

Global Pressure – Nordic Solutions?

Nordic Globalization Barometer 2011



**Global Pressure- Nordic Solutions?**

The Nordic Globalization Barometer 2011

By Christian Ketels

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Nordic co-operation

Nordic co-operation is one of the world's most extensive forms of regional collaboration, involving Denmark, Finland, Iceland, Norway, Sweden, and Faroe Islands, Greenland, and Åland.

Nordic co-operation has firm traditions in politics, the economy, and culture. It plays an important role in European and international collaboration, and aims at creating a strong Nordic community in a strong Europe.

Nordic co-operation seeks to safeguard Nordic and regional interests and principles in the global community. Common Nordic values help the region solidify its position as one of the world's most innovative and competitive.

Foreword

The global challenges related to climate, the environment, energy, welfare and the financial markets are huge and urgent. None of these challenges can be solved by one country or region alone. They require a co-ordinated approach. For the Nordic countries it is quite natural to look for joint solutions. The Nordic region has a common history, strengths, values and knowledge that support joint efforts to answer these challenges.

The Nordic Prime Ministers therefore took joint action to strengthen Nordic cooperation as a tool to better meet the challenges of globalization. In Punkaharju, Finland in 2007 they stated a shared and positive attitude towards opportunities and challenges of globalisation. According to the Prime Ministers Nordic co-operation should be more focused on globalization and the opportunities stemming from it. They therefore called upon joint Nordic activities related to innovation, climate and energy, research and education, welfare and health issues – areas where the Nordic region can be successful.

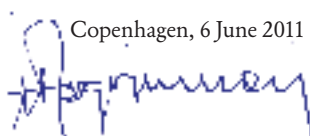
One of the initiatives initiated from the Nordic Prime Ministers' joint Nordic globalisation policy is a Nordic Globalization Forum. The objective of the forum is to seek joint solutions to the challenges of globalisation. The Nordic premiers together with representatives of industry and commerce, research, politics and non-governmental organisations are taking part. The first Nordic Globalization Forum was held in Sweden in April 2008 and the second in Iceland in February 2009. On both occasions the Nordic Prime Ministers confirmed the Nordic globalization process that was started in 2007. In June 2011, the fourth Nordic Globalization Forum will take place in Finland, with the focus on how to generate more growing green companies in the Nordics.

Previous years the Nordic Globalization Barometer have contributed with valuable input to the debate that took place at the Globalization Forum and the Nordic Prime Ministers wished to see an updated version in 2011. I am therefore proud to present the 2011 Globalization Barometer.

The Nordic countries have been fully exposed to the recent changes in the global economy. Their solid domestic policy enabled them to deal with the crisis much better than many of their OECD peers, with Iceland being a special case. In the short run, the fiscal imbalances created by the economic crisis are dominant concern for a significant part of the region. But in the longer run, all Nordic countries face the question how to react when the center of gravity in the global economy moves away from Europe. The Barometer aims to inform the discussion about this complex question.

Finally, I would like to give my warmest thanks to the author Christian Ketels (Harvard Business School / Stockholm School of Economics). The analysis and conclusions in the Nordic Globalization Barometer are those of the author and do not necessarily reflect the views of the Nordic Council of Ministers. However, I am convinced that the report will be a useful instrument in our future work implementing the globalization initiatives that started with the Prime Ministers summer meeting in Punkaharju.

Copenhagen, 6 June 2011



Halldór Ásgrímsson
Secretary General
Nordic Council of Ministers



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Executive Summary

The 2011 Nordic Globalization Barometer is the fourth in its series, again designed to serve as input to the Nordic Globalization Forum. With the global crisis giving room to a reluctant and highly uneven recovery, the focus is turning towards the emerging shape of the post-crisis global economy. The US is struggling with long-term fiscal imbalances amidst a slow recovery. Europe is divided between quickly recovering economies led by Germany in the north and debt-struck economies in the south. The emerging economies have continued their ascendancy.

The Nordic economies have been fully exposed to these changes in the global economy. Their solid domestic policies enabled them to deal with the crisis much better than many of their OECD peers, with Iceland being a special case. In the short run, the fiscal imbalances created by the economic crisis are a dominant concern for a significant part of the region, Denmark and Finland in particular. In the longer run, all Nordic countries face the question of how to react when the centre of gravity in the global economy moves away from Europe.

The Barometer's framework (Ketels, 2008) aims to inform the discussion about this complex question. It is grounded in the research on competitiveness (Porter, 1990; Porter et al., 2008; Delgado et al., 2011), on growth diagnostics (Hausman et al., 2008; Rodrik, 2010; Ketels, 2011) and its policy applications (OECD, 2009a; European Council, 2010). A wide-range of data is used, with the World Economic Forum's Global Executive Opinion data a key source (WEF, 2010).

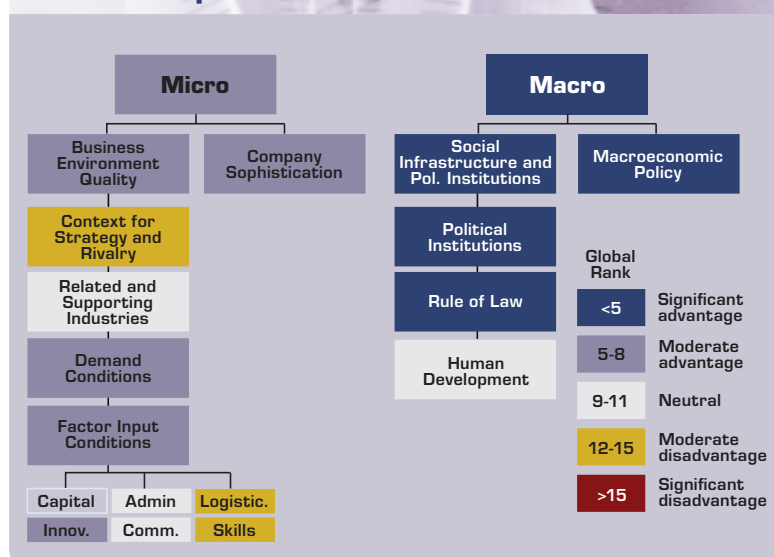
The Global Competitiveness of the Nordic countries

The analysis of the **current economic climate** indicates that the Nordic region is now in a good position to reach a path of stability. The exuberance of sentiment visible last year has largely subsided: the end of the stimulus packages and a mix of monetary policy tightening and fiscal policy consolidation have left their mark. In a still very uncertain global environment, there are now more downward risks.

The data presented in this Barometer reflects the strong recovery in economic performance that the Nordic economies have been able to achieve. GDP per capita is growing again, based on a resurgence of productivity. Labor input and labor market conditions have stabilized. Denmark showed a somewhat less benign trend, with labour input levels falling at an only moderately decreasing rate. Fiscal policies need to be tightened further in some countries but overall the region has a good chance to achieve a robust recovery without creating the seeds of a new bubble. While the determined policy response has left a clear mark in the public finances of all Nordic countries, they are in a more enviable situation than their southern European peers. Iceland remains an exception but has also managed a remarkable macroeconomic stabilization.



Global Competitiveness Profile of the Nordics



Source: Unpublished data from the WEF Global Executive Opinion Survey (2010), author's analysis based on Delgado et al. (2011)

The **competitiveness** of the region has remained stable. The high level of overall competitiveness supports the high level of prosperity that the region is enjoying. The region remains slightly stronger on macro- than on micro-economic competitiveness and recovered marginal ground lost last year. Only Denmark saw its position erode overall, albeit from a high level and at a moderate rate.

The Nordic region benefits from strong institutions, macroeconomic policies, sophisticated companies, advanced demand conditions, and a strong innovation infrastructure. It has improved its ranking on patenting, capital market infrastructure (especially the access to local equity markets and the soundness of banks is seen more positively than last year), and the perceived openness to foreign investment. In indicators of company sophistication, the region maintains its leading position, especially on the internationalisation of firms. The region is perceived to have lost ground on physical infrastructure, education and innovation infrastructure (here driven largely by Denmark and Norway). It also continues to have a relatively weak presence of clusters.

In addition, there is a more general puzzle in competitiveness being generally higher than the level of prosperity that the Nordic countries achieve in comparison to their international peers. This could be the result of standards of living in society being higher than indicated by average income levels or an indication of specific bottlenecks that hinder the Nordic countries to take full advantage of its strengths.

On **globalization readiness**, the role of the Nordic countries in the global economy is gradually changing. The Nordic countries are losing market share in what seems to be a structural decline. Exports are becoming less important, with services are holding up better than goods in terms of world market shares. As production in global value chains is moving to Asia, the role of the Nordic countries in the global economy is gradually changing.



The Nordic countries remain very active in outward FDI, while inward flows are developing less dynamically. The share of the Nordic countries in FDI inflows dropped below the region's share in global GDP; Finland and Sweden in particular saw inflows drop. This is more likely the reflection of changes in the global economy than of lower absolute attractiveness of the Nordic countries as a place to do business.

On labor market flexibility and openness to entrepreneurship, there have been few changes according to the available indicators. The Nordic labour markets have overall been able to deal quite well with the dramatic shock of the global economic crisis. Where problems exist, they relate to the rules and regulations affecting specific groups, especially people entering the labour market, in early retirement or on sick leave, and immigrants. The Nordic countries do well on new business formation. But economic impact depends on the ability of new entrants to grow and scale-up their operations. And on this dimension the Nordic countries are still struggling (FORA, 2010).

Recommendations

On **macroeconomic competitiveness**, the short term priority is to *stay the course* in pursuing macroeconomic policies that support a path of sustainable growth. This requires flexibility but also the adherence to clear fiscal and monetary policy targets. Sweden seems already well on track to reach this target. Denmark and Finland, to some degree also Norway, still require more policy action to get there. Iceland remains a different case, despite the significant progress made. Longer term, the Nordic countries need to *remain open* to react to changes in the policy environment around them. The current heterogeneity between Euro-Zone membership, Euro-peg, and flexible exchange rate has worked so far but seems unlikely to remain stable forever. No drastic changes are needed now but there needs to be openness to evaluate alternatives for tomorrow.

On **microeconomic competitiveness**, the short term priority is to continue efforts to improve the *effectiveness and efficiency* of policies in areas like education, infrastructure, innovation, and entrepreneurship. New approaches, like a more aggressive use of demand-driven innovation policies, need to be developed and implemented. Longer term, the Nordic countries need to become *more strategic in targeting policies* on specific bottlenecks to value creation in their economies. While there is a clear macroeconomic strategy, microeconomic policy tends to be a collection of individual programs without comprehensive view.

Global competitiveness is increasingly a question of the role that a location is playing the global economy, not just of its generic capabilities. The Nordic countries' changing pattern of globalization readiness indicates that the way existing advantages are translated into economic benefits is being transformed. The Nordic countries should aim for more clarity on the *positioning* that they aspire to have in the global economy. What activities do they want to be attractive locations for, and how will those activities generate value for their citizens? The answers to these questions will help to guide action priorities on competitiveness upgrading and support their integration into an overarching strategy that generates maximum benefits for Nordic citizens.



The 2011 Nordic Globalization Barometer is the fourth in its series. When the Nordic Prime Ministers launched this effort at their June 2007 meeting in Punkaharju (Finland), the globalization process had driven economies around the world to increasingly high levels of performance. The US steamed ahead but European countries, too, finally seemed to be gathering speed and were starting to reduce the gap towards the US. BRICs, the acronym for Brazil, Russia, India, and China framed by a Goldman Sachs economist, was a short-hand for the opportunities that globalization brought to less-advanced economies opening up to the global market.

Four years later, the environment has changed dramatically. The US economy is slowly growing after a deep crisis. Its struggle with long-term fiscal imbalances, both domestically and internationally, has only just started. Europe has been divided between quickly recovering economies centered around Germany and the PIGS (the acronym for Portugal, Ireland, Greece, and Spain) economies struggling with public sector imbalances that sap the energy out of any cyclical recovery. The emerging economies have in the meantime continued their ascendancy, with domestic business environment weaknesses or macroeconomic overheating a larger concern than the repercussions of the overall lackluster performance of many OECD economies.

The Nordic economies – small, open, and with robust macroeconomic and financial market regulation policies following their own financial crisis in the 1990s – have been fully exposed to these changes in the global economy. Their solid domestic policies enabled them to deal with the crisis much better than many of their OECD peers, with Iceland being a special case. But their dependence on foreign trade also exposed them to the full-blown shock of the trade collapse. In the short run, the fiscal imbalances created by the economic crisis are a dominant concern for a significant part of the region, Denmark and Finland in particular. In the longer run, all Nordic countries face the question of where they will stand when the centre of gravity in the global economy moves away from Europe.

The policy challenges that the answer to this question raises leads back to the agenda that has been the focus of the Nordic Globalization Barometer from the start: global competitiveness. Competitiveness is in this report understood as the combined impact of a broad range of fundamental aspects of the economic environment on the level of productivity and innovation that economies can sustain. Competitiveness thus defined determines what role the Nordic countries will be able to play in the future of the global economy and what level of prosperity its citizens will be able to enjoy. The Nordic Globalization Barometer aims to provide a concise profile of how the Nordic countries perform on a range of economic performance indicators that together allow a meaningful diagnostic of where the region stands.

The Nordic Globalization Barometer is conceptually grounded in the research on competitiveness (Porter, 1990; Porter et al., 2008; Delgado et al., 2011), a framework that draws widely on the broader academic literature on growth and prosperity. In terms of policy implications it is motivated by recent research on diagnostics to identify binding constraints to growth (Hausman et al., 2008; Rodrik, 2010; Ketels, 2011) and policy applications in



the context of the OECD “Going for Growth” agenda (OECD, 2009a) and the EU’s policy process related to the EU2020 strategy (European Council, 2010). The data on economic outcomes and competitiveness conditions is drawn from a wide-range of sources, with the World Economic Forum’s Global Executive Opinion data a key element (WEF, 2010).

The Nordic Globalization Barometer 2011 builds on the methodology established in previous editions (Ketels, 2008) to look at four separate dimensions that provide complementary insights into global competitiveness:

- The first part provides a short overview of the macroeconomic climate in the Nordic countries. These short-term trends have limited direct impact on long-term competitiveness. But they set the context in which policy choices affecting competitiveness have to be made.
- The second part tracks the changes in economic performance, the ultimate way in which competitiveness translates into prosperity. The indicators closely match those that were covered last year. The short term changes of these indicators reflect the impact the current crises has on economic conditions. The longer-term patterns of levels for these indicators give important insights into strengths and weaknesses of underlying competitiveness.
- The third part covers the main drivers of competitiveness. Competitiveness is set by all those fundamental factors that drive the potential prosperity an economy can generate. While these fundamentals tend to not change rapidly in the short-term, trends in their relative strength and weakness provide important information for policy.
- The fourth part covers indicators of a country’s ability to project its competitiveness globally. The broad categories to measure “globalization readiness” follow closely those that were introduced last year. Some of the performance related indicators on trade and investment are highly affected by the global crises. The structural indicators of flexibility are subject to more gradual changes as a consequence of policy action across countries.

The two final parts of the Barometer provide information on policy actions by the Nordic countries in the main dimensions of competitiveness and globalization readiness covered. While far from being a complete documentation or assessment of all policies, this new element of the Barometer provides further insights for the discussion of policy implications.

The Barometer concludes with a number of summary remarks on the main findings and policy conclusions.

Global Competitiveness of the Nordic countries

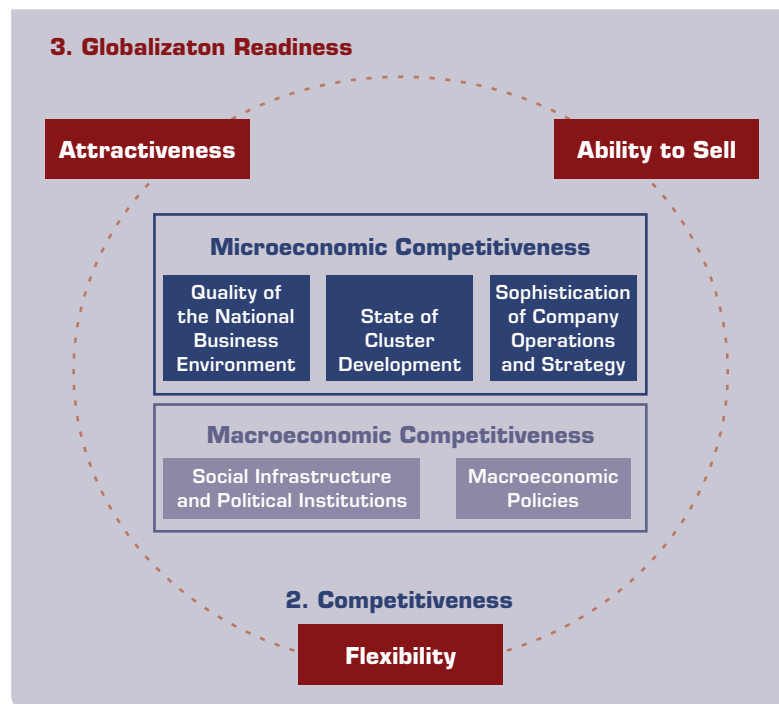
The global crisis has changed the profile of the global economy. While the transition towards an economically more multi-polar world had been under way for some time, the crisis led to a significant acceleration in the change process. Dominant OECD economies in Europe and North America were shaken, and will have for some time to deal with addressing their domestic economic challenges, both in terms of macroeconomic imbalances and gaps in structural reforms. Emerging economies were emboldened, not the least because their growth resumed even when the OECD economies achieved only moderate growth in the aftermath of the crisis. While they continue to face significant challenges in becoming countries that can support broad-based prosperity for its citizens, they are increasingly confident about being able to do so over time.

For the Nordic countries, these changes have provided a range of challenges, differing according to their current economic position. Norway (thanks to its natural resources) and Sweden (thanks to its prudent macroeconomic policies) have left the crisis largely behind. They now have to prepare their economies for the realities of the new, post-crisis global environment. Denmark (which entered the crisis early) and Finland (which traditionally has had a less flexible economic structure) still have much more work to do to address the fall-out of the global crisis on their public finances. But beyond that, their lower ability to grow exports in the wake of the crisis raises further concerns about their longer-term position. Iceland has successfully stabilized its economy following the dramatic meltdown of its financial sector, but now needs to find a new growth perspective. All Nordic countries face the question of how to prepare themselves for the realities of post-crisis globalization.

The framework introduced in the 2008 Nordic Globalization Barometer (Ketels, 2008) is an attempt to inform the discussion about this complex question. The framework acknowledges the breadth of factors that have an impact on long-term sustainable growth. It organizes these factors into categories that are driven by their different roles in the overall process of supporting prosperity improvements and by the different policy architectures that determine their quality. Crucially, the framework does not propagate a generic set of policy priorities, but requires locations to identify the specific challenges they face based on an in-depth review of their respective strengths and weaknesses. The Barometer makes a contribution to such a review for the Nordic countries, focusing particularly on issues that are relevant for the entire region.



1. Economic Performance



The 2011 Nordic Globalization Barometer continues to apply this framework with marginal adjustments to some individual indicators used depending on data availability. Following a discussion of the current economic climate, the Barometer analyses the position of the Nordic countries in the global economy on three sets of indicators:

- **Economic performance**, in particular a high standard of living, is the ultimate objective of economic policy. The Barometer tracks overall measures of prosperity and prosperity generation, including GDP per capita, labor productivity, labor mobilization, and local price levels.
- **Competitiveness** is the combination of factors that set the level of productivity that companies can reach in a given location, the key long-term determinant of the standard of living a location can sustain. Based on the refined framework first introduced in the new Global Competitiveness Index (Porter et al., 2008), the Barometer differentiates between macroeconomic and microeconomic competitiveness.
- **Globalization readiness** describes the ability of a location to successfully engage with the global economy, bringing to bear its full competitiveness. The Barometer tracks three categories of relevant indicators: The ability to sell globally, the ability to attract globally, and the ability to react to global shocks.

As in the previous year, the Nordic Globalization Barometer aims to strike a balance between accessibility, i.e. being sufficiently brief to enable decision makers to use the data, and relevance, i.e. providing sufficient breadth and depth to enable a meaningful discussion about actions. It draws on existing data and research rather than extensive primary analysis. The positions of the Nordic countries individually and on aggregate are summarized through the simple color scheme below. The sources for the detailed data are provided in the list of references at the end, in some cases also with the direct links to the online data.

Green for a position better than the OECD and EU-15 average, or a rank within the global top 10, or an improvement

Yellow for a position between the OECD and EU-15 average, a rank between 10 and 20 globally, or no change

Red for a position below the OECD and EU-15 average, a rank lower than 20 globally, or a deterioration

The Nordic countries' policy actions in the main dimensions of global competitiveness covered in this report are described based on several documents from the governments, submissions to and analyses provided by the EU and the OECD, and a range of interviews with government officials and researchers from all five Nordic countries. Their generous contribution of information and insights is gratefully acknowledged; they are not responsible for any omissions or mistakes in this report.

2.0 Economic Climate

The Nordic Globalization Barometer does not aim to provide an in-depth assessment of the current economic climate in the Nordic countries. Many government agencies, research institutions, and banks are focused on this task. Instead, the Barometer discusses medium-term data related to the level of economic performance that the Nordic countries will be able to achieve over time. The short-term fluctuations of the economy provide only very

Real GDP growth rates (in %)

	2007	2008	2009	2010	2011*
NORDIC	3.2	-0.1	-4.9	2.9	3.0
Denmark	1.6	-1.1	-5.2	2.1	1.8
Finland	5.3	1.0	-8.3	3.1	3.5
Iceland	6.0	1.4	-6.9	-3.5	1.0
Norway	2.7	0.8	-1.4	0.4	2.1
Sweden	3.4	-0.8	-5.3	5.3	4.1
EU	3.0	0.4	-4.2	1.8	1.6
OECD	2.6	0.2	-3.6	2.8	2.3

Source: EIU, 2011



Unemployment (in %)

	2007	2008	2009	2010	2011*
NORDIC	4.8	4.6	6.3	6.7	5.9
Denmark	3.6	2.6	4.6	5.9	5.7
Finland	6.9	6.4	8.2	8.4	7.2
Iceland	1.0	1.6	8.0	8.1	8.1
Norway	2.5	2.6	3.2	3.6	3.2
Sweden	6.1	6.2	8.3	8.4	7.3
EU	7.3	7.2	9.2	9.8	9.5
OECD	5.7	6.1	8.2	8.4	8.1

Government budget balance (in % of GDP)

	2007	2008	2009	2010	2011*
NORDIC	7.7	7.0	0.9	1.3	1.7
Denmark	4.8	3.4	-2.8	-2.9	-3.8
Finland	5.2	4.5	-2.6	-2.5	-1.2
Iceland	5.4	-13.5	-10.0	-7.8	-5.1
Norway	17.7	19.3	9.9	10.1	10.6
Sweden	3.5	2.2	-1.2	-0.3	0.1
EU	-0.8	-2.3	-6.7	-6.4	-4.8
OECD	-0.6	-2.0	-7.3	-6.7	-6.4

* Predicted value.

limited information on these trends. They do, however, set the context in which many policy decisions with longer-term implications are being made.

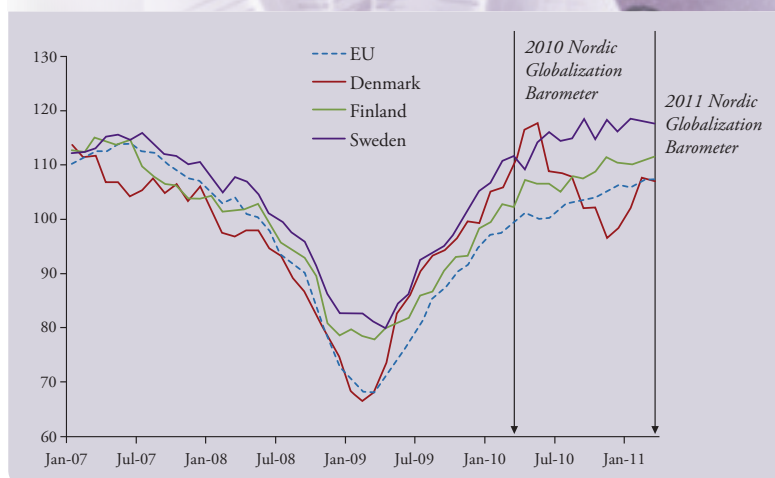
The Nordic countries had been growing stronger than its European peers in the run-up to the current global crisis. The crisis was then deeper but also more short-lived than in both the OECD and the EU. The overall impact of the crisis from 2007 to 2011 is expected to be smaller than in the EU but higher than in the OECD. The Nordic countries will in 2011 move beyond the GDP level reached in 2007, while the EU remains just shy of that benchmark. The OECD is forecasted to reach 101.6% of its 2007 GDP level, compared to 100.7% for the Nordics.

Looking at the components of GDP growth, the Nordics are benefiting in particular from robust domestic consumption, which is growing faster than in the OECD and EU. Government consumption is also making a positive growth contribution relative to peer countries. Investments and exports in the Nordics, however, have fallen less in 2008 and 2009 but have in 2010 not been growing as fast as in other countries.

A significant driver of the solid domestic demand in the Nordic countries has been the better than average labour market performance. The Nordics entered the crisis already with a lower unemployment rate, about 1%-point below the OECD average and 2.5%-points below the EU. Unemployment increased less between 2007 and 2010 – +2%-points in the Nordics compared to +2.5%-points (EU) and +2.7%-points (OECD). And it is forecasted to drop faster in 2011: -.08%-points in the Nordics vs. -.03%-points in both the EU and the OECD.

Changes in the government budget balance are less distinctive for the experience of the Nordics than one might assume: Between 2007 and 2009 balances deteriorated by close to 7% of GDP and are expected to improve by less than 1% of GDP by 2011, much like in the OECD average. The EU actually saw a smaller deterioration during the crisis but stronger consolidation since then. The difference is the starting point: While the Nordics started with a solid budget surplus, both the OECD and the EU were in negative territory already before the crisis and are now on a clearly unsustainable fiscal path.

Economic Sentiment Indicator



Source: European Commission. *Economic and Financial Affairs*. 2011

The tasks for policy makers in the Nordic countries have become more dependent on country-specific circumstances rather than being driven by region-wide trends.

Denmark has consistently underperformed the average of its Nordic peers since 2007. The key drivers have been less dynamic domestic consumption and weaker investments. The weaker performance over the last year is also consistent with the quite dramatic cooling of business sentiment in Denmark relative to the one year ago. More recently the trend has become more positive but Denmark is now only back at the level of the EU average. This is all the more remarkable as Denmark is closest to the large German economy, which has performed exceedingly well recently. One factor that might explain the less positive outlook in the Danish economy might be the realization of the fiscal policy challenges that are ahead. The 2010 trend change in economic sentiments came close to the time when the government was forced to publish its consolidation package. The growth in confidence since January might signal a higher confidence that the fiscal strategy might succeed.

Finland had been growing faster than the Nordic average until 2008 but then experienced a more dramatic drop. It still has not reached pre-crisis GDP levels and lags even the EU average on this indicator. Domestic consumption, both private and public, is the main driver of the lower economic growth in Finland. This can not be easily explained by labor market trends, which were



if anything better than in the Nordic average. Economic sentiments were also gradually improving. The sovereign debt crisis in the Euro-zone clearly had an impact on outlooks, as became visible in the recent election. But there might also have been concerns about the future path of fiscal policy, where further cuts are necessary to align means with the demands of an aging society. While worries about Nokia's path might also have mattered, exports are in 2011 expected to grow dynamically on the back of a relatively weak Euro.

Iceland's economy is in 2011 stabilizing at a level of about 10% below its pre-crisis GDP. Private consumption had in 2009 dropped by 15%, investments by 50%. Both are now leveling out with very modest positive growth rates expected in 2011. The Capacent Gallup indicators for business and consumer sentiments remain at very low levels and have shown little upward momentum since 2009 (Central Bank of Iceland, 2011a). A key issue is the slow rate of private sector debt restructuring (IMF, 2011). Exports had been growing throughout the crisis, albeit now at a rate below the Nordic average. Unemployed had stabilized already in 2009. The Icelandic labour market proved quite flexible with a lot of the foreign labour that had entered the country during the upswing quickly leaving again. The government budget balance clearly is not yet sustainable, even though deficits have been gradually reduced. Balancing the budget would clearly be much easier if the economy would show signs of life, for example by attracting additional investment in the energy-intensive sector.

Norway's economy has literally behaved as a tanker, i.e. reacting with much less amplitude to the large shocks affecting the rest of the Nordic region. Growth has dropped significantly less during the crisis but there has also been much less of a recovery. Part of the explanation is Norway's unique trade profile: while its exports did react to the crisis, it did much less so than for the rest of the region. Unemployment rose somewhat during the crisis and is only slowly receding. The government balance remains in significant surplus due to the large oil and gas revenues. But the deterioration has been more severe than in the Nordic average.

Sweden, the region's largest economy accounting for more than a third of total GDP, seems to have a chance of entering a sustainable growth path in the wake of the roller-coaster of the last few years. Following strong growth prior to the crisis it was hard hit in late 2008 and 2009 but recovered strongly since then. Key drivers of the recent growth have been strong domestic demand, both private and public, and a resurgence of gross fixed investment. More restrictive monetary policy has stabilized economic sentiments at a high level. Private consumption is slowing down, as are exports in the face of a strong currency. Government budget balances are on a solid path, significantly stronger than for all peers except oil-rich Norway. Unemployment is the only lagging indicator that remains in worse shape than before the crisis, despite significant improvements in 2011.

2.1 Economic Performance

Integration in the global economy is important, because it enables citizens to reach higher levels of prosperity. But opening up to the global market is

not sufficient to ensure that these benefits to the standard of living actually emerge. This is why an assessment of global competitiveness has to start with an evaluation on prosperity as the ultimate policy objective. The central indicator to measure **prosperity** is the average GDP per capita, adjusted by local price differences, the so-called purchasing power parity (PPP). Labor productivity and labor mobilization determine together with local price levels prosperity in an accounting sense.

Prosperity is measured by GDP per capita, adjusted for purchasing power parity; level data is for 2010, growth is relative to 2009, and growth dynamism is the change of the annual growth rate from 2009 to 2010. Colouring is relative to OECD/EU. Source: The Conference Board, 2011

Prosperity			
	Level	Growth	Growth dynamism
Nordic			
Denmark			
Finland			
Iceland			
Norway			
Sweden			

The Nordic countries continue to register a strong position on GDP per capita (PPP), a measure that captures the longer term fundamentals of an economic and does not change rapidly over time. For the fourth consecutive year, the region overall and each Nordic country individually register higher levels of average prosperity than the OECD and the EU-15. The short term view on 2010 growth and the change of growth rates between 2010 and 2009 shows a clear improvement – particularly for Finland and Sweden, who have seen growth rates jump by 11% and 10% respectively compared to 2009. At 2%, Denmark's GDP per capita growth was only slightly lower than the OECD average of 2.3% and almost 7.5%-points higher than in 2009.

Iceland, and now also Norway, have lower growth and growth dynamism when compared to the OECD/EU. For Iceland, this is a reflection of continuing decreases in GDP in recent years. In Norway's case, this comparatively low level is due to stronger resilience of growth rates during the crisis compared to the high volatility in other OECD/EU countries.

GDP per capita is on many accounts an imperfect measure of social welfare (Fleurbaey, 2009). When considering other measures of prosperity (including governance, access to education, health, safety&security, personal freedom and social capital), the view on Nordic prosperity is even brighter. In the Legatum Prosperity Index – which presents a broader measure of prosperity covering both wealth and well-being – Norway, Denmark and Finland fill the top three spots. All five Nordic countries ranked well above both OECD and EU average rankings on each of the eight sub-indices, with few exceptions.

The Nordic countries continue to register solid **productivity** rates, measured by GDP (PPP adjusted) per hour worked. The high value for Norway – driven to a significant extent by the share of oil and gas revenues in the country's GDP – drives this result (as in previous years). Denmark was just above the EU-15 and the lower OECD average. Finland continues to register productiv-



ity levels below the EU-15, and Iceland even below the OECD. Productivity growth in the Nordic region has been above OECD/EU averages in 2010 – driven by Denmark and Sweden. Although Finland and Norway had lower productivity growth than OECD/EU averages, only Iceland experienced a decrease in productivity relative to 2009.

Among the Nordic countries, Sweden, Denmark and Finland all registered large gains in productivity growth in 2010 relative to 2009 (with 6%, 6% and 5%-percentage point increases respectively relative to the productivity losses in 2009). However, Finland's labour productivity is still below its 2008 level. Norway's labour productivity continued to grow at a low but relative stable rate. As last year, Iceland continues to register poor productivity growth compared to advanced economy peers, and has experienced a 7%-points drop in labour productivity growth relative to 2009. This large drop is predominantly an effect of the unique situation in Iceland in 2009, when hours worked fell by a higher percentage than GDP contracted – resulting in a 5% increase in labour productivity in 2009. With a 2% reduction in labour productivity in 2010, the change in growth relative to 2009 is quite dramatic.

Labour productivity is measured by GDP per hour worked; level data is for 2010, growth is relative to 2009, and growth dynamism is the change of the annual growth rate from 2009 to 2010. Colouring is relative to OECD/EU. Source: The Conference Board, 2011

Labour productivity			
	Level	Growth	Growth dynamism
Nordic			
Denmark			
Finland			
Iceland			
Norway			
Sweden			

The Nordic countries' position on **labor input**, here measured by hours worked per capita – a summary measures that captures the impact of demographics unemployment rates, and working hours by employees – remains higher than other advanced economies. Yet the average level is still below 800 hours and on a decreasing trend since 2008 – both for the Nordic countries and for the EU/OECD countries. However, the more dramatic drops in labor input that were experienced in 2009 seem to be tapering off – both for the EU/OECD and for the Nordic countries. Labour input seems to be leveling off around 775 hours for OECD countries (lower in the EU), and around 790 hours for the Nordic countries. As the drops in 2009 were more dramatic for the EU/OECD countries, the labor input growth and growth dynamics for the Nordic countries in 2010 is relatively lower.

Among the Nordic countries, Iceland continues to have the highest levels of labor input (at over 920 hours), whereas Denmark has the lowest (falling from 800 hours in 2009 to 780 hours in 2010). While Finland and Sweden experienced 1% increases in labor input, both Denmark and Iceland experienced 2% decreases in 2010. Norway had only marginally lower labor input in 2010 (decreasing from 784 to 782 hours). Most countries that experienced dramatic decreases in labor input in 2009 have been able to either bounce back (e.g. Canada, Finland, Germany, Sweden) or slow down labour input decreases in

2010 (e.g. Iceland, Ireland, Spain, USA), Denmark is one of the few countries that seem to be experiencing continued steady declines in labor input.

Labour input is measured by annual hours worked per capita; level data is for 2010, growth for the relative change 2010 to 2009, and growth dynamism for the change in percentage change in 2010 to 2009. Colouring is relative to OECD/EU. Source: The Conference Board, 2011

Labour input			
	Level	Growth	Growth dynamism
Nordic			
Denmark			
Finland			
Iceland			
Norway			
Sweden			

Three key factors have an impact on the level of labor input countries reach: working hours per employee, unemployment among the working age population, and the share of people with working age in the total population. On **working hours per employee**, the Nordic countries remain below the average of their peers in the EU-15 and OECD. This gap widened again in 2010, as hours increased more strongly in the OECD and the EU-15. Of the Nordic countries, only Finland experienced increased working hours per employee in 2010 (almost reaching 2008 levels). This could be related to different choices across countries on expanding capacity through raising working hours versus hiring new staff.

On **employees per population** the Nordic countries remain ahead of their European and OECD peers. The gap to the EU-15 increased slightly in 2010, even though all Nordic countries (except Sweden) continue to experience slightly decreasing trends in employee shares. An important factor driving these changes is the unemployment rate. Despite slightly rising unemployment rates (particularly in Denmark and Norway), the Nordic region continues to maintain lower unemployment rates than their EU and OECD peers. Although the gap is increasing relative to the EU-15 (who experienced a 0.7% jump in average unemployment in 2010), the gap is decreasing slightly relative to the OECD. During 2010, Finland and Sweden still struggled with the highest unemployment rates in the Nordic region (each with 8.3% unemployment), with Iceland close behind (with 7.8% unemployment).

The **demographic challenges** ahead are getting increasingly clear, even though most Nordic countries are in a somewhat more favourable position than their European peers. The demographic changes are particularly critical for the fiscal balances of the social welfare system, where the Nordic countries have conversely more elaborate transfers than other advanced economies.

The Nordic countries continue to register relatively high **local cost levels**. In 2009, the latest year for which Eurostat provides comparable annual data, the cost level in the Nordic region was 26% above the EU-27 average and 18% above the Eurozone average. However, this gap has decreased since 2008, reflecting a return to previous convergence trends following the crisis.



While the higher GDP per capita level and the low density/remoteness of the Nordic region explain some of the price difference, it leaves a significant part to be driven by other factors like taxes and local market conditions.

Level is normalized price level of a set basket of goods and services relative to the EU-27 average in 2009; changes are changes in this relative price level between 2008 and 2009. Source: Eurostat, 2011.

Domestic price level		
	Level	Change
Nordic		
Denmark		
Finland		
Iceland		
Norway		
Sweden		

Among the Nordic countries, Denmark has the highest domestic price levels, while Iceland (followed by Sweden) now has the lowest. Iceland continues to experience dramatic reductions in price levels. It is now reaching levels lower than the Eurozone (and only slightly higher than EU-27 peers) as a result of the crisis. However, this decrease slowed significantly relative to 2008, and had not fallen further in the first quarter of 2011.¹ Driven by exchange rate changes, Sweden experienced a significant drop in domestic price levels in 2009 (putting Sweden on par with Eurozone levels), but has since risen a bit relative to the Eurozone according to latest OECD statistics. Denmark experienced the highest relative price level increase at 3.4% relative to the EU-27, followed by Finland.

2.2 Competitiveness

While a country's position on labor productivity, labor input, and price levels explain prosperity in an accounting sense, it provides only limited insights into the root causes of prosperity and thus the levers that policy has to pull in order to achieve sustainable improvements in prosperity. They are important diagnostic tools, not ultimate goals or direct indicators of policy.

Actionable policy advice needs to be based on a more comprehensive assessment that combines data on ultimate economic outcomes with data on underlying competitiveness, i.e. the root causes that explain these outcomes. Underlying competitiveness is measured in the Barometer based on a framework introduced in the 2008 Global Competitiveness Report (Porter et al., 2008) and further developed in a recent paper (Delgado et al., 2011). This paper provides clear econometric evidence that institutional quality, macroeconomic policy, and microeconomic factors like business environment conditions, company sophistication, and cluster presence all have a significant and independent impact on prosperity differences across countries. The analysis also indicates that for countries like the Nordics with high standards of economic development microeconomic factors are particularly important.

¹ Source: OECD monthly comparative price levels (<http://stats.oecd.org/Index.aspx?DataSetCode=CPL>)

Overall business environment quality is measured by the aggregate ranking on competitiveness using the new GCI methodology presented in the Global Competitiveness Report 2010. Change is measured by the change in rank on this measure between 2010 and 2009. Colouring is relative to absolute rank and rank change. Source: Global Competitiveness Report, 2010.

The 5th Nordic Globalization Barometer presents rankings of the Nordic countries based on this methodology to a wider audience.

The traditionally strong position of the Nordic countries in aggregate measures of competitiveness is confirmed by the 2010 results. Three Nordic countries are among the global top five, and four are among the global top ten. With improved rankings from Finland and Norway, the Nordic region has improved its average performance relative to last year, and is nearly back to 2008 levels.

Overall competitiveness		
	Level	Change
Nordic		
Denmark		
Finland		
Iceland		
Norway		
Sweden		

Sweden has maintained its top ranking on overall competitiveness for a 2nd year. Of the two Nordic countries that experienced a deterioration relative to 2009, Iceland dropped from 24th to 27th, and Denmark dropped from 3rd to 5th. For Iceland, this reflects continued instability in its economy and competitive outlook. Although Denmark maintains a position in the global top five, the country has experienced a two-step drop for the 2nd year in a row. Finland and Norway have both improved their rankings in 2010. Finland has moved up 1 step and is again ranked in the top three globally. And Norway has jumped three steps up into 6th position globally. The difference between Denmark and Norway is no longer statistically significant.

As with overall competitiveness, the Nordic countries continue to have a very strong position on macroeconomic competitiveness – with four out of five countries in the top six positions globally. This is based on strong performance on both pillars of macroeconomic competitiveness: social infrastructure and political institutions, and macroeconomic policy. With reliable and effective government, strong legal systems, and stable performance on human development indicators, the Nordics have consistently topped the rankings on the institutional pillar of macroeconomic competitiveness. And their continued admirable performance on indicators of macroeconomic policy (including deficit, debt and inflation) has kept them in the group of top-performing countries in this pillar as well.

Among the Nordic countries, Sweden and Finland top the list (in 1st and 2nd places respectively). Both countries have improved their ranking since 2009, driven by improved performance on indicators of political institutions and rule of law. Norway also climbed two positions in 2010 (to 5th) for many of the same reasons. Iceland continued to fall dramatically in the global rankings, as repercussions from the banking crisis have negatively impacted both government finances and perspectives on governmental institutions. Denmark also experienced a rather sharp decline (dropping from 1st to 6th place), somewhat



Level is measured as the overall 2010 GCI rank on Macroeconomic Competitiveness. Change is measured by the change in rank on this measure between 2010 and 2009. Colouring is relative to absolute rank and rank change. Source: Global Competitiveness Report, 2010.

Macroeconomic competitiveness		
	Level	Change
Nordic		
Denmark		
Finland		
Iceland		
Norway		
Sweden		

surprisingly driven by lower ratings of its legal framework, judicial independence and reliability of the police (among other things).

The data presented in the table above and the other tables that follow in this report captures actual outcomes or perceptions by business leaders about present conditions. For an informed policy debate, it is useful to put this profile of the current situation into the context of the relevant government policies. In the following paragraphs, key information is given on the policy framework and recent actions for each of the Nordic countries as they pertain to macroeconomic policy. Similar paragraphs are included throughout the rest of the report where specific dimensions of competitiveness are being discussed.

DENMARK

Denmark's fiscal policy aims to keep the government budget deficit at an average of -0.5% of GDP over an economic cycle. The government's long-term outlook identifies demographic factors as driving structural budget deficits to move beyond this limit after 2013 if no policy action is taken. The Danish government debt has risen recently but remains far below the 60% mark of the European Growth- and Stability Pact. Danish government bonds have a very small interest rate disadvantage to benchmark Bunds, the German government bonds.

During the crisis Danish fiscal policy delivered one of the largest fiscal loosening of all EU member countries. Alongside the effect of the automatic stabilizers, i.e the expansionary effect of public spending as a result of falling tax revenues and growing social expenditures during a crisis without any legal changes, there was also a significant increase in discretionary spending, especially on health care. As a result Denmark went significantly above its own fiscal target and was in 2010 in danger of missing the 3% public deficit target of the European Stability- and Growth Pact; only unusually high returns from the pension funds in 2010 pushed Danish public finance below this level.

The May 2010 "Genopretningsaftale" pulled back 90% of the fiscal expansion during the crisis. The fiscal consolidation program put in place included a spending freeze until 2013. In April 2011, the government announced the "Reformpakken 2020 – Kontant sikring af Danmarks velfærd" to ensure longer-term fiscal sustainability. Key elements of the program are an increase in pension age, reductions in the funds available for student loans, and a



reduction of early-retirement. To achieve a balanced budget by 2020, the programs also puts forward some structural changes in the policy planning process. An overall ceiling for government spending to be below 50% of GDP will put all future spending programs under a more systematic test in terms of their fiscal implications.

Danish monetary policy is the responsibility of the Danish Central Bank, Nationalbank. It's main policy focus is the peg of the Danish Krona to the Euro. As a result, Nationalbank tends to mirror interest rate changes made by the European Central Bank. During the crisis Denmark had to keep interest rates somewhat higher as markets saw a larger risk for non-Euro zone countries. The Nationalbank raised the discount rate twice in October 2010, after it had stood at 0.75% since earlier in the year.

FINLAND

Finnish fiscal policy has in the recent past been conducted within a framework that included a central government expenditure ceiling and multiple other targets. The Vanhanen government aimed in its program for a structural surplus in central government finances equivalent to 1% of GDP. This was going to be achieved through policies to increase labor market participation and thus revenues as well as efforts to increase public sector productivity and thus lower expenditures (Kaste program (2008–2011)). One important element of this effort was the merger of municipalities to increase productivity.

As the financial crisis hit, the Finnish government announced that it was going to more flexible in terms of its fiscal targets if there would be structural reforms in parallel. As many of its peers, Finland added additional fiscal stimulus measures to the automatic stabilizers inherent in the tax and social welfare systems. Compared to other countries, a larger share of these stimulus measures were permanent policy changes, for example on income tax. Preliminary data from Statistics Finland put the general government budget deficit in 2010 at 2.5% of GDP. Government debt has increased but is at 48% of GDP at a moderate level compared to many European peers. In January 2011 the Government introduced a joint spending inventory for all ministries.

Finland is part of the Euro-zone with the European Central Bank in charge of monetary policy. The ECB aims to keep inflation “below but close to 2% over the medium term”. The ECB reacted to the financial crisis with aggressive interest rates cut and large-scale unconventional measures to increase liquidity in the markets. Since May 2009 the ECB refinancing rate has remained at a record-low 1%. Since mid-2010 the ECB has taken small steps to exit its policy of “enhanced credit easing.” Finland has been reluctant to participate in the latest European rescue package for Portugal but the new government has now committed to support these measures.

ICELAND

Iceland's fiscal policy is oriented towards a balanced budget. The government's medium-term fiscal program presented to parliament outlined a return to a primary surplus by 2011 and an overall surplus in 2013. This program is a key element of the government's agreement with the IMF. The government's letter of intent to the IMF also includes a commitment to



implement a stricter fiscal framework for local governments alongside the consolidation of the central government budget.

The fiscal and economic crisis had pushed Iceland's fiscal deficit to close to 10% of GDP. Debt levels rose quickly from less to 20% of GDP to roughly 85% of GDP as the government assumed the losses of the failing Icelandic banking system. The 2009 budget already provided for substantial cuts in both current and capital spending. The 2010 budget included a range of tax increases on middle and higher-income earners, wealth and energy, as well as a rise in value-added tax (VAT). As a result, the government deficit has dropped to around 4% this year, with structural balance to be within reach already in 2011.

Iceland has received significant financial support from the IMF, its Nordic partners, and Poland. A Stand-By Agreement (SBA) in an amount equivalent to roughly EUR 1.5bn was approved by the IMF's Executive Board on November 19, 2008. Since then, the funds have gradually been released to the Icelandic government. According to the latest (4th) IMF review of the SBA all performance indicators agreed with the Icelandic government have been met. Iceland is since the crisis embroiled in a dispute with the UK and Dutch government about the responsibility for liabilities from the Icesave collapse. The two countries had covered the losses of deposit holders in the local Icesave branches and are demanding the Icelandic government, which nationalized the failed bank, to reimburse them. Two agreements failed to find public support in subsequent referenda. There are no ongoing negotiations but there are now signs that the value of the remaining assets held by the Icesave estate might be sufficient to cover its obligations to priority holders (which would include the UK and Dutch government) without further debts to be assumed by the government.

Iceland's monetary policy is under the control of the Icelandic Central Bank, Islands Sedlabanki. Sedlabanki pursues inflation targeting as its main policy target, defined as a rise in the consumer price index (CPI) by 2.5% over a 12 month period. If the inflation rate deviates more than 1.5%-points from this target, the Central Bank has to publicly inform the government about the reasons for the deviation and the policy steps taken to get back into the target zone. There is a simmering debate as to whether Iceland should aim to join the Euro-Zone in the future, placing its monetary policy in the hands of the European Central Bank.

The financial and economic crisis put exchange rate stability to the forefront of monetary policy. Iceland implemented controls on the capital account, effectively limiting the ability of foreign and domestic creditors to transfer their holdings in Icelandic Krona, valued at about 1/3 of total Icelandic GDP, into foreign currency holdings outside of Iceland. The Central Bank submitted in March 2011 a strategy for the gradual removal of capital controls by 2015 to the government. Since August 2010 the Monetary Policy Committee (MPC) has cut Central Bank interest rates four times. Inflation reached the 2½ percent inflation target in the last months of 2010. The Krona appreciated by close to 12 percent in trade-weighted terms over the course of 2010. Iceland's government debt rating remained unchanged, even in the after-



math of the second Icesave-referendum, and should enable the country to return to capital markets as planned in 2011.

NORWAY

Norway's fiscal policy aims since 2001 to keep the structural non-oil central government deficit at 4% of the Government Pension Fund Global (GPF) over an economic cycle. 4% is the long-term historical return on the GPF, the fund managing the government's revenues from oil and gas exports. Norway has one of the highest shares of public spending in (mainland) GDP of all OECD countries.

During the crisis fiscal policy turned to a strongly expansionary stance, overshooting the 4% target by a significant margin. The 2010 budget continued to be expansionary. The government will have to reduce spending over the next few years to return to the 4% target. A reform of the pension system is to be phased in from 2011 as part of the efforts to ensure long-term fiscal sustainability.

Norway's monetary policy is under the control of the Norwegian Central Bank, Norges Bank. Norges Bank operates with a target to keep inflation in the range between 1.5% and 3.5%. The version of the consumer price index used is adjusted to exclude taxes, energy and other volatile items.

During the crisis, the central bank reduced interest rates by 450 basis points between October 2008 and June 2009, and it increased the supply of liquidity. Exceptional liquidity measures were phased out in the summer of 2009 and in the final quarter of 2009 Norges Bank began to tighten monetary policy. It raised interest rates three times since then to 2% in May 2010. Norges Bank expects to keep the rate on hold until mid-2011. Of concern are now rising property prices on the back of the economic recovery and historically low interest rates.

SWEDEN

Swedish fiscal policy is oriented towards a surplus target of 1% over an economic cycle. Local governments are facing a balanced budget requirement since 2000; temporary budget shortfalls need to be recovered within three years. On March 17, 2011 a communication regarding the design of the Swedish fiscal policy framework was published by the government with the intention to provide further transparency on the policy process and its objectives. Since 2007 the government is advised by the Fiscal Policy Council, an independent body of experts.

During the financial crisis a combination of automatic stabilizers and discretionary expansionary measures by the government – in particular close to EUR 1.5bn (SEK 13bn) in additional funding for local government – pushed government balances far into deficit. Expenditure is now in 2011 and 2012 set to be pulled-back to pre-crisis levels. Despite lower revenues due to tax reductions Swedish fiscal policy is now back on its target path, generating a significant surplus. Gross debt is currently at 37% of GDP, with a reduction to 25% targeted for 2014.



Swedish monetary policy is under the control of the Swedish Central Bank, Riksbanken. Riksbanken pursues an inflation-target, specified as 2% or less annual change in the consumer price index (CPI). The CPI includes interest rates on mortgage payments. The direct effect that interest-rate changes by the central bank have on measured inflation has created some debate as to whether Riksbanken should adopt a target that excludes this effect. As a secondary objective Riksbanken supports the government's general economic policy, which has led to its strategy being called flexible inflation targeting policy. Following a 2003 referendum against joining the Euro-Zone in 2003 the government has not announced any current intentions to change the current monetary policy framework. Riksbanken is currently subject of two external reviews of the quality of its monetary policy.

During the financial crisis Riksbanken took unprecedented steps in slashing interest rates and using unconventional tools to make liquidity available, much as many of its international peers. With pressure on the financial markets easing Riksbanken has gradually raised its key interest rate since the summer of 2010. There has been discussion about the speed of increase, balancing the signals from a robust domestic economy with until recently still rising real estate prices and an international economic environment where recovery has been more uneven and remains fragile to shocks. The faster rise in Swedish interest rates compared to international benchmarks has contributed to a significant strengthening of the Swedish Krona with a dampening effect on Swedish exporters.

On **microeconomic competitiveness**, the Nordic countries continue to have a strong global rank, although not as high as on macroeconomic competitiveness. Microeconomic competitiveness is based on indicators of the business environment (covering the four aspects of Porter's "diamond model") and company sophistication (covering aspects of operational effectiveness, organizational practices, and internationalization). On both of these pillars, Nordic countries' performance is relatively balanced (although individual countries have different profiles), indicating that the region has both strong framework conditions and strong-performing companies.

Level is measured as the overall 2010 GCI rank on Microeconomic Competitiveness. Change is measured by the change in rank on this measure between 2010 and 2009. Colouring is relative to absolute rank and rank change. Source: Global Competitiveness Report, 2010.

Microeconomic competitiveness		
	Level	Change
Nordic		
Denmark		
Finland		
Iceland		
Norway		
Sweden		

As with macroeconomic competitiveness, Sweden also tops the global rankings on microeconomic competitiveness. Improved factor inputs (including administrative, capital market and innovation infrastructure) contributed to Sweden's improved performance since last year. Finland follows in 4th place, having climbed from 6th place last year. This has been primarily driven from

improved company operations and strategy – re-gaining higher performance levels that it has had in previous years. Denmark maintains a place in the top ten, even though it has dropped four spots (from 5th to 9th place) this year. In years past, Denmark has had top rankings on microeconomic competitiveness. This year, however, lower performance on company operations and strategy and significantly lower performance on the business environment (namely on indicators of innovation infrastructure, demand conditions and context for strategy and rivalry) have led to a lower global rank. Norway has made some improvements since last year, rising from 16th to 15th place. And Iceland seems to be regaining its position somewhat – climbing three spots to 25th place, after having made improvements in the business environment (namely in demand conditions). Yet continuing drops in company operations and strategy highlight that there is still a long way to go to reach previous years' position.

Education and science

In order to successfully compete in the global economy, high skill levels and innovation capacity are driving factors – particularly for advanced economies that are unable to compete on low labour costs or prices. The quality of the local education and science system are critical to ensure strengths in both of these areas.

A first indicator is the **quality of education system**, where the Nordic region continues to perform well, with three out of five countries ranking in the top 10 globally. However, a deterioration in 2010 pushed the Nordic region's average position down three places to 13th globally. The view of maths and science education is not as positive – with an average Nordic ranking of 30th on this indicator (decreasing somewhat from last year). Two large comparative studies on relative educational attainment, TIMSS and PIRLS, will be updated this year with data available late in 2012. The OECD's PISA study will also be out sometime in 2012 and provide new data on the relative quality of the Nordic education systems.

Level is measured as the overall 2010 GCI rank on the quality of the education system; change is measured as change in rank between 2010 and 2009. Quality of maths and science education is measured by the 2010 rank on this indicator in the GCR. Colouring is relative to absolute rank. Source: Unpublished analysis, Global Competitiveness Report, 2010.

Education system			
	Overall	Change	Math & Science
Nordic			
Denmark			
Finland			
Iceland			
Norway			
Sweden			

Finland and Iceland rank the highest among Nordic countries on both the quality of the educational system and the quality of maths and science education. Finland has maintained a top three ranking in maths and science, but its decreasing rank in recent years on overall educational quality has placed it slightly below Iceland on this indicator (whose position remains unchanged). Iceland has made marked improvements in maths and science education, climbing from 20th to 8th rank globally – joining Finland in the top 10 for the



first time since this data has been systematically collected. Sweden has maintained its 9th rank overall, supported by strong improvements in the quality of maths and science education. Sweden has at 18th still a comparably low global ranking, below many EU and OECD peers, despite gaining six ranks following an ever larger improvement last year. Denmark, on the other hand, has experienced worsened performance on both indicators (falling from 11th to 30th in maths and sciences, and from 5th to 20th overall). After an improvement in its maths and science ranking in 2009, Norway has again experienced a significant drop (from 55th to 69th) in 2010, and has also experienced a decreasing trend on the overall ranking in recent years (where its current rank is 22nd globally). Interestingly, Norway is the highest-ranked Nordic country behind Finland in the OECD's most recent PISA ranking (2009), yet consistently has the lowest Nordic position in the respective GCR rankings that capture the perceptions of the business elite on the quality of education.

The following paragraphs provide some key information on the policy framework and recent actions for the Nordic countries in this policy area:

DENMARK

Denmark's globalization council had in its recommendations identified education as a critical area in which more investments were needed. As a result, more than EUR 1.5bn were spent over the last six years and a number of programs covering upper secondary education, higher education, and adult/continuing education. Many of these efforts were focused on raising standards and increasing the quality of education. More recently, there has also been a stronger emphasis in creating incentives to finish studies in time.

ICELAND

Iceland has over the last years made relatively modest changes in its education system. The 2009 secondary education reforms aimed for students to complete upper-secondary education more quickly and provide incentives for new and shorter study programs to counter high dropout rates. A key instrument at the higher education level is the Icelandic Government Student Loan Fund, which supports Icelandic students going abroad for studies, in particular for studies towards a second and a third degree.

FINLAND

Finland's education policy has over the recent past been based on the education and research development plan for 2007–2012 adopted at the end of 2007. This program was organized around relatively modest improvements to the system, especially in the area of quality and efficiency and of access of good education to migrants. In the higher education system more fundamental changes have been launched, consolidating a university landscape that was perceived as too dispersed around a smaller number of stronger institutions.

NORWAY

Norway's education strategy has been laid out in 2008–09. A 2008 White Paper recommended enhancing teacher quality through training and formal accreditation, including strengthening a national evaluation system for teachers to increase accountability. The 2009 Budget law allocated resources to some of these measures. Candidates for teacher training must now meet



more stringent entry requirements. And municipalities must prepare education quality reports using national indicators.

SWEDEN

The Swedish government has over the last few years introduced significant reforms in the education system. Among the concerns motivating these changes – many of which were raised in the report of the Swedish Globalization Council – were the high rate of students (>10%) leaving compulsory school with incomplete final grades, the low attractiveness of vocational training, the low rate of students choosing technical disciplines, and the relatively modest level of educational attainment achieved by Swedish students compared to the spending level and to their Nordic peers.

A central focus of these efforts has been raising quality of education and educational attainments. A new Education Act provided the legal basis for the reforms in K-12 education, and introduced clearer knowledge targets for students and a certification process for teachers. The creation of the Swedish Schools Inspectorate and of the Swedish National Agency for Higher Vocational Education put new institutions in charge of quality and funding for vocational training. A government-appointed Technology Delegation recently presented recommendations on how to raise the share of students choosing technology and science.

In tertiary education, financial support for students has been increased and places in the regular system have been temporarily expanded. Admission criteria have been reformed to encourage direct transition from upper secondary to tertiary education. University tuition fees will be introduced for non-EEA students in 2011. Sweden has in the past attracted a relatively high number of students from such countries. Universities argue that preliminary figures indicate a significant drop-off in these numbers.

A broader measure of the available **innovation infrastructure** is calculated using a number of indicators of skills and science capability. The Nordic region maintains a strong global position (with three of the five countries ranked in the top ten globally), but has decreased slightly since last year. Despite overall improvements in Finland, Iceland and Sweden, notable downward trends in Denmark and Norway (particularly in the quality of scientific research institutions and maths and science education) have driven this change. One of the key indicators of innovation capacity is the quality of research institutions. On this indicator, the Nordic region has experienced a decline – now ranking around 14th globally.

Finland and Sweden lead the Nordic countries on overall ranking of the innovation infrastructure (in 2nd and 3rd global positions respectively). In Finland, this is driven by strong availability of scientists and engineers, strong levels of tertiary education and patenting, and university-industry research collaboration. Finland has, however, experienced a significantly lower (and slightly declining) position on the quality of its research institutions. Like Finland, Sweden also experiences strong availability of scientists and engineers, patenting levels, and university-industry collaboration – and stands out with its leading positions on the quality of scientific research institutions and management schools. Sweden ranks lower on levels of tertiary enroll-



ment and quality of math and science education. Iceland has returned to the top ten this year, now with the 8th position globally on innovation infrastructure. This is driven by notable improvements in the quality of math and science education, university-industry research collaboration, and availability of scientists and engineers. Although the quality of Icelandic scientific research institutions has improved in 2010, their global position remains below the top 20. Denmark and Norway have both experienced significantly decreased global rankings (falling to 13th and 18th positions respectively). In Denmark's case, this was the result of notable declines in the quality of math and science education, as well as the quality of management schools and scientific research institutions. Denmark also experienced weaker university-industry collaboration. Norway's declining position was a result of a significant drop in the quality of math and science education, as well as declines in university-industry research collaboration and the quality of scientific research institutions (which is now in 24th position globally).

Level is measured as the overall 2010 GCI rank on innovation infrastructure. Change is measured by the change in rank on this measure between 2010 and 2009. Quality of research is measured by the 2010 rank on the quality of scientific research institutions. Colouring is relative to absolute rank and rank changes. Source: Global Competitiveness Report, 2010.

Innovation system			
	Overall	Change	Quality of research
Nordic			
Denmark			
Finland			
Iceland			
Norway			
Sweden			

As reviewed in detail in last year's Barometer, there are many other international rankings of innovation capacity and performance (e.g. the European Innovation Union Scoreboard, the World Bank's Knowledge Economy Index, the Nordic Innovation Monitor, the INSEAD Global Innovation Index, and BCG's International Innovation Index). On these other ranking systems, as well, the Nordic region holds comparably strong positions. One notable difference, however, is Denmark's position in the European Innovation Union Scoreboard – where it is ranked as one of the innovation leaders (together with Sweden, Finland and Germany). Denmark's relative strengths in this ranking system were: open, excellent and attractive research systems, linkages and entrepreneurship, and intellectual assets. While the EU Scoreboard draws on hard data with some more time delay it is interesting to note that these are the areas of decline in WEF's global executive opinion survey.

In terms of the output of the education and science system, **patenting** remains an important measure. It is clearly biased towards scientific rather than commercial innovation, but it is important to note that the vast majority of patents is awarded to companies that see commercial value in protecting their intellectual property this way. The Nordic region's patenting levels in the US remain strong – well ahead of average levels within the EU-15

Patents are measured as patents filed per capita by the citizens/residents of the respective country in the US in 2010. Changes are changes in the patenting per capita activity 2010 versus 2009; relative change is change in patenting activity relative to the OECD (without US) and EU-15. Colouring is relative to absolute numbers. Source: U.S. Patent and Trademark Office, 2010.

Patenting			
	Level	Change	Relative change
Nordic			
Denmark			
Finland			
Iceland			
Norway			
Sweden			

Norway continues its catch-up towards the Nordic (and global) innovation leaders – with per capita patenting levels between the EU-15 and OECD averages. Yet despite these positive trends over the past few years, Norwegian per capita patenting rates are low relative to Finland, Sweden and Denmark. Finland and Sweden remain the Nordic innovation leaders, and are both firmly among the global top ten on per capita patenting, and have improved their patenting levels since last year. Denmark has also made strong improvements since last year – increasing the number of patents filed in the US by more than 55%. Iceland continues a downward trend in patenting intensity in the US, and has the lowest patenting levels of the Nordic region (at approximately 1/3 of Finland, less than 1/2 of Sweden, and about 35% and 16% lower than Denmark and Norway respectively).

Even though patenting is – and will remain – an important indicator of innovation output, it is broadly understood other indicators of innovation output are important as well. Especially in Norway there has been a long-standing discussion about the bias implicit in many of the patenting and academic research-driven measures of innovation used in international statistics. Norway's relatively poor position compared to its Nordic peers is according to this view largely an artifact of the indicators inability to capture the specifics of Norway's industrial specialization profile in areas that are less prone to academically-driven innovation. In its Communication on the Innovation Union flagship initiative last fall, the EU announced the decision to develop a new headline indicator to measure innovation output: the share of fast-growing innovative companies in the economy.² In the US, a 2008 report by a high level advisory commission of academic and business leaders

² See p. 30 of the *Innovation Union Communication* (<http://ec.europa.eu/research/era/docs/en/ec-understanding-era-14.pdf>)



to the Secretary of Commerce also argued for new metrics to cover innovation (Department of Commerce, 2008). These announcements highlight the new trends that are underway related to the measurement of innovation.

The Nordic countries are internationally seen as innovation leaders, with strong innovation systems that support innovation-driven strategies by companies. They all rank high on international assessments of innovative performance and capacity with high overall R&D spending as well as a high share of private sector spending in total R&D. Public sector research is conducted in universities as well as public (or publicly approved) research institutions. Last year's Nordic Globalization Barometer took a more in-depth view on the private sector-perspective of the Nordic countries as a location for R&D investments.

The following paragraphs provide some key information on the policy framework and recent actions for the Nordic countries in this policy area

DENMARK

Denmark's innovation policy is grounded in the report of the Globalization Council "Progress, Innovation and Cohesion Strategy for Denmark in the Global Economy", published in April 2006. The part of the strategy directly related to innovation policy became operational in early 2007 with the introduction of the innovation policy action plan "InnovationDenmark 2007–2010". In August 2010, the Danish government presented "Styrket innovation I virksomheder" (Strengthened innovation in business) with an analysis of the Danish challenges in innovation and with 37 concrete initiatives to improve innovation in the private sector. As a consequence, the innovation policy action plan was updated with "InnovationDenmark 2010-2013".

The Danish Council for Technology and Innovation and the Danish Council for Research Policy advise the Minister of Science, Technology and Innovation. Their expertise is also open to other Ministers and to the Danish parliament. Danish innovation policy is implemented through a range of institutions that are organized along the innovation process from basic research to commercialization:

- The Danish National Research Foundation is oriented towards the funding of research institutions. Among its programs is funding of about EUR 60m per year for currently 40 Centres of Excellence as well as funds for hiring foreign professors.
- The Danish Council for Independent Research provides funding, about EUR 190m per year, for research projects by individual researchers.
- The Danish Council for Strategic Research, founded in 2003, provides about EUR 150m per year for research in a number of areas identified by the government as strategic. The 2011 call is for research in the fields of health, food, and welfare (EUR 25m), energy and environment (EUR 28m), strategic growth technologies (nano-, bio-, and IC technology; EUR 15m), and three other areas.

- The Danish Council for Technology and Innovation, founded in 2002, provides about EUR 150m per year to promote collaboration between research institutions and companies. It operates programs to support innovation networks, R&D consortia, tech transfer, and industrial PhDs, etc.
- The Danish National Advanced Technology Foundation, founded in 2005, provides funding for projects that have obvious commercial potential, include technology transfer, and are based on the collaboration public-sector research or higher education institutions and private-sector companies.

The Danish university sector includes 12 universities, 5 of which covering a full range of fields. GTS – Advanced Technology Group is a network consisting of nine independent Danish research institutes that are publicly approved. The GTS institutes have a total budget of around EUR 430m, financed through fees paid by users as well as government funding for specific projects. They disseminate new knowledge and technology to companies and public institutions in order to support innovation and development.

The Globalization Fund allocated about EUR 1bn to research and innovation between 2010 and 2012. Funds have been allocated for talent development programs, the modernization of university laboratories, an increase in university funding, matching funds to encourage universities to attract external funds, a stronger focus on strategic research fields, and a number of innovation and knowledge transfer initiatives. An example of the program's strategic efforts to bring research results closer to commercialization is the establishment of the EUR 100m Business Innovation Fund. The Fund supports collaborative business-academia innovation efforts, particularly in fields related to welfare and green growth.

FINLAND

Finnish innovation policy is since 2008 managed through the government's Research and Innovation Council, the re-incarnation of the previous Science and Technology Council. A major review of the Finnish innovation system was conducted in 2009, led by former Finnish Prime Minister Esko Aho. The review argued for the Finnish innovation system to become more demand-driven, more international, and more broad-based beyond scientific research. This new direction has informed subsequent innovation policy choices and the direction that the main institutions supporting the Finnish innovation system have taken.

- Tekes, the Finnish Funding Agency for Technology and Innovation identified eight focus areas after a strategy review in 2008: well-being and health; knowledge society for all; clean energy; scarce resources; built environment; intelligent systems and environments; service business and innovations; and interactive media. Tekes accounts for an increasing amount of Finnish public R&D spending; spends now more on services than manufacturing
- The Academy of Finland, the main provider of research funding to universities and individual researchers, adopted a new strategy in September 2010. The strategy aims to enhance the quality and impact of research, strengthen the position of scientific research in the Finnish research and



innovation system, and strengthen the international position and impact of Finnish science

- Alongside these two main institutions, the Finnish Innovation Fund, Sitra, aims to achieve strong social impact in selected program areas. It is financed through an endowment capital of EUR 680m (2009). The current programs focus on areas like energy, the mechanical industry, and municipalities.

The Finnish higher education system comprises 20 universities, 10 of which covering a full range of fields, and 29 polytechnics. There are 19 state research institutes operating in eight sectors. The institutes provide knowledge and skills in their respective fields and have an important role in knowledge and technology transfer. In terms of research volume, the largest institutes are VTT Technical Research Centre of Finland, the Forest Research Institute and the MTT Agrifood Research, the National Institute for health and Welfare and the Institute of Occupational Health, and the Environment Institute.

The Finnish university system is currently undergoing a significant reform. The Universities Act of 2010 gave universities more autonomy, including more freedom in HR policies, financing, and the specialization on particular research fields. Public funding will increasingly be given in relation to the private funding that universities are able to mobilize. A new funding plan is going to be developed with a view to focus on research quality and overcoming the current perceived fragmentation of the higher education system. An important symbol for the direction that the system is going is Aalto University, created in 2010 through a merger of the Helsinki School of Economics, the Helsinki University of Technology and the University of Art and Design Helsinki. Aalto University is together with Tekes and the Academy of Science running the Finland Distinguished Professor Program (FiDiPro), a program to recruit leading foreign researchers that is one of the key efforts to increase the internationalization of the Finnish innovation system. A working group assigned by the Ministry of Employment and the Economy made in June 2009 a proposal for an R&D tax credit that remains under discussion. There is also a road map for large scale R&D infrastructure that remains in the planning stage.

The previous government had decided to raise public research funding by roughly 3% to €2.1bn in 2011, despite spending cuts in almost all other policy areas. The Ministry of Education and Culture will receive 46% of the total available research budget. It provides university funding of EUR556m, roughly 10% more than in 2010. The Ministry of Employment and the Economy will disburse a 36% share, slightly down on 2010. Funding for Tekes is set to decline by €20m in 2011 to €590m (29% of the total). The Academy of Finland will receive about 17% of the total 2011 research budget.

ICELAND

Iceland's innovation policy is since 2003 managed through the government's Science and Technology Policy Council (STPC) on the basis of the 2003 Public Support for Scientific Research Act and the 2007 Act on Public Support for Technological Development and Innovation in Industry. A



national task force was established in 2008 to review the future of Iceland's education, research and innovation policy. The work of the task force was complemented by an independent review of international experts that in May 2009 presented its recommendations "Education, Research and Innovation policy – A new direction for Iceland" to the government. Building on this document, the Science and Technology Council adopted "Building on Solid Foundations, Science and Technology Policy for Iceland 2010–12" as the Icelandic innovation strategy. The strategy aims for universities to work more closely with businesses and for a higher share of research funding to be allocated competitively. In the spring of 2009, a committee appointed by the STPC developed a roadmap for the development of research infrastructures in Iceland. The STPC also oversees the main institutions in the Icelandic innovation system:

The Icelandic Centre for Research (Rannis) administers the government's main competitive and strategic research funding programs in Iceland, including the Research Funds, the Technical Development Fund and the Graduate Students' Fund. It is also the main institutions supporting policy making in the field of innovation through research and analysis.

- The Innovation Center Iceland was established in August 2007 through a merger of the Technical Institute of Iceland (IceTec) and the Icelandic Building Research Institute (IBRI). It has different activities to disseminate knowledge, and provide service to innovation-based companies.
- The Icelandic higher education system comprises 8 universities, including three private institutions. The University of Iceland is the largest one with the broadest area of fields covered. There are 12 public research institutes. In 2007, the Ministry of Education, Science and Culture and the University of Iceland signed an agreement on the introduction of performance-based funding. No such contracts have been adopted for the other universities and the public research organizations.

In February 2009, three Centres of Excellence were selected for multi-year funding through an annual budget of up to EUR 0.5m: The Icelandic Institute for Intelligent Machines – IIIM, The Geothermal Research Group, and The Centre of Excellence in Gender, Equality and Diversity Research (EDDA). In January 2010 Iceland introduced R&D tax incentives; companies that are certified as "innovation companies" can deduct 15% of their R&D expenses, up to EUR 0.3m of own and EUR 9.45m of contracted R&D activities.

NORWAY

Norway's innovation policy is based on the 2008 "Innovasjonsmeldingen – Et nyskapende og bærekraftig Norge" (An Innovative and Sustainable Norway), the first ever comprehensive strategy for Norwegian policy in this area. The strategy identified a number of measures of particular importance to Norwegian innovation, including the support of innovative start-ups and SME, intellectual property right protection, design, education, entrepreneurship, renewable energy, and innovation in the public sector. The strategy also establishes a strong sectorial focus on marine and maritime industries, tourism, services, and environmental technologies. In 2009 a council on



innovation in services made proposal that are now under discussion. Outside of the ministries, three institutions are the most important in supporting the Norwegian innovation system:

- Innovation Norway (IN), created in 2004 through a merger of four previously independent agencies, is the main Norwegian agency for the development and administration of business-oriented policy instruments. IN's overall budget in 2010 was around EUR 1.25bn, of which around EUR 200m were dedicated to innovation policy programs. A significant share of the 2009 stimulus package was used to support IN programs. In January 2010, 49 % of the ownership of Innovation Norway was transferred to the county councils. This strong regional focus is also reflected in the creation of seven regional funds in 2009 that will make their returns available for regional innovation spending
- The Research Council of Norway (RCN) funds basic research, much of it focused on specific areas. RCN is administered by the Ministry of Education and Research, and bears the overall responsibility for the promotion of basic and applied research within all scientific and technological areas. It is partly funded by contributions from the ministries and partly by the returns of the Fund for Research and Innovation, a national fund with a capital base of more than EUR 8bn. RCN's 2009 strategy document "In the Vanguard of Research" sets out its priorities for the period from 2009 to 2012. Its total 2011 budget amounted to around EUR 920m.
- SIVA – The Industrial Development Corporation of Norway (SIVA) operates science and industrial parks across Norway, providing physical infrastructure to support innovation. In 2010 it owned and operated 25 science parks, 52 industrial parks, 19 incubators, and 9 venture companies. SIVA's total investment volume in 2009 was close to EUR 90m.

The Norwegian higher education system includes eight universities covering a broad range of fields, nine specialized universities, 24 university colleges as well as a range of private university colleges. Norway has historically had a relatively significant collection of public research institutions. The SINTEF group, which has the Norwegian University of Science and Technology as its parent, is the largest remainder with research activities across seven different areas.

The R&D tax credit (SkatteFUNN) is the largest program for funding private R&D efforts in the Norwegian budget, providing general support for R&D activities through a 20% tax rebate on R&D costs. The current budget raises the maximum amounts to EUR 0.55m for internal and EUR 1.1m for external research expenditures. There are also significant funds for user-driven research-based innovation (BIA) where companies get co-funding for their research efforts. The industry/public R&D contract schemes (IFU/OFU) also have a strong position in Norwegian innovation policy. They are focused on collaborations between suppliers and industrial producers. While these programs are available to companies from all sectors and locations, there are also significant industry-specific research programs, especially in the strategic sectors identified in 2008. Examples include MAROFF, the MAT-program, Petromaks, Renergi, Areal and Havbruk. There is also financing for 14 cent-

ers for research-driven innovation (SFI) that focus on long-term research between companies and research institutions in specific areas.

SWEDEN

Sweden's innovation policy is based on the 2008 proposition "Ett lyft för forskning och innovation" (A boost to research and innovation). The document outlined a significant increase in the overall innovation budget (+EUR 550m), a shift of university funding towards a more performance-based model, enhanced funding for research in 24 strategic research efforts, a stronger focus on the application and commercial use of scientific research, and the modernization of public research institutes. The Swedish government is currently working on a new innovation strategy to be launched within the coming year. In the spring of 2010 the government's Research Advisory Committee conducted a review of the Swedish research system. Its report "Research Shapes Future" published in late 2010 presents a number of proposals concerning the recruitment, education and training of researchers, research career opportunities, targeted research initiatives and ways of raising the standard of Swedish research to serve as input for the next government bill on research and innovation policy. There is also an on-going project "Innovation and Growth" by the Royal Swedish Academy of Engineering Sciences (IVA) that develops specific proposals on the basis of the analysis published by the Swedish Globalization Council in its 2009 report "Beyond the Crisis. How Sweden Can Succeed in the New Global Economy". Outside of the ministries, the following institutions are the most important in supporting the Swedish innovation system:

- VINNOVA, the Swedish Agency for Innovation Systems established in 2001, is charged with funding needs-driven research and the development of effective innovation systems. It has an annual budget of around EUR 220m.
- The Swedish Research Council (Vetenskapsrådet) provides financing for basic research activities at universities and other research institutions. It has an annual budget of around EUR 450m. In addition, two other institutions, FORMAS and FAS, provide funding more narrowly in the areas of environment/sustainability and social/labor-related research.
- Research funding is in Sweden also to a significant degree provided by a number of private (Wallenberg, Cancerfonden, HL-fonden, etc.) and semi-public funds (Riksbankens Jubileumsfond och forskningsstiftelserna, KK-Stiftelsen, SSF Stiftelsen för strategisk forskning, etc.). The government made the decision to keep this multiplicity to allow for different views on research topics and approaches.

The Swedish higher education system includes 20 universities, three of them private, and eleven public university colleges with a broader array of fields. In addition, there are a number of public and private university colleges and other specialized institutions with a narrow focus. Sweden has a number of public research institutes organized in the IRECO Holding AB, renamed RI.SE in 2009. They include Skogforsk, Institutet för jordbruks- och miljöteknik (JTI), Imego AB, IVL Svenska miljöinstitutet AB (IVL),



Totalförsvarets forskningsinstitut (FOI), and Statens väg- och transportforskningsinstitut (VTI).

About 60% of Vinnova's budget is allocated to sector-specific research programs, with an increasing importance of programs devoted to so-called "big challenges", i.e. problems of large societal impact like climate change and demographics. A second group of projects is dedicated to general support for R&D activities, for example through the *forska & väx* program for companies and the VINN excellence centers for research institutions. 18 VINN excellence centers receive up to EUR 7m co-funding for a multi-year period for educational establishments to organize long-term collaboration with companies and public organizations. A final group is oriented towards universities to support them in the technology transfer and commercialization efforts, for example through the creation of innovation offices or verification programs for research results.

Infrastructure

Infrastructure remains an important driver of competitiveness and company productivity. While it is for advanced economies increasingly hard to gain true competitive advantages from infrastructure, weaknesses in this area can limit growth and drive economic activities towards alternative locations.

Logistical (GCI) is measured by the rank on logistical infrastructure in the 2010 GCI, Logistical (World Bank) by the rank on the World Bank's Logistical Performance Index, and ICT (GCI) by the rank on the Communications Infrastructure index in the 2010 GCI. Colouring is relative to absolute rank. Source: unpublished analysis, Global Competitiveness Report 2010, World Bank Logistical Performance Index, 2010.

Physical infrastructure			
	Logistical (GCI)	Logistical (World Bank)	ICT (GCI)
Nordic			
Denmark			
Finland			
Iceland			
Norway			
Sweden			

On the quality of the **logistical infrastructure** the Nordic region ranks generally well, although with a slight decrease since last year. Port infrastructure and electricity supply are particular strengths. The World Bank data (not updated since last year) also shows that the Nordic countries are able to combine strong physical infrastructure with efficient procedures and advanced services, areas in which emerging economies continue to find catching up a complex task.

On the GCI's composite indicator of logistical infrastructure, Denmark, Finland and Sweden have all maintained top ten positions globally for the 2nd year in a row. Somewhat behind, Iceland again made progress – surpassing Luxembourg and moving further ahead of Norway. Norway experienced another significant decline in its ranking (now in 26th position globally). This was due to sharp decreases in both the quality of railroad infrastructure and



roads). Norway does significantly better on the World Bank's Logistics Performance Index published last year which includes a wider range of transportation and logistics-related factors.

The following paragraphs provide some key information on the policy framework and recent actions for the Nordic countries in this policy area:

NORDIC REGION

Overall transport infrastructure spending in the Nordic countries amounted to EUR 8.2bn in 2008, the latest year for which internationally comparable data is reported by the OECD/ITF. Sweden accounted for 35% of the Nordic total, followed by Norway (29%), Denmark (17%), Finland (16%), and Iceland (3%). Slightly more than 60% are invested in the road system, 25% in the rail system, and roughly 7% each in ports and airports. The relative share of spending on roads has increased over time, largely because of changes in Denmark. The railroad system is overall well developed but lacks modern high-speed trains with speeds above 200 km per hour. Sweden has been spending around 40% of its transport infrastructure investments on rail, while the figure is between 12% and 17% for the other Nordic countries.

The electricity infrastructure across the Nordic countries is well integrated. Four Nordic countries (Denmark, Finland, Norway, and Sweden) operate an integrated electricity wholesale market. 70 % of the consumption volume is traded daily ahead on Nord Pool Spot. The market provides access to the countries' significantly different power generation profiles, with relative high shares of hydro energy in Norway, biomass in Finland, nuclear and biomass in Sweden, and wind power in Denmark. All Nordic countries have over the last few years launched significant plans to develop renewable energy sources.

Physical and electricity infrastructure is, alongside environmental projects, a key area in which the Nordic countries can draw on financing from the Nordic Investment Bank, their common public investment institution. NIB approved EUR 1.8bn new loans in 2010, with about 50% going to environmental projects, 25% to energy projects, 15% to transportation and communication, and 10% to innovation-related projects.

DENMARK

Denmark has seen over the last years prior to the crisis increased the share of investment into the road network increase significantly relative to other modes of transportation. The Danish Globalization Council argued in its report for a major new push on infrastructure, including the creation of a new central fund for infrastructure investment. Earlier this year the parliament has made the decision for a tunnel/bridge-solution to cross the Fehmarn-Belt, a EUR 5.1bn project that will provide a fixed link between Scandinavia and Central Europe. A key instrument to be used in the future is the public private partnership (PPP), where private funds are mobilized to (co-)finance public infrastructure. A large pension fund has recently announced plans to boost its infrastructure investment by as much as DKK10bn (€1.3bn) over the next five years, stating the government's moves to create better opportunities for public-private partnership (PPP) projects as a key reason.



FINLAND

Finland has also decided to use PPP as new instrument to finance transportation infrastructure. In 2010, the Finnish National Rail Administration published its two first tenders ever, inviting private investors into joint projects. The Finnish parliament voted in July 2010 to build two additional nuclear power stations for use by 2020, in addition to four in use and one under construction.

ICELAND

The Icelandic Road Administration is in charge of maintaining and investing in the road infrastructure. Iceland does not have a railroad system. As a result of the recent economic crisis, investment funds are limited. The overall transportation infrastructure remains solid. Iceland has access to significant resources of hydro and geothermal energy. Given its geographic position, it is far not directly linked to either the European or North American electricity grid. Iceland's energy resources have attracted large investments from energy-intensive industries, particularly aluminum smelters. New such investments would require also new investment in energy production – with hydro energy largely developed, this would mainly mean additional geothermal plants. Iceland is in the process of developing a national energy strategy. Without such a strategy, investments decisions in energy have so far been made on an individual basis.

NORWAY

Norway's geography and natural conditions have made land-based transportation infrastructure more costly to build than in many other countries. For 2011, the investment in road infrastructure is budget at around EUR 1.9bn. Railroad investment will be at around EUR 360m, with twice as much going to network maintenance.

SWEDEN

The Swedish government decided in March 2010 on a national plan for intermodal transport containing investments of nearly EUR 56bn over the period 2010–2021. This entailed an increase of EUR 440m in overall annual appropriations. In reaction to service problems during the winter the government has announced further investments into the rail system. According to the government, investments in the railways are expected to reach around EUR 1.6bn in 2011, with another EUR 680m spend on railway maintenance. As some of the other Nordic countries, Sweden is also looking into opportunities for PPP as a way to finance infrastructure investments. The Swedish government has reorganized the agency structure in this policy area with the aim to organize better intermodal integration. Trafikverket and Trafikanalys are two new organizations responsible for both road and railroad infrastructure.

On the presence and quality of the **information and communication infrastructure**, the Nordic region does even better, reaching an aggregate rank as 10th globally (one step down from last year). Here, internet penetration and quality of telephone infrastructure are particular strengths of the region. Even internet access in schools is rising in strength. Sweden again ranks highest on the composite ICT indicator, and has moved into the leading global position for the third year in a row. Iceland follows in 7th place (moving



down from 4th place last year, due to slightly lower rankings on telephone lines and mobile subscriptions per person). Norway has held steady at #12, while Denmark decreased four positions (to 15th globally) due to lower rankings on phone penetration and internet access in schools. Finland remains in the top twenty globally, moving up one position to 18th – driven by notable improvement in internet access in schools.

Sweden and Finland have launched national broadband strategies to ensure the wide availability of high-speed internet connections throughout their countries. The Nordic countries tend to rank highly on the share of population with broadband access, with Finland surprisingly ranking the lowest.

Access to Capital

Financial capital is, alongside the human and physical capital discussed in the previous two sections, a critical third input factor needed by business. A strong financial system is crucial to allocate capital productively and provide promising business ideas with the necessary financing. In the aftermath of the crisis, the existence of a stable and effective financial system to enable business growth is crucial.

The Nordic countries continue to rank well on the overall quality of their **capital market infrastructure**. The average rank for the region remains among the global top ten, improving almost two steps since last year and maintaining a significant lead over the EU and OECD averages.

Among the Nordic countries, Norway, Finland and Sweden maintain positions in the top ten. Stockholm remains the highest ranked financial center in the region and the only one in the European top ten, despite a slight loss of position relative to last year. Finland stands out among the three leading Nordic countries, having jumped five steps from 10th to 5th position globally after improvements in a range of indicators (soundness of banks, ease of access to loans, availability of venture capital, etc.). Despite significant improvements in venture capital availability and financing through the local equity market, Denmark has experienced a slight decline in rank since last year (now at 14th position globally). And although Iceland has re-gained some lost ground after the most severe stages of the financial crisis (moving from 83rd to 57th position globally), it still trails far behind its Nordic peers.

The global crisis continues to put much focus on the soundness of the banking system. All five Nordic countries have experienced improved positions on this indicator but some nervousness remains among business executives. Finland is the only Nordic country in the global top ten on this indicator (moving up from 16th to 7th position). Norway and Sweden follow in the top twenty (in 14th and 18th positions respectively). Norway has now surpassed its 2008 ranking, yet (despite a large jump from 41st to 18th position globally) Sweden is still working to recapture the top five position it has had in earlier years. After dramatic declines in both Denmark and Iceland last year, both of these countries have experienced improvements (although Denmark is still ranked low at 82nd, and Iceland is ranked second lowest in the world at 130th position).



Level is measured as the overall 2010 GCI rank in Capital Market Infrastructure category. Change is measured by the change in rank between 2010 and 2009. Soundness of banks is the respective indicator in the 2010 GCI dataset. Colouring is relative to absolute rank and rank changes. Source: Global Competitiveness Report, 2010.

Capital market infrastructure			
	Level	Change	Soundness of banks
Nordic			
Denmark			
Finland			
Iceland			
Norway			
Sweden			

The following paragraphs provide some key information on the policy framework and recent actions for the Nordic countries in this policy area:

DENMARK

Denmark's banking system is traditionally characterized by a relatively high level of household debt, to a large degree the result of the Danish mortgage system and thus matched by significant household assets, and a relatively dispersed banking sector with a significant number of strong regional banks. The extensive credit guarantees that the government had provided during the financial crisis to stabilize the banking sector were withdrawn in late 2010. A process for winding-down banks in trouble is now in place. The bankruptcy of Amagerbanken in February 2011 was worked out relatively smoothly, with investors forced to take a share of the losses. Recent stress tests have given good results for the Danish banking sector.

The Danish Globalization Council had identified access to risk capital as a critical factor in driving growth. The Growth Fund (Vaekstfonden) was created as a government-sponsored investment fund with a capital base of around EUR 300m to invest in early stage ventures mainly focusing on Life Science/Med Tech and High Tech, and provide mezzanine financing to a broad range of industries. The funding is mainly provided on commercial terms in cooperation with private investor and has become one of the largest investors in the Danish venture market. The recent Enterprise/Business Package included additional support for venture funding, including the mobilization of up to EUR 1.3bn risk capital from pension funds and the extension of the Growth Fund's loan guarantee scheme by EUR 200m.

FINLAND

The Finnish banking system is considered very effectively regulated it did experience no significant problems during the global financial crisis. In late 2008 the government provided bank lending guarantees and drew up plans for bank re-capitalization. But none of the latter has been used and there no longer appears to be any need for government support for the sector.

The outgoing government has endorsed a proposal for substantial reform of securities market legislation. A working group appointed by the Ministry of Finance presented a proposal to reduce the cost burden on listed companies in February 2001. Finnvera, a state-owned company, acts as a provider of complementary risk financing services in close association with banks and other financing organizations. It has 16 regional offices around the country. Finnvera's subsidiary, Veraventure Oy, is responsible for capitalizing and de-



veloping corporate regional investment funds. Finnish Industry Investment Ltd, a state-owned investment company engages in equity capital investment and invests in venture capital funds and directly in growth companies, together with private co-investors.

ICELAND

Iceland's financial sector was fundamentally shaken during the financial crisis. The domestic commercial banking activities are now the core of the new banks that have been created as the successors of the bankrupt pre-crisis institutions. Ownership of these new banks rests largely with the foreign debtors that have claims against the old entities. The Icelandic authorities are considering reforms in the light of the 2009 Jännäri-Report on Banking Regulation and Supervision for improving prudential regulation and supervision.

New Business Venture Fund, an independent company owned by the government, which financially supports innovative projects often in co-operation with private and other institutional investors. A new fund, Frumtak, was established in 2008, addressing innovative new technology-based firms with high growth potential.

NORWAY

Norway's sound regulatory and supervision framework enabled the country's banking sector to get through the financial crisis largely unscathed. During the crisis, the government established a Finance Fund to supply core capital to banks to strengthen their lending capacity. A Government Bond Fund was launched to boost the supply of credit in the bond market.

INVESTINOR is a government risk capital fund within the structure of Innovation Norway. Created in 2008, it has around EUR 280m to invest in the priority sectors of Innovation Norway, i.e. environment, energy, tourism, maritime, and marine. By late 2010 the fund had made 19 investments. Argentum Fondsinvesteringer is another public fund with the goal of stimulating the emergence of a dynamic venture capital market in Norway with the competence to successfully develop innovation-driven companies. Argentum has currently roughly EUR 825m capital under management and is minority owner in 22 private equity funds. It received an additional EUR 200m, equity capital in the government's 2009 stimulus package.

SWEDEN

Sweden has a relative large banking sector relative to GDP but this is partly a function of how housing finance is organized. Regulatory authority is shared by the Central Bank (Riksbanken), the National Debt Office (Riksgälden), and Financial Market Supervisory Authority (FI). During the financial crisis, the sector was affected by its significant exposure to the Baltic banking market, where Swedish banks have a strong position. During the crisis the government widened its deposit-guarantee scheme, introduced a government loan guarantee scheme, and launched a stabilization fund to deal with bank's liquidity problems and provide equity injections if necessary. Most of these measures have in the meantime become viewed as unnecessary and have been closed down. Instead, the concerns about real estate price inflation have



led to the introduction of a ceiling of 85% of value for loans on real estate purchases.

The Swedish government provides financing through a number of channels. ALMI provides loans and risk capital (through ALMI Invest) when private market sources of financing are not available. In 2010 ALMI provided around EUR 230m in new loans to small and medium-sized companies. Innovationsbron offers soft loans and equity for companies active in the commercialization of research ideas. There are also a significant number of other public venture capital funds with a more regional (e.g. Inlandsfonden) or sectorial (e.g. Fouriertransform) focus.

Conditions for doing business

The context for strategy and rivalry that companies face determines whether government rules and regulations make it more or less attractive for companies to engage the available factor inputs in creating valuable products and services.

On the **ease of doing business**, i.e. the administrative rules and regulations that affect the cost at which companies can operate, the Nordic countries maintain a stable position relative to their peers globally (with a rank of 11th for the second year). This measure provided by the World Bank is a composite comprised of nine different sub-indices that reflect the regulatory environment for business around the world. The index is validated by feedback from governments, academics, practitioners and reviewers. Denmark and Norway continue to rank among the global top ten, with the other Nordic countries coming in between rank ten and twenty. Relative to last year, Norway, Finland and Iceland all registered a small deterioration of their position while Denmark stayed in the same position. Sweden was the only Nordic country to register a notable improvement (improving its global rank from 18th to 14th). This improvement was driven by a significant jump in the area of protecting investors – where Sweden strengthened investor protection by requiring greater corporate disclosure and regulating the approval of transactions between interested parties.

On **administrative infrastructure**, the Nordic region does even better – with an average Nordic ranking of 9th globally. This composite indicator calculated in the GCI captures how company executives perceive the actual implementation of rules and regulations by the public administration. The Nordic countries benefit from a relatively efficient public sector, not just from more efficient rules and regulations. This profile is consistent with their strong position on social infrastructure and political institutions discussed above. Among the Nordic countries, Finland, Sweden and Denmark are all in the top ten (in 5th, 8th and 10th positions globally). Iceland follows in 11th position, having moved up three ranks since last year. Norway moved down three ranks to 14th (due to increased perceived burden of government regulation), still maintaining a strong global position.

Level is the overall ranking in the World Bank Doing Business 2011; change is the change in rank between 2011 and 2010. Administrative Infrastructure is the ranking on this category in the 2010 GCR. Colouring is relative to absolute rank. Source: World Bank Doing Business 2011, unpublished analysis, Global Competitiveness Report, 2010

Rules and Regulations for Business			
	Level	Change	Administrative infrastructure
Nordic			
Denmark			
Finland			
Iceland			
Norway			
Sweden			

The following paragraphs provide some key information on the policy framework and recent actions for the Nordic countries in this policy area:

DENMARK

The Danish government has over the last few years been engaged in a broad-based effort to modernize business legislation and reduce administrative barriers. In early 2009, the government introduced a range of measures to cut business red tape, particularly in relation to starting a new business. The Government is establishing call centers in connection with regional Business Link centers to aid businesses in access relevant government programs and funds

FINLAND

The Finnish government has a 2009–2012 action program to reduce the administrative burden on businesses through reducing reporting, providing more government services online, and other efforts.

NORWAY

The Norwegian government has in 2008 presented an action program “Tid til nyskaping og produksjon” (Time for creation and production) to reduce the administrative burden on businesses that result from laws and regulations. In continuation of this work, the government presented a report on its effort to reduce administrative costs in early 2010.

SWEDEN

The Swedish government aims to present a new simplification program for the 2011–2014 period within this year.

Context for competition

The intensity and nature of competition on national markets is a core driver of the productivity and level of innovation an economy ultimately achieves. Firms who meet strong competition on their home markets are pushed to achieve higher levels of innovation and efficiency (and are thus better prepared to compete on global markets). Strong domestic competition is as much a reflection of government policies as of the decisions that companies take in response to the conditions they face.

The Nordic countries continue to receive good rankings for the overall **context for domestic competition** (maintaining 12th position globally for the



second year). Sweden is the only Nordic country in the top ten (rising one spot to 3rd position globally), followed by Finland, Denmark and Norway, who are in the top twenty. Finland has improved from 16th to 12th position, while Denmark experienced a continued deterioration of its position (falling from 10th to 16th). Norway maintained its position (at 20th) for a second year. Iceland fell another four spots (to 62nd), following dramatic changes in performance on indicators related to taxation.

Overall is the ranking on the GCI Context for Strategy and Rivalry score in 2010, change is the change in rank between 2010 and 2009 on this measure. Competitive Intensity is the ranking on the GCI indicator for Intensity of Local Competition in 2010. Colouring is relative to absolute rank. Source: Unpublished analysis, Global Competitiveness Report, 2010.

Context for competition			
	Overall	Change	Competitive intensity
Nordic			
Denmark			
Finland			
Iceland			
Norway			
Sweden			

The Nordic countries have always received relatively good grades on their openness and low barriers to trade (although Iceland can be an exception to this). But due (primarily) to their small market size, the intensity of local competition has traditionally been a problem. After an improvement in global ranking (to 20th) in 2009, the Nordic region took a fall and is now ranked 30th on the intensity of local competition. This is due to dramatically deteriorating positions of both Denmark (falling from 5th to 40th) and Finland (falling from 43rd to 63rd). This could be driven by short-term changes in sentiment, possibly also a reaction to less exposure to foreign competition as the exchange rate of the EUR and the DKK have weakened. Norway and Iceland also fell nine spots each (now occupying 31st and 6th positions respectively). Only Sweden experienced an improved position (jumping seven spots from 12th to 5th).

The following paragraphs provide some key information on the policy framework and recent actions for the Nordic countries in this policy area:

DENMARK

Denmark has introduced a competition policy package that reduces some barriers to large-format retail stores, increases the power of the authorities in merger control cases, and strengthens regulations in public procurement cases.

FINLAND

Finland has introduced some liberalization to market regulations in 2009 but several rules on, for example, shop opening hours and product range continue to inhibit competition. The Land Use and Building Act was reformed in 2007. A recent court decision on price fixing in the pulp & paper sector signaled a more robust approach by the competition authorities.

ICELAND

Iceland has in recent year's aligned its competition laws with EU standards, most recently in 2007 and 2008. Further strengthening of the powers of the competition authority are currently being discussed in parliament.

NORWAY

Government owned companies continue to play a larger role in Norway than in other Nordic and OECD countries. The government is going to present a report on its ownership policy later this year, following up on the latest such report in 2006. The OECD continues to report high barriers to competition in Norwegian network industries and a much larger level of agricultural subsidies than in any other Nordic or OECD country, including Iceland. The government amended the Competition Act in 2008 to simplify procedures for the government to reverse Competition Authority decisions against mergers on grounds other than competition. The amendment might weaken the opportunity to have an appeal scrutinized on competition grounds.

SWEDEN

The Swedish government has taken a broad range of efforts to open more activities for private sector competition. The scope of public ownership has been significantly reduced through privatization, for example in the pharmacy sector. In 2011 the Swedish parliament stopped plans for further privatizations. Specific tax rules (RUT-avdrag) have provided a boost for household-related services. The National Board for Public Procurement was made a part of the Competition Authority in 2007, and a new Public Procurement Act came into force in 2008. Rules have been strengthened to limit any undue advantage for publicly owned companies in markets where private companies operate.

On the level of **government interference in markets**, the Nordic region continues to rank similar to many of its peers among advanced economies and better than many other European countries. Overall, the Nordic countries are viewed as having very open markets with equal conditions for all companies. However, the large size of the government sector is seen as limiting opportunities for private companies, and keeping average performance of the Nordic region outside of the top twenty globally.

Denmark maintains its rank among the global top ten, and Finland among the global top twenty (holding steady at 17th). Sweden experienced a modest deterioration (from 21st to 22nd), while Norway improved its performance (jumping from 37th to 30th). The most dramatic change in this year's ranking was Iceland's drop from 18th to 44th – likely reflecting the multiple referendums that the government has initiated in response to Iceland's banking crisis in terms of capital controls, the nationalization of the banking system, and tax increases.

An import element of economic freedom is the impact of taxes on the incentives to work and invest. Despite some marginal improvements in 2009, average Nordic performance is back down to 97th. Yet this level of performance is still better than many EU peers. Norway has the best rank of the Nordic countries (at 66th), despite a substantial decline over the past year. Iceland, too, has experienced a significant decline (dropping from 12th to 80th position



Market institutions are measured by the aggregate ranking in the Heritage Economic Freedom index. Level data is for 2011, changes for 2011 relative to 2010. Colouring is relative to absolute rank. Source: 2011 Index of Economic Freedom, Heritage Foundation.

Economic freedom		
	Level	Change
Nordic		
Denmark		
Finland		
Iceland		
Norway		
Sweden		

globally). Finland has substantially improved its position (from 114th to 89th). It changed position with Sweden, which lost most of the gains made last year (from 87th to 112th). Although Denmark experienced a marginal improvement in its global ranking (from 126th to 117th), it remains the lowest ranking Nordic country on incentive effects of taxation.

Incentive effect is the ranking on the GCI indicator '(low) impact on incentives to work and invest' in 2010; change is the change in rank between 2010 and 2009 on this measure. Distortive Effect is the ranking on the 2010 GCI indicator '(low) distortive effect of taxes and subsidies on competition. Colouring is relative to absolute rank. Source: Unpublished analysis, Global Competitiveness Report, 2010.

Effect of taxation			
	Incentive effect	Change of incentive effect	Distortive effect
Nordic			
Denmark			
Finland			
Iceland			
Norway			
Sweden			

The distortive effects of taxes and social security contributions, i.e. differential rates across activities or types of companies, were perceived to be modest compared to most EU and OECD peers. Sweden is now in the top ten (having improved its position in 2010), and Denmark and Finland remain in the top twenty. Norway dropped from 17th to 26th, and Iceland took another substantial drop on this measure (from 22nd to 71st) – and now trails far behind its other Nordic peers.

The following paragraphs provide some key information on the policy framework and recent actions for the Nordic countries in this policy area:

DENMARK

Denmark has reduced marginal income tax rates in earlier 2010. A political agreement on May 27, 2011, implies that the corporate tax will be reduced from 25 % to 20 %. Tax credits of up to app. EUR 655,000 were introduced for companies with negative current results.

FINLAND

Finland increased value-added taxes, energy taxes, excise duties on sweets and soft drinks, and the waste tax. The employment pension (TyEL) contribution paid by employees and employers as an indirect cost on salaries will both be raised by 0.2 percentage points annually in the period 2011–2014. At the beginning of 2011 income taxes and social security contributions were



reduced by EUR 446 million; cuts in income taxes and social security contributions. The government-appointed Working Group for Developing the Finnish Tax System argued in its December 2010 report for moving towards a more consumption-based tax system.

ICELAND

Iceland's 2010 budget included a range of tax increases on middle and higher-income earners, wealth and energy, as well as a rise in value-added tax (VAT). Excise taxes on imported food (other than sugar and sweets) were abolished in 2007 and the general import tariff on imported meat products was lowered significantly.

NORWAY

Norway has made no changes to its income tax recently. The discount applied to real estate in the wealth tax was reduced in 2010, but not eliminated.

SWEDEN

The Swedish government has reduced income taxes in four stages via the in-work tax credit; a fifth step has just been proposed. The in-work tax credit and lowered social security fees account for most of these tax cuts. Major changes in capital taxation in recent years include the lowering of corporation tax, the abolition of the wealth tax and the reduction in tax on property. As a result, the tax ratio, i.e. total tax revenue as a percentage of GDP, declined by 2.1 percentage points between 2003 and 2010. The most recent budget announces a range of further tax reductions depending on the further development of the Swedish economy.

Cluster presence

Clusters are regional agglomerations of producers, suppliers, services providers, research and educational institutions, etc. related through input-output relations, knowledge spillovers, shared use of input markets, and other linkages. If there is active collaboration in addition to pure geographic proximity, the strength of these linkages and their benefits for company productivity can be even higher. There is new econometric evidence that shows the clear positive effect clusters have on productivity and wages, but also on new business formation, employment growth, and innovation (Delgado et al, 2011b). A number of studies in the Nordic countries have shown that companies engaged in cluster-related government innovation programs have done better than peers in a control group outside of these programs (Danish government, 2011).

On the presence of **related and supporting industries**, the foundation of dynamic clusters, the Nordic countries continue to get strong overall marks – just outside of the global top ten. It can be considered somewhat surprising for this collection of small countries to show such high marks on an indicator cluster presence and specialization (vs. choosing to cover a broad range of economic activities). Sweden and Finland remain in the top ten on cluster presence (with marginal shifts down and up – now at 5th and 6th positions – respectively). Denmark also experienced a slight deterioration in its position (moving from 13th to 15th) and Norway a slight improvement (moving from 20th to 18th), yet both remain solidly in the top twenty. Iceland trails behind



Level is the ranking on the GCI Related and Supporting Industry category in 2010, change is the change in rank between 2010 and 2009 on this measure. State of Cluster Development is the ranking in the 2010 GCI on this indicator. Colouring is relative to absolute rank. Source: Unpublished analysis, Global Competitiveness Report, 2010.

Related and supporting industries			
	Level	Change	State of cluster development
Nordic			
Denmark			
Finland			
Iceland			
Norway			
Sweden			

the others in 40th rank (falling from 34th), driven in part by strong drops in the perception of local supplier quality.

On the **state of cluster development**, i.e. the breadth and depth of regional specialization, the situation is similar. The average position of the Nordic region is slightly below the top ten globally. Both Finland and Sweden hold top ten positions (in 7th and 9th respectively). These quite strong positions can be attributed – in part – to the various policy initiatives (focused on strengthening regional research and innovation hubs) that the respective governments have put in place over the last decade. Norway follows in 18th rank (also with a number of policy initiatives focused on clusters), and Denmark is close behind in 21st. Iceland trails in 65th position globally, having experienced a rather sharp drop (from 46th) since last year.

The following paragraphs provide some key information on the policy framework and recent actions for the Nordic countries in this policy area:

DENMARK

Denmark has traditionally not prioritized cluster policy and had until 2007 three small regional cluster programs, despite a clear focus on sectors and on areas of strength in many parts of government economic policy. The Government has, however, now established a program of national cluster and network organizations called Innovation Networks Denmark with 19 national networks and 3 national partnerships. The overall budget is about EUR 10m per year with up to EUR 0.9m per cluster and year. The funding is provided to support the cluster initiative in combination with co-funding from the private sector. Additional funding for specific activities can then be mobilized from other government programs. Netmatch has been created in 2010 to provide central services to the cluster organizations. RegX, The Danish Cluster Academy, provides the clusters with knowledge and training support.

FINLAND

Since the mid-1990s Finland has run its Centre of Expertise Program. The program is now scheduled to be discontinued after the end of the 2007–2013 programming round. While the program focused on collaboration between regional groups of companies and research efforts had a significant local impact, an evaluation of the program published in 2010 criticized the lack



of national impact. The low overall effectiveness was seen as the result of intransparent mix of regional and innovation policy objectives and tools.

Finland has now refocused its cluster efforts around the Strategic Centres for Science, Technology and Innovation (SHOK). Funding from these centers is planned to account for an increasing share of Tekes overall funding. In the years 2008–2010, it has provided funding in the region of EUR 120 million for research at the centers that have a focus on six thematic areas.

ICELAND

Iceland's cluster policy has traditionally a strong regional focus. Cluster efforts were launched as part of "regional growth agreements", an initiative under the responsibility of the Ministry of Industry and managed by Impra. A private sector effort is currently under way to explore opportunities for Iceland's geothermal cluster. While there are no public funds involved, there is considerable political support for the initiative.

NORWAY

Norway has created two separate programs that serve clusters at different stages of development. The Norwegian Centers for Excellence supports the most developed clusters with the ambition of competing as world class clusters. The Arena program focuses instead on emerging clusters with a more limited track record. Both of these programs have a relatively modest budget in relation to other public innovation or economic development efforts. Their main effort is to strengthen collaboration and create institutional structures that allows the clusters to apply for funds from other traditional program

SWEDEN

Sweden's cluster efforts started in the first half of the 2000s. In 2001, Vinnväxt was launched by VINNOVA as a national competition to receive multi-year funding for internationally competitive research and innovation environments in specific growth fields. Twelve winners were selected in three different calls, with funding soon going to cease for the first round of clusters. ITPS, now part of Tillväxtverket, VINNOVA, and Invest:Sweden jointly ran the Visanu cluster program between 2003 and 2005. The program supported cluster efforts at the regional level, often in connection with so-called regional growth agreements. Tillväxtverkets (regional) cluster program offered around EUR 8m funding between 2005 and 2010. Twelve clusters were in the program since 2009, with another five entering in 2010. A number of regions provide significant additional funding for regional cluster efforts. Swedish agencies are also very active in efforts to enhance cross-Baltic Sea cluster collaboration in the BSR Stars and Stardust programs.

Demand conditions

Demanding customers and regulatory standards put pressure on companies. While this can be a burden in the short term, it can lead to higher productivity and innovative dynamism over time. Over the past year, this has been an area of increasing focus for policymakers.



Level is the ranking on the GCI Demand Conditions category in 2010; change is the change in rank between 2010 and 2009 on this measure. Regulatory Standards is the ranking in the 2010 GCI on the Presence of Demanding Regulatory Standards indicator. Colouring is relative to absolute rank. Source: Unpublished analysis, Global Competitiveness Report, 2010.

Demand sophistication			
	Overall	Change	Regulatory standards
Nordic			
Denmark			
Finland			
Iceland			
Norway			
Sweden			

The Nordic countries maintain a steady strong position on demand conditions (with an average rank of 6th globally for the second year). Sweden now has the leading global position on this measure, having jumped one spot since last year. Finland also improved its position (from 8th to 5th), and Norway held steady at 9th – both joining Sweden in the top ten. Denmark fell out of top ten, having dropped six spots (from 5th to 11th) in 2010. This is a result of a reduced perception of buyer sophistication in Denmark – but also of reduced perceptions in a number of areas of government policy (e.g. procurement of advanced technology products, success in ICT promotion, and stringency of environmental regulations). Iceland, on the other hand, jumped back into the top twenty (rising in ranks from 24th to 12th). In Iceland, this was not a result of increased buyer sophistication (which dropped), but rather solely on increased perceptions of areas influenced by government policies (most strongly notable in procurement of advanced technology products and laws relating to ICT).

The following paragraphs provide some key information on the policy framework and recent actions for the Nordic countries in this policy area:

FINLAND

In Finland, the shift towards a more demand-driven approach was a key element of the refocusing of the innovation policy agenda. Tekes launched a new funding scheme targeting innovations in public procurement in June 2009. The government has published an Action Plan for Demand and User-driven Innovation Policy in 2010.

NORWAY

Norway has in 2008 created the Directorate for Administration and ICT (Difi) which has the development of knowledge in the public procurement system as one of its responsibilities. The government's 2009 report on government procurement (innkjøpsmeldingen) outlined an overall action agenda. A significant share of Norwegian innovation programs are focused on the collaboration between users and suppliers.

SWEDEN

In Sweden, VINNOVA designed a pilot program on innovation in government procurement in 2008. The program struggled to gain much traction as the traditional approach in this area is focused on reducing risks, ensuring legal security, and achieving low costs. A few regional efforts have, however, now been launched.

A prominent observer of innovation policy remarked that historically the Nordic countries were quite active in demand-driven policies, while more recently the rhetoric has become much more visible while actual measures are falling behind.

Company sophistication

The sophistication of companies, i.e. their adoption of new management methods and their way of competing, marks the final step to realize productivity levels that fully mobilize the potential inherent in the quality of a country's business environment.

Level is the ranking on the GCI Company Operations and Strategy category in 2010, change is the change in rank between 2010 and 2009 on this measure. Competitive Advantages is the ranking in the 2010 GCI on the Nature of Competitive Advantages indicator. Colouring is relative to absolute rank. Source: Unpublished analysis, Global Competitiveness Report, 2010.

Company sophistication			
	Level	Change	Competitive Advantages
Nordic			
Denmark			
Finland			
Iceland			
Norway			
Sweden			

The Nordic countries continue to have a strong position in overall **company sophistication**. Four of the Nordic countries are now in the top ten. Sweden has kept its #1 position for a second year, followed by Finland (who rose from 10th to 6th), Denmark (now in 7th after a slight decline), and Norway (who rose from 13th to 10th position). Iceland has also experienced improved perceptions of company sophistication in 2010, taking a notable jump from 25th to 18th this year. The nature of competitive advantage on which companies compete (i.e. whether they compete on low costs or rather on differentiated strategies based on innovation and unique strengths) is one of the most important elements of company sophistication. Companies in Finland, Denmark and Sweden (all in the top ten globally) are perceived to compete on differentiated strategies – often driven by innovation. In Norway (who ranks 27th), this is less the case. Iceland continues to experience a low perception of the nature of its competitive advantage (ranked at 40th – after a dramatic drop out of the top twenty in 2009).

The GCI indicators on company sophistication can be further organized by measures of strategy and operational effectiveness, organizational practices, and internationalization. Overall the Nordic countries get the highest scores on organizational measures (which is in line with the literature on flat management structures in Nordic countries). The strongest improvements, however, are registered in the measures related to internationalization of firms, particularly in the breadth of international markets and the prevalence of foreign technology licensing. Norway, in particular, made impressive improvements in measures related to internationalization. These positive changes are nice to note – particularly given policymakers increased focus on this area in recent years.



2.3 Globalization Readiness

In a global market, having strong competitiveness fundamentals is not enough to sustain and develop high prosperity. Countries also need to engage actively with the global economy, create outward and inward linkages, and prepare for the shocks that might affect them through these channels. This is why the Nordic Globalization Barometer introduced the notion of “Globalization Readiness” as a measure of how well the Nordic countries are performing on these three dimensions.

Selling on foreign markets

Exports of goods and services are the traditional way to leverage domestic strength on a global market. It also provides local companies with crucial exposure to global knowledge and competition, both key drivers in reaching higher levels of performance. This is particularly important for small economies that in these dimensions often suffer from their limited absolute size.

The Nordic countries are highly export oriented – as exhibited by their world export market share of 3.4% (2010). This share remains high relative to the Nordics’ share in global GDP (2.35%). However, this figure continues to show a noticeable decline compared to the last decade, when the Nordics’ share of world export held steady around 4.0% and 4.1%. Although the Nordic countries experienced a 9.5% increase in exports relative to 2009 (much like the EU), this paled in comparison to the 18.8% growth in exports globally. This overall trend – lower relative growth in the Nordics compared to global growth in exports – was experienced in both goods and services, resulting in declining export market shares (from 3.3% to 3.0% in goods, and from 5.3% to 5.2% in services).

Overall is measured by the relative change between 2010 and 2009 in total world export market share. Goods and Services are measured the same way for the respective sub-categories of total trade. Colouring is relative to absolute changes. Source: WTO, 2011.

Change in Exports World Market Shares			
	Overall	Goods	Services
Nordic			
Denmark			
Finland			
Iceland			
Norway			
Sweden			

All of the Nordic countries experienced growth in exports in absolute terms, but only Sweden was able to achieve export growth that approached average global levels. Iceland also registered double-digit growth in export revenues but lost some market share in goods markets. Finland, Norway and Denmark all experienced declines (of 7%, 9% and 11% respectively) in their overall global position in exports. For Finland, this was driven by a decline in service exports (in both relative and absolute terms). In Norway, the decline in relative global position was driven by lower relative growth in its export of goods (which was 60% lower than global growth rates). Denmark’s relative global position suffered the most, as its rebound in exports (increasing at 4.7% overall, 3.5% in goods and 6.7% in services) was only marginal compared to global export growth – particularly in export of goods where its growth was almost 8.5%-points below the global benchmark).

Outward foreign direct investment (FDI) is another way to export knowledge and capabilities, but also to tap into foreign knowledge pools. As economies move towards more knowledge intensive activities where value is embodied in the intellectual capital used rather than in the production process per se, the ability to access the best knowledge globally becomes increasingly important.

For 2009, the latest year for which globally comparable data is available, the Nordic countries continued to register a strong outward FDI position – with a steady market position on outward FDI stocks (representing about 4.6% of the world total), and strong gains in outward FDI flows (from 3.9% to 7.7% of the world total) as global FDI flows collapsed by more than 40%. A large share of this development is due to lower M&A activity, a traditionally highly cyclical activity closely linked to financial market conditions.

In terms of outward FDI flows (which also includes loans from home country firms to their foreign affiliates, a financial flow that has likely become much more important during the financial market crisis), the Nordic countries proved much more resilient than both EU and OECD peers). Developing and transition economies are increasing outward FDI at a much faster rate than most developed economies. That the Nordic countries are able to maintain their global position in this indicator is a reflection of an increasing trend in Nordic companies' practice of serving foreign markets through local subsidiaries and production facilities. Relative to total domestic GDP (which decreased in 2009), outward FDI stocks grew more than 20% – a rate higher than EU averages, but slightly lower than that of the OECD.

Share is measured by change of world market share of outward FDI stock between 2009 and 2008. Flow is measured by change of world market share of outward FDI flows between 2009 and 2008. Stock relative to domestic GDP is measured as percentage change of outward FDI stock relative to domestic GDP. Colouring is relative to absolute changes. Source: UNCTAD, 2011.

Change of outward foreign direct investment			
	Stock	Flow	Stock relative to domestic GDP
Nordic			
Denmark			
Finland			
Iceland			
Norway			
Sweden			

Iceland had over the last decade experienced a dramatic increase in its outward FDI activity. Much of this foreign expansion had been credit financed, which could not be maintained through the financial crisis. Following the selling and value adjustments in 2008, 2009 saw positive outward flows (although at levels around 13% of the 2007 peak) and an increase in outward FDI stock relative to GDP (from 56% to 58%). Of the other Nordic countries, Sweden maintains the strongest outward FDI activity and with growing absolute FDI outflows and an FDI stock abroad values at more than 90% of domestic GDP. Denmark experienced notable growth in outward stocks and flows (doubling its percentage of global outward flows from 0.7% to 1.4% in 2009), and now has outward FDI stocks valued around 70% of GDP. Norway, too, continues strong upward trends in outward stocks and flows, increasing



outward FDI stock relative to GDP from 29% to 43%. Finland had a dramatic dip in its outward FDI flows relative to 2008, stronger than for the EU overall. Finland's outward FDI stock now stands at 53% of domestic GDP.

Attracting foreign interest

In today's very globalised and inter-dependent economic landscape, no economy can compete based on its own inherent resources and capabilities alone. They need to attract investment capital, human capital, and ideas. And they have to establish the right conditions to retain their own companies and people as everyone can more flexibly choose where to invest or live and work. Attracting global interest is both an indicator and enabler of global competitiveness. Only competitive locations are able to attract foreign interest, and the inflow of foreign capital and skills makes a location more competitive.

Share is measured by change of world market share of inward FDI stock between 2009 and 2008. Flow is measured by change of world market share of inward FDI flows between 2009 and 2008. Stock relative to domestic GDP is measured as percentage change of inward FDI stock relative to domestic GDP. Colouring is relative to absolute changes. Source: UNCTAD, 2011.

Change of inward foreign direct investment			
	Stock	Flow	Stock relative to domestic GDP
Nordic			
Denmark			
Finland			
Iceland			
Norway			
Sweden			

The Nordic countries host about 3.8% of the global **inward foreign direct investment (FDI)** stock, a share that has been fluctuating around 4% the past few years (and has decreased slightly since last year). In the last decade, inward flows tended to be somewhat lower (at about 2.5% – 3% of global flows), and have grown slowly over time. The value of the foreign owned investment is equivalent to about 64% of the Nordic countries' GDP. In 2008, foreign investment flows dropped globally, and continued to drop in 2009. The Nordic countries have done well compared to OECD peers – where inward FDI flows have continued to fall (primarily driven by the US's continued decline). However, Nordic countries' growth in inward FDI flows is lower than that of the EU – where large countries like France, Germany and Italy have seen more notable growth in their global share of inward FDI flows. Relative to domestic GDP growth (which continued to be negative in 2009), the recovery in the value of inward FDI stocks has meant a nearly 13% increase of inward FDI stocks (and flows) relative to Nordic GDP.

Sweden continues to be the dominant destination for foreign FDI coming into the Nordic region, accounting for 45% the region's total foreign FDI stock in 2009. Although its inward FDI flows declined substantially in 2009, Sweden was also the only country to surpass its 2007 values of inward FDI stock through retained profits, inter-company loans, and revaluation of foreign companies Swedish subsidiaries, and saw its inward FDI stock increase to 75% of GDP. After a dramatic drop in inward FDI flows in 2008, Denmark experienced a strong rebound and even surpassed its previous global share of inward FDI flows (which was up to 0.7% at the end of 2009). Finland



and Norway also experienced a solid year in terms of FDI attraction – registering increased relative global positions in attracting inward investment (despite decreased inflows in absolute terms in Norway), and increased values of inward FDI stocks relative to GDP. Iceland was the only Nordic country to experience declines in both inward FDI stocks and flows in 2009 – a reflection of the continued instability of its national economy in the wake of the banking crash and a slow process in deciding upon further investments into energy-intensive industries.

The following paragraphs provide some key information on the policy framework and recent actions for the Nordic countries in this policy area:

DENMARK

The Trade Council, organized within the Danish Ministry of Foreign Affairs, is responsible for export promotion and investment attraction. Its strategy “value, growth and knowledge for Denmark – strategy towards 2015” organizes export promotion activities around traditional export promotion activities (market access, promotion events, export advice), public affairs (branding in key Danish markets), and risk and opportunities assessment (CSR, anti-corruption, and bottom-of-the-pyramid markets).

Invest in Denmark is the Danish investment attraction agency. With offices in Denmark and ten foreign locations, it provides a one-stop shop service for foreign companies looking into setting up activities in Denmark. Invest in Denmark is focusing on activities in four cluster categories (cleantech, ICT, life sciences, and maritime) in which Denmark has a strong position as well as on a range of specific functions across all industries (Regional HQ, R&D center, logistical center, etc.).

Export financing is provided through Eksport Kredit Fonden (EKF), which offers both guarantees and trade financing facilities to Danish exporters. EKF provided about EUR 1.2bn in credit guarantees in 2010.

An important element of the internationalization efforts in the innovation area is the university cooperation with China through the Danish University Centre in Beijing. The Center is expected to accommodate 300 master’s degree students, together with 75 PhD students and 100 researchers, with an approximate 50/50 mix from each country.

FINLAND

Export promotion services are provided by Finpro, an association founded by Finnish companies in 1919. Finpro has 49 foreign offices and 8 representations across Finland to support especially small- and medium-sized Finnish companies in their internationalization efforts.

Invest in Finland is the Finnish investment promotion agency. Its activities are currently focused on four manufacturing (Cleantech, healthcare, ICT, and Mining) and five service sectors (business services, logistics, real estate, retail, and tourism) with particular importance for the Finnish economy.

Export financing is provided through Finnvera, which also provides more general financing services to small- and medium-sized companies.



Internationalization has been a strategic objective for the Finnish innovation system. FinNode has been created by key institutions in the Finnish innovation system with the objective of boosting international R&D cooperation and business. Its first office was opened in the US in 2007; it is now present also in China, Japan, and Russia. Finland is also strongly engaged in collaboration among innovation agencies within the Baltic Sea Region as part of the BSR stars program.

ICELAND

Promote Iceland has been created in 2010 as a public-private partnership to market Iceland's commercial interests abroad through support for Icelandic exporters, investment attraction, and branding. In the export area, it builds on the activities of Visit Iceland (tourism), Iceland Music Export, and Responsible Fisheries, an effort to brand Icelandic fishery products.

Invest in Iceland, the country's investment attraction agency, has in 2010 become part of Promote Iceland. An evaluation of its activities initiated by the Board of Invest in Iceland found solid operational performance but a lack of overall strategy and a low budget compared to peer locations. The Icelandic government is currently reviewing the proposals developed by an advisory committee.

In July 2010, Althingi passed a new Act on incentives for initial investments in Iceland, specifying the level of incentives that can be made available. The government will review the impact of these measures in 2012 before the current law expires at the end of 2013.

NORWAY

Norway's internationalization efforts are largely organized through Innovation Norway, which took over the activities of the Norwegian Trade Council. Innovation Norway has more than 30 offices abroad, which provide both export-oriented services and help with international linkages in the innovation system.

The export credit agency "Garantiinstituttet for eksportkreditt" (GIEK) provides export-related credit insurance and Eksportfinans ASA trade financing to Norwegian companies. They received additional funds during the financial crisis.

Norway has no dedicated body for investment attraction but is considering whether to create one. The current structure relies on ad-hoc responses to investor requests from the Ministry of Trade and Industry, SIVA, and Innovation Norway.

SWEDEN

The Swedish Trade Council provides a broad range of support services for Swedish exporters. Some of its more general activities are fully financed by the government, while company-specific services are usually provided against a fee. The National Board of Trade focuses on trade policy but provides also some services in relation to legal trade barriers, for example within the context of the EU's common market.

Export financing is provided through Svensk Exportkredit (SEK) focusing on trade credits and Exportkreditnämnden (EKN) focusing on guarantees.

Invest Sweden, a government agency under the Ministry for Foreign Affairs, provides services to foreign investors and to Swedish companies looking for foreign capital and strategic partners. Its operations are organized around a number of target industries (automotive, clean tech, life sciences, ITC, etc.) and functions (regional headquarters).

The Swedish government has recently launched a review of the export promotion and investment attraction activities, partly with the objective to analyze the implications of organizing these activities within one organization.

Flexibility

The ability to adapt to changing conditions is increasingly important in the global economy. While this is sometimes seen as a contradiction to the need for specialization, it is in fact closely connected to it. Regional economies can only succeed in the global economy if they reach the high level of productivity that economic specialization is needed to achieve.³ But specialization in turn exposes regional economies to the impact of external shocks. High levels of prosperity can only be sustained where regions are able to transfer their productive resources to new economic activities. In the short term, being more flexible can seem as a disadvantage as companies find it less costly to reduce employment in flexible rather than in rigid economies. In the long term, however, it creates much more attractive conditions for companies to make investments that create competitive employment opportunities.

In international rankings of **labor market flexibility** (measuring formal rules and regulations affecting flexibility in employing workers), the Nordic countries generally receive low scores, driven by their more protective labor legislation. Denmark is the exception – where a combination of weak job security, generous unemployment benefits and considerable investments in labour policy incentive schemes has made Denmark a model for “flexicurity”. Yet this index may not reflect the actual flexibility of Nordic labor markets, and is currently under revision.⁴

Entrepreneurship is critical in a flexible and dynamic economy. And the level of entrepreneurship is related to the overall competitiveness of a loca-

³ Support to regions in designing “smart specialisation strategies” is the main focus of the European Smart Specialisation Platform, a key element of the EU’s new regional policy approach to be launched in June 2011.

⁴ The World Bank/IFC’s Doing Business Report includes an index of labour market regulation known as the “Employing Workers Index.” It assesses the amount of flexibility that exists in national labour legislation on issues concerning use of term contracts, minimum wages, dismissal protection, severance pay, working hours, annual leave and non-wage labour costs. Countries that have less protective legislation score better on the index. Currently, the methodology used to calculate the index is being revised in order “to ensure consistency with relevant ILO conventions and to avoid scoring that rewards economies for flexibility that comes at the cost of a basic level of social protection.”



tion. Of particular importance are rules and regulations that affect the cost of entry, but also the risk associated with committing resources to a new venture and the ease with which less successful companies can exit a market.

On the costs associated with **closing down businesses**, the Nordic countries have traditionally been quite strong. This continues to be the case, with Norway, Denmark and Finland in 4th, 5th and 6th positions respectively. Iceland and Sweden remain in the top twenty. On the costs of **starting a business**, the Nordic countries continue to look weak. Although Iceland, Norway and Sweden have improved their position slightly since last year, none of the Nordic countries is even in the top twenty-five. This leads one to question the impact of the many programs for new entrepreneurs across the Nordic countries.

Closure of Business is measured by the World Bank Doing Business 2011 rank on this indicator. Starting a Business is measured by the World Bank Doing Business 2011 rank on this indicator. Colouring is relative to absolute rank. Source: World Bank, 2011.

Flexibility		
	Closing a business	Starting a business
Nordic		
Denmark		
Finland		
Iceland		
Norway		
Sweden		

The following paragraphs provide some key information on the policy framework and recent actions for the Nordic countries in this policy area:

DENMARK

The Danish government has launched a range of measures to increase the incentives to work and further adjust the Danish flexicurity model in the post-crisis economic environment. Changes in the income tax systems were made to increase labor supply.

The Youth Packages I and II (2009), contain a number of initiatives to speed up the entry of young people in further education and jobs. The youth packages contain a number of new initiatives designed to help young people into education and jobs, including faster inclusion in activation activities. In the employment field, the packages contain initiatives offering young 18–19 years old on social benefits an immediate offer as soon as they enter the job center, an extended mentor scheme, leisure time jobs to young persons, etc. The reform of the system of student grants and loans (SU) in 2010 provides stronger financial incentives for students to study in time by putting stronger performance conditions on the availability of student loans. The Government has concluded two political agreements aimed at strengthening municipalities' financial incentives to improve the efficiency of their employment policies with an increased focus on enterprises based on-the-job training. The Action plan on long term unemployment (2010) provides around EUR 35m for regionally-organized efforts to improve workforce skills among unemployed. The Fiscal Consolidation Agreement (2010) reducing the unem-



ployment benefit period from 4 years within the last 6 years to 2 years within the last 3 years.

Two proposals that are currently under discussion are the reform of the disability pension and flex-job schemes and the voluntary early retirement scheme. The government has proposed to reduce the availability of disability pensions for people below 40 and raise the early retirement age earlier than previously agreed.

The Danish government has also launched a range of efforts to encourage entrepreneurship in Denmark. Regional growth houses offer advice and support to entrepreneurs across Denmark. The Business Package improves access to finance through efforts like raising the growth fund's loan guarantee scheme by EUR 200m. An entrepreneurship education strategy, including the establishment of an Entrepreneurship Fund, aims to create a comprehensive national effort across all levels of education. The Government has launched an action plan for female entrepreneurs and established a program to help entrepreneurs with an ethnic background to succeed.

FINLAND

In Finland, the economic crisis raised significant concerns about the danger of unemployment becoming structural. In 2010 various statutes supporting the employment of young people came into force. These related to education, trial work placements, early support in employment services, making the job alternation leave system permanent, improving restructuring protection and strengthening adult education. New legislation was introduced to promote the integration of immigrants into the labor force.

A relocation allowance was introduced in 2007 to promote greater inter-regional mobility of the unemployed. Receipts of unemployment benefits after 500 days have been made conditional on participation in active labor market programs. As part of the fiscal stimulus, various benefits (maternity, parental and sickness allowance, unemployment) were increased in the summer of 2009. There are now ongoing discussions on tax changes to reduce the fiscal demands of the social security system, including further steps to reduce opportunities for early retirement. According to the OECD, Finland has still the highest disincentives to work for older unemployed among all Nordic countries.

Finland has less of a tradition on SMEs and entrepreneurship than some of its Nordic peers. But existing government agencies have increasingly focused on the role of entrepreneurship as a key growth driver. The Ministry of Education published new guidelines on the inclusion of entrepreneurship education at all levels of education in 2010. TEKES has recently launched the VIGO program that provides public and private capital as well as business development services to young, growth-oriented SMEs. So far 20 companies have been included in the program. Tekes' Tuli program on research-based start-ups has a budget of EUR 50 million and involves 14 universities, 21 polytechnics and 5 research institutes. A number of efforts were launched to improve access to finance for SMEs. There are 15 T&E Centres across the country that provide a wide range of advisory and development services for SMEs and entrepreneurs. Specific programs focus on female entrepreneur-



ship, the transfer of business from old entrepreneurs to new owners, and entrepreneurial opportunities in the creative and welfare sector.

The Confederation of Finnish Industries (EK) published a document in September 2010 containing 64 recommendations aimed particularly at improving tax and other conditions for SMEs. There is a program on diminishing the administrative burden for SMEs through the simplification of procedures. More government services are provided through a centralized web portal. Tax incentives are under discussion.

NORWAY

Compared to its Nordic neighbors, Norway has made relatively minor changes to its labor market and social security system in the last few years. Measures ensuring that long-term sickness leave recipients are followed more closely were introduced in 2007. The ongoing merger of the welfare system and the employment services network is intended to improve coordination of these services. A new pension system with longevity adjustment and a flexible retirement age from 62 onwards, based on actuarially neutral adjustments, will be phased in from 2011. According to the OECD, Norway remains the country with the highest number of working hours lost due to sick leave compared to other Nordic or OECD countries.

The Norwegian government launched action plans for female entrepreneurship in 2008 and for entrepreneurship in education in 2009. A number of financial support mechanisms have been made available for entrepreneurs. In 2009 roughly EUR 35m start-up stipends were paid out, significantly more than in the past. A new national start-up grant scheme has been established with a budget of EUR 15m to stimulate new business ventures. Innovation Norway offers a wide range of services, infrastructure, and financial support to entrepreneurs. According to the organization's own accounts, roughly 11% of all funds paid by Innovation Norway benefit entrepreneurs. FORNY is an example of a program that is focused on start-ups from universities. The government is currently working on a strategy for SMEs.

SWEDEN

The Swedish government has over the last few years introduced a wide range of ambitious measures to increase the labor supply and ease entry in the labor market for groups previously stuck in the social security system. In a number of steps the tax disincentives for working have been reduced. Tighter administration, time limits on eligibility and measures to promote rehabilitation have lowered sickness absence rates. Temporary disability benefits are in the process of being phased out in 2010.

Skill upgrading has been strengthened through the creation of the Swedish National Agency for Higher Vocational Education, which funds vocational training at the post-secondary level with close to EUR 200m annually, and the provision of 10 000 full-year equivalent places in vocationally oriented courses. Coaching initiatives were established at the Public Employment Service and additional positions for work experience have been created. A new active labor market program was introduced in early 2010 for people that have reached the maximum number of benefit days in the sickness insurance. A new strategy for the faster integration of immigrants into the



labor market came into force at the same time. To make Swedish language training for immigrants more effective, the pilot project with performance-based incentive compensation (the SFI bonus) was made permanent on 1 September 2010. According to the OECD, Sweden remains the country with the highest imbalance between strong protection for employees in regular jobs versus poor protection for employees in temporary jobs. Sweden also continues to report the highest gap in unemployment rates between natives and immigrants.

The Swedish government has launched a wide range of efforts to support entrepreneurship. Between 2011 and 2014, more than EU 10m will be spend on female entrepreneurship in programs around Women's Enterprise Ambassadors and many business and innovation development initiatives. There is also a wide range of services to entrepreneurs in general related to access to capital, research-based start-ups, internationalization, etc. The government is also undertaking efforts to reduce the bureaucratic burden on small businesses.

2.4 Overall assessment

The 2011 edition of the Nordic Globalization Barometer tracks the development of the Nordic countries' competitiveness as the global economic enters a new post-crisis environment.

The analysis of the **current economic climate** indicates that the Nordic region is now in a good position to reach a path of stability. Last year's fast growth was largely driven by the reaction to the deep fall in 2009. While even the 2011 growth rates are solid, the exuberance of sentiment visible last year has largely subsided. This is to a large degree the result of policy choices: the end of the stimulus packages and a mix of monetary policy tightening and fiscal policy consolidation have left their mark. In a still very uncertain global environment, with Europe struggling to find a sustainable framework to underpin its common currency, the US facing a long, difficult road towards fiscal consolidation, and concerns about overheating in some of the large emerging economies, there are significant downward risks.

The **economic performance** of the Nordic region has clearly rebounded after the crisis. Prosperity levels remain high and have started to grow again. Still, the 2010 upturn has recovered less than 50% of the ground lost during the 2009 crisis. A resurgence of productivity growth has been driving the 2010 recovery, while labour input levels – the more important lever for adjustment last year – have stabilized. Although the Nordic countries still struggled to reduce unemployment rates, they have fared much better than their EU and OECD peers. The Nordics have also experienced a reduced gap in domestic price levels relative to previous years. Denmark showed a somewhat worrying trend, with labour input levels falling at an only moderately decreasing rate.

The competitiveness of the region has not changed dramatically. The high level of overall competitiveness supports the high level of prosperity that the region is enjoying. The region remains slightly stronger on macro- than on microeconomic competitiveness. In both areas the region improved some-



what in 2010, regaining the marginal ground lost last year. Finland, Norway, and Sweden gained in both dimensions, Iceland in microeconomic competitiveness. Only Denmark saw its position erode overall, albeit from a high level and at a moderate rate.

Within macroeconomic competitiveness, positions remain largely unchanged. Iceland continued to drop in the area of macroeconomic policy as government debt levels have dramatically increased. In Norway there has been the perception that economic policy making is getting more concentrated in the capital.

Among the determinants of microeconomic competitiveness, the Nordic region has improved its ranking on patenting, capital market infrastructure (especially the access to local equity markets and the soundness of banks is seen more positively than last year), and the perceived openness to foreign investment. In indicators of company sophistication, the region maintains its leading position, again with particular improvements in measures related to the internationalisation of firms. The region is perceived to have lost ground on physical infrastructure, education and innovation infrastructure (here driven largely by Denmark and Norway).

On **globalization readiness**, the Nordic countries are losing market share in what seems to be a structural decline. The global trade collapse has, if anything, accelerated this process but not caused it. Whether the most recent rebound in exports visible from national statistics is an indication of a change in trend or just a normal recovery in the wake of the crisis is still not clear.

On FDI, investors from the Nordic countries remained active abroad. Most likely, they were more willing (or able?) than their global peers to support their foreign subsidiaries through inter-company loans as global financial markets shut down and many companies repatriated funds to shore up balance sheets at home. Foreign investors become much less active in the Nordics. The share of the Nordic countries in FDI inflows dropped below the region's share in global GDP as Finland and Sweden in particular saw inflows dry up.

On labor market flexibility and openness to entrepreneurship, there have been few changes according to the available indicators. The Nordic countries remain to be seen as having a relatively stringently regulated labour market while formal entry and exit barriers are low. The data on labor input adjustments discussed earlier in this report sheds at least some doubt on the perceived overall inflexibility of the Nordic labour markets.

In the post-crisis environment, the heterogeneity of challenges has increased across the Nordic region. This is particularly the case for macroeconomic policy. Both Denmark and Finland face the need of further fiscal adjustment to get back to a path that is sustainable in the long term. In Denmark, plans for significant fiscal consolidation have been proposed but will be hard to decide upon before the election later this year. In Finland, a new government is facing the task to develop such a plan in a new coalition of partners. Norway and Sweden are in a more comfortable position already. In Norway the inflows from oil and gas exports secure a strong surplus. The main challenge



is to manage the demands to spend this money and return back to the path outlined in the country's long term fiscal policy framework. In Sweden the very robust policy of the past, both medium-term and most recently, have created a good chance of keeping fiscal policy on the long term target path while keeping the economy at a solid, stable growth rate. The main challenge is to manage fiscal and monetary policy instruments to keep on this path in the face of high global economic uncertainty. Iceland remains in a difficult position but seems now on a credible stabilization path. The main challenges are how to gradually reduce the public debt burden and what to do in terms of the monetary policy regime in the long term.

On competitiveness, the list of key issues has not markedly shifted compared to last year. On many dimensions of competitiveness the countries in the region do well, which provides the foundation for the high level of prosperity that their citizens are able to enjoy. In addition, the profiling of economic policies undertaken this year shows a high level of activity in many areas of competitiveness. Nevertheless, there are areas in which improvements remain still possible and necessary. An important example is education, where some Nordic countries have started to show more appetite for reforms. Another is taxation and the openness for private initiative in markets in which government plays a large role, where again quite a number of policy changes have been made in some countries. In all of these areas policy actions take time to implement and to result in different behaviour.

Finally, last year's Barometer identified the political governance challenges the Nordics face in being subject to the global economy and the policy decisions that shape its architecture but having very limited influence on many of these decisions. These challenges have not disappeared. In fact, the recent Finnish election results might in part be a reflection of the unease that significant segments of (not only) Nordic society feel about being forced to participate in actions – in this case the rescue packages for Greece, Ireland, and Portugal – on which they perceive their government leaders to have little say on. At the minimum, this puts a strong onus on Nordic government leaders to explain the benefits of these policies to their public.



Four years ago, the Nordic Prime Ministers decided to organize annual meetings to discuss in a less formal setting how their countries were faring in an increasingly global economy and what they could do to prepare them for it. The global economic and financial crisis then put a range of new, urgent challenges on the policy agenda. To different degrees individual Nordic countries will take some more time to fully overcome the impact of the global economic crisis. At the end of that process, the Nordic countries find themselves all facing the same question that was posed by the Prime Ministers already in 2007: How to deal with a more global – and through the crisis more quickly transformed – economic environment around us?

The Nordic countries face this question through the lens of the recent experience:

- They are as small open economies highly exposed to a global economy that seems to become more integrated but also more unpredictable and prone to shocks.
- They are with their strong institutions and solid macroeconomic policies better equipped than many others to deal with these shocks.
- They have created overall strong competitiveness foundations that provide a solid basis for future prosperity

The overall impressive way in which the Nordic region has handled the crisis gives reason to be proud about the achievements. The policies that secured this success will continue to be beneficial in the post-crisis environment. But with changing challenges ahead they will most likely not be sufficient.

3.1 Key findings

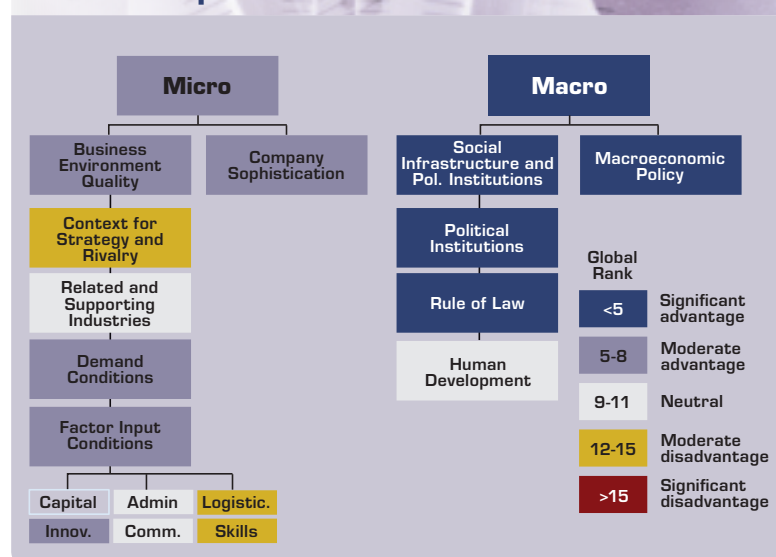
The data presented in this Barometer reflects the strong recovery in economic performance that the Nordic economies have been able to achieve. GDP per capita is growing again, based on a resurgence of productivity. Labor input and labor market conditions have stabilized. Fiscal policies need to be tightened further in some countries but overall the region has a good chance to achieve a robust recovery without creating the seeds of a new bubble. While the robust policy response has left a clear mark in the public finances of all Nordic countries, even the ones harder hit are in a more enviable situation than the southern European countries. Iceland remains an exception but has also managed a remarkable macroeconomic stabilization.

The **competitiveness** of the Nordic continues to be strong overall and can sustain the current level of economic performance. And there is a general pattern that the region benefits from strong institutions, macroeconomic policies, sophisticated companies, advanced demand conditions, and a strong innovation infrastructure. But it also has a relatively weak presence of clusters, and some challenges in the education system and the logistical infrastructure. With overall spending high on education and comparable to many peers on infrastructure, the issue is more one of efficiency and effec-



tiveness than resources. Apart from these general patterns, there are weaknesses in specific policy areas for individual countries in the Nordic region.

Global Competitiveness Profile of the Nordics



Source: Unpublished data from the WEF Global Executive Opinion Survey (2010), author's analysis based on Delgado et al. (2011)

In addition, there is a more general puzzle in competitiveness being generally higher than the level of prosperity that the Nordic countries achieve in comparison to their international peers. This could be the result of mismeasurement, i.e. standards of living for many citizens are higher than the simple average income figure suggests. But it could also be an indication of specific bottlenecks in the system, i.e. individual policies that make it impossible for the Nordic countries to take full advantage of its strengths.

On **globalization readiness**, the role of the Nordic countries in the global economy is gradually changing. Exports are becoming less important, with services are holding up better than goods in terms of world market shares. As more and more production in global value chains is moving to Asia, the role of the Nordic countries in the global economy is gradually changing. The data on FDI is consistent with this view. The Nordic countries remain very active in outward FDI, while inward flows are developing less dynamically. It is much more likely that this is the reflection of changes in the global economy – including the way global companies and value chains are organized – than changes in the absolute attractiveness of the Nordic countries as a place to do business.

In terms of flexibility, especially labour market structures and the conditions for entrepreneurship that affect an economy's ability for structural change, the actual performance of the Nordic countries suggests that many of the indicators used in the literature thus far are incomplete or misleading:

- The Nordic *labour markets* have overall been able to deal quite well with the dramatic shock of the global economic crisis. Where problems exist, they relate to the rules and regulations affecting specific groups, especially



people entering the labour market, in early retirement or on sick leave, and immigrants.

- The Nordic countries' performance on *entrepreneurship* turns out to be quite strong, both on entry rates and on the general conditions affecting new entrants captured in this report. But economic impact depends on the ability of new entrants to grow and scale-up their operations. And on this dimension the Nordic countries are still struggling (FORA, 2010).

3.2 Key policy implications

The Nordic Globalization Barometer aims to identify policy areas important for the future success of the Nordic region in which collaboration on the Nordic level can make a significant difference.

Strong **macroeconomic competitiveness**, in the recent crisis especially on fiscal and monetary policy, has been a key pillar of the Nordic countries' admirable performance over the last decade.

In the short term, the Nordic countries need to *stay the course* in pursuing macroeconomic policies that support a path of sustainable growth. This requires flexibility in reaction to shocks. But it also requires the adherence to a clear fiscal and monetary policy framework that sets strong guidelines on medium term targets for budget balance and inflation. Sweden seems already well on track to reach this target. Denmark and Finland, to some degree also Norway, still require more policy action to get there. Iceland remains in a somewhat different situation, where macroeconomic stability alone is unlikely to reduce the large public debts created due to the collapse of the financial system.

In the longer term, the Nordic countries need to *remain open* to react to changes in the macroeconomic policy architecture around them. For Iceland the questions are most obvious as to which currency regime to choose when the current capital controls are gone. For the other Nordic countries, the current heterogeneity between Euro-Zone membership, Euro-peg, and flexible exchange rate has worked so far. But it seems unlikely that this mix is going to remain optimal forever. In fact, it is remarkable that the dramatically changing exchange rates between the Nordic countries have not created more tensions. What is needed, are not drastic changes now but an openness to continue to evaluate alternatives to the current framework for tomorrow.

On **microeconomic competitiveness**, the Nordic countries have become a global role model for combining a large public sector that makes strong investments into factor input conditions with an open market that allows for fair and effective competition.

In the short term, the Nordic countries need to continue their efforts to improve the effectiveness and efficiency of their policies. There are weaknesses in areas like education and infrastructure, where the committed resources do not generate enough impact in terms of the productivity level in the economy that they help support. Further structural changes in these areas are necessary. There are also weaknesses in innovation and entrepreneurship



policies, where intermediate targets of scientific quality, university-industry collaboration, and new business formation are met but the ultimate benefits in terms value creation remain below potential. New approaches, like a more aggressive use of demand-driven innovation policies, need to be developed and implemented.

In the longer term, the Nordic countries need to become more strategic in targeting policies on specific bottlenecks to value creation in their economies. While there is a clear strategy for macroeconomic policy, microeconomic policy tends to be a collection of many individual programs and efforts without a comprehensive view on how they relate to each other. There is an increasing realization in the literature (Hausman et al., 2008; Rodrik, 2010; Ketels, 2011) but also in the policy community (EU 2020 process, OECD Going for Growth process) that this is a waste of resources and existing competitive advantages. The series of innovation policy-plans that have been developed across the Nordic regions largely before the crisis were a step in the right direction. A new round of such strategies should be more comprehensive in reflecting systemic relations between policy areas and more determined in making clear choices on what matters most for enhancing competitiveness and prosperity.

Global competitiveness is not just a matter of creating generally strong foundations for productivity and innovation. It is also a question of the role that a location is playing the global economy.

The Nordic countries have – as past editions of this Barometer have discussed in detail – been a prime beneficiary of globalization because this process allowed them to leverage their significant competitive advantages on a much larger scale. Their specific strengths, including strong institutions and innovation infrastructures, are in relatively short supply on a global scale.

But the Nordic countries' changing pattern of globalization readiness, in particular its gradual loss of world export market share, also indicates that the way existing advantages are translated into economic benefits is changing. One example is the strength in company sophistication: while Nordic companies, especially Nordic multinationals, remain highly sophisticated and internationalised the direct value that they created for their home countries through activities in the Nordics is decreasing. Another example is the so-called "Swedish paradox" (Edquist, 2010) of high innovation inputs that generate limited economic outputs. The data in this and previous year's Barometer suggest that this could be the result of Nordic innovation being economically leveraged abroad, not of low efficiency in the Nordic innovation system per se.

To deal with these changes, the Nordic countries need to gain more clarity on the *positioning* that they aspire to have in the global economy. What activities do they want to be attractive locations for, and how will those activities generate value for their citizens? With the on-going dispersion of industry value chains across locations (Baldwin, 2006) this requires setting priorities not only in terms of industries or research fields but also in terms of positions in the value chain and in the type of value created. The goal of



being an innovation-driven economy is no longer sufficient as an orientation for these choices to be made coherently. There is a wide-range of positions that are consistent with this overall characterization, with widely different implications for the policies to be implemented (Breznitz, 2007). Making explicit choices on which position to aspire to will guide action priorities on competitiveness upgrading and help to integrate them into an overarching strategy that generates maximum benefits for Nordic citizens.

Success in the global economy is not just a matter of identifying the right issues and devising appropriate policies to address them. It is a matter of acting on these insights. The Nordic countries have despite their cultural similarities all their individual ways of getting to action. Collaborating at the Nordic level is an opportunity to learn from each other on how to leverage these differences rather letting them become an excuse for inaction.



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The 2011 Nordic Globalization Barometer is the fourth in its series, again designed to serve as input to the Nordic Globalization Forum. With the global crisis giving room to a reluctant and highly uneven recovery, the focus is turning towards the emerging shape of the post-crisis global economy. The US is struggling with long-term fiscal imbalances amidst a slow recovery. Europe is divided between quickly recovering economies led by Germany in the north and debt-struck economies in the south. The emerging economies have continued their ascendancy.

The Nordic economies have been fully exposed to these changes in the global economy. Their solid domestic policies enabled them to deal with the crisis much better than many of their OECD peers, with Iceland being a special case. In the short run, the fiscal imbalances created by the economic crisis are a dominant concern for a significant part of the region, Denmark and Finland in particular. In the longer run, all Nordic countries face the question of how to react when the centre of gravity in the global economy moves away from Europe.

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