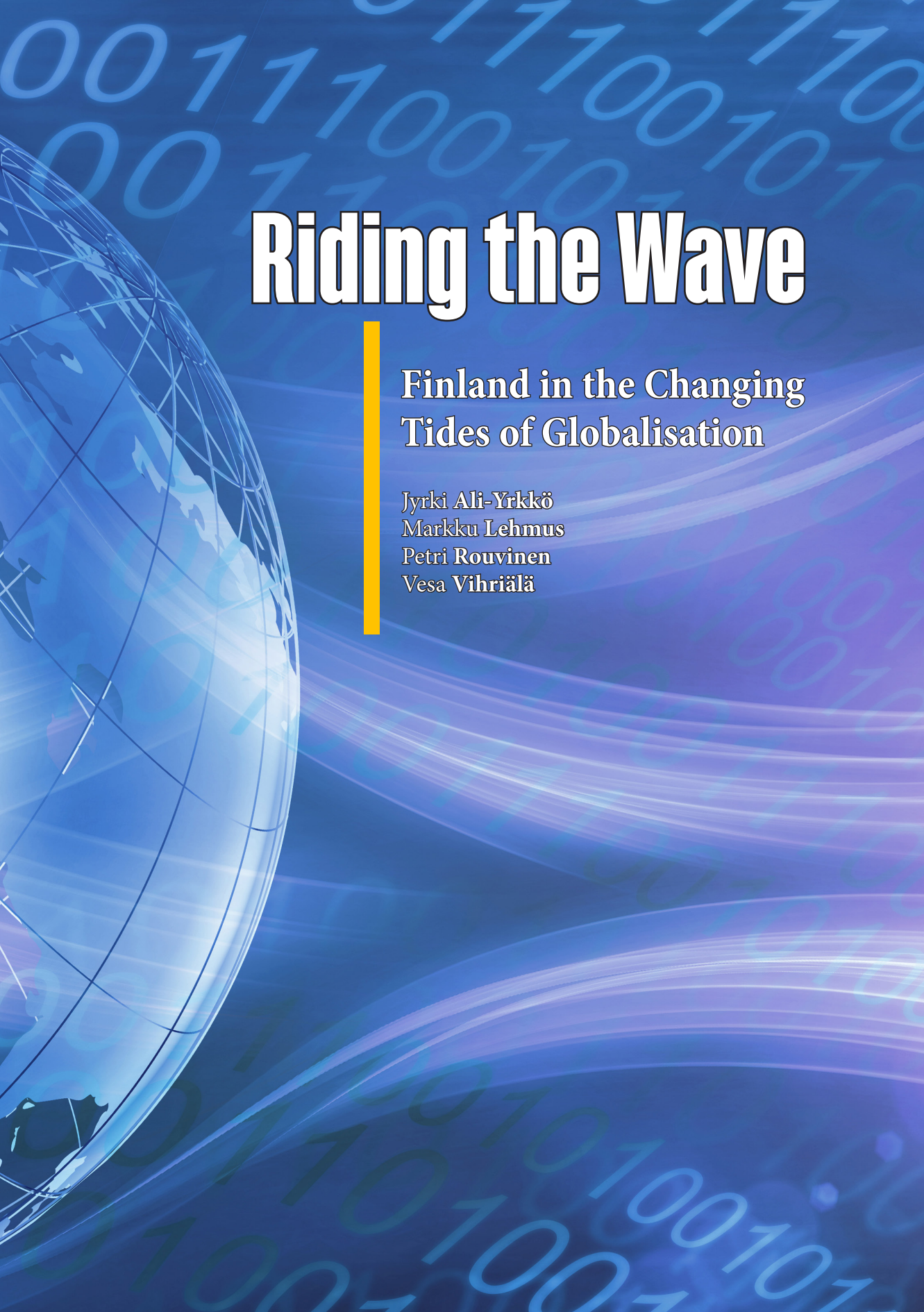

Riding the Wave

Finland in the Changing Tides of Globalisation

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Preface

Recent years have witnessed a backlash to globalisation in many parts of the developed world. The belief that globalisation is harming rather than benefiting many citizens has gained currency and has been seen to be an important contributing factor in recent political upheavals, such as Brexit and the election of Donald Trump as US president.

While no developed country has been immune to the new scepticism about the benefits of global economic integration, policy makers in several small countries continue to believe in free trade and economic openness in general. Finland is one of those countries. The obvious question is why this "keep-calm-and-carry-on" attitude has prevailed in such countries. Is it perhaps because these countries had been miraculously saved from the adjustment pressures of globalisation, unlike other parts of the developed world?

This book is an attempt to shed light on this question by recounting the Finnish economic history during the different phases of globalisation. The answer that emerges is a resounding "no". Finland definitely has had its share of economic hardship and adjustment needs, many of which relate, in one way or another, to its international economic relations. The answer, rather, is that Finland has benefitted greatly from globalisation *in spite of* the serious turbulences that have been associated with it. In all critical junctures it has managed the adjustment processes, even if sometimes with unnecessary costs. We also hope to provide some explanations for the overall favourable cost-benefit outcome. Finally, we discuss the policy challenges and options going forward.

The conceptual framework for our discussion is provided by Richard Baldwin in his recent book "The Great Convergence: information technology and the new globalisation". The story we tell about Finland can be seen as an example of how a small country has navigated its way through the two eras of globalisation, called "first unbundling" and "second unbundling" by Baldwin. Baldwin's book is a fitting backdrop for our discussion of Finland, not only because of its contents but also because some key elements of Baldwin's analysis emerged in the report he wrote for a globalisation project for the Finnish Prime Minister's Office in 2006.

The book is joint effort by Jyrki Ali-Yrkkö, Markku Lehmus, Petri Rouvinen and myself. We are grateful for the help from several people at Etla, including, and especially, Mika Maliranta for productivity data and Kimmo Aaltonen for layout. Many thanks go also to Viv Davies for his excellent editing of the text.

Vesa Vihriälä

Riding the Wave: Finland in the Changing Tides of Globalisation

Summary: The book recounts Finnish economic history during the different phases of globalisation as defined and analysed by Richard Baldwin in "The Great Convergence: Information Technology and the New Globalisation". We demonstrate that Finland has benefited a great deal from its participation in the international division of labour and exchange, and that this is not due to exceptionally favourable endowments or a lack of disturbances and adversities. While errors in policy have not been avoided, the broad approach, i.e. the Finnish version of the so-called 'Nordic model', has been appropriate. It has embraced economic and political openness and sought to increase the economy's capacity to take advantage of emerging opportunities and to strengthen its resilience. The last ten years have again been difficult and revealed the vulnerability of a small specialised economy. However, after almost a decade of stagnation, the economy has recently shown strong signs of a rebound again. We conclude that the Nordic model is also the best starting point for Finland with regard to the new challenges of technological change and global competition. Nevertheless, policies need to be sharpened, including increasing the flexibility of the labour market and further improving competences and innovation capacity.

Keywords: globalisation; free trade; openness; convergence; Finland

Aallon mukana: Suomi globalisaation tyrskyissä

Tiivistelmä: Kirja kuvaa Suomen talouden kehitystä globalisaation eri vaiheissa Richard Baldwinin kirjassaan "The Great Convergence: Information technology and the New Globalisation" esittämässä kehikossa. Osoitamme, että Suomi on hyötynyt suuresti osallistumisestaan kansainväliseen työnjakoon ja vaihdantaan ja että tämä ei ole johtunut poikkeuksellisista luonnonvaroista tai häiriöiden tai vaikeuksien puutteesta. Vaikka Suomi ei olekaan välttänyt politiikkavirheitä, politiikan peruslinja, Suomen versio ns. Pohjoismaisesta mallista, on ollut hyvä. Se on suhtautunut myönteisesti taloudelliseen ja poliittiseen avoimuuteen ja pyrkinyt lisäämään talouden kykyä hyötyä uusista mahdollisuuksista sekä vahvistamaan sen sopeutumiskykyä. Viimeiset kymmenen vuotta ovat olleet jälleen vaikea vaihe ja osoittaneet pienen erikoistuneen talouden haavoittuvuuden. Lähes vuosikymmenen stagnaation jälkeen talous on kuitenkin viime aikoina osoittanut vahvoja merkkejä tointumisesta. Päädymme siihen, että Pohjoismainen malli on paras lähtökohta Suomelle myös uusien teknologisten ja globaalin kilpailun tuomien haasteiden edessä. Politiikkaa on kuitenkin terävöitettävä, ml. työmarkkinoiden joustavuuden lisäämiseksi ja osaamisen ja innovaatiokyvyn parantamiseksi.

Asiasanat: globalisaatio, vapaakauppa, avoimuus, lähentyminen, Suomi

1

Introduction and overview

A basic tenet of economic theory is that trade is good for economic efficiency and welfare. Given the resource limitations of most economies, international economic integration can be particularly beneficial for small countries. In keeping with this observation small countries tend to be more open to the outside world, not only in terms of foreign trade of goods and services, but also with regard to capital flows and migration. However, as a result, small countries need to be more specialised. They also have less power to influence the political and economic conditions within which they operate. Such countries are therefore likely to be more vulnerable to external economic and political shocks.

Finland has been a keen member of the group of counties that has pursued higher living standards through foreign trade, access to foreign capital, knowledge and even migratory flows. This positive attitude towards economic integration has been apparent throughout Finland's 100 years of independence, as indeed it was during the preceding years of autonomy, when the industrial revolution began to radically change the country's economic landscape. Even during recent years, when anti-globalisation attitudes have spread across the developed world, Finland has remained in the group of countries that has resisted imposing protectionist policies.

The fact that Finland has risen from a very poor country in the European periphery a hundred years ago, to one of the rich countries globally – and, according to some assessments, even to the very top in terms of quality of life (e.g. 'OECD Better Life Index) – would suggest that globalisation has served Finland well. An obvious question, then, is whether this success has been due to favourable conditions – for example, that Finland has been supported by exceptional resource endowments and saved from external political and economic turbulences, to the extent that it has been

able to reap the benefits from economic openness without significant disturbances or adjustment problems.

This book seeks to demonstrate that this explanation has certainly not been the case, neither in the past nor currently. In fact, Finland has experienced many external shocks that have derailed its economic development, including during the most recent period of globalisation. Our thesis is that openness has benefited Finland *despite* many shocks and a lack of exceptional endowments, such as oil or gas, or a particularly advantageous location, and that sensible, if not always perfect, policies supported by solid institutions have been central to this outcome. Further, we maintain that embracing openness and being proactive in adjustment is the best way to meet the challenges now, and in the future.

Openness has benefited Finland despite many shocks

Our approach is to draw from Finnish economic history and, in particular, the country's participation in the global division of labour during the different phases of globalisation, as defined and analysed by Richard Baldwin in "The Great Convergence: Information Technology and the New Globalisation". Our emphasis is on the last twenty-five years, though we also discuss the opening up of the economy and the key economic outcomes from the onset of the industrial period in the middle of the 19th century.

The 'periodisation' of globalisation

We begin in Chapter 2 by summarising Baldwin's arguments regarding the 'periodisation of globalisation', which he describes as: (i) the **"first unbundling"** (which is divided into three acts: Act 1 is the period from the beginning of industrialisation to World War I (WWI); Act II is the political backlash period from the start of WWI to the end of World War II (WWII); and Act III is the post-war period up to around 1990); (ii) the **"second unbundling"**, (which extended from around 1990 to the present); and finally, (iii) the prospect of a **"third unbundling"**, which is potentially waiting just around the corner.

A peripheral Grand Duchy gets lifted by the first unbundling

Chapter 3 covers the entire period of the first unbundling. At the beginning of the first globalisation phase, up to the beginning of WWI in 1914, Finland was still an autonomous part of the Russian empire. Given the au-

tonomy of the Grand Duchy, Finland could, to a significant degree, pursue its own economic policies. This opportunity was used to modernise the economy, in a number of different ways, most prominent of which were: (i) the promotion of the adoption of new technologies (steam-powered sawmills being a prime example); (ii) the building of logistical infrastructure (railroads, man-made improvements of the waterways); (iii) the promotion of education; (iv) establishing a stable monetary system; and (v) developing the financial institutions.

Foreign trade was a key driver of economic development during industrialisation

The expansion of foreign trade was a key driver of economic development during this first phase of industrialisation, with the import of technology and the immigration of entrepreneurs being important facilitating factors. Finland made use of its vast forest resources to become a major exporter of timber, sawn wood, pulp and, towards the end of the period, paper. The forest industry was the engine that powered Finland's early development. Gross Domestic Product (GDP) *per capita* rose virtually at the same rate as in Western Europe in general, though slightly less than in Sweden and Germany. The economic development was much better than in Russia. Natural resources do not provide the explanation for this difference, as Russia obviously had much larger forest resources than Finland. The crucial difference was the political and economic institutions, which in Finland had been formed during its 700 years of being a part of Sweden. Nevertheless, Finland remained the 'poor relation' to most western countries, given its low starting level and the average *per capita* growth rate.

An independent Finland continues to prosper in the headwinds of protectionism

WWI was a defining episode in Finnish history, as it led to the independence of Finland. Simultaneously, it was a huge economic shock, with GDP declining by over 30% over a couple of years. In the immediate aftermath of the war, Finland's economy was restructured in many ways, including by a major process of land reform and the reorientation of trade, as the Russian market suddenly became closed. The economy recovered surprisingly well, however, being driven again by forest industry exports. The protectionism of the interwar period did not affect Finland's economic openness to any significant extent; essentially, the share of foreign trade in GDP did not decline. Finland continued to grow at roughly the same rate as its key western European peers.

WWII was again a major shock for Finland, even though it was saved from the devastation experienced in the Soviet Union, the Baltics, Poland and Germany. Over 2% of the country's population was lost in combat, 10% of the area of the country had to be ceded, more than 10% of the population resettled, and, for several years, about 5% of GDP had to be paid out in war reparations. The war effort and these losses impoverished the country, even though GDP did not take a major hit. As in so many other countries, foreign trade dropped to a very low level during the war.

The new openness facilitates a 'great catch-up'

Following the war, Finland was keen to exploit the opportunities created by the new US-led 'world order', by embracing free trade and economic integration more generally. Within this, however, the country was constrained by its delicate political situation, lying within the shadow of the now-very-powerful Soviet Union. For example, Finland was unable to benefit from the Marshall Plan. Nevertheless, Finland became a member of the key international institutional groupings, including the International Monetary Fund (IMF), the World Bank and the Organisation for Economic Cooperation and Development (OECD). It also participated fully in trade liberalisation within the General Agreement on Tariffs and Trade (GATT), and became part of the European Free Trade Association (EFTA). Simultaneously, it conducted bilateral trade with the Soviet Union, importing oil and raw materials, while exporting manufactured goods.

The key element of the growth strategy adopted after the war, and maintained until the 1980s, was the promotion of investment financed by domestic savings. Expanding the capacity of export industries was a priority. While the forest industry remained the backbone of the export sector, the metal industry also expanded significantly. Foreign trade, as a share of GDP increased consistently (as in other developed countries), reaching its pre-war level by the 1980s. The economy witnessed a steady structural change, wherein the share of primary production declined, while manufacturing, and later services, increased. During the 1980s, the expansion of foreign trade was increasingly accompanied by a deeper internationalisation through financial investments in both directions, facilitated by financial market liberalisation.

Expanding the capacity of the export industries was a priority

From the early 1960s, Finland began to follow the other Nordic countries in building a welfare state in order to protect its citizens against many

kinds of risks (e.g. unemployment, incapacity to work due to sickness or old age, etc.) and to provide comprehensive health care, social care and education services. The expansion and qualitative improvements in the education system were prominent in this respect. The expansion of social safety nets and many of these services were motivated, apart from distributional objectives, by the belief that these expenditures would also increase economic growth through higher productivity and a better capacity to bear risks associated with economic activity.

The growth strategy proved to be highly successful. With an average annual growth rate of GDP *per capita* of 3.5% during the post-war period, Finland caught up significantly with the more advanced western economies, reaching 70% of the US GDP *per capita* level, lagging only a little behind Sweden, and matching West Germany. Yet consumption opportunities did not grow equally as well, as investment spending took an exceptionally high share of total demand and turned out to be relatively inefficient in terms of productivity impacts. Nevertheless, Finland was very successful in Baldwin's 'third act' of the 'first unbundling': the country was described as "The Japan of Europe" in the 1980s.

Macro shocks lead to a deep crisis, but with a silver lining

Chapter 4 describes how this glorious growth period ended in tears. Finland went through a financial crisis very similar to the crises experienced by Ireland and Spain post 2008. GDP declined by over 10%; 20% of jobs were lost, and the unemployment rate rose to close to 17%. It was fundamentally a macroeconomic crisis stemming from the excesses unleashed by badly managed financial liberalisation in the 1980s, and the collapse of the Soviet market following the dissolution of the Soviet Union. The crisis was aggravated, in a number of ways, by misguided policies.

The crisis induced reforms conducive to growth

While devastating for aggregate output and welfare, the crisis also led to important structural changes that were to help Finland recover and grow on a more sustainable basis. First, the crisis eliminated a considerable amount of low-productivity production that was directed towards the Soviet market and to satisfy domestic demand. Second, the crisis induced, or at least helped to implement, reforms conducive to growth. These involved an increased emphasis on innovation policy, including much more public spending on research and development (R&D), a further opening up of the economy through the membership

of the European Union (EU), reforms to make taxation less distortionary, as well as stricter competition policy and better financial regulation. In addition, the crisis experience strengthened the consensus that public finances needed to be kept solid in good times, in order to have room for manoeuvre when crises emerged.

Finland becomes a model of success in the second unbundling

When Finland was in the midst of the economic crisis, the world was rapidly moving to a new phase in globalisation, i.e. the 'second unbundling' in Baldwin's terminology. Chapter 5 discusses how Finland made use of the new opportunities, not only to recover from the deep crisis but also to become a showcase for an innovation-driven economy capable of producing high and inclusive growth.

A key underpinning of Finland's economic performance from the mid-1990s to 2008 was the development of a knowledge economy. This comprised a highly-skilled labour force and strong public support for innovation activities. The reforms of the education system, which began in the 1960s and thereafter pursued consistently, had paid off, in the form of a substantial improvement in the competences of the labour force by the mid-1990s. The public R&D promotion that began in the 1980s was taken to a new level in the 1990s, through significant increases of resources and a better focus of policy to target a limited number of economic clusters, while avoiding picking winners among companies.

A key underpinning was the building of a knowledge economy

When the global economy emerged from the cyclical slump and simultaneously began to benefit from the new opportunities of a global division of labour, the Finnish business sector was in a good position to respond. The companies that had survived the 'steel bath' of the crisis were lean and competitive, and supported by a significant depreciation of the currency. There was also a considerable amount of well-educated labour available, and importantly, in the emerging information and communication technology (ICT) field, Finland had a company at the technological frontier with an ambitious new leadership – Nokia.

The result was very rapid export-led, and particularly ICT-production-led, growth, over more than a decade. GDP *per capita* grew by 3.5% annually, which was faster than in any EU country apart from Ireland, and considerably faster than the EU average of 1.8% and the US average of 1.9%. Finland again caught up with the richer countries, reaching 80% of the US

GDP *per capita* level, 95% of the Swedish level, and surpassing Germany by 3%. The growth was also quite inclusive. Income inequality increased somewhat in the 1990s but remained stable thereafter, at a comparatively low level internationally.

An important aspect of this growth period was a rapid internationalisation of the Finnish economy. Led by Nokia, many Finnish companies became truly international by setting up and acquiring foreign plants, and in terms of their financing and ownership models. At the same time, foreign direct investments in Finland increased considerably. A significant amount of economic activity in Finland became a part of global value chains (GVC). The ICT sector became the third pillar in the export industry, along with the forest industry and technology industry (excluding the ICT sector). This branch-level diversification notwithstanding, Finland's important export products were relatively few, and Nokia played an oversized role in the economy.

A series of shocks derails the economy again

This bout of rapid growth came to an abrupt end, just as did the boom at the end of the 1980s. As we discuss in Chapter 6, the trigger was again a macroeconomic shock, i.e. the global financial crisis in 2008. The crisis can be considered responsible for the bulk of the GDP decline of 8.3% in 2009. However, the original macroeconomic shock masked more structural ones, which were largely asymmetric concerning Finland more than other countries. The most important was the collapse of Nokia's position in the cell phone market, but also significant were the decline of paper demand, the global dearth of investment demand and, later, the collapse of Russian demand in 2014. These disturbances hit Finland very hard. The shining example of a successful innovation-based economy suddenly proved to be very vulnerable to shocks that were linked to the country's participation in the global division of labour.

Recovery has been painstakingly slow

Recovery from the shocks has been painstakingly slow. A recovery that has the signs of being sustainable began only in 2016, when GDP was still 4% below its peak prior to the crisis. The big puzzle is how an economy that has been ranked as one of the most competitive globally struggles for so many years to recover. While the jury is still out, our tentative explanation has three elements. First, the series of shocks were truly exceptional in size and largely permanent. Second, cost competitiveness was very slow

to react to the asymmetric shocks in the absence of exchange rate adjustment – the labour market was not up to the requirements of a specialised part of a monetary union. Third, the real flexibility of the economy, in terms of developing completely new products and reallocating resources to their production, has been insufficient relative to the needs of the highly specialised economy. It might also be said that a part of the slow reaction stemmed from a complacency that was created on many levels – in companies, labour market organisations, and among policy makers – by the success of the economy following the 1990s crisis.

An interesting aspect of the most recent crisis is that neither income disparities nor poverty have increased. A key reason for this is that employment has kept up reasonably well, as the loss of production has mainly taken the form of a decline of productivity. But this outcome also reflects a Nordic welfare state in action, i.e. strong safety nets and strong automatic stabilisation built into the tax system, both facilitated by healthy public finances at the outset of the crisis. This protection against social pain has not come without cost, however. Public finances have weakened, to a degree that has led to consolidation measures already being implemented before full employment. It can also be argued that the relative painlessness of the shock has been a factor that has slowed down the necessary adjustment in the labour market.

The Finnish experience since the 1990s clearly illustrates the two sides of the most recent phase of globalisation with regard to a small economy. On the one hand, it provides a range of opportunities that can greatly benefit an innovative and developed economy. At the same time, the specialisation needed from a small economy to reap those benefits makes it vulnerable. If the shocks are big enough, even an economy with many strong fundamentals may struggle to adjust and recover.

With no alternative to openness, the Nordic model is a good basis to make the best of it

So, what does the future look like and what should a country like Finland do? The final chapter discusses these questions. While there appears to be a cessation in the deepening of globalisation, and protectionism has received some high-visibility supporters, we do not believe there will be any permanent reversal. The technological forces that drive globalisation are simply too powerful and hold too great a promise of benefits to be overturned. No country can escape this reality. The question now, partic-

ularly for the small countries, is how to navigate the waters of globalisation in order to reap the maximum benefits and minimise the inevitable adjustment costs.

In our view, the basic approach taken by Finland, along with the other Nordics, is sound. It is better to embrace globalisation than resist it, and to focus on making the country as strong as possible as a location for value creation, and to capture a reasonable share of that value for its own citizens. This will involve: supporting and developing Finnish people's competences; making the country attractive to foreign talents; promoting innovation; allowing market forces to determine the success or failure of companies; creating a flexible labour market in order to allow the labour force to be fully employed and reallocated (as is required for efficiency); providing insurance for people against the risks a dynamic economy is associated with; ensuring a stable macroeconomic environment; and further enhancing social capital built on trust, tolerance, security and efficient and un-corrupt authorities.

It is better to embrace globalisation than resist it

Nothing in these principles is new, and no-one can argue convincingly that even this recipe would make life easy in the face of constant technological change and fierce competition. However, in our view, it is the best option, and the focus should be on the best possible application of these tested principles.

2

The phases of globalisation[1]

Economic history can be classified into phases in a number of different ways. Nevertheless, it is clear that a major break took place in the 19th century with the onset of industrialisation. The process of industrialisation has created not only a tremendous change in the quantity and variety of global production and the associated rise of welfare, but also essential changes in how, and to what degree, different parts of the world interact economically.

Richard Baldwin refers to what is a lengthy period from the start of industrialisation – i.e. from around 1820 until 1990 – as the "first unbundling", and the period from 1990 until the present as the "second unbundling". The first unbundling refers to the geographical separation of production and consumption and the associated increase of trade. The second to a similar separation of fine-grained phases of production and the associated increase of intra-industry trade – or, in other words, the emergence and growth of global value chains.

The fundamental driving forces of the first and second unbundling have been technological

As with industrialisation, the fundamental driving forces behind the first and second unbundlings have been technological. According to Baldwin, in the case of the first unbundling, the key driver was the reduction of the costs and time of transportation of goods. In the second unbundling, the key enabling factor has, in turn, been the decline in the cost and the increase of the speed of communication. Nevertheless, while technology has undoubtedly been the fundamental underlying force, the actual outcomes have been greatly affected by political factors. In some periods, they have slowed down or even reversed economic integration, while in other periods they have fostered it.

[1] This chapter presents our interpretation of the key messages in Baldwin's (2016) analysis of globalisation.

The three phases of the first unbundling

The first unbundling was originally driven by the emergence of the steam engine, which reduced transportation costs tremendously. This related to both land and sea transport. Steam ships and railroads fundamentally transformed transportation. They facilitated trade and allowed production to be concentrated in specialised factories, as well as attracted populations to agglomerate to a much larger degree than had ever been the case before. Railroads integrated different parts of continents in a way that had not previously been witnessed.dt. They were the engine of expansion of the United States (US) westwards, and were also extremely important in Europe, as well as in Russia and its expansion to the east.

The impact of the technological progress in transportation was supported by liberal trade policies. A major step in this regard was the repeal of the Corn Laws in Britain in 1846. Many countries followed suit, even though, for example, the US maintained high tariffs. While policies became more protectionist in some prominent countries, such as Germany, towards the end of the century, global trade increased enormously up to WWI. At the same time, capital movements were largely free between countries and were facilitated, in part, by the gold standard. Investment in a given country was less dependent on national savings than previously, which allowed a rapid expansion of production capacity in countries where the investment opportunities were the best. Similarly, the migration of people from Europe to the US, in order to make use of the new opportunities, enabled a rapid growth of the US economy, while alleviating the population pressure in the poorer parts of Europe where all labour could not be employed efficiently. This contributed to higher incomes *per capita* in these countries.

This first period of globalization took an abrupt end with the First World War

This first golden age of globalisation, or Act I of Baldwin's first unbundling, was associated with a very rapid increase of *per capita* production in the 'North', i.e. in many parts of Europe, the US, as well as in Japan. The progress was far less important, or did not take place at all, in the South, i.e. China, India, South America and Africa. The outcome was a 'great divergence' of average living standards across the globe.

This first period of globalisation came to an abrupt end with the onset of WWI. Technical progress did not stop but rather took new leaps through the electrification of factories and homes and the spread of the internal combustion engine in the transportation of goods and people. Still, because of political reasons, the impact of these technical advances was wit-

nessed mainly internally, in the various national economies, and not in a further international division of labour and trade.

Tariffs were raised in the US and elsewhere following the war, and particularly after the onset of the Great Depression. The world divided into trading blocks. Britain's strongest links remained with former colonies, while Germany and the Soviet Union pursued self-sufficiency and had only bilateral trading arrangements, and Japan had its own East-Asian trading bloc. While, for example, the US reduced tariffs in the 1930s, world trade did not recover much and its share of GDP remained at a lower level than it had reached before WWI, falling from its peak of 20% of GDP to levels of around 10% – 15% percent of GDP (Klasing and Milionis, 2014). This, in Baldwin's terminology, was Act II of the first unbundling.

After the Second World War trade barriers were successfully reduced over the following decades

Following the massive disruption caused by WWII, the US and its western allies placed considerable emphasis on fostering international trade in the context of newly-created international governance institutions. In addition to the United Nations (UN), the World Bank and the IMF (which was also a trade institution), the GATT was also established (which was effectively the forerunner of the World Trade Organisation (WTO)). The aim of the GATT was to reduce tariffs through multilateral negotiations based on the principle of non-discrimination, i.e. that all countries should be treated in the same way. While negotiations on tariff reductions, and later, on reducing various non-tariff barriers to trade, were painstaking processes, trade barriers were successfully reduced over the following decades with more and more countries becoming part of the multilateral trading arrangement.

In Europe, a process of deeper economic and political integration emerged in the 1950s, beyond what the GATT process would entail. The European Economic Community (EEC) of 6 countries, established in 1957, not only promoted free trade by reducing tariffs but also through creating a customs union and later a single market for goods, services, labour and capital.

The political steps to promote trade were supported by the continuous reduction of transport costs. A particularly important development in this regard was the introduction of standardised containers during the 1960s. The containers eliminated several loading and unloading phases in transportation, which led to a significant reduction of costs and to an increase in the speed of long-distance transportation of goods. While slow to take off, through the 1980s container transportation became the dominant

means of moving goods between continents. At the same time, the cost of air transportation also decreased substantially.

The result of this combination of trade liberalisation and cost reduction was a steady growth of international trade in relation to global output, even though a significant part of world population, under communist rule, remained excluded from deep global integration. From the 1950s until 1990, world trade grew by an annual rate of 5.8%, while global GDP grew by 3.9% (Kitson and Michie, 2000). This period, referred to as 'Act III' of the first unbundling by Baldwin, was associated with a very rapid but relatively steady economic growth in the developed countries. As in the earlier phases, for the most part of this period the less-developed countries did not benefit equally, and the divergence of incomes *per capita* between North and South continued.

The second unbundling

The key technological and political trends that had spurred trade in the post-WWII decades have continued, even after 1990. There have, nevertheless, been two phenomena that can be characterised as being qualitative changes. The first is the development of ICT to a level that has allowed the sale of many types of services over the internet, with non-negligible trade costs and new ways of organising production. Production processes can now be controlled from a distance, in a manner that allows different phases of production to be located in different parts of the world more efficiently than ever before. Combined with lower transportation costs – thanks to the aforementioned containerisation of sea transport and more efficient air transport – this has led to the emergence of global value chains controlled by multinational corporations. Phases of production, or even discreet tasks, have been unbundled from one another geographically.

Phases of production or even tasks have been unbundled from one another geographically

While technological development was a necessary condition for the global value chains to emerge, political factors have greatly facilitated their growth, and constitute a second qualitative change. The adoption of a market economy principle in China, and its gradual opening up to foreign trade (which began in the late 1970s but really took off from the early 1990s) made hundreds of millions of new workers effectively part of the global, market-based economic system. Similarly, the collapse of the Soviet Union and communism in the former Warsaw Pact countries

significantly widened the resource pool of the global market economy. The disappearance of the communist-planned economy as an alternative to different variations of a capitalist economic order implied that, with a few exceptions (at least until recently) no country has endeavoured to improve its economic performance by anything other than active participation in the global trading system.

In Europe, these global developments have been accompanied by further steps towards economic and political integration. The idea of a single market with the 'four freedoms', i.e. free mobility of goods, services, people, and capital, which was articulated when the EEC was established, was given a concrete form in the Single European Act of 1992. At the same time, the Maastricht Treaty set out the establishment of the European Economic and Monetary Union (EMU), which effectively began in 1999, with the common currency introduced in 2002. Through several rounds of enlargement, the number of member states in the EU has increased to 28, most notably by the entry of 10 former communist countries in Central and Eastern Europe.

The second unbundling has changed the nature of the participation and competition of a national economy in the global economic system. Previously, the predominant issue was the appropriate specialisation of an economy in the products in which it had a comparative advantage. Under the new circumstances, the issue is the role of various resources of a national economy in different phases or even tasks of production. In Baldwin's words (2016, p 12): "The first unbundling was all about allowing nations to better exploit their comparative advantages. The second unbundling is much more about allowing the firms to boost their competitiveness by recombining national sources of comparative advantages."

Workers that perform a given task compete with one another globally

The orchestrator, or initiator, of a value chain will seek to locate a given phase of the production in a place where that particular part can be produced most efficiently (i.e. at the lowest cost). This means that workers who perform a given task compete with one another globally. The abundance of workers suitable for low- or medium-skill tasks in poor, low-cost countries has implied that these countries have captured an ever-increasing share of such jobs. This has been the primary means by which the poorer countries have benefitted from the new global division of labour. The other side of the coin is that the demand for similar workers' labour in the rich, high-cost countries has declined. Along with skill-biased technical change this may have contributed to unemployment and/

or a relative decline in earnings for such workers' in the rich countries.

At the same time, the workers with skills in high demand face a larger market than before and can thus demand a higher premium for their contribution. This is why the second unbundling has contributed to a labour market polarisation in the rich countries. Production workers in manufacturing, in particular, have seen their relative position weaken.

The adjustment requirements for a national economy are, in several ways, more demanding in the era of the second unbundling than in the earlier phases of globalisation. Given the task-level competition, the demand for labour became more finely defined and individualised, rather than directed to large, homogenous groups of workers. Secondly, economic and market changes tend to be more sudden and less predictable. And finally, given that technology, rather than trade policy, is the primary driver of change, the changes are less controllable by the political decision makers than in the earlier phases. All these considerations imply that keeping the national economy's resources in efficient use requires much more flexibility than was the case during the first unbundling.

The Great Recession and the backlash to globalisation

The period from the start of the second unbundling until 2008 was economically very successful. Global growth was fast and relatively stable. Perhaps even more important was the fact that the benefits were now widely shared globally, unlike during the first unbundling. At the same time as the developed economies grew robustly, the poorer countries that had entered the global market economy grew considerably faster, also in *per capita* terms, despite their faster population growth. Hundreds of millions of people were lifted from absolute poverty, and global economic divergence turned into convergence.

The overall global trend of economic convergence has continued, while at least temporary divergence has been observed within the Eurozone

The global financial crisis of 2008 was a shock that affected production and trade around the world. Its consequences were not uniform, however. The slow global recovery and, in particular, a lower level of investment activity, in combination with adverse financial market developments, affected economic activity very negatively in several developing countries that relied heavily on the export of raw materials, the prices of which plummeted. Nevertheless, China and several other developing economies resumed rapid growth quite quickly. As many developed countries, particularly in Europe, struggled to recov-

er, the overall global trend of economic convergence has continued, while at least temporary divergence has been observed within the Eurozone.

In many developed countries, the Great Recession produced by the financial crisis aggravated the social strains caused by skill-biased technological change and globalisation: the decline of manufacturing employment and the communities being reliant on such employment. These problems have been compounded by weak productivity growth across these countries. This means that even the average incomes of the employed have grown only slowly and public finances have remained strained, which in turn has constrained, or even led to cuts, in public sector support for those suffering from the loss of market incomes.

The frustrations of the people who were hit by unemployment and relative social decline have been a fertile ground for anti-globalisation political sentiments. While other factors, such as migration and the fear of terrorism, have also contributed, the perception of globalisation not serving large parts of the population has led to a political backlash to globalisation. The election of Donald Trump as US President, who has a clear protectionist, even isolationist agenda, is possibly a visible manifestation of this phenomenon. Similarly, the popular decision for the UK to leave the EU (which is the first time this has happened in the history of the EU) might also be interpreted as an anti-globalisation sentiment.

In the summer of 2017 there are, nevertheless, signs that the anti-globalisation pendulum may have reached its apex. The US has found few supporters among the developed countries for its anti-free-trade position. Rather the contrary appears to be the case. The EU has managed to reach agreements for further trade liberalisation with both Canada and Japan. In Asia, there is an interest in continuing to push for a regional multilateral trade liberalisation without the US on the basis of the Trans-Pacific Partnership (TPP) trade agreement, from which the Trump administration withdrew in January 2017.

Towards a third unbundling?

While the first unbundling was triggered by the decline of the costs of moving goods, and the second by the decline of costs of moving information, the question now arises of the possibility of technological progress reducing the costs of 'face-to-face' contacts between people. Baldwin notes two avenues to substitute for a physical movement of people across borders. The first is to transfer brain services through 'telepresence',

which are technologies that already exist in crude forms. The second is 'telerobotics', which involves the remote operation of robots, even from the other side of the world.

While these conjectures may sound like science fiction, they are rapidly becoming a reality. Surgeons control surgical equipment over the internet to execute a surgery; military personnel control drone attacks from a distance of thousands of kilometres; politicians have campaigned in several places simultaneously in the form of 3-dimensional holograms.

The implications of such virtual migration of labour are difficult to anticipate. But they clearly have the potential to be significant.

3

A small peripheral economy during the first unbundling

In the first half of the 19th century, when industrialisation began in Britain and elsewhere, Finland had a few decades of autonomy as a Grand Duchy within the Russian empire. For more than 700 years Finland had been a part of the Kingdom of Sweden, and the political and economic institutions were very much Swedish and detached from Russia. The laws were from the Swedish era, Swedish currency remained in circulation alongside the Russian ruble, the educated people spoke Swedish, and Russians were not eligible to serve in the civil administration.

During these decades, Finland was a peasant economy. There was no real industry to talk about, with the exception of a few iron works, water-powered sawmills and a textile factory established in the 1820s by a Scottish entrepreneur. Trade with the outside world was limited, although important for a handful of small towns on the coastal areas. The main export products were tar and timber for shipbuilding.

Industrialisation spread to Finland later than to the US or to the central areas of continental Europe, such as France, Prussia or Switzerland. It really started to take off in the 1860s. In the aftermath of the Crimean War, the Russian Tsar, Alexander II, introduced a programme of liberalisation and modernisation in the Empire. The new policy orientation had a major impact on the economic and political conditions in Finland, which were freer to begin with than in the rest of the empire. The Estates were permitted to convene after an intermission of several decades and new laws were enacted. Legal constraints on economic activity were reduced and institutions and infrastructures were developed to promote economic growth. The guild system was abolished, steam-powered sawmills were allowed, and customs duties were reduced. Finland had its own currency,

which greatly improved monetary stability. The construction of railroads commenced and the first primary schools were established.

It is thus natural to consider the 1860s as being the starting point of an industrial Finland and of its participation in the international trade in industrial products. In what follows, we will describe how Finland fared in three distinct periods of the first unbundling, as defined by Baldwin: (i) the take-off of industrialisation until WWI; the protectionist, interwar-period of 're-bundling'; and finally, the post-war years from the late 1940s to 1990. During the first period, Finland became very open in terms of trade and as part of the rapidly progressing Europe. In the second period it fared surprisingly well, despite the global protectionism and the devastation of two world wars. Finally, during the last forty years of the first unbundling, Finland rapidly caught up with its peers in Western Europe.

The Grand Duchy joins the club of the take-off countries

In 1860 Finland was poor by most standards. Finland's GDP *per capita* was approximately half of the level in Germany and three quarters of the level in Sweden. In the 1860s, only a fraction of the Finnish population was employed in industry or industrial handicrafts (Hjerppe and Jalava, 2006). Industrial production employed around 20,000 people, and the urban centres were small and few. Agriculture accounted for about 60% of Finnish GDP and 80% of employment in the 1860s.

The start of the industrial period was anything but fortunate. Exceptionally harsh weather conditions destroyed harvests to a large extent in 1867. Compounded by a slow reaction of the authorities to import grain from abroad, the loss of harvest resulted in an extensive famine. Starvation and disease led to a population loss of some 10% of the pre-famine population. A poor country proved very vulnerable when left to rely on its own resources alone.

Railroads link the people and resources

Despite this catastrophe, economic modernisation proceeded. A key infrastructure element in this was the construction of the railway network. The first investments in the national railways system were made in 1862, with the connection between the state capital of Helsinki and inland waterways through the provincial town of Hämeenlinna. The next extension was the link between Helsinki and the then Russian capital, St. Petersburg, in 1870.

The railways network was further extended with two coastal harbour links in 1873–1874, and with three north-south-directed trunk lines between 1876 and 1894. Following these extensions, the second and third largest cities were also connected to the capital city of Helsinki, as well as to Russia. The central line also brought other large municipalities in central and eastern Finland into the railways system. The railways were run mainly by the state, but some privately-owned railways also served local traffic.

A key element in economic modernisation was the construction of the railway network

The railroads were important for the economic development, in a number of ways. They complemented waterways in transporting wood and forest industry products from inland to harbours. They also linked many parts of Finland directly to St. Petersburg, which was not only the capital of the Russian empire but also a very large market in itself. With the Russian rail network expanding, Finland gained excellent access to various parts of the vast empire, as the uniform rail width implied that whatever was loaded on a train in Finland could be delivered to any larger population centre in Russia.

Also important was that the expanding railroad system contributed to population agglomeration in a country where the population was extremely widely spread to begin with. Even in 1880, the Finnish population of 2 million people was almost evenly distributed, with a mean density of five inhabitants per square kilometre (Kotavaara et al. 2011). It was not until the last decades of the nineteenth century that migration to more urban centres in the southern parts of the country began to gain momentum. The contribution of the railroads to this development is obvious, as all towns that grew rapidly were situated next to railway lines.

Technology transfer and foreign skills a part of the story

The sawmill industry in Finland took a leap forward in 1857, when the earlier restrictions against the use of wood were removed with an act relating to the construction of steam-powered sawmills. Within a quarter of a century, 160 new applications were made for permission to start steam-powered mills. Even though many new water-powered sawmills were started at the same time, the wider technological change was clearly on its way. The development was also helped by the introduction of another important act in 1861, which removed sawing restrictions and stock quotas.[2]

[2] See Kuisma (1990).

The adoption of new technologies was greatly aided by foreign entrepreneurs. These entrepreneurs provided capital, know-how and, in some cases, imported skilled labour to start new production. Already by the early 1820s, a Scotsman called James Finlayson had established a textile factory using imported cotton in Tampere. In 1872, a Norwegian entrepreneur, Hans Gutzeit, opened a saw mill in a southern coastal town, Kotka, which was the origin of one of the largest forest industry companies currently in Finland.

In addition to entrepreneurs, professionals, technicians and engineers came from abroad at the early stage of the industrialisation process. With them came new technologies, machines and know-how, which were needed when many new factories were established, literally in the middle of forests. It was only in the late 19th century, with the help of an improved technical and commercial education system together with frequent foreign visits, were there enough domestic professionals available for the needs of the developing industries in Finland.

Box 3.1

Hans Gutzeit – a foreign-born moderniser of the Finnish sawmill industry

Hans Gutzeit, a Norwegian entrepreneur inherited a sawmill in Fredrikstad, Norway in 1869. The mill was the first steam-powered sawmill in Norway. However, by that time there were already several sawmills in Fredrikstad making the market rather competitive. Hans Gutzeit started to look for better opportunities elsewhere. He found them in Kotka, on the southern coast of Finland, where a large river connects the harbour town to a plentiful source of timber inland. Gutzeit established the biggest and most modern sawmill of the country in 1872. The timing could not have been better, since the end of Prussia-France war had created a reconstruction boom in Europe, implying also a strong demand for sawn goods.

At the time, there was a shortage of skilled labour in Finland to operate a modern sawmill. The problem was solved by importing the needed labour. Hans Gutzeit, being a well-known person in Norway, could attract skilled people to move from Norway to Finland to work at his newly established mill. Already by the end of 1872 the sawmill had 42 Norwegian workers, and by 1875 some 90 families had moved to Kotka. Later, many of the skilled workers moved to other establishments, spreading the know-how they had acquired in the service of a technology leader of the time.

Unfortunately, more difficult times were ahead for the sawmill industry in the second half of the 1870s, when the global economic cycle took a downturn. This also affected Hans Gutzeit, who filed a personal bankruptcy in 1880. While Gutzeit moved to Paris and eventually back to Norway, the sawmill continued under new owners and expanded again when the conjuncture improved from the second half of the 1880s. The company not only expanded sawn-wood production but also moved to higher value-added products by establishing a ground-wood plant and eventually a paper mill. Through many transformations the company established by Hans Gutzeit is currently part of Stora-Enso, a large Swedish-Finnish forest industrial conglomerate.

The forest industry takes off

Industrialisation increased the demand for construction materials in Europe, among which sawn wood was very important. Similarly, increasing wealth and better printing technologies increased the demand for paper. These trends made the forest resources much more valuable than when they could be used only as fuel or for making tar.

At the same time, technological advances made the utilisation of the Finnish forests easier and cheaper. First, steam ships reduced the costs of transporting bulky products over long distances. This was obviously very relevant for selling Finnish forest products to Western Europe.

Second, as previously discussed, the expansion of the railroads in Finland helped to link the raw material sources to mills and harbours much more effectively than previously, when water transport was the only practical means of moving large quantities of timber. At the same time, waterways were also improved, with the primary purpose of easing wood product transport – most notable among these was a new canal that connected sawmills in the Lake Saimaa area with the port of Wiborg.

Third, steam engines could be used as an alternative to power mills, which made it possible to establish saw mills in places where hydro power was not available, but where raw material availability and access to foreign markets were good. In practice, this meant coastal towns situated on rivers, which allowed massive round-wood transports from inland.

Industrialisation increased demand for construction materials in Europe, among which sawn wood was important

The breakthrough of the sawmill industry in Finland took place between 1860 and 1875, which was a few decades later than in Sweden and Norway. The timing of the take-off relates clearly to the deregulation and infrastructure measures noted earlier (Kaukiainen, 2006). These domestic policy changes coincided with changes in Britain – colonial imports were no longer preferred. This lowered the customs duties on Finnish sawn wood significantly, thus improving its competitiveness in the British market.

In a single decade, production, as well as the export volumes of sawn goods, more than trebled. Around 1875, the value of exports of sawn wood was ten times higher than that of tar. In the late 1870s, at least 50% of all industrial products exported from Finland consisted of timber products.

The rapid expansion of the sawn-wood production and export was thus facilitated by simultaneous positive changes in demand and supply conditions. The following decade showed that these conditions could be volatile,

and demand for Finnish products could also decline abruptly. In the late 1870s, the international outlook weakened steeply. Furthermore, Russia began to supply sawn wood to the western market. As a result, Finnish sawn-wood production volumes declined by 30%, and prices by around 35% during 1877–1879. It was only in 1889 when the volume of production surpassed that of 1877.[3] The conjuncture, however, improved in the 1890s and the Finnish sawn good exports started to rise again, reaching record quantities in 1913. Finland was then the third largest producer of sawn-wood products in Europe.

While sawn timber was the most important forest product for Finland, it was not the only one. There was a deliberate pursuit to create more value-added from the raw material. Pulp and paper were such products. As a result, following the 1870s, pulp and paper production grew rapidly, reaching about 45% of the value of sawn-wood production just prior to WWI (Kaukiainen, 2006). However, the highest value-added products, i.e. paper, accounted for only about 10% of the total forest product exports.

The breakthrough of the sawmill industry in Finland took place between 1860 and 1875, which was a few decades later than in Sweden or Norway

Interestingly, there was also an increase at the low end of the value-added scale, i.e. round wood. This segment of products was given a push by the construction of railways and timber-floating along the interior waterways, but also by the declining cost of maritime transport. Hence, interestingly, improved transport technologies and declining transport costs did not lead to increases in trade of higher value-added products only, but in some cases just the opposite.

The forest industry expanded more quickly than any other sector of the economy, and became the most important industry and source of export revenues for Finland. Between 1860 and 1913, the total value of forestry exports increased *circa* twenty-five-fold, and their share in all exports rose to 75%.

The rest of the economy follows

While the forest industry was the growth engine of the industrialising economy, other branches also took off and grew significantly. Some of them were directly linked to the demands generated from the growing forest industry.

The increasing exports of sawn wood also led to a corresponding increase in the demand for shipping – the volume of Finnish sea-borne exports dou-

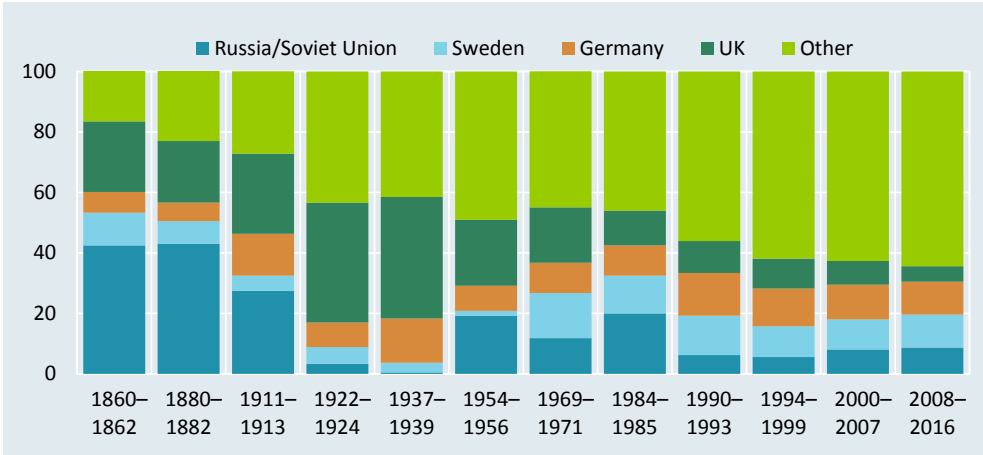
[3] See Heikkinen and Hoffman (1982).

bled between the early 1870s and 1880s (Kaukiainen, 2006). The growth of exports guaranteed a corresponding growth of tonnage, due to the fact that shiploads were, in practice, reserved for Finnish ships. The *per capita* tonnage was the fifth largest in the word in 1875 (Kaukiainen, 1993).

In manufacturing too, textiles and metal products produced by a number of foundries became noteworthy export industries. Unlike in the case of most forest industry products, particularly sawn wood, which was exported to Western Europe, the rest of the industrial products from Finland went, in practice, to Russia. Over time, Finnish paper production also found markets in Russia. The growth of these exports to Russia was based on the facts that the quality of such products was generally higher in Finland than in Russia, and that the barriers to trade were lower than from outside the Russian empire because of logistics and lower tariffs. For example, since 1859, Finnish paper exports were exempt from tariffs in Russian trade, whereas other countries suffered from duties, which were raised further in the 1870s. On the other hand, low barriers to trade *vis-á-vis* Russia did not harm the emerging Finnish industries, as the relevant Russian industry remained undeveloped.

Thus, interestingly, Finnish export markets were split into two blocks according to the type of products. Sawn wood and pulp and paper were exported to Western Europe, as such products were globally competitive. Russia, in turn, was the market for other manufacturing products, in addition to paper, in which Finland had a specific advantage, being a part of

Figure 3.1
Distribution of exports by country, selected years, %



Sources: Kaukiainen (2006) and Statistics Finland.

the Russian empire and hence with good connections and a preferential tariff treatment. Agricultural products had a similar advantage and their exports to St. Petersburg increased at the same time as Finland industrialised.

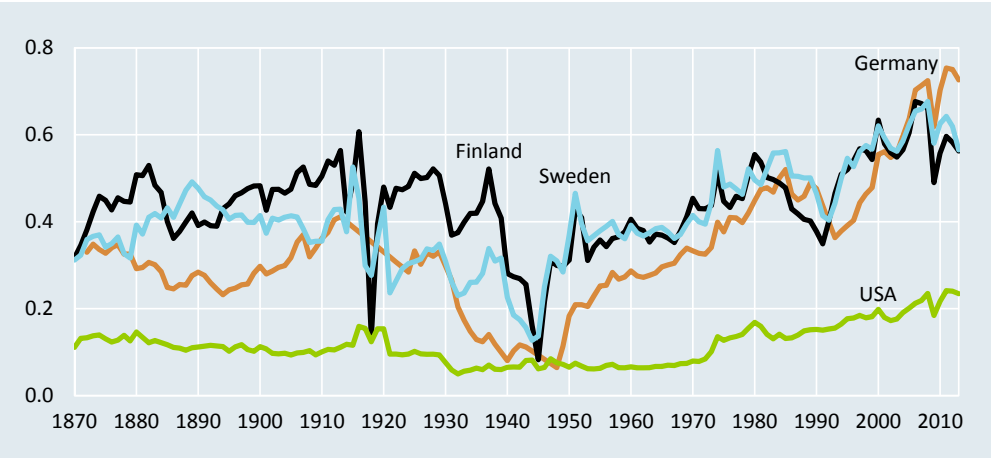
The dominant role of the forest industry during this period is reflected in the country composition of Finland's exports. Before the rise of the pulp and paper industry, Russia had been the most important export market, with almost a half of Finnish exports going there towards the end of the 19th century. With the growth of the forest industry, and despite the fact that a part of the paper production went to Russia, Russia's share in exports declined significantly. During the 1890s, Britain overtook Russia as Finland's first export market. In 1913, just before WWI, Russia's share in Finnish exports was 28% (see also, Figure 3.1).

Expansion of trade a trigger of economic development

Since the 1860s Finland globalised rapidly. Between 1870 and 1913, the export volume grew almost nine-fold, and that of imports even fifteen-fold. This implies, on average, a 50% and 65% increase per decade, which is also faster than the estimated growth of world trade in the same period (Kaukiainen, 2006).

While Finland was lagging behind Britain and many other countries in terms of industrialisation, it was already a relatively open economy in the 1860s, and this openness increased significantly up to WWI, despite a temporary cyclical drop in the 1880s (Figure 3.2). In terms of its share of

Figure 3.2
Foreign trade (exp+imp) / GDP, 1870–2013



Source: Jorda et al. (2017).

foreign trade in GDP, Finland was even more open than Sweden or Germany. In the period 1860–1914, it was only between 1885 and 1895 that foreign trade, as a share of GDP, was higher in Sweden than in Finland.

Finland's industrialisation was very tightly linked to exports, given that the dominating forest industry produced overwhelmingly for export markets, and also that the two other important branches, i.e. the manufacturing of textiles and metal products, also sold mainly for export. The share of these two branches in exports amounted to more than 20% at its peak in the late 19th century. The expansion of export industries since the early 1860s was, in turn, the trigger of a wider economic dynamism. Export revenues created purchasing power that could be used to import advanced investment goods as well as consumer goods. Higher incomes allowed domestic demand to grow and economic growth accelerated.

The expansion of export industries since the early 1860s was the trigger of wider economic dynamism

The benefits of the export growth for the economy were even greater than the volume increase would suggest. The terms of trade developed very favourably. The export price index increased by 50% more than the import price index between 1860 and 1913. This allowed import volumes to grow faster than export volumes, without the balance of payments becoming a constraint.

It was significant for the economy, and for the society as a whole, that the revenues from the export industries created purchasing power throughout Finland. The key raw material for the export industry, timber, was widely spread in the country and even forest ownership was widely distributed. Thus, the revenues from timber sales were widely shared and the felling, transportation and processing provided many kinds of jobs for people all across the country. The economic dynamism created by the forest industry was thus not limited to a few localities, even though the forest industry agglomerations grew rapidly and were an important driving force of urbanisation.

Finland becomes a member of the prospering club

Finland's GDP grew by an annual rate of 2.73% between 1870 and 1913, and by 1.44% in *per capita* terms. The GDP growth rate was among the best in Western Europe, slightly slower than in Germany, but faster than in Sweden, Denmark, Norway, Britain or France (Table 3.1). However, growth in *per capita* terms was quite close to the average rate in Western Europe, and slightly less than in Sweden or Denmark, for example. The

growth was also, on average, slower than in the US, with the difference emerging in the early part of the period. Though from the 1880s, Finland grew in *per capita* terms equally as fast as the US.

Finland thus became part of the western world – a country that adopted new production technologies, created specialised manufacturing and rapidly expanded trade based on that specialisation. In contrast, most parts of the Russian economy remained backward relative to its western peers. This difference underlines the importance of institutions. In Finland, the political and legal traditions were those inherited from the Swedish era. Serfdom, which was abolished in Russia only in 1861, had not existed at all, and land ownership was far less concentrated than in Russia.

However, given the low level from which it started, Finland remained a relatively 'poor relation' to the more advanced western European countries and to the US. Given the broadly similar *per capita* growth rates it also did not really catch up with these economies during this period (Figure 3.3 and Figure 3.4).

The low-income level, high fertility rate, combined with the opportunities that emerged in the US and better accessibility, led to a very significant emigration from Finland to the US at the turn of the century. Even in this respect, Finland was no outlier, but rather an example of how population pressures partly resulted in emigration, despite rapid economic growth. Some 280,000 Finns emigrated to the US before WWI. Of those, at least around 200,000 never returned. The net migration to the US was around 7% of the population (in 1913). This is broadly a similar fraction as in the other Nordic countries at the time.[4]

Table 3.1
Average annual GDP growth in selected countries between 1870 and 1913, %

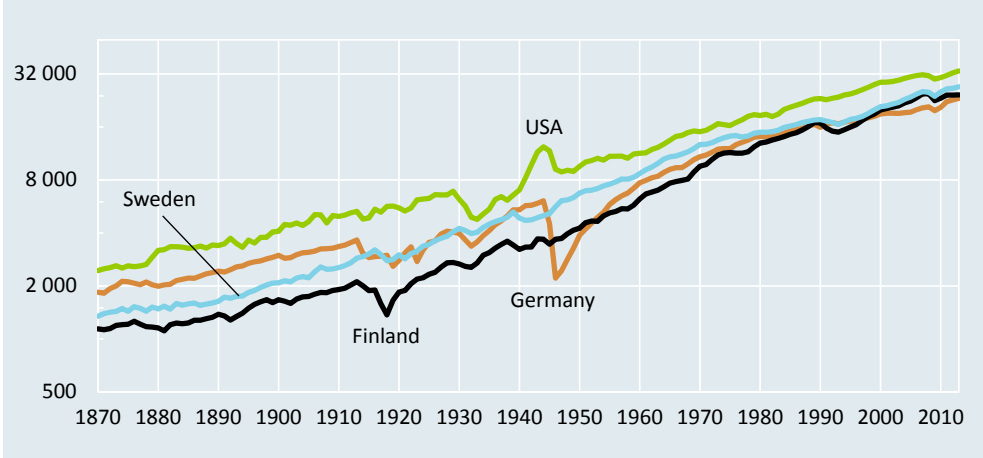
	GDP growth	GDP per capita growth
Finland	2.73	1.44
Sweden	2.49	1.78
Norway	2.19	1.38
Denmark	2.66	1.57
Germany	2.78	1.61
France	1.63	1.45
UK	1.90	1.01
USA	3.94	1.82

Source: Jorda et al. (2017).

[4] Source: https://en.wikipedia.org/wiki/United_States_immigration_statistics.

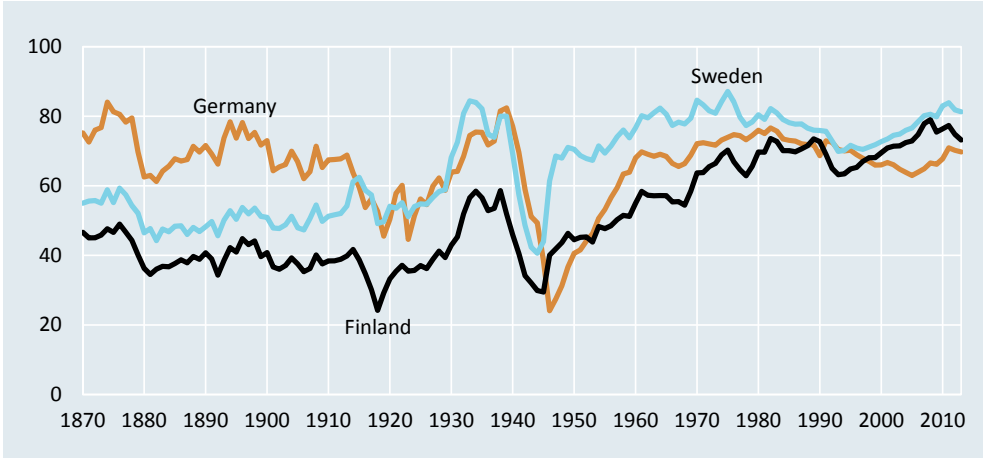
The migration to the US obviously weakened the economic growth potential in Finland. Nevertheless, it was not solely a negative thing. Remittances were important sources of income for many families, and many of the return migrants came back with new skills and new types of entrepreneurial attitudes.

Figure 3.3
Real GDP per capita (PPP) 1870–2013, log scale



Source: Jorda et al. (2017).

Figure 3.4
Convergence to the US GDP per capita level 1870–2013, USA GDP per capita = 100



Source: Jorda et al. (2017).

An independent nation prospers in difficult circumstances

WWI created a sudden break in the Finnish economy by slashing its western trade to a fraction of earlier levels (Kaukiainen, 2006). This was a considerable shock to the economy, leading to mass layoffs in the sawmill industry. However, the impact war largely compensated for by an increased demand for all kinds of goods that Finland could produce for Russia, who could no longer trade with Western Europe as it did before the war. Metal, textile and paper industries even experienced booms in the early years of the war. While the Russian share of the Finnish exports had been 28% in 1913, it increased to 96% in 1917. Extensive fortification works also provided many jobs in Finland during the war years up until 1917.

The February and October Revolutions in Russia, and the general weakness of the emerging Soviet Union, created circumstances that allowed Finland to gain independence at the end of 1917. Just like the beginning of the industrialisation era in the 1860s, the start of the new independent country was nevertheless very difficult. The economy had started to weaken significantly during the course of 1917, as the events in Russia led to a discontinuation of the fortification works, and the chaos in Russia eliminated the only remaining export market. Import possibilities vanished. The Finnish harvest was also bad in 1917. A shortage of food led to price increases and contributed to social unrest.

A bitter civil war followed in the spring of 1918. The newly established government, formed by the centre-right political forces, began to disarm the Russian troops remaining in Finland. At the same time, militants on the left took to arms to stage a socialist revolution, instigated by the Bolshevik Russia and supported by many of the Russian soldiers still in the county. Over the course of a few months, the government forces (the "whites") emerged victorious, due in part to the help of the imperial Germany. The war and its aftermath, with tens of thousands of the rebellious "reds" confined to prison camps, further damaged the economy. Famine and disease ravaged the country and thousands of lives were lost in the camps. The war and summary killings of people on both sides left the country badly divided.

Between 1914 and 1918 Finland experienced the biggest collapse of production ever registered

From 1914 to 1918, Finland experienced the biggest collapse of production ever registered, with the bulk of the decline taking place in the two years of turbulence during 1917 and 1918. The estimated decline of GDP between 1913 and 1918 was 33%. The collapse of economic activity was even larger than in Germany, and the difference in GDP *per capita* relative to the peaceful Sweden and the US increased steeply (Figure 3.4).

The economy reorientates surprisingly well

During the aftermath of the civil war and at the end of the WWI, the Finnish economy faced enormous pressures to restructure. Internally, there was a great need to provide livelihoods for the tenant farmers and other landless people in the countryside, where the vast majority of Finns still lived. To do this, a major land reform was implemented. The establishment of many, small independent farms helped to improve the food supply and stabilise the society politically. However, it also had a lasting impact on the structure of Finnish agriculture, with the small farms being in a weak position to make use of the productivity-enhancing technologies that were to emerge later.

Externally, there was a need to reorientate foreign trade. The Russian market had ceased to exist – 0.1% of Finnish exports in 1919 went to Bolshevik Russia. The defeated Germany, which for a while seemed like a major potential trading partner, was in a deep recession. By default, Britain emerged as the export market with most potential for Finnish exports. Fortunately, the demand for the main Finnish export products of sawn wood, pulp and paper, remained robust. Furthermore, the disappearance of Russia as an exporter of timber created room for the other (mainly Nordic) producers, which supported the price level.

Finland remained much more open than Sweden throughout the interwar period in terms of the ratio of foreign trade to GDP

The Finnish export industry remained successful. There was a rapid growth in western trade soon after the war. The pre-war share of foreign trade in GDP was almost re-attained by 1925. Finland thus reached the same level of economic openness in the 1920s as just before the war (Figure 3.2). Interestingly, the Finnish performance was much better in this regard than that of its neighbour, Sweden, which had been saved from the ravages of the war and which benefitted equally well from the exit of Russia from the timber market. In fact, Finland was to remain much more open than Sweden throughout the interwar period, when measured by the ratio of foreign trade to GDP.

Protectionism concerns Finland, too, but the damage remains limited

One of the consequences of WWI was a return to more closed and, in some cases, almost autarkic economic relations. The newly established Soviet Union traded very little with the West. Tariffs were increased by many countries, even by the 1920s. The Great Depression led to further

protectionist measures and competitive devaluations. The Nordic countries were influenced by this change in atmosphere and their trade policies became more active, with a similar orientation – increased protectionism in order to protect domestic production.

In Finland, a new customs tariff was introduced immediately following the country's independence. The reform raised tariffs to around 10% of the import value, and they were raised to over 20% in 1923 (Kauppila, 2008). The Great Depression of the 1930s stirred up the protectionist mood further, leading to yet another round of rises in tariff levels through the decade.

In addition to becoming a politically acceptable option in the interwar period, there was also another rationale for increasing tariffs. Tariff charges were an important source of government revenue in Finland. They accounted for around 40% of the total revenues at the start of WWI (Kauppila, 2008). Growth in foreign trade, together with higher tariffs, increased the proportion to 55% – 60% in the first decade of independence, and it remained at that level throughout the whole interwar period.

By international comparison, Finland remained a relatively open economy even during the protectionist era of the 1930s. Both export and import levels doubled in the first two decades of independence. This was an impressive performance, given that international trade increased only by 1% a year, or by 20% during these two decades, and that, for example, the Soviet Union restarted exporting timber and timber products towards the end of the 1920s. Finnish exports also increased a great deal faster than during the latter half of the 19th century.

Both export and import levels doubled in the first two decades of Finland's independence

One of the key factors that explains Finnish export success during this period was its pragmatic attitude towards the exchange rate. While Finland, along with many other countries, returned to the Gold Standard in 1926, the new linkage took place at the prevailing exchange rate, which implied more than an 80% devaluation relative to the dollar parity before the war. In this, Finland deviated from the other Nordic countries, who re-established the old parity. Similarly, Finland was quick to abandon the Gold Standard again during the Great Depression. The Finnish currency depreciated by some 50% in two years, and when a fixed exchange regime was re-established in 1933, the link was made to pound sterling, which had depreciated significantly relative to the dollar. It could be argued that the Finnish currency remained very competitive throughout the interwar period. (Kuusterä and Tarkka, 2011).

The relatively extensive participation in international trade did not, however, lead to a climb in the value-added ladder of production. There was no significant change from resource-intensive to high-value-added products in Finland during the interwar period. Export growth came mainly from pulp rather than paper. This was at least, in part, due to tariff policies – tariffs for finished goods were higher than for those for semi-finished, lower-value-added goods. Finnish pulp was consequently more competitive on the world market than Finnish paper. Furthermore, pit props and other raw timber products continued to occupy an important position in Finnish exports (Kaukiainen, 2006). Hence, even though Finland succeeded rather well in trade during these years, the country still kept its old role as a producer of relatively low-value-added bulk products among western countries.

Finland did well in the interwar period and survived WWII

The recovery after 1919 was swift, and the 1920s was a good period of growth for Finland. The Great Depression hit Finland in much the same way as it did other countries, but in relative terms the loss of production and jobs was less than in the US or Germany, while somewhat more than in Sweden. The recovery from the Depression until WWII was broadly as good as in Sweden and Germany, and clearly stronger than in the US (Figure 3.3).

Industrialisation proceeded steadily and services also expanded, even though agriculture continued to occupy the largest part of the population. The share of primary production in employment decreased, while that of secondary production and tertiary production rose to some extent over the period 1920–1938. Nevertheless, on the eve of WWII, the share of primary production in labour input was still around 40%. Earnings increased across the board.

Efforts in the field of education were expanded significantly, initially by making primary school compulsory for all in 1921. After a while everyone attended school for at least 6 years. After the first 4 years, the best students could continue into a middle school for 5 years, and following that a further selection for a 3-year gymnasium (upper secondary school). While the number of middle schools and gymnasiums increased over decades, the access to such schooling remained limited, particularly in rural areas. Many of the schools were also private, charging a (modest) tuition fee and requiring the students to buy their own books. The concept of

equal opportunities did not apply to education in Finland until the late 1960s and early 1970s.

In social and labour policies, Finland began to follow its Nordic neighbours during the interwar period. Labour laws limited the working day to 8 hours as a rule and put constraints on child labour. Laws on social assistance, unemployment insurance, health care and pensions established the rudiments of a social security net.

The economic and social progress made by the end of the 1930s helped Finland survive the Second World War as an independent nation

The economic and social progress made by the end of the 1930s can be assessed as being an important factor that helped Finland survive WWII as an independent nation. A country that had been bitterly divided by a civil war only two decades earlier, turned out united in the face of Soviet aggression in 1939, and successfully defended its independence with considerable sacrifices through the different phases of the war.

WWII was a major shock on society and the economy in Finland. Around 90,000 lives, or 2.3% of the pre-war population, were lost in combat. Some 10% of the total land area had to be ceded to the Soviet Union, and 420,000 evacuees from ceded areas, representing 11% of the total population, had to be resettled in the remaining parts of the country. Finland was also forced to pay substantial war reparations to the Soviet Union. The reparations corresponded to 5% – 6% of the annual GDP in the late 1940s, and the payments continued until 1952.

Interestingly, despite the fact that the capital stock was substantially reduced by losses in the ceded areas, some war damages in the rest of the country, and by missing replacement investment, GDP did not take a big hit during or in the immediate aftermath of the war. This reflected the extraordinary mobilisation of the working-age population for the war, and resettling and reconstruction activities. Given that a large fraction of the production was directed to the war effort, consumption opportunities obviously plummeted during the war. Rationing became a central feature of the distribution of the basic consumption goods and was phased out only very gradually after the war. The import of passenger cars was subject to import permits until as late as 1962.

During the period from the start of the WWI to the end of WWII, when globalisation took a downturn, Finland remained relatively open and grew quite well by international comparison. Its nearest Nordic peer, Sweden, posted better GDP *per capita* growth, but this is quite understandable as

it was saved from the ravages of the two war periods. Finland managed to catch up a little with the US, even if less than Sweden did. Finland's income *per capita* level rose from around 42% of the US level in 1914 to 46% by 1949. In comparison, the Swedish income *per capita* was 61% of the US level in 1914, but rose to 71% by 1949.

The great catch-up in the post-war decades

Just as during the interwar decades 25 years earlier, the Finnish economy post-WWII was again faced with major restructuring challenges. More than 10% of the population had to be resettled. The depleted capital stock was in great need of replenishing. Finland had to find ways of producing and financing large quantities of new types of products as war reparations. Foreign trade had to reorientate. During the war, most foreign trade had been discontinued. The little trade that took place was with Sweden and Germany. The latter was now in ruins and divided.

A shortage of financial resources to industrialise and to build urban infrastructure on a large scale, along with various political factors, dictated the early adjustment strategy. The evacuees were resettled mainly in rural areas, where larger landowners were forced to cede land for resettling, and people were encouraged to clear forests for new farms. The settlement policy further accentuated the small-scale nature of Finnish farming.

Finland adopted a growth strategy based on a high investment ratio, to be financed by forced domestic savings. The primacy of investment over consumption, and the mobilisation of savings to support it, was prominently stated in 1952 in a famous booklet "Has our country patience to prosper?" written by the Prime Minister of the time, and later President, Urho Kekkonen. External financing was difficult, partly due to political reasons. Finland was not considered to be very creditworthy by foreign investors following the war. As a sign of the delicate situation, in 1947 Finland even declined the offer to take part in the Marshall Plan (i.e. the European Recovery Programme, or ERP, which was a US initiative designed to help rebuild western European economies in the aftermath of WWII) because of pressure from the Soviet Union.

To implement the strategy, the tight regulation of the financial system introduced in the 1930s, and reinforced during the war, was continued. The regulatory regime was comprehensive, involving capital controls, constraints on debt issuance by companies, regulation of interest rates on deposits, as well as bank loans, lending guidelines by the central bank, etc.

Investment efforts concentrated initially on building the capacity to produce goods for the war reparations. In practice, this required a significant expansion of the metal product industry, which heralded the beginning of diversification in the Finnish industry, even though the forest industry would remain the backbone of the Finnish economy for decades to come.

A second pillar of the growth strategy was to open up the economy to foreign trade and international economic co-operation. The rationale was both economic and political. It was widely acknowledged in society that only specialisation and trade would allow rapid growth and improvement of living standards. At the same time, the participation in trade with the western economies, and in the institutions created for economic co-operation, would help to counteract the political pressures from the mighty Soviet Union next door.

A third element in the economic strategy emerged in the 1960s – a strong expansion of the education system and building a welfare society following the Swedish and other Nordics' example. While very difficult initially, the overall strategy turned out to be very successful. In the four decades following the war, Finland not only recovered quickly but grew much faster than most of its European peers, as well as the US. Finland made a huge leap in catching up with the richer countries during the last period of the second unbundling.

Box 3.2

Valmet – from artillery works via war reparations to technological frontier in metal industries

The end of the war and the reparations transformed many Finnish companies significantly. A state-owned artillery factory, Valtion Tykkitehdas, is a case in point. During the war, the company manufactured mainly artillery pieces, and took care of their repairs and spare parts. After the war, the production was reoriented towards products that could be delivered as war reparations to the Soviet Union: log lifts, log bundling equipment, locomotive and bandsaws, among other things. Know-how created with these products made the basis for later transformations in production.

After the reparations were completed, the company, renamed Valmet in 1951, focused on developing new products, including paper machines. The first two paper machines manufactured were delivered to Poland in 1953. Paper machines became the workshop's most important focus in the 1960s, and Valmet became an internationally known company in the mid-1960s after delivering several machines to the world's leading paper industry countries. The machine delivered to Continental Group Inc. in 1972 was the world's widest machine, with the highest output at the time.

After several mergers, acquisitions, and finally a de-merger, Valmet currently concentrates on supplying technologies, automation and services for the pulp, paper and energy industries. Its net sales amounted to 2.9 billion euros in 2015 and it has some 12,000 employees globally. Valmet is listed on the Nasdaq Helsinki.

Finland is keen to expand trade and does so successfully

The external economic environment of post-WWII Finland was very different from that following WWI. A change that was specific to Finland was the emergence of the Soviet Union as a major trading partner, close to the degree to which Russia had been prior to WWI. The war reparations proved the imports from Finland to be valuable for the Soviet Union, which did not trade much with the West. A bilateral trading arrangement was set up within which the payments for exports and imports took place on a clearing account without the use of hard currency. The extent and contents of the trade was agreed at a high political level, which implied that commercial aspects were often overlooked. For example, the Finnish companies could charge higher prices than they could obtain for similar products in the West, and sometimes inferior quality Soviet products were imported in order to maintain the agreed level of trade.

Trade liberalisation characterised much of Finland's post-war international economic relations

Even more importantly, both directly and indirectly, were the trade liberalisation and later the liberalisation of capital movements, that were to characterise much of the post-war international economic relations. A key institution in this regard was the GATT, within which the participating countries committed themselves to negotiate reciprocal and mutually advantageous cuts in tariffs. Finland joined the GATT in 1950. Finland also joined the other central multilateral organisations, the IMF and the World Bank, soon after their establishment in 1948, and the OECD, with some delay, in 1969.

France, West Germany, Italy and the three Benelux countries founded the EEC in 1957, with the aim of promoting economic integration beyond just free trade. Although the UK was not interested in such integration at the time, it considered free trade to be important, as did several other European countries. These countries went on to establish EFTA in 1960. For Finland, joining the EEC, and even EFTA, was politically difficult, because the Soviet Union considered these organisations to be hostile. Nevertheless, Finland became an associate member of EFTA in 1961, while granting similar preferential treatment in trade to the Soviet Union, as for the EFTA members.

The decision of the UK to join the EEC in the early 1970s created a further dilemma for Finland, as the Soviet Union continued to resist the expansion of the EEC and, in particular, Finland's membership of this western institution. A solution was found in a free trade agreement with the EEC, in combination with similar arrangements with the Soviet Union and smaller communist countries.

Participating in the western trade liberalisation facilitated a strong increase in trade with the countries of Western Europe, while the bilateral trade arrangement with the Soviet Union did the same with regard to trade with it and the rest of the communist bloc. Foreign trade, as a share of GDP, increased consistently from the late 1940s to the late 1970s, in line with a similar development in other western countries (Figure 3.2). Following the brief interruption during the war, Britain again became the most important destination for Finnish exports, with paper, pulp and other wood products constituting the bulk of the exports for many decades. In imports, West Germany occupied the same position, with machines and motor vehicles being the main import items.

Soviet trade also became very important to Finland, but its composition was rather different from its trade with Western Europe. Finland's exports to the Soviet Union consisted of machines, textiles and other manufactured goods, whereas the imports were mainly oil and other fuels and raw materials. The value of the Soviet trade depended very much on the price of oil. When the oil price was low, the value of the Finnish exports also had to be low, given the nature of the bilateral trading system. During the 1960s, the share of Soviet trade varied between 12% and 15%, but it increased to over 20% following the oil crises in the 1970s (see Figure 3.1). The balanced nature of the trade implied that the oil price shocks of the 1970s automatically increased Finnish exports to the Soviet Union. Thus, while Finland's terms of trade weakened and reduced purchasing power in Finland, the increasing export demand supported activity more effectively than in most western European countries.

In contrast to the interwar period, there was a significant improvement in the value-added of Finnish exports over time. The forest industry moved from timber and pulp to increasingly high-quality paper, and the share of technology industry exports grew. Nevertheless, high-technology products continued to comprise a minor share of the total exports – around 6%, even as late as 1985. In any case, Finland's exports to the West became increasingly similar to its imports. An increasing share of Finnish trade became intra-industry, which was particularly the case regarding trade with neighbouring Sweden. Sweden's share of Finnish metal, and other such manufactured goods, rose to 30%, while that of other EFTA countries rose to 20%.

As previously, the increase in trade was also reflected in the Finnish shipping industry. Its capacity increased from some 650,000 gross tons in 1950, to more than 2.5 million gross tons by the beginning of the 1980s. As a

result, the tonnage per population ratio in Finland ranked sixth in the world in 1975, though all the Scandinavian countries ranked even higher.

The building of a welfare state and the expansion of education take big leaps

In the 1960s, Finland began in earnest to develop policies and create the institutions of a welfare state, following in the footsteps of its Nordic neighbours, Sweden in particular. There were three major reforms in social security in the 1960s, which provided support for three types of eventualities – unemployment, old age and sickness.

The unemployment benefit reform of 1960 created a statutory unemployment insurance scheme. The rural unemployment problem was dealt with by establishing an unemployment allowance scheme in parallel with the unemployment fund scheme administered by the trade unions.

A system of earnings-related pensions was introduced in 1961 to complement the universal national pension scheme introduced in the 1930s. The defined benefit system was originally funded by the employers alone, but subsequently an employee contribution was also introduced. From the outset, the pension rights were fully portable, i.e. they were retained when the employee changed employer. The system, which remains in place today, is rather unique, in two ways. First, it is partially funded and only partially 'pay as you go'. Second, while the system is compulsory to all employers and employees, and the parameters are set in detail by legislation, it is run by private companies, the administration of which is dominated by labour unions and employer organisations.

A third significant reform was the introduction of compulsory sickness insurance in 1963. It included two main forms of compensation: medical care insurance, which reimburses the necessary costs in case of illness, pregnancy or childbirth; and daily allowance insurance, which compensated for the loss of earned income due to these circumstances. From the early 1970s, the provision of universal tax-funded health care services was greatly expanded. The provision of these services was made the responsibility of local authorities, though with financial support from the state.

Over the years, the coverage and generosity of the social security net has changed considerably. Until the early 1990s, the change was more or less unidirectional – greater benefits for a wider group of people. Since the economic crisis of the 1990s (discussed later), and with weakening demographics, the financial sustainability of the provision has received more attention, with cuts in benefits also taking place.

From the early 1960s onwards, these social policies were seen not just as a way of improving the lot of the less well-off people as such, but also as a means of promoting economic growth by helping to share risks (see, for example, Kuusi, 1964). Also apparent was an element of 'co-opting' the labour unions and the left-wing political parties in support of the market economy, in the context of the ideological competition between capitalism and communism. This was very strongly felt in Finland, especially in view of the proximity of the Soviet Union and a large communist party until the 1980s. The role given to labour market partners in the administration of important elements of the social safety net is an example of this.

Social policies were seen not just as a means of social improvement but also as a way of promoting economic growth by helping to share risks

While Finland followed Sweden and the other Nordics in the construction of the welfare state, the size of the public sector remained smaller than in the other Nordic countries throughout the period of the first unbundling (Table 3.2) The share of public expenditure in GDP reached and in fact exceeded those in Sweden and Denmark only in the post-2008 crisis, when Finland's GDP declined substantially.

An expansion and upgrading of the education system accompanied the creation of the social security system, so as to provide adequate education for the 'baby-boom' generation born after the war. While the expansion of the middle schools had already accelerated during the 1950s, gymnasium education, which was a prerequisite to university studies, was greatly expanded from the early 1960s. The number of matriculation exams passed at the end the gymnasium increased from 6,000–7,000 in the early 1960s, and to 20,000 by 1970 and 30,000 by the early 1980s.The expansion of secondary education also involved a reform of vocational education by increasing its volume and redefining the relevant sectors of vocational education.

Table 3.2
The public sector expenditures in the Nordic countries, % of GDP

	1960	1970	1980	1990	2000	2010	2015
Finland	27.7	30.5	40.0	47.9	48.0	54.8	57.0
Sweden	31.3	43.0	60.0	61.0	53.6	51.2	50.2
Denmark	25.2	40.2	56.2	56.0	52.7	56.7	54.8
Norway	31.3	41.0	50.7	54.0	42.0	45.0	48.8

Source: Hannikainen et al. (2016), OECD (1987), OECD and Statistics Sweden.

These steps in the secondary education were followed by a rapid expansion of the university system. New universities were established all over the country, and existing, specialised higher education establishments were upgraded to full universities. The number of university students tripled in the course of the 1960s, to 60,000, and further increased to more than 100,000 by 1990.

Finally, in the early 1970s, a major reform of the primary education was implemented. A 9-year comprehensive school replaced the old 4(6)-year primary school and middle school. This provided similar compulsory education to all children across the country up to the age of 15. In addition, the curriculum was reformed, along with new pedagogical approaches.

While the intrinsic value of education figured highly on the reform agenda, the needs of the economy and the demand for some specific skills played a significant role in the reforms that were implemented (Lampinen, 2000). In the 1940s and 1950s, the focus of policies was on enhancing the general education level of the people. With the formation of the welfare system in the 1960s and 1970s, higher education became an important provider of public employees and that type of social science graduates that were needed then. In the 1970s and 1980s, the needs of the private sector became more relevant, and towards the 1990s further development in technical fields, together with the emergence of the ICT sector, increased investment in higher education in these fields (Koski et al., 2006).

The investment-centred strategy works but not without negative side effects

The strategy of promoting investment took many forms. An important element was the establishment and rapid expansion of state-owned companies to exploit Finland's natural resources, many of which were located in the rural north-east of the country. These companies operated not only in the forest industry but also in the mining and metal industries. In addition, private companies were encouraged to invest heavily through tax policies and a specific policy of 'relending' a significant part of the pension contributions to the companies.

The investment ratio took a leap after the Second World War, rising from an average of 15% in the interwar period to more than 25% in the 1950s

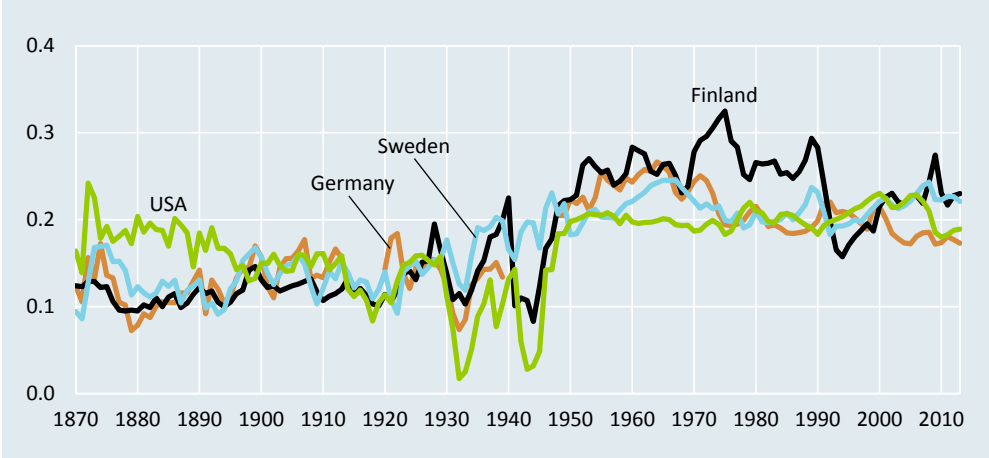
The strategy was very effective in terms of raising investments and keeping their level high. This can be seen in Figure 3.5, which shows the investment ratio (investments relative to GDP) in Finland over the period 1860–2013. The investment ratio took a leap following WWII, rising from an average of 15% in the in-

terwar period, representing the earlier normal times, to more than 25% in the 1950s. The Finnish level was higher than that of Sweden, the US, or even Germany, which also needed to rebuild a great deal of its infrastructure after the war.

During the 1970s and1980s, the Finnish investment ratio reached close to 30%. Consequently, the differences between Finnish and Swedish, US, and German investment ratios grew substantially – the Finnish investment ratio was around 5–10 percentage points higher than in any of these countries.

The high investment level undoubtedly supported the rapid growth of the economy through a fast accumulation of the capital stock. Over time it nevertheless became obvious that the massive investments were also bound to involve inefficiencies. A thorough analysis by Pohjola (1996) shows that the growth of total factor productivity was quite low in Finland for an extended period. Furthermore, the reason for the weak productivity growth was not that the investments had been tilted towards real estate, which have often turned out to be less efficient than investment in machines and equipment. It was more to do with the fact that the investments in machines and equipment were, as a share of GDP, clearly higher in Finland than in an average OECD country over the period 1960–1985. The sole country with a higher GDP share of such investments was Japan.[5]

Figure 3.5
Investment-to-GDP ratio, 1870–2013



Source: Jorda et al. (2017).

[5] See De Long and Summers (1991) for more details. In Finland the average share of investments on machines and equipment of GDP over the period 1960–1985 was 12.1, while the figure in Germany was 8,9 and in the US 7,6. De Long and Summers do not have data on Sweden included in their paper.

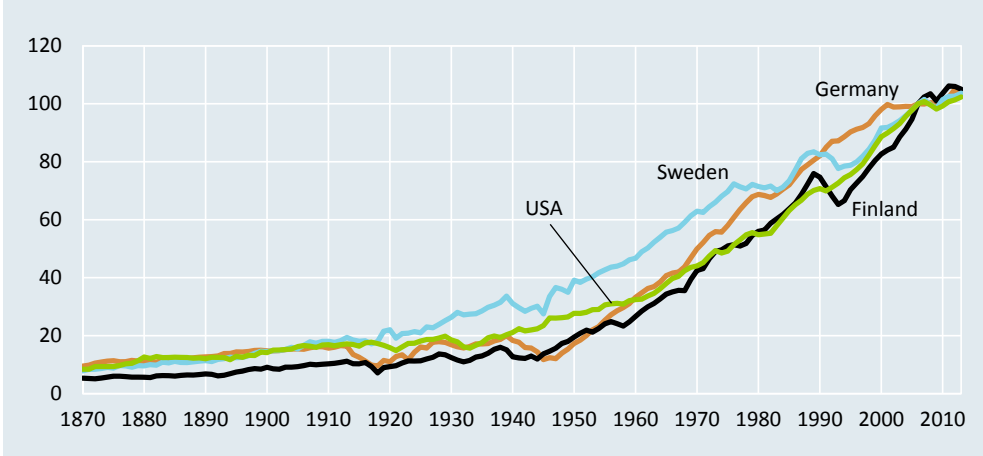
The flip side of the investment strategy was that private consumption in Finland lagged behind other OECD countries over the period 1950–1990 (see also Figure 3.6). When measured with total consumption *per capita*, – i.e. even when including government consumption, which has typically been high in Finland, as well as in other Nordic countries – Finland has remained below the OECD averages. Also, when looking at consumption per employed person, Finland's ranking was one the weakest among OECD countries in 1990. Thus, the emphasis on investment clearly had a high opportunity cost in terms of foregone consumption.

Finland's growth performance was very good in the post-war decades up to the end of the first unbundling era. The country's GDP *per capita* grew by an average annual rate of 3.5%. This clearly exceeded the typical growth rates of advanced European countries and that of the US. Finland's GDP *per capita* even caught up with that of Germany and almost Sweden, and reached slightly over 70% of that of the US (Figure 3.4).

At the same time, economic activity remained quite volatile in Finland (Table 3.3). While the growth was volatile in all these countries during the period 1950-1990, the economic cycles appear to be, on average, more pronounced in Finland than in Sweden or Germany. The volatility of the Finnish economy is most striking in the 1960s, though this feature clearly diminishes in the 1980s.

A part of the explanation for this was the strong specialisation in forest industry products, the demand for which tended to vary a great deal over

Figure 3.6
Real consumption per capita 1870–2013, index 2006=100



Source: Jorda et al. (2017).

the economic cycle. However, in addition, the policy strategy may have itself contributed to such an outcome. A key means of promoting exports and for expanding export capacity was a competitive real exchange rate. Demand management and income policies unfortunately often failed to keep inflation in line with that of the competitor countries. The weakened competitiveness reduced exports and the incentives for investment. The process typically culminated in large current account deficits and their corresponding financing challenges. In order to restore the balance, the government resorted to introducing recurrent sizeable devaluations. While these, as a rule, kick-started exports and investment, they also produced higher inflation. A devaluation cycle consequently emerged, contributing to increased GDP volatility. It is also likely that the ever-present devaluation option weakened the incentives of large companies to keep investment spending efficient.

Economic activity remained quite volatile in Finland, particularly in the 1960s

In addition, despite the rapid growth, Finland failed to provide enough good job opportunities for the baby-boom generation in the late 1960s and early 1970s. While emigration had exceeded immigration every year after the war, during the peak years of 1969 and 1970 the net emigration amounted to 40,000 and 36,000, respectively. This represented about 0.8% of the population and led to a slight decline of total population, for the first time since 1940. However, by the end of the 1970s the net immigration turned permanently positive, as the baby boom generation had found its place in the labour market and relative economic growth remained good.

Table 3.3
Volatility of GDP growth (as a standard deviation and coefficient of variation) in selected countries, 1950–1990

	In the 1950s		In the 1960s		In the 1970s		In the 1980s	
	Standard deviation	Coeff. of variation	Standard deviation	Coeff. of variation	Standard deviation	Coeff. of variation	Standard deviation	Coeff. of variation
Finland	2.8	0.6	2.8	0.6	3.2	0.8	1.3	0.4
Sweden	1.8	0.5	1.4	0.3	2.2	0.9	1.1	0.5
Germany	4.1	0.4	2.0	0.4	1.8	0.6	1.4	0.7
United States	3.5	0.9	1.7	0.4	2.5	0.8	2.5	0.8

Source: Jorda et al. (2017).

Towards a knowledge-based economy

While the extensive investments by Finnish companies implied the adoption of new technologies, and a degree of diversification since the 1950s, Finnish companies continued to compete, mainly with relatively standardised products, until the 1980s (Dahlman et al., 2006). It was only in that decade that the Finnish economy really began a transformation towards a knowledge-based economy. This was driven by two main factors.

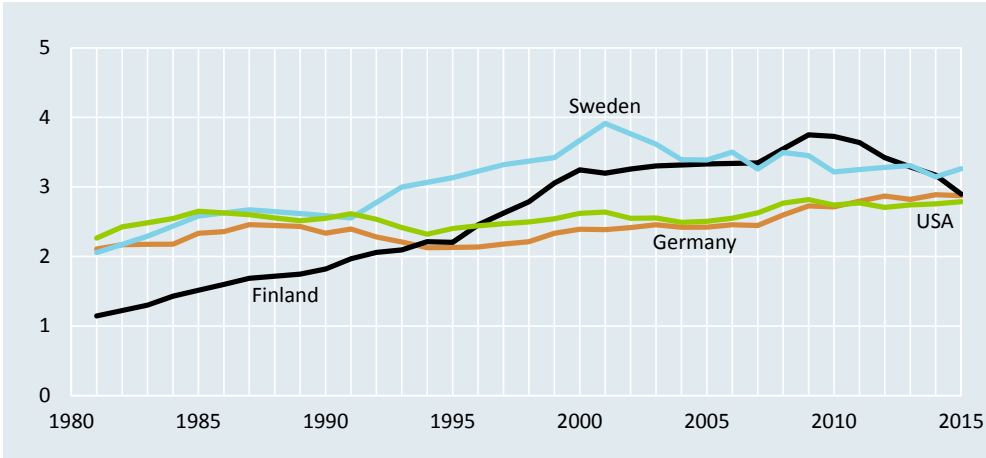
The first was technology policies, the roots of which date back to the 1960s. These began to more strongly emphasise innovations in various fields, and supported that emphasis with new and additional forms of public R&D funding. An important step in this regard was the establishment of Tekes, the Finnish Funding Agency for Innovation, in 1983 (more on Tekes' role in Chapter 4).

It was not until the 1980s that the Finnish economy really began a transformation towards being a knowledge-based economy

The second factor was the cumulative effect of the consistent 'opening up' of the economy and the ensuing intensification of competition and financial market liberalisation, which led to higher real interest rates and reduced credit rationing. These changes encouraged, and in some cases even forced, Finnish companies to look for new competitive advantages and to economise on capital spending.

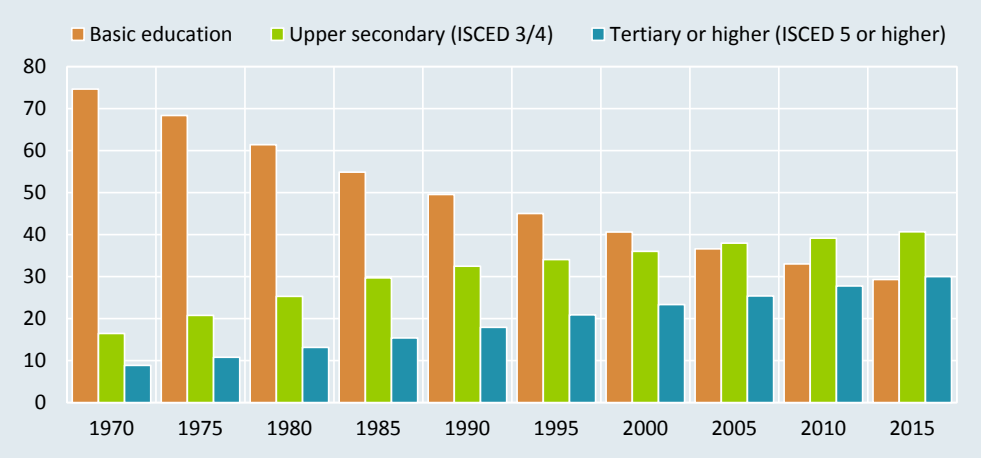
As a result, there was a rapid increase of overall R&D intensity, with both the private and public sectors significantly increasing their R&D expen-

Figure 3.7
Ratio of R&D expenditure to GDP, 1981–2015



Source: OECD.

Figure 3.8
Education qualifications, % of Finns aged 15 or over



Source: Statistics Finland.

ditures (see Figure 3.7). In comparison to the previous decades, the 1980s was a decade of rapid internationalisation, technological change and modernisation of the Finnish economy. Education levels among Finnish people rose, so that by 1990 more than 30% of Finns aged 15 or over had an upper secondary level degree, and close to 20% a tertiary level degree (see Figure 3.8).

Unfortunately, the transformation that initiated was not well managed. While everything looked fine for a few years, and Finland became to be called "the Japan of Europe", growth was highly imbalanced. A deep financial crisis followed, annulling many years of growth.

4

Macro shocks reveal vulnerability: Finland's crisis of the early 1990s

Internationalisation pushes financial liberalisation

By the 1980s, the Finnish economy had become more integrated with the outside world. As a result of free trade agreements, trade with the ETFA and EEC countries had grown rapidly. The oil price hikes due to the first and second oil crises had increased the value of oil imports, which led to a major increase in exports to the Soviet Union, under the umbrella of the existing bilateral trade arrangement.

At the same time, exports had become more diversified. The share of forest industry products had declined to under 50% of exported goods by the mid-1970s. Machinery, equipment, ships etc., had become the major elements of Finnish exports. Expanding such production required increasing investment and intermediate goods imports, thus linking the economy more closely to foreign suppliers.

An important element of the external linkages was finance, which had been tightly regulated with regard to both capital flows and interest rates. While foreign borrowing and investments remained subject to capital controls by the central bank, financial integration proceeded. In 1980, the Bank of Finland allowed banks to engage in short-term foreign borrowing and placements to cover their foreign currency exposures due to forward contracts. Such contracts had become increasingly important for businesses active in foreign trade, given the increased exchange rate volatility in the post Bretton Woods world. These financial transactions were the starting point for a domestic money market and market-determined interest rates.

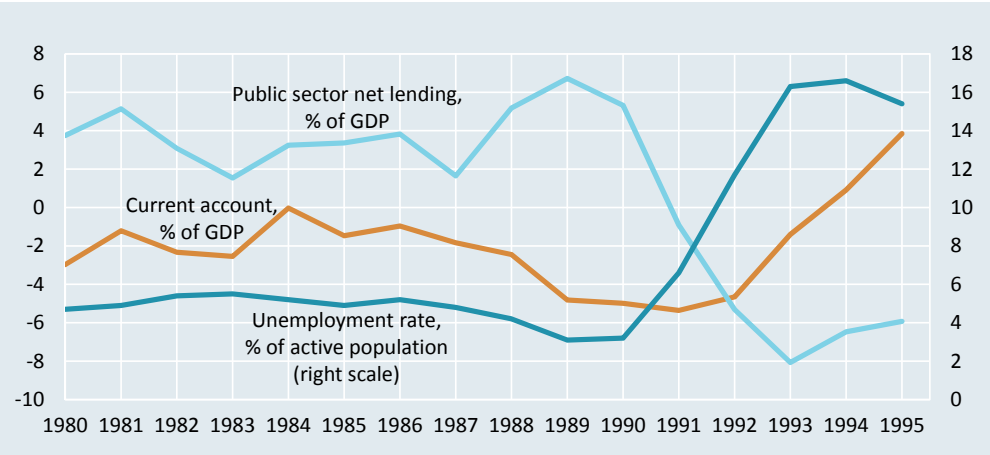
A dynamic process of financial deregulation, or liberalisation, followed. Capital controls were lifted step by step, with each liberalisation measure making the maintenance of the remaining restrictions more difficult. In

a similar way, domestic regulations on bank lending rates and on issuance of private sector bonds were eased. By 1987, the most stringent elements of capital controls and interest rate regulations had been eliminated (Vihriälä, 1997).

A credit and asset price boom ensues

The liberalisation of financial markets gave a strong boost to domestic demand, as the corporate sector made use of the new borrowing opportunities abroad, and households from the domestic banks. A large part of the rapidly expanding investments was in the housing and services sectors, which relied on domestic demand. Corporate borrowing was often in baskets of foreign currencies, as the lower foreign interest rates made this type of borrowing cheap, on the assumption of a fixed exchange rate relative to the basket. Private sector debt increased rapidly, as did asset prices. The expansion of labour-intensive construction and services activity brought unemployment to a historically low level, below 4%. Wage increases exceeded productivity growth and cost competitiveness weakened. High domestic demand, in combination with weaker competitiveness, led to deepening current account deficits. The liberalisation of outward capital flows and better financing opportunities also induced companies to expand abroad through acquisitions, many of which turned out to be bad choices.

Figure 4.1
Internal and external balance, %



Source: Statistics Finland.

Policy makers were slow to react to the boom. First, the rapid increase in private debt was considered a one-off stock adjustment after a long period of credit rationing, which would calm down quickly. When the boom continued, and the imbalances associated with it became more visible, various political constraints delayed and watered-down policy action. Restrictive monetary policy was effectively prevented by the fixed exchange rate regime, in the context of what was now, essentially, free capital movements. Attempts by the central bank to raise short-term interest rates were frustrated by capital inflows for as long as the currency peg to a basket of foreign currencies remained credible. This credibility was strengthened by the government that was formed in 1987. Its key economic policy doctrine was "stable markka", in order to eliminate the recurrent devaluations-inflation cycles, which had increasingly become to be considered detrimental for efficient resource allocation.

By 1989 the excessive nature of the boom and imbalances had become indisputable

Fiscal policy was not significantly tightened either. One of the reasons may have been due to the lack of the tradition of counter-cyclical fiscal policy. Fiscal stabilisation had never been a central part of Finnish economic policy making, irrespective of the political hue of the government (see, for example, Vartiainen, 2011). Given the high tax revenues generated by the domestic demand boom and the resulting solid surpluses, fiscal policy also appeared rather tight.

Finally, prudential regulation, supervision of banks and the favourable tax treatment of debt were not adapted to the new environment, where capital controls, debt issuance permits, and interest rates regulations had been eliminated as constraints to financial intermediation. While there was some discussion about a need to tighten banks' capital requirements, and to strengthen financial supervision, no action was taken, at least in part because of effective lobbying by the banks.

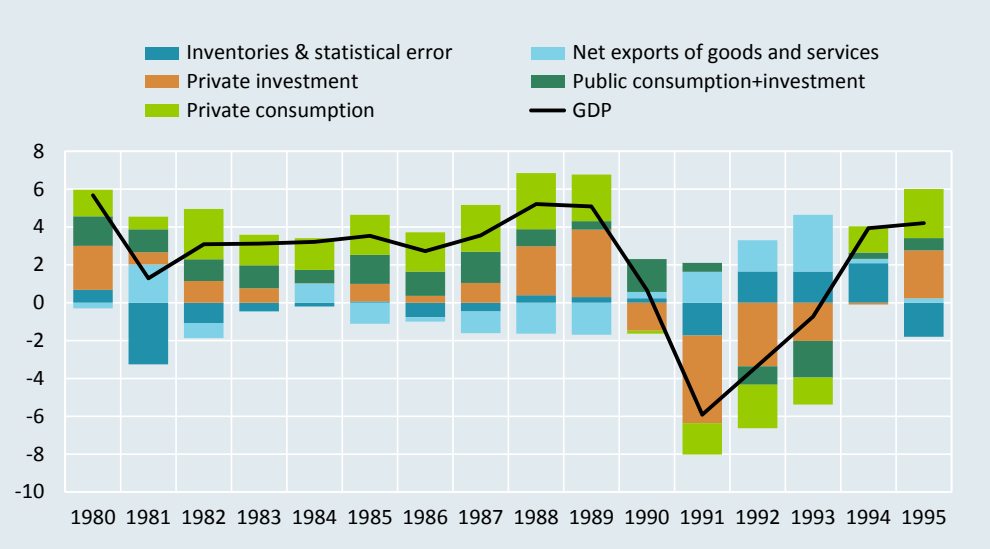
By 1989, the excessive nature of the boom and imbalances had become indisputable. The annual rate of growth of bank debt approached 30%, stock and housing prices were at an all-time high, the current account deficit reached 5% of GDP (Figure 4.1), and some early signs of refinancing difficulties of the most aggressive banks began to emerge. The central bank imposed a special cash reserve requirement on banks, which would continue to expand lending beyond a low speed limit. However, by that time vulnerable financial positions had already been created.

From boom to bust

In 1989, interest rates began to increase, the growth of bank lending decelerated, and stock and housing prices declined. These changes in domestic financial market conditions were soon accompanied by two important external factors. First, the reunification of Germany exerted upward pressure on European interest rates. Second, and more importantly for Finland, the economic decline of the Soviet Union accelerated, reducing Soviet demand for Finnish exports. The eventual collapse of the Soviet Union in 1991 implied an almost complete disappearance of the exports, which even a few years earlier had accounted for more than 20% of Finland's total exports.

A debt-deflation spiral set in and an unprecedented financial and economic crisis in the economic history of post-WW2 Finland ensued. Housing prices decreased by almost 40%, stock prices by 65%. GDP declined cumulatively by over 10%, as investment activity collapsed (Figure 4.2). In addition, private consumption declined substantially for three years in a row. Employment declined by almost 20%, unemployment increased from less than 4% to 16.7% (as annual average) in three years, and a 5% public sector surplus turned into a 6% deficit. Non-performing loans, credit losses and increasing refinancing costs led to a severe banking crisis, and the government was forced to bail out a significant part of the banking system (Vihriälä, 1997).

Figure 4.2
Contribution of demand components to growth, %



Source: Statistics Finland.

In terms of GDP and employment loss, the crisis was one of the deepest among the developed economies for many decades. The Finnish banking crisis was characterised as one of the "big 5" of modern times (together with neighbouring Sweden, Norway and Japan at roughly the same time, and Spain in 1977 (see for example, Reinhart and Rogoff (2009)) prior to the global crisis of 2008–2009.

Initially, policy makers tried to stick to the fixed exchange rate regime. However, the credibility of the currency peg eroded rapidly, and despite short-term rates rising to double digits, exchange reserves were depleted. A 14% devaluation in November 1991 turned out to be insufficient to restore confidence, and the currency was set to float on 7 September

Box 4.1
Interpretations of the crisis

The Finnish crisis was exceptional in depth at the time but not unique. Also, Sweden and Norway went through similar boom-bust periods. In all of these crises, financial deregulation was followed by a lending boom and a financial crisis and recession.

An often-used characterisation about the causes of the crises is bad luck, bad banking and bad policies. In the case of Finland, the primary bad luck element was the collapse of the Soviet Union and thus Soviet trade. Bad banking refers to excessive risk-taking by banking institutions in the aftermath of financial liberalisation. The bad policies concern, on the one hand, lax regulation and supervision of banks, and on the other hand, too accommodating macro policies in the boom years and too stringent policies in the midst of the crisis. Several in-depth analyses have tried to disentangle and quantify the roles of these different factors.

While they acknowledge the role of the collapsing Soviet demand, Honkapohja and Koskela (1999) emphasise the importance of bad policies. Financial deregulation was not accompanied by tighter prudential regulation or fiscal restraint. In their view, the most important culprit was the fixed exchange rate system, which allowed large capital inflows and kept the interest rates low in the immediate aftermath of the key deregulation measures. Secondly, sticking long to the fixed rate regime led to extremely high short rates, further clamping down domestic demand.

Conesa et al. (2007) look more to the supply side reactions than demand factors in a neoclassical growth model. On the one hand, they underline the importance of a drop in total factor productivity and the decline of labour supply due to higher labour taxes. Gorodnichenko et al. (2012) argue, using a calibrated dynamic general equilibrium model, that the Soviet trade shock was the primary driver of the crisis. Rigid real wages and financial factors played secondary roles, both with regard to magnitude and timing of their impact.

On the other hand, several recent studies emphasise the crucial role of the financial sector in the crisis. Freystätter (2011), in a DSGE framework, Gulan et al. (2014) with a structural VAR model, and Kuusi (2017), in a dynamic general equilibrium model, all find that financial market shocks in different ways account for a large part of the GDP decline in the bust period. They also tend to account better for the observed variation of different main demand components than the Gorodnichenko et al. analysis.

1992, a week before pound sterling crashed out of the European Exchange Rate Mechanism (ERM). The result of the adopted policy approach was very detrimental for short-term growth, in two ways. First, the very high short-term markka rates contributed to the economic decline, and then the eventual significant depreciation increased the debt service burden of the companies that had borrowed in foreign currency.

Fiscal policy was, perhaps by accident, expansionary in the early phase of the crisis, but quickly turned contractionary, as the deficit increased and public debt was – despite its low level to begin with – on a steeply increasing trajectory. A part of the additional debt was related to bank bailout measures, which were considered unavoidable. Consolidation involved both expenditure cuts and tax increases, including, and in particular, taxes on labour.

The crisis eliminates inefficiencies

While the origins of the crisis were macroeconomic, there were significant structural consequences. Given the magnitude and breadth of the crisis, many businesses closed down. Some of them were undoubtedly sound but had to close because of financial difficulties stemming from high interest rates and the rise in the debt service burden of foreign currency loans produced by a significant depreciation of the Finnish currency. However, the reduction of economic activity centred on the businesses and jobs with weaker than average productivity and growth prospects.

In terms of sectors, the 'steel bath' of the crisis hit construction and services dependent on domestic demand most severely, and within manufacturing production it affected those lines of production where the main, if not the sole market, was the Soviet Union. Productivity was lower in services and construction than in the economy on average. In the same way, a substantial part of the production for the Soviet market was of lower quality than what could have been sold at a similar price to the western markets. When the captive demand based on the bilateral trade arrangement disappeared, many of the companies that specialised in the products for the Soviet market failed.

The dire demand conditions and financial squeeze forced all companies to increase efficiency

The pressures were not limited to these sectors alone, however. The dire demand conditions and financial squeeze forced all companies to increase efficiency, irrespective of the market they were selling to. Those who could not had to exit through bankruptcy or other routes. Therefore, with the

exception of the first year of GDP decline in 1991, productivity increased in all main branches of the economy, even when GDP continued to decline in 1992 and 1993.

The banking sector was a special case. While the sector incurred huge losses, the government prevented bankruptcies by implementing various bailout measures. The worst institutions were taken over by the authorities, and all banks were provided with capital injections from the government. The extensive bank support did not, however, save the sector from a major rationalisation. The institutions taken over by the authorities (primarily the savings banks and their central organisation) were either wound down or sold to competitors. Other banks also resorted to major reorganisations. These included a merger of the two largest commercial banks and, eventually, the merger of the new entity with other Nordic banks to create the largest bank in the Nordic region, Nordea. The result was a reduction of banking employment by almost 50% over just a few years. One of the highest cost banking systems in Europe became one of the leanest in a very short space of time.

The crisis experience also influenced companies' views about what a healthy balance sheet looks like. Large-scale borrowing to finance risky investments fell out of fashion. In a similar vein, banks and other financial institutions began to strengthen their own balance sheets. Tighter financial regulation and supervision worked in the same direction. As a result, both the financial and non-financial enterprises reduced their relative indebtedness in the following years. This kept investment growth moderate relative to GDP growth, while contributing to the economy's capacity to withstand future shocks.

Policies embrace reorientation

Relinquishing the fixed exchange rate policy led to a significant depreciation of the currency – at its peak about 30% relative to the pre-crisis level. This implied a major improvement of cost competitiveness for companies that had survived the crisis.

At the same time, it was recognised that the economic success of the country could not be based solely on a competitive exchange rate and advantageous bilateral trade arrangements. Finland had to become structurally more competitive. This led to important policy action on three fronts.

First, much more emphasis was put on innovation policy. In a clear departure from the past, the industrial strategy of the government that came

into power in 1991 was designed in close collaboration with the research community and very much inspired by Michael Porter's (1990) analysis of competitive clusters. The strategy emphasised the creation of appropriate framework conditions and the support of innovation activity, instead of targeted policy measures to promote certain types of businesses. Although public spending was reduced, substantially more money was allocated to public support of R&D activity. Tekes, the Finnish Funding Agency for Innovation, which had been created a decade earlier, was given significantly more resources in the midst of the crisis. Its total funding authorisation more than doubled from 1990 to 1994.

Second, as the collapse of the Soviet Union dramatically changed the political landscape in Europe, Finland decided in 1992 to apply for membership of the EU. This decision was based primarily on political considerations – Finland wanted to become an undisputed part of Western Europe. However, it was seen as a strategic, economic decision as well. Membership of the EU would reduce the perception of political risks among foreign investors and would further open up the economy by reducing various non-tariff barriers to trade within Europe, as well as increase competition. Competition policy, which had really started only very recently by enacting a new law on the restriction of competition and the creation of Competition Authority in 1988, would also be strengthened by the application of the common EU competition and state aid policies.

Third, tax reforms, which had been started some years earlier, were continued with the aim of reducing various non-neutralities of the tax system that were distorting resource allocation, and of improving the attractiveness of capital formation in Finland. The basic idea was to lower the rates and broaden the tax base. In 1993, corporate tax rate was reduced to 25% and the taxation of capital income was separated from that of earned income, and made flat at the same 25% rate. In combination with the so-called 'avoir' fiscal system, introduced earlier in 1990, this implied that profits were subject only to the corporate tax rate, independent of whether they were distributed as dividends or held in the company. Linked to the EU membership, realised as of the beginning of 1995, value-added tax replaced the sales tax.

It could also be argued that the long tradition of fiscal prudence received a further boost from the crisis. It was recognized that a high debt level could force fiscal consolidation in the midst of a crisis, thus unnecessarily holding back recovery. As a consequence, when the economy started to recover, expenditure growth was limited to allow surpluses of several per cent of GDP to be generated and the debt-to-GDP ratio to come down.

Labour market institutions remain largely unchanged

The increase of unemployment to what were unprecedented levels for Finland obviously exerted considerable pressure on the labour market. In the early phase of the crisis, the government tried to convince its labour market partners to agree on a nominal labour cost reduction of the order of 7%, in an effort to improve competitiveness and avoid devaluation. While the central organisations agreed on the deal in principle, the proposal failed to materialise, as some important unions in the export industries opted out. Devaluation promptly followed. The most the unions could agree on was a wage freeze and some shift of employer contributions to employees.

The centre-right government of Esko Aho considered increasing labour market flexibility to be important for reducing high unemployment. It also considered it necessary to reduce social expenditure and improve work incentives. However, in three instances the labour unions prevented reforms that were aimed to advance these objectives by threats of general strikes. The reform initiatives were directed towards cuts in unemployment benefits, some modifications of labour laws, and the elimination, or reduction, of the tax deductibility of union membership fees. The discontent of the labour unions also contributed to very high wage demands and actual wage increases in 1995, despite the still very high unemployment.

The support of the unions for EU membership carried a price by shielding labour market policies and institutions from significant change

The unions had a more positive view of the government that was led by a social democratic prime minister, Paavo Lipponen, following the 1995 parliamentary elections. As a consequence, the unions returned to wage moderation. The government continued overall fiscal consolidation while increasing further expenditures on R&D. This implied additional cuts in social security benefits. Nevertheless, the unions forced even the new government to back down from a plan to reduce unemployment benefits by a threat of a general strike in 1996.

While the unions were hostile to wage and benefit cuts, they had a positive, or at least neutral, view of EU integration. This is interesting, as it was quite clear that the membership would imply more competition and thus a need for structural adjustment, which in many countries has often been strongly opposed by the labour unions. One reason for this positive view was probably the strong position of the unions of the export industries, which understood the benefits of better access to the EU markets. It was also clear that EU membership would lower food prices, which had been maintained at a high level by import restrictions that very strongly

protected domestic food production. Wage earners could thus expect the membership to contribute to better purchasing power. In line with this argument, the most hostile segment towards EU membership was, in fact, the farmers, who rightly feared the implied reduction of produce prices.

It can be argued that wage moderation and the support of the unions for the EU membership carried a price in shielding the labour market policies and institutions from significant change. Finland had a tradition of comprehensive, tripartite incomes policy agreements, dating back to early 1970s. These implied highly centralised wage formation and, over time, an increasing role for the labour market partners in the formulation of social security policy and even tax policy. Unlike in many other countries, including the neighbouring Sweden, these features were not diluted in Finland through the 1980s or 1990s.

A close collaboration with the labour market partners was, in fact, a cornerstone of the two consecutive governments (1995 to 2003) of Paavo Lipponen. It was also a part of the EMU strategy of the government, which strongly favoured taking Finland into the EMU from the outset. Many experts argued that abandoning monetary autonomy would require much more labour market flexibility, in particular wage flexibility, and that could only be achieved through a more decentralised bargaining framework. However, the government's position was that a centralised wage-bargaining system, embedded in tight tripartite collaboration, could and would deliver the required flexibility.

5

The stars align: the second unbundling takes Finland to the frontier

In the early 1990s, Finland was in a contradictory situation. Internally, the country was going through its worst peacetime economic crisis. At the same time, the external conditions were rapidly becoming much more favourable, in a number of ways.

First, the collapse of the Soviet Union held a promise that the large eastern neighbour would transform into a 'normal' democratic market economy that would be much less threatening, thus reducing political risks and provide great economic opportunities. Second, there was a prospect of Finland becoming a fully-fledged member of the EU, again bringing both political and economic advantages. Third, the global economy began to recover from a short slump, to embark on a period of steady growth based largely on the deeper integration of China in the global market economy. Fourth, the ICT revolution was making leaps, which provided good opportunities for the particular strengths that had been developed in Finland.

While the economic starting point was challenging, it transpired that Finland succeeded in making best use of the emerging opportunities for around 15 years until the global financial crisis. This was due essentially to wise political decisions taken in Finland at different points in time, the success of Finnish companies in fulfilling the needs of their international customers, and good luck. Perhaps the most important beneficial policy orientation was the long-lasting emphasis on education and the more recent investments in R&D and innovation activities, which created the basis for a knowledge economy. But in addition, what also contributed was the opening up of the economy during the preparation for, and entry into, the EU in 1995, deliberate measures to increase competition, tax reforms to reduce distortions and obviously, as was the case so many times in the past, the significant improvement of cost competitiveness through depreciation of the currency.

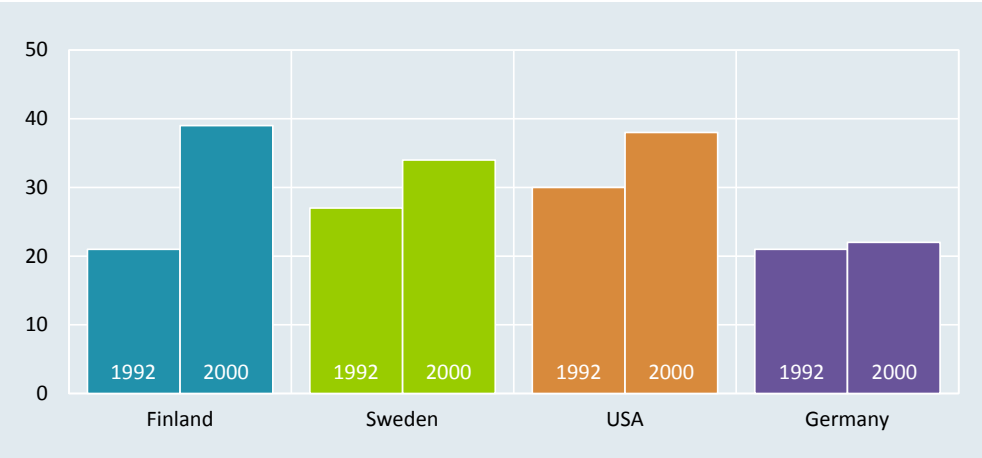
The luck aspect concerned the phenomenal success of the ICT sector and, in particular, one company, Nokia, when it became the global leader in mobile phone production. This is in no way to belittle the importance of the decisions in the research community to develop competences in low-current technology years before the ICT revolution, and the strategic decisions taken by Nokia management in the early 1990s. But the fact that Nokia's growth almost consistently exceeded the company's own forecasts during the expansion phase speaks volumes about the considerable unanticipated tailwind.

In this chapter, we begin by discussing three aspects that lay behind the Finnish success: (i) the emerging knowledge economy; (ii) Nokia; and (iii) the internationalisation of the economy. We then describe the outcomes, in terms of GDP and productivity growth and structural change in the economy. Finally, we note that Finland did not avoid adjustment pains, and that the good performance over several years led to complacency, the costs of which became apparent when global and country-specific shocks hit the economy.

Finland as a knowledge economy

In the knowledge economy, growth stems from innovation and is based on the use and creation of knowledge, rather than mere exploitation of natural resources or through the employment of uneducated and cheap

Figure 5.1
Population (25–34 years old) with tertiary education, % of all 25–34 years old



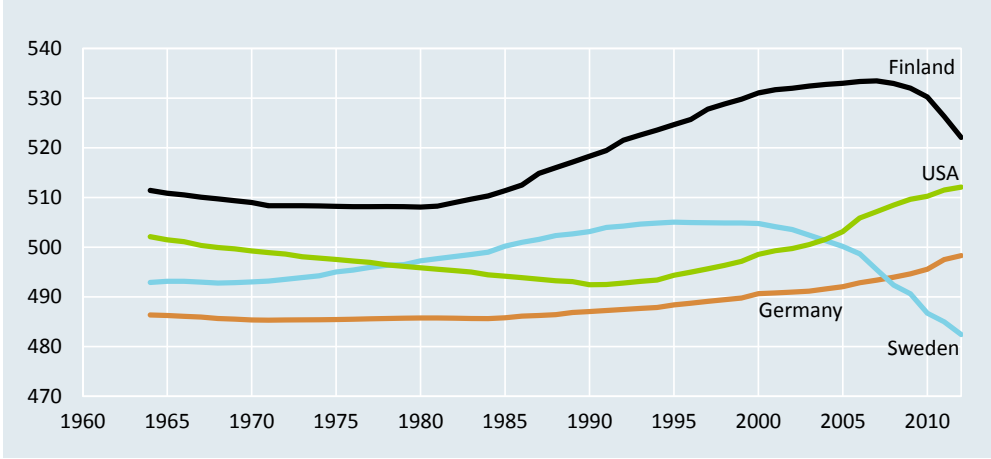
Sources: Authors' calculations based on OECD data (Education at a Glance).

labour. A necessary, though not sufficient condition, is the existence of a well-educated labour force. As has been discussed in Chapter 2, education has occupied a central position in Finnish society throughout its history. The expansion of university and vocational education, which began in the 1960s, and the reform of the primary education in the early 1970s, formed the basis for increasing Finland's human capital.

The sustained education efforts showed up in several ways by the turn of the century. The fraction of the population with tertiary education increased substantially and became one of the highest globally in the late 1990s. The educational level has obviously increased not only in Finland but also in other developed countries, but Finland did very well when compared to other countries (Figure 5.1). In 2000, almost 40% of 25–34 year-old Finns were tertiary educated, slightly exceeding the corresponding figure for the US, Sweden and Germany.

More important than the formal educational attainment is the factual competences education provides. These have been measured in various international assessments. While different studies have generated somewhat different results, the overall impression is that the competences provided by the Finnish education system have been very good by international comparison. Thus, Finland excelled in the first tests for 15-year olds conducted by the OECD's Programme for International Student Assessment (PISA) in the early 2000s. In the same way, in the first tests by the OECD on the general competences of the entire adult population,

Figure 5.2
Test scores in selected countries, 1964–2012



Source: Hanushek and Woessmann, 2015, p. 186.

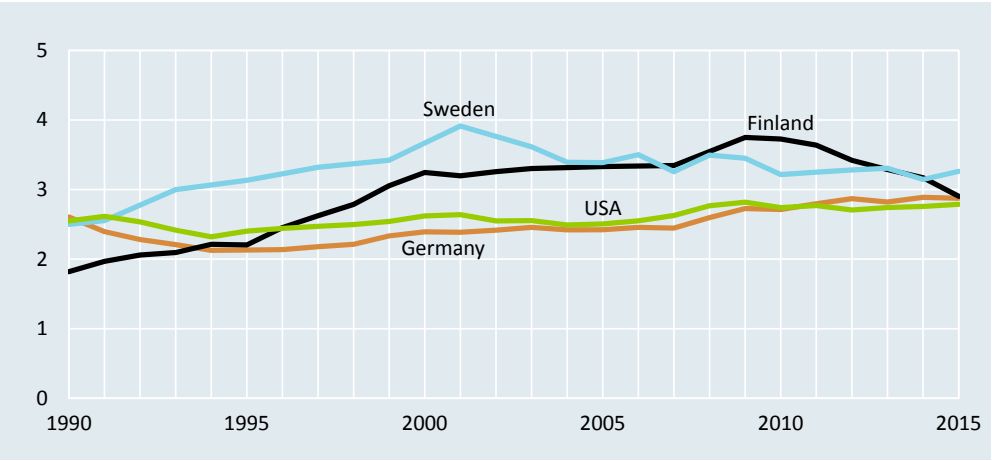
i.e. the Programme for the International Assessment of Adult Competencies (PIAAC), Finland came global top. Furthermore, an interesting feature has been that, at least until recently, the share of those with very low scores has been small.

A summary statistic by Hanushek and Woessmann (2015), suggests that the education system has produced good results for many decades in Finland (Figure 5.2). At the same time, their analysis indicates that the achievements may not be permanent. Over the past decade, the summary score appears to have significantly declined in Finland, while still remaining higher than in the US, Germany or Sweden.

A factor that has probably been important for the economic performance of Finland has been the emphasis on engineering and natural science studies in higher education (Vartia and Ylä-Anttila, 2003). This ensured the availability of skilled people for both product development and process management in manufacturing in general, and in the ICT sector in particular.

Apart from labour force competences, innovations require sustained R&D efforts. In this respect, Finland moved from an average advanced country to the global top during the second half of the 1990s, and continued to increase R&D intensity in the years before the global crisis (Figure 5.3). While in the early 1990s Finnish R&D investments relative to GDP lagged behind the Swedish and the US levels, ten years later Finland invested as much as 3.2% of its GDP in R&D, exceeding the US level (2.6% in 2000) and EU-15 level (1.8% in 2000).

Figure 5.3
Gross Domestic Expenditure of R&D as a percentage of GDP (GERD), %



Source: OECD, main science and technological indicators.

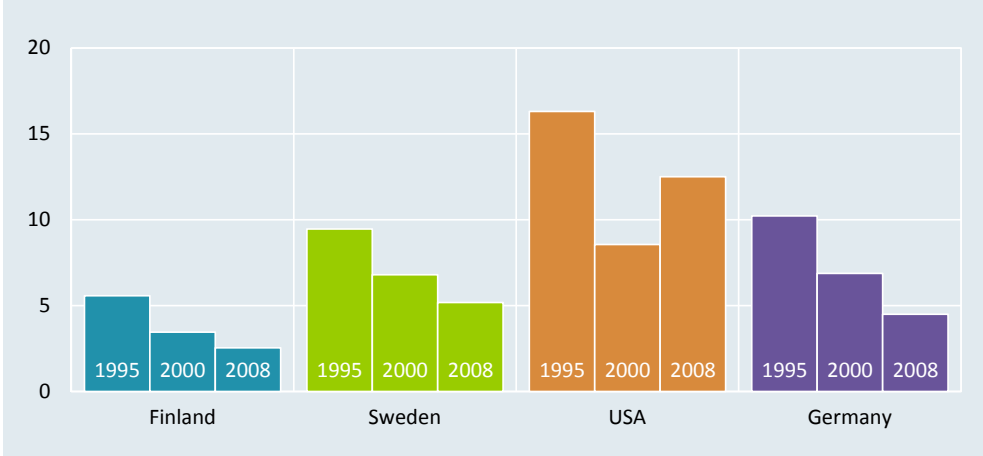
This growth was primarily driven by the business sector, though the public sector also increased R&D funding. During 1990–2000, the public sector in Finland increased its R&D expenditure by more than 50% (in real terms), while the corresponding growth in the business sector exceeded 170%. A part of the increased public R&D funding was directed to the business sector. Regardless of this growth of public R&D funding, however, the business sector itself financed an increasing share of its R&D operations. As a result, the relative importance of the public sector as a financier of the business sector R&D declined (Figure 5.4).

A downward trend also occurred in Sweden and the US, but despite these declines their levels still exceeded the Finnish level. Thus, in terms of R&D investments, the business sectors in Sweden and the US have relied more on government funding than in Finland.

Since the early 1980s, the Finnish public funding directed to the business sector has been concentrated towards only one organisation, Tekes (The Finnish Funding Agency for Innovation), which provides R&D loans and grants to firms. The role of small- and medium-sized enterprises (SMEs) as a receiver of public R&D funding increased in the late 1990s. While in 1996 SMEs obtained roughly 40% of Tekes's business sector funding, over the following five years this share increased to 50% (Tekes's Annual Report, 2000).

From the viewpoint of knowledge spillovers, the important element of this R&D funding has been the cooperation between SMEs, large companies

Figure 5.4
Business-sector R&D financed by government, %



Note: Percentage of business sector R&D financed by government.
Source: Authors' calculations based on OECD data (Main Science and Technology Indicators).

and research institutions. The cooperation has been one of selection criteria when companies have applied for public R&D funding, and in the cases of large firms the approval has been *de facto* required cooperation with SMEs or research institutions.

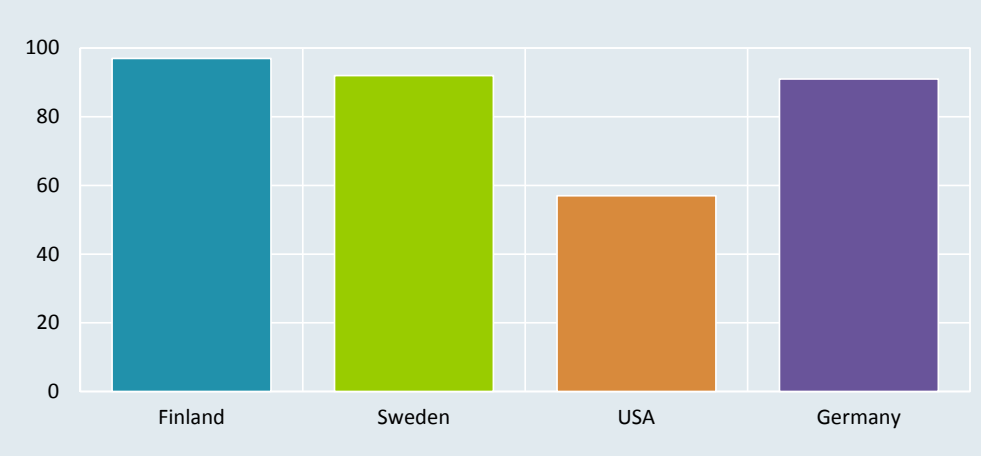
The increased innovation activity in the 1990s concerned not only R&D activity but also its outcomes, such as patents. Companies increasingly patented their inventions globally (Figure 5.5).

The Nokia miracle

The roots of the success of Nokia and the Finnish 'ICT Cluster' can be traced back to decisions taken decades earlier. In contrast to the most other countries, the Finnish telephone network operation market has been open to competition (see Paija, 2000). Even by the 1930s, there were more than 800 private local telecom companies. Thus, Nokia had no monopoly in the local market and also had to compete with foreign companies in order to obtain orders from operators. This competition pushed Nokia to keep developing its products from an early stage.

In the early 1970s, national post and telegraph administrations of Nordic countries launched a joint initiative to build automatic mobile telephone networks. The specifications of these NMT (Nordic Mobile Telephony) networks were open and free, thus enabling competition between equipment providers. Because of this competition, these providers had to de-

Figure 5.5
Triadic patent families per million population (in 2001)



Note: Triadic patent families are defined as a set of patents taken at the European Patent Office (EPO), the Japanese Patent Office (JPO) and the US Patent & Trademark Office (USPTO) that share one or more priorities.
Source: OECD Science, Technology and Industry Scoreboard, p. 69.

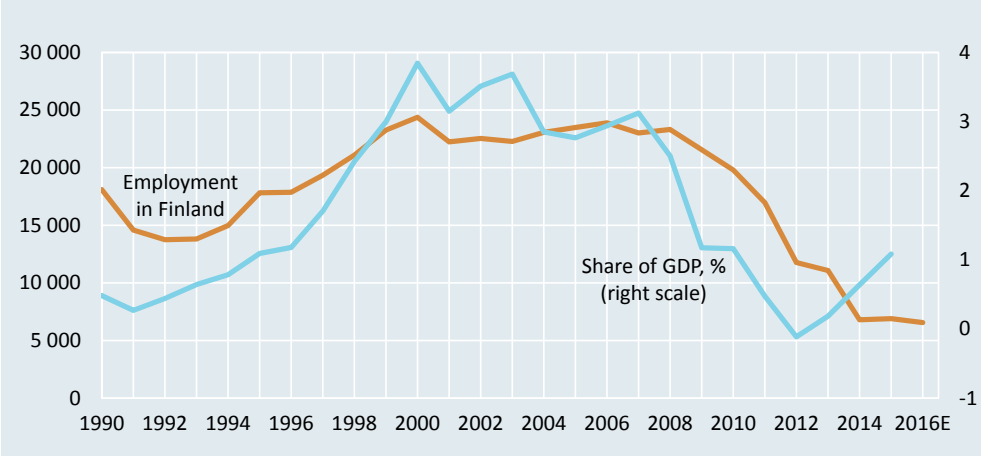
velop their own solutions and provide their equipment at competitive prices. Thus, competition was a crucial element of the NMT networks, which made the Nordic countries (Finland, Denmark, Norway and Sweden) the world's largest mobile market in the early 1980s (Paija, 2001).

An important facilitating factor was also that low-current technology had been a focal area of technological research and engineering education for decades. There was thus technological competence available for the development of new solutions as well as products in telecommunications when the business opportunities emerged.

In the late 1980s, Nokia was a conglomerate of numerous businesses such as paper, cable, chemicals and computers. Because of a weak overall profitability, the company initiated a heavy divestment program in order to concentrate on mobile phone technology. Nevertheless, in 1990, mobile phones and telecommunications networks accounted for only one fifth of the net sales.

In the early 1990s, Nokia was in an existential crisis, which was mainly related to the weak development of the company itself, but also due to the general collapse of the Finnish economy. At that point, in addition to divestments, the senior management of Nokia was replaced and the focus on mobile phones was further strengthened. Sooner than anyone expected, the company enjoyed stunning growth. During 1992–1999, Nokia's net sales grew annually, on average by 30% (in current prices).

Figure 5.6
The role of Nokia in Finland



Sources: Ali-Yrkkö et al. (2000), Ali-Yrkkö et al. (2013), updated.

The rapid growth surprised not only investors, but also the company itself. Nokia continuously exceeded its own forecasts that were announced in their capital market days and other events. It appeared that the company had made the right choices at the right time and, when exceptional technological and market opportunities emerged, it was in a position to fully benefit from them.

An important part of Nokia's expansion was the use of low-cost countries in the production process. Nokia's foreign employment increased by over 20,000 between 1992 and 2000. However, the production process also increased Nokia's domestic employment. The number of employees in Finland increased from 13,700 to 24,400 in the 1990s. While in 1992 Nokia accounted for 5% of Finnish total exports, by 2000 the share reached 21%.

> *"We needed more people who knew marketing, logistics, and sales. We needed ever more good managers for all our departments".*
>
> Jorma Ollila, former Nokia CEO (in Ollila and Saukkomaa, 2016, p. 259).

Not surprisingly, Nokia's share of Finnish GDP also grew rapidly, peaking in 2000 when the company accounted for as much as 3.8% of GDP (Figure 5.6). In fact, the role of Nokia in the Finnish economy was even bigger, as this figure did not include the value-added created by Nokia's subcontractors operating in Finland.

An increasing number of the new Nokia employees in Finland were recruited for R&D. In 2000, as much as 50% of Finnish employees worked in R&D, while in other countries the share was 18%. Nokia was able to acquire technological competence by recruiting thousands of skilled employees in Finland. The most rapid recruitment period of Nokia ended when the 'dot-com' bubble collapsed. After that, the number of employees in Finland remained relatively stable until 2008.

Nokia dominated the smartphone market. The company's operating system for handsets, Symbian, reached a 50% share of the global smartphone market in 2008. But the turning point was close. Apple had just launched its first IPhone and Google its first version of the Android operating system. These changed the mobile device market faster than anyone might have expected.

Internationalisation takes off

A central element of the second unbundling phase of globalisation has been the internationalisation of businesses, i.e. the setting up of subsid-

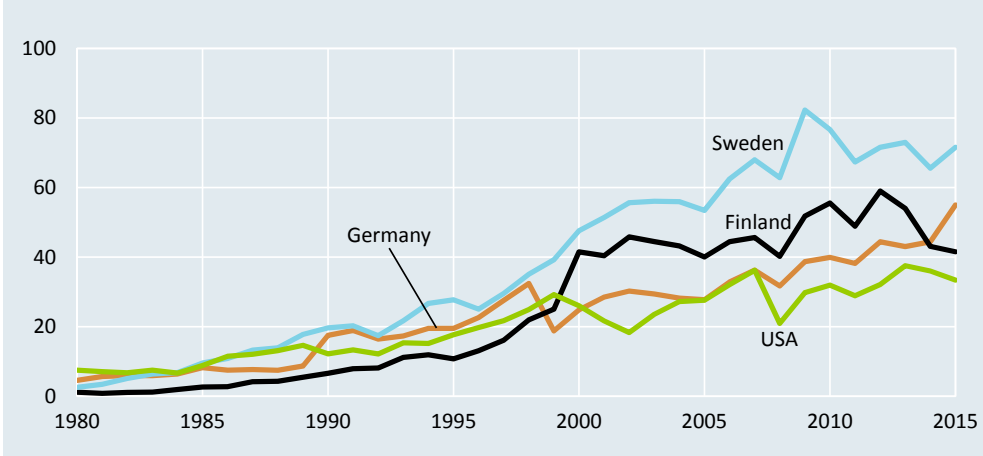
iaries outside the home country, and the associate splitting of the value chain according to the advantages of various locations. Finland is a very good example of this phenomenon. While the internationalisation of Finnish businesses had started in the 1980s, it really took off during the mid-1990s. Particularly large companies operating in various industries established overseas subsidiaries and acquired foreign companies.

Large Finnish forest companies globalised their operations by making greenfield investments (e.g. in Germany and China) and merger and acquisition (M&A) operations (e.g. in the US and Sweden). In the electronics industry, Nokia took a leading position by making a number of greenfield investments. At the beginning, these operations concerned mainly manufacturing operations including, for example, investments in China, Brazil and Hungary. Later, overseas R&D units were also established, including in China, Japan and the US.

"Konecranes Oy increases subcontracting in Estonia"
Kauppalehti, 5.11.1997.

In the forest industry, UPM Oy made a major investment in the US by acquiring a paper manufacturing company called Blandin Paper Company. One of UPM's competitors – Myllykoski Oy – invested heavily in Germany by building a new paper machine in Southern Germany in 1998. In the same year, two paper company giants, Finnish Enso Oy and Swedish STORA AB merged, and few years later this new company made one of its biggest investments by acquiring the North American pulp and paper manufacturer, Consolidated Papers, for EUR 4.9 billion. Later, this acquisition ended in financial disaster.

Figure 5.7
Outward FDI stock as a percentage of GDP, %



Source: UNCTAD FDI database.

Locations at a greater distance attracted particularly larger companies, while smaller manufacturing companies were more interested in locations within a closer proximity. One such close country was Estonia, which had regained its independence from the Soviet Union in 1991. At that time, operating costs in Estonia were considerably lower than those in Finland, and so provided cost savings for Finnish companies. In addition to the reduced costs and close proximity, the Estonian language is similar to Finnish, which simplified some companies' decision to invest in Estonia.

The increasing activity of Finnish companies abroad can also be seen in Foreign Direct Investment (FDI) statistics. Since 1990, the Finnish outward FDI stock, relative to GDP, almost quadrupled, reaching 25% in 1999 (Figure 5.7).

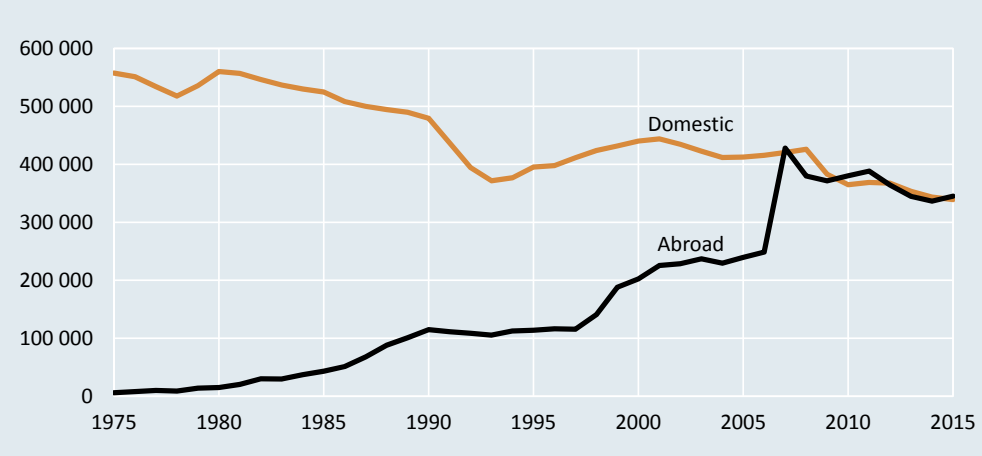
Compared to many other countries, the growth rate of outward FDI in Finland was rapid. As a result of a major cross-border merger between Finland and Sweden in the banking sector, FDI growth still continued in 2000, when outward FDI stock relative to GDP reached 42% in Finland, still slightly lagging behind the level in Sweden (48%) but exceeding the levels in the US (26%) and Germany (25%). It should be noted, however, that in certain years FDI figures can be heavily driven by a few cross-border mergers or acquisitions. On this account, FDI stocks often provide more informative figures than FDI flows.

"IVO Oy has invested in Sweden more than 7 billion Finnish marks"

Kauppalehti, 23.3.1998.

Figure 5.8

Foreign and domestic employment of Finnish manufacturing, number of employees



Note: Because of statistical change, the number of foreign employees artificially rose significantly between 2006 and 2007.
Sources: Statistics Finland, Bank of Finland, Etla and authors' calculations.

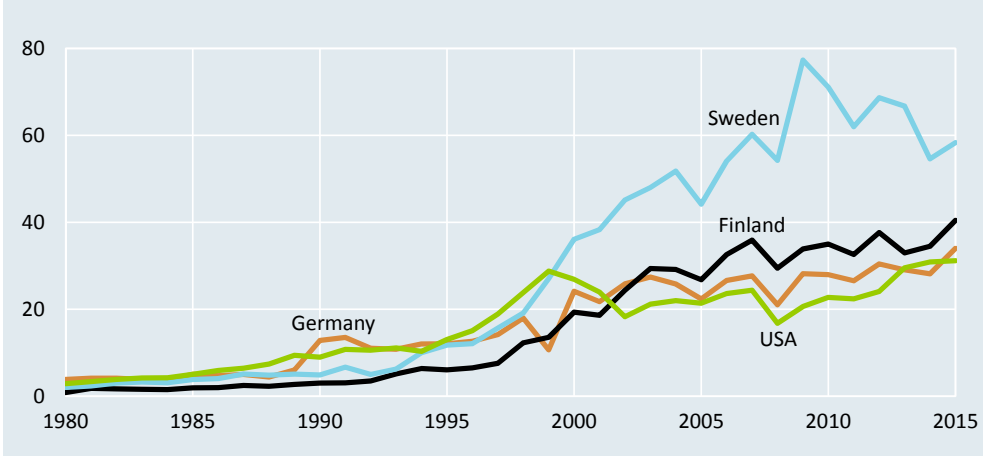
As a consequence of overseas investment in 1990s, an increasing number of Finnish manufacturing companies' employees were located abroad. Between 1993 and 2003 the number of overseas employment approximately doubled, to over 200,000, while domestic employment increased only by some 70,000, on the back of the recovering economy (Figure 5.8).

Economic globalisation is, however, a two-way street. As Finnish firms were expanding their overseas operations, foreign-owned firms were also investing increasingly in Finland. This was at least partly related to the liberalisation of capital controls. The remaining restrictions on foreign ownership and capital movements were lifted in the early 1990s.

In part, the inward capital movements stemmed from the opportunities that arose from the restructuring of the Finnish businesses as a result of the crisis of the early 1990s. At that time, many of the largest Finnish companies were conglomerates, with a number of subsidiaries operating in various industries. Hard times pushed these companies to focus on narrower areas by divesting other units. Quite often, these units were acquired by foreign companies. As a result, inward foreign investments increased substantially from the mid-1990s onwards (Figure 5.9).

In 1992, the inward FDI stock hardly reached 3.5% of Finnish GDP, lagging clearly behind a number of other countries. In Sweden, the corresponding figure exceeded 5%, in the US 10%, and in Germany 11% (Figure 5.9).

Figure 5.9
Inward FDI stock as a percentage of GDP, %



Source: UNCTAD FDI database.

The 1990s witnessed an increasing amount of inward FDI, not only in Finland but also in other economies. In Finland, inward FDI relative to GDP reached 19% at the end of decade, or five times more than in 1992. In Sweden, however, the rate of growth was even faster, and inward FDI stock accounted for as much as 36% of Swedish GDP (in 2000), exceeding the US (27%) and German levels (24%).

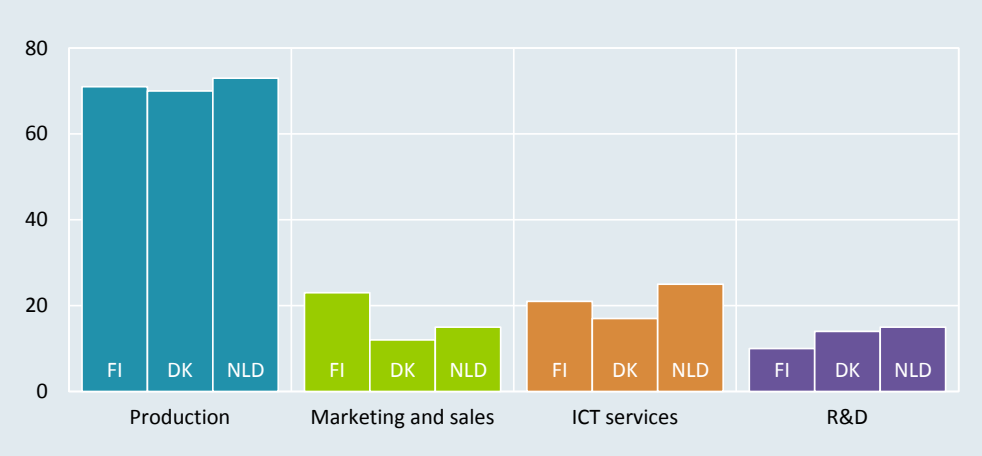
The increases in both inward and outward FDI illustrate the increasing activity of multinational enterprises (MNEs) operating in multiple economies. From the viewpoint of global value chains (GVCs), the role of MNEs is crucial, as up to 80% of global trade is coordinated by MNEs (OECD, 2013, p. 23).

"Nokia has 30,000 R&D employees globally, of which 2,000 are in China"

Helsingin Sanomat, 23.2.2008.

The companies made dynamic use of the new ways of splitting the value chain. Companies that only 1–3 years earlier had recruited hundreds or thousands of new employees in Finland, announced massive layoffs when relocating activities to low-cost countries. In the first step, these relocations were focused on manufacturing and assembly tasks, excluding R&D and other white-collar functions. A few years later, some of these companies expanded their offshoring portfolio by also relocating some R&D jobs. The more general trend, however, was to continue R&D activity in Finland (see also Figure 5.3).

Figure 5.10
International sourcing by tasks in manufacturing, %, 2001–2006 (Finland, Denmark and Netherlands)



Sources: Statistics Denmark (2008), Eurostat, International sourcing survey.

Rapid relocations can be partly explained by the wishes of their customers. Thus, customers guided and, in some cases even required, their suppliers to also operate in other countries. The following example (Seppälä, 2013) illustrates this:

> *"Typically, Nokia sourcing organization communicated the targets four years in advance. … a good example of such communication is that in 2006 low cost production targets were communicated meaning that 80% of production needs to be in low cost locations by 2010."*
>
> (A former Elcoteq employee), quoted in Seppälä, 2013.

Due to the signals from customers, offshoring practices spread to other companies, including SMEs. As a result, an increasing number of companies became multinational companies, with subsidiaries in multiple countries.

In Finland, the electronics industry was not the only industry that internationalised its value chain in the 2000s. A number of companies, particularly in the metal and engineering industry, also expanded their operations in overseas locations.

> "The comprehensive service of customers requires presence abroad. One has to be there where customers themselves are operating. That is message that large companies such as Metso and Konecranes repeat."
>
> Jalo Pirhonen, CEO of TP-yhtiöt, Taloussanomat 27.9.2007.

During 1995–2008, an increasing share of gross output in manufacturing was created overseas (Figure 5.11). In Finland, the share increased by 11 percentage points, reaching 38% in 2008. Thus, goods and services produced by the Finnish manufacturing sector increasingly included foreign content. The development in Finland was not exceptional. A similar trend also occurred in a number of other countries (see also Timmer et al., 2013).

The efficiency gains from internationalisation were significant. Like so many other companies with their home base in a developed country, Finnish companies could make use of cheap labour in developing countries, where many of the new jobs were created. Nokia was eminent among these companies, but by no means the only one. The fishing lure manufacturer, Rapala Oyj, established its Estonian plant in 1997 to benefit from the country's lower labour costs. Already by the late 1990s, the company fragmented its production process geographically, as the following quote illustrates:

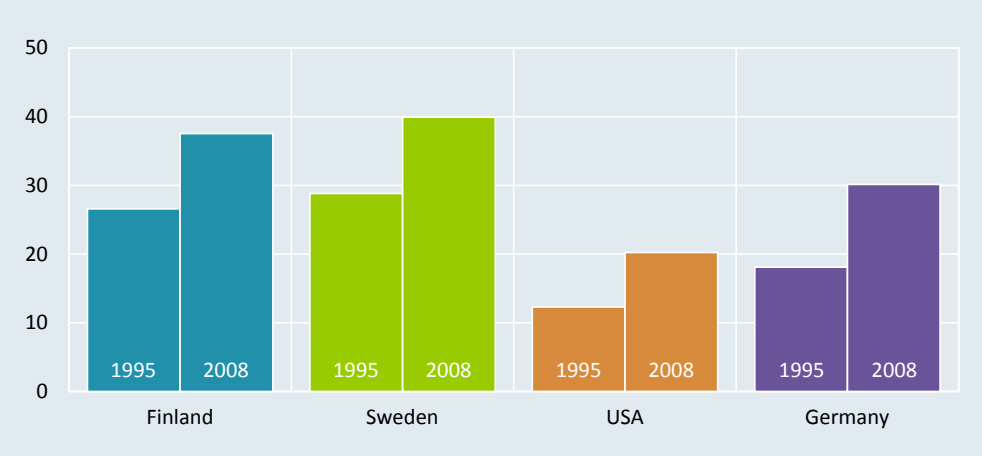
> *"When the components of lures have been manufactured in Finland, they are transported to Estonia for assembly. Then they are shipped back to Finland where the surfacing is done. After that lures are shipped to Ireland for fine-tuning and testing.*
>
> Arto Nygren, Rapala Oy, Taloussanomat, 1.10.1998.

There is substantial evidence that offshoring improves the productivity of companies' domestic units (D'Attoma and Pacei, 2014; Moser, Urban and Weder Di Mauro, 2015; Michel and Rycx, 2014). When companies offshore some tasks overseas, the occupational structure of their domestic units change, and this change leads to enhanced productivity (Maliranta, 2013).

There is also evidence that foreign-owned companies outperform domestic-owned companies (see e.g. Hanley and Zervos, 2007; Fukao et al., 2008); Criscuolo and Martin, 2009). Also, in Finland, the productivity and profitability of foreign-owned companies exceed domestic-owned companies (Pajarinen and Ylä-Anttila, 2006).

The higher productivity and better profitability of foreign-owned companies raises the question of what explanatory factors lie behind the observation. In many cases the most important reason is likely to be 'cherry-picking', i.e. foreign companies selecting local firms that had already demonstrated excellent financial performance. Thus, good financial performance increased the probability that the company became the acquisition target of foreign-owned companies (Kaitila, 2012). However, fol-

Figure 5.11
Share of foreign value added of gross output in manufacturing, %



Source: Authors' calculations based on WIOD database.

lowing the acquisition the productivity growth does not necessarily differ from other companies (Kaitila, McQuinn, Siedschlag and Zhang, 2013).

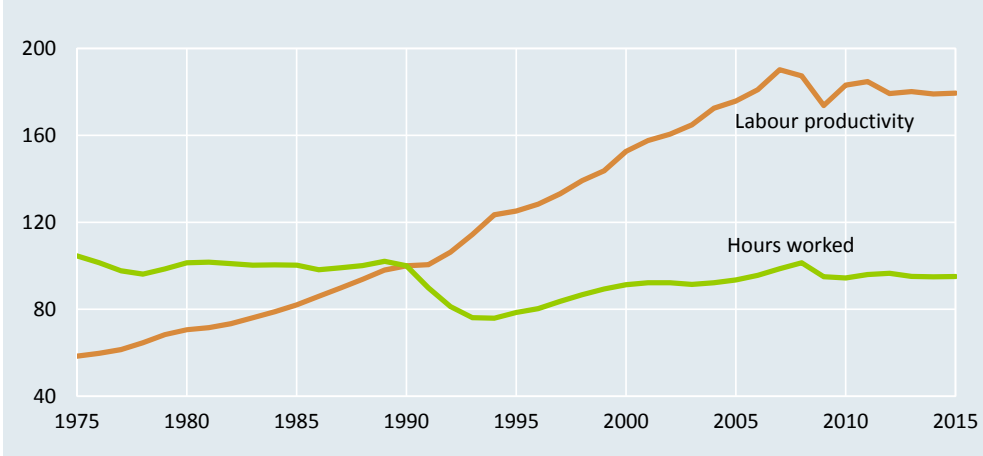
Foreign companies have, however, other positive impacts. Their presence increases competition. This has also been observed in Finland. The penetration of foreign companies has led to the destruction of inefficient companies and may even increase survival probabilities among the most efficient ones (Maliranta and Nurmi, 2004).

Finland becomes a model of innovation-based growth

Finland's growth performance from 1995 to 2008 was superb among the developed countries. With an average annual growth rate of 3.4% of *per capita* GDP between 1995 and 2008, Finland grew more rapidly than any other developed European country, save Ireland (4.4%), and considerably faster on average than the so-called 'old EU countries', or EU15 (1.8%), or the US (1.9%).

The over 50% increase of *per capita* GDP by 2008 implied that Finland rapidly caught up with the other developed countries. The GDP-per-capita rank among the OECD countries improved to number 12 from number 19 in 1995. Finland reached some 80% of the US level and 95% of the Swedish level, and surpassed the German level by 3%. The growth was also inclusive, in the sense that income inequality remained in the same

Figure 5.12
Labour productivity and hours worked in the business sector (1990=100)



Source: Statistics Finland.

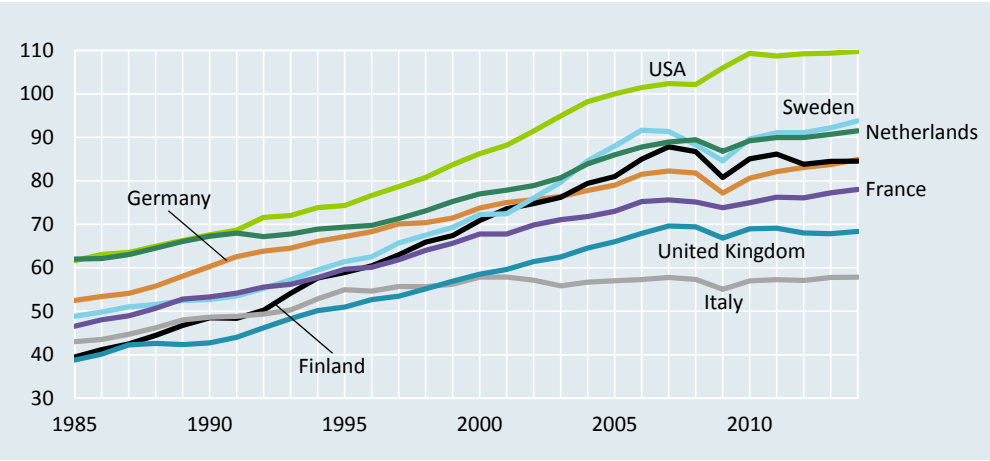
league as the other Nordics, and thus low by international standards, even though inequality had increased somewhat in the 1990s.

The growth implied a significant rise in employment. The employment rate rose from the historically very low 60%, in the aftermath of the 1990s crisis, to 70% in 2008. However, most of the growth came from higher productivity (Figure 5.12). This, in turn, reflected both the rapid growth of the share of high-value-added production, such as the ICT products, and the rapid productivity growth within different branches.

A part of the improvement in productivity was due to the immediate effects of the economic crisis, when weak companies lost market share and disappeared, and the rest had to improve productivity to survive. But importantly, productivity continued to steadily increase even after that, until the global financial crisis.

While international comparisons of productivity levels can be hazardous, the existing evidence suggests that the Finnish productivity performance was very good indeed from 1990 to 2008. According to the EU Klems data, productivity in the market sector increased fastest Finland among the developed countries in this period (Figure 5.13).[6] In the manufacturing

Figure 5.13
Labour productivity in the market sector, USA 2005 = 100



Note: US productivity development for the years 2007–2015 is estimated on the basis Business sector productivity obtained from OECD STAN4 database.
Source: EU Klems.

[6] The market sector refers to the economy excluding the public sector, where productivity measurement is notoriously difficult. Even the market sector productivity is a problematic concept given that it includes the financial sector. The measurement of productivity level is most reliable in the manufacturing sector.

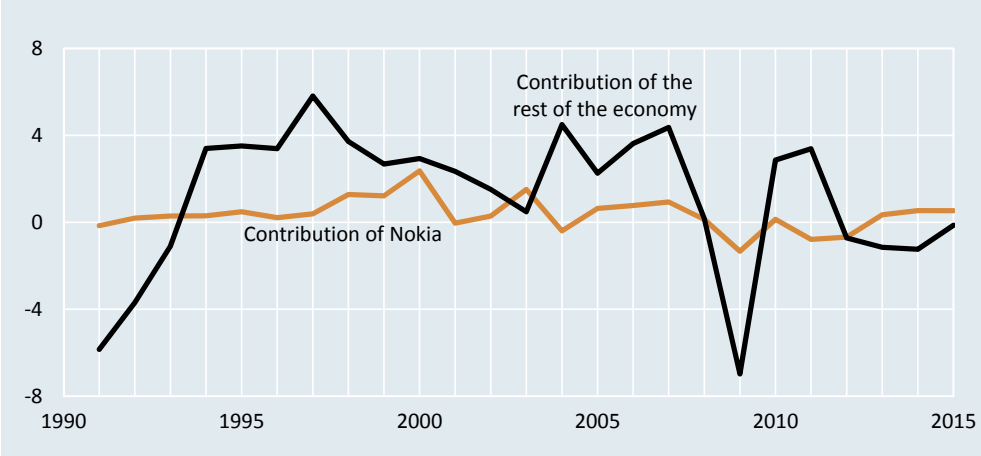
sector, where the measurement problems are smallest, the growth was even more impressive by international comparison. The EU Klems data suggest that productivity in the Finnish manufacturing sector surpassed that of even the US by 2007 (Maliranta, Määttänen and Vihriälä, 2012).

While many parts of the economy contributed to this improvement in growth, Nokia's role was significant (Figure 5.14). As a result, Finland transformed itself from being one of the least ICT-specialised countries, to becoming the single most specialised one in the world.

This rapid growth was clearly linked to the introduction and application of modern technology. Innovations were a central part of the success of the flagship company, Nokia, but also of success more widely. Similarly, the success was very much a result of an expansion in international trade and the internationalisation of the Finnish economy. The growth was essentially export-led, with export volume growing at an average annual rate of 7.9% between 1995 and 2008.

As discussed earlier, Finnish companies seized the opportunities of offshoring parts of their production processes to locations outside Finland, predominantly in the low-cost countries, but also closer to large markets. Finland's role in the international division of labour became increasingly tilted towards high-technology production. According to UNdata statistics, in Finland, the share of high-tech products in exports increased to 17.2% by 2008, exceeding that of Germany (13.3%) and Sweden (11.2%),

Figure 5.14
Contribution of Nokia Corporation to Finland's GDP growth



Sources: Ali-Yrkkö (2001), authors' calculations.

though still lagging behind the US (25%). In the process, the openness of the economy continued to increase.

As a result of the rapid growth of ICT manufacturing, the produce of which was sold almost entirely for export, the structure of the Finnish export industry changed significantly. While during the mid-1990s, Finland's forest industry was the most important export industry by far, followed by the traditional technology industry (excluding ICT), the ICT sector now formed a third pillar. This represented a significant diversification of Finnish exports and, in particular, now included products that were not based on domestic raw materials. This diversification reduced the vulnerability of the economy to shocks emanating from individual branches. At the same time, however, the economy became more dependent on one company and a particular technology it applied, than had been the case before.

Finland's rapid growth, the fact that it was very much based on innovation and trade expansion, as well as the relative inclusiveness of its growth, made Finland a kind of showcase of successful globalisation. Many articles and reports were written not only about the Nokia miracle, but more generally about the small peripheral country that succeeded extremely well amidst global competition (see e.g. Dahlman, Routti and Ylä-Anttila, 2006).

Adjustment pains and vulnerabilities emerge

The overall picture of the Finnish economy in the early 2000s was very positive. Nevertheless, strains began to appear in the economy. Offshoring had reduced many types of manufacturing jobs, with particularly severe impacts on smaller towns that had grown to depend on a single, or a few, manufacturing plants. An example of this was the closure of a mobile phone charger plant by Salcomp Oy, in the small town of Kemijärvi in 2003. The company laid off 290 of its 350 employees in Finland, most of them production workers in Kemijärvi. The remaining 60 people worked in R&D, senior management, sales and marketing tasks.[7]

At the same time, unemployment declined painstakingly slowly. Many of the people who had become unemployed during the crisis a decade earlier

[7] The offshoring decisions, as in the case of Salcomp, gave rise to a critical debate about the benefits of globalisation. One of the consequences was that the government set up a project to look into ways to improve the adjustment capacity of the society in 2004. The exercise was repeated two years later with a broader scope. As a part of second globalisation project an analytical paper was commissioned from Professor Richard Baldwin (2006).

had great difficulties reintegrating into the job market. Their skills were not good matches with the emerging jobs, or else the jobs were offered at a considerable distance from where the unemployed lived. As in many other countries, there were increasing signs of polarisation in the job market, with demand for the highly-skilled and some low-skilled service personnel increasing, while the number of manufacturing jobs returned to a downward trend.

Towards the very end of the period, when the employment rate reached 70%, and the unemployment rate declined below 7%, wage pressures began to increase in response to shortages of labour in some open sector branches and, in part, owing to some politicians' promises to improve the relative position of public sector employees. This did not cause any problems for as long as the global demand situation and the Finnish productivity growth remained good, but the momentum that was created turned very unfortunate when the situation changed.

In retrospect, it is clear that the good economic performance led to complacency at all levels of the economy and society. The strong economic cycle and the inherited good cost competitiveness reduced pressures to push for productivity-improving changes in the corporate sector. The great successes of the ICT sector and, for example, its rapid recovery from the bursting of the telecom bubble, made decision makers overlook the risks that had built up as a result of an increased dependence on a single company. The relatively good employment growth eliminated all pressures to modernise the labour markets. Similarly, the hefty surpluses in public finances reduced the pressures to address long-term sustainability challenges created by a rapidly ageing population. Finland was doing well, but it was vulnerable.

6

A series of shocks disrupt the economy again

As discussed in the previous chapter, Finland enjoyed one the best growth performances among developed economies in the decade and a half prior to the start of the global financial crisis in 2008. Even the bursting of the 'dot-com' bubble in 2001 slowed down growth only temporarily, despite Finland's dependence on the production of telecom technology.

At the same time it seemed that Finland had adjusted smoothly to the loss of monetary autonomy as one of the founding members of the Eurozone. Unemployment declined slowly but steadily, without any exceptional acceleration of inflation. The public sector posted heavy surpluses, which took the general government gross debt down to a little over 30% of GDP by 2008.

Global and European macro shocks hit hard

The blissful situation was not to last, however. The global financial crisis that began in earnest during the autumn of 2008, hit the Finnish economy hard. GDP declined by 8.3% in 2009. Finland's loss of output was far worse than the Eurozone average of 4.5%, and represented the largest drop in the EU, save the three 'catching-up' economies in the Baltics, Estonia, Latvia and Lithuania.

The shock obviously emanated from exports, the volume of which declined by 20% in 2009. The decline was one third larger than in Sweden or Germany – two manufacturing-oriented EU economies – and double the Eurozone average. Investment demand declined by a little over 10%, in line with many other EU countries, including Sweden and Germany. Also, private consumption came down temporarily.

As in most other EU countries, the Finnish economy started to recover towards the end 2009. However, GDP stalled in early 2011 and resumed

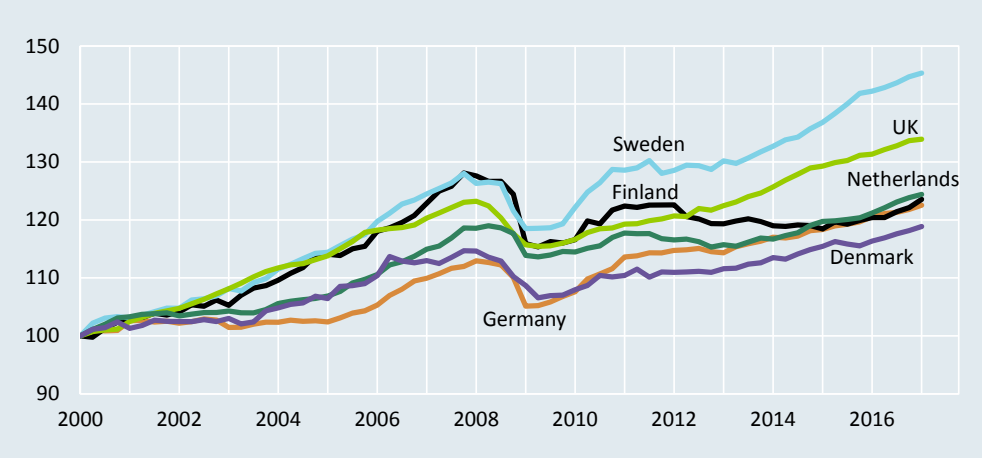
a decline that went on until 2015. Thus, the performance deviated a great deal from other high-income northern European countries, which continued to recover at relatively steady rates from the original global shock (Figure 6.1). In 2016, GDP was still about 4% below the 2008 level, while over 4% higher in the Eurozone as a whole, and 14% and 8% higher in Sweden and Germany, respectively. The low level of activity can be traced back to exports and investments, which were still both 11% smaller in 2016 than in 2008. Private consumption, however, increased by 7.5% in the same period, even including the initial drop, on the back of fiscal expansion and an increase in household debt.

The recession Finland has been going through is the longest episode in modern Finnish economic history when GDP has remained below a previous peak. While growth has finally accelerated through 2016 and during 2017, the 2008 level of GDP will be reached, at the earliest, in 2018. Thus, the recovery has been very different from that experienced in the aftermath of the 1990s crisis (Figure 6.2).

Asymmetric shocks lie behind the substandard growth

The inferior performance of Finland, relative to its peers, has not been due to exceptionally tight macro policies or domestic financial instability (Suni and Vihriälä, 2016). Fiscal policy stance in Finland was cumulative-

Figure 6.1
GDP level in selected northern European countries, 2000/1=100



Source: Eurostat.

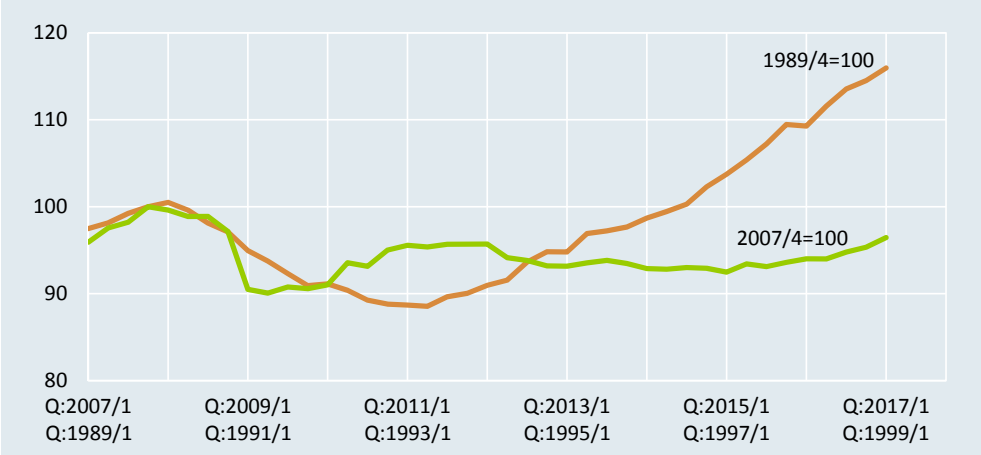
ly the most expansionary in the whole EU between 2009 and 2015, owing to both strong automatic stabilisers and a large discretionary stimulus in 2009 and 2010. Monetary policy rates were obviously the same as in other Eurozone countries. The banking system did not incur large losses and remained well capitalised. As a result, the interest rates faced by households and SMEs remained low and the availability of credit better than on average in the Eurozone. The lower ECB interest rates were thus transmitted fully into the economy.

Nokia's share of Finnish GDP declined from some 3% to zero

Rather than being a result of exceptional macro policy, a much more likely explanation for the weak growth is that Finland was subject to a series of country-specific shocks. The first obvious one was the rapid decline of Nokia's mobile phone business, when the company failed to match iPhone and various Android touchscreen devices, and rapidly lost market share from 2008. As a result, Nokia's activity in Finland, and particularly its profits, declined rapidly, and the company's share of Finnish GDP declined from some 3% to zero in the five years to 2012. Apart from production, R&D activity by the company was also reduced. Given its dominating role in R&D and its extensive collaboration with other companies and universities in the ICT field, overall R&D activity in Finland took a serious toll.

A second sector-specific shock concerned paper. The demand for print paper began to decline at roughly the same time as the global crisis, as

Figure 6.2
GDP in two crises



Source: Statistics Finland.

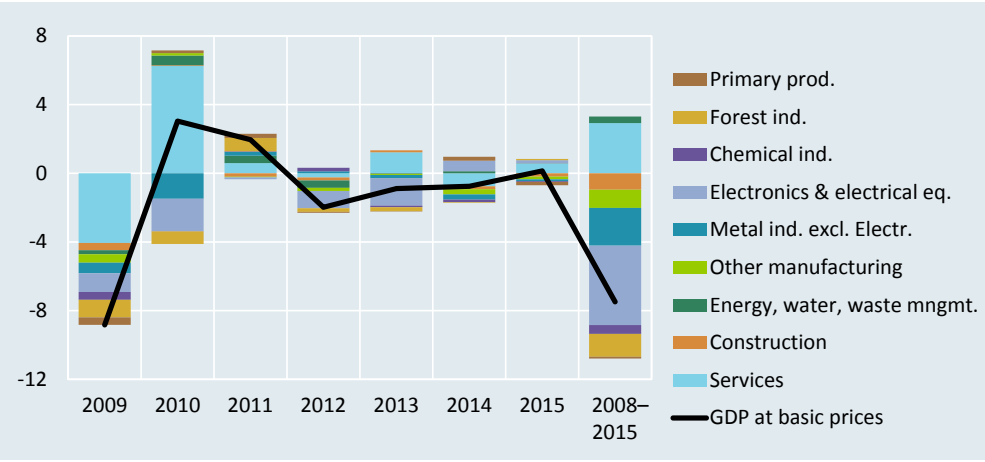
digital distribution of information began to replace traditional paper media. Given the importance of the paper industry in the Finnish economy, the impact was bigger than, for example, in Sweden.

A third shock that can also be characterised as asymmetric in nature, was the large drop of investment demand globally during the crisis, and its subsequent lower level as a percentage of GDP than prior to the crisis. This was more problematic for Finnish manufacturing than for many other countries, as the Finnish technology industry outside the ICT sector has been more oriented towards producing investment goods, and components for such final goods, than consumer goods.

Finally, in the spring of 2014 the decline in the price of oil, and the collapse of the value of the ruble, significantly reduced Russian purchasing power. As Russia accounted for some 9% of Finland's goods exports and Russian tourists were by far the most important visitor group in Finland, this further reduced Finland's export revenues. Goods exports to Russia declined by 50% in two years, as did the number of Russian tourists visiting Finland.

The GDP impact of the Nokia-dominated 'ICT Cluster' was by far the biggest shock, accounting for some 60% of the cumulative GDP loss between 2008 and 2015 (Figure 6.3). However, most of the employment loss was due to other technology industry branches.

Figure 6.3
Change in GDP 2008–2015, contribution of different branches



Source: Statistics Finland.

Box 6.1

The decline of Nokia's phone business and the reallocation of resources

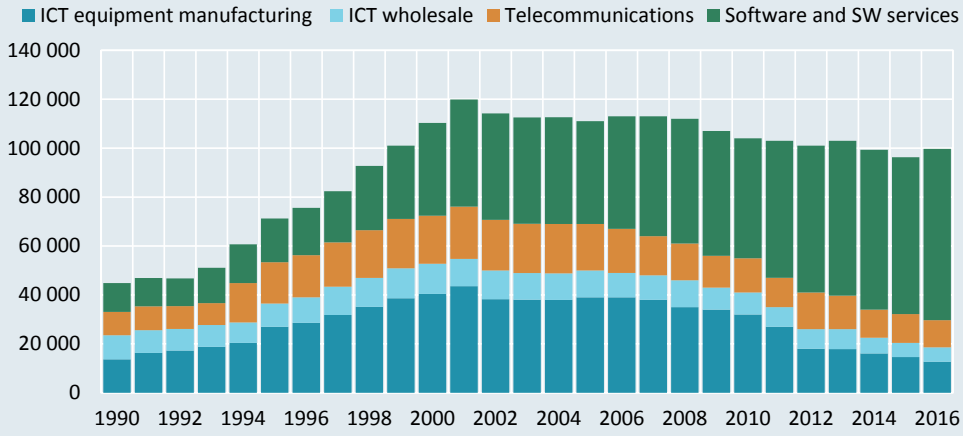
After 2008, Nokia very rapidly lost market share in smartphones. Apple's IPhone started a new era in smartphones, and the killer invention was Google's Android operating system. Nokia's counterattack was to develop new linux-based operating systems, Meego and Meltemi. But their development work progressed too slowly, and by 2011, Androit had become the market leader in smartphones' operating systems. At that point, under a new leadership, Nokia discontinued the development of own-operating systems and opted for Windows as the operating system for the smart phones. Nokia's Windows strategy did not work either. The market share continued to decline from quarter to quarter. Consequently, thousands of employees were laid off. Between 2009 and 2013, the number of Finnish employees dropped from 21,600 to 11,100. Eventually, in 2013, Nokia divested its mobile device business to Microsoft. In total, Nokia transferred 32,000 employees to Microsoft, of which 4,700 were in Finland. After the deal, Nokia had 6,800 employees in Finland.

In spite of Microsoft's efforts, the company did not succeed in the mobile phone business, thus, during 2014–2017, thousands of employees were fired, both in Finland and other countries. In June 2017, Microsoft closed its Finnish subsidiary Microsoft Mobile Oy. Thus, Microsoft mobile's Finnish employment dropped from 4,700 to zero within three years. Meanwhile, Nokia transformed itself into a leading network equipment and wireless technology company, including through an acquisition of Alcatel-Lucent. The company's market value was € 28 billion in January 2017, and it employed 102,700 people globally, of which 6,600 were in Finland. In 2015, Nokia was again the biggest company in Finland by value added, and it share in Finland's GDP was about 1% (Ali-Yrkkö, Mattila and Seppälä, 2016).

The transformation of Nokia and the cluster around it, along with general trends in manufacturing, have brought about a significant restructuring of the ICT-sector in Finland. The overall employment of the sector declined from a peak of almost 120,000 in 2001, to about 100,000 in 2016. Most of the jobs lost have been relatively low-skilled manufacturing jobs, but also a large

Figure 6.4

Number of employees in the Finnish ICT sector by subcategories



Note: Number of employees in Finland. *Data source*: Statistics Finland.

number of highly-skilled people have had to find new employment. Many of the ex-Nokia employees have found new jobs outside the ICT sector proper, many have moved to other ICT companies, and some have become entrepreneurs; some 600 companies have been established by ex-Nokia employees.

As a result of these changes, the structure of the Finnish ICT-sector is now very different from the heydays of Nokia. The vast majority of the employment is in software development and software services, while equipment production accounts only for some 12% of the sector's employment (in 2016, see the Figure 6.4). Some of the most successful new companies have been in video games, including Rovio and Supercell.

Productivity is affected across the board

The decline of GDP in 2009, and its very slow recovery, has manifested itself primarily in the collapse and subsequent stagnation of aggregate productivity. While employment declined too, by some 4%, the weak productivity performance accounts for four-fifths of the approximately 20% gap that emerged between the trend GDP and actual GDP by 2015. In this regard, the crisis differs a great deal from the crisis of the early 1990s, when productivity continued to grow throughout the crisis, while some 20% of jobs disappeared over the following three years.

Part of the weak productivity development since 2007/2008 undoubtedly reflects global technology trends. Productivity has grown much slower during this period than previously, in all countries that are at or close to

Figure 6.5
Labour productivity in the non-farm business sector

Source: EU Klems.

the productivity frontier, for reasons that are not currently fully understood. This concerns both labour productivity and total factor productivity and is thus not essentially due to different levels of capital invested in different lines of business.

The initial productivity shock was fairly similar for Finland as it was for Sweden or Germany. However, after the initial shock, productivity growth has been much weaker in Finland than in these key peer countries. While Sweden and Germany have just about reached the US level (relative to the 2007 level), a gap of more than 10% has emerged between Finland and the US (Figure 6.5).

Bad luck is only a partial explanation for the weak Finnish productivity performance

An obvious potential explanation for this is the composition of the demand shocks. In Finland, the loss of sales disproportionally concerned high-productivity branches, such as ICT and paper industries. This structural factor explains about one third of the difference that has emerged between productivity in Finland and that in the US, and about a half of the difference relative to Sweden and Germany. Thus, bad luck with regard to the production structure is only a partial explanation for the weak Finnish productivity performance. Low aggregate demand is another possible explanation for the productivity discrepancy, but it cannot be excluded that the Finnish economy has simply been weaker than Sweden or Germany in making use of new technological possibilities recently.

The production structure normalises

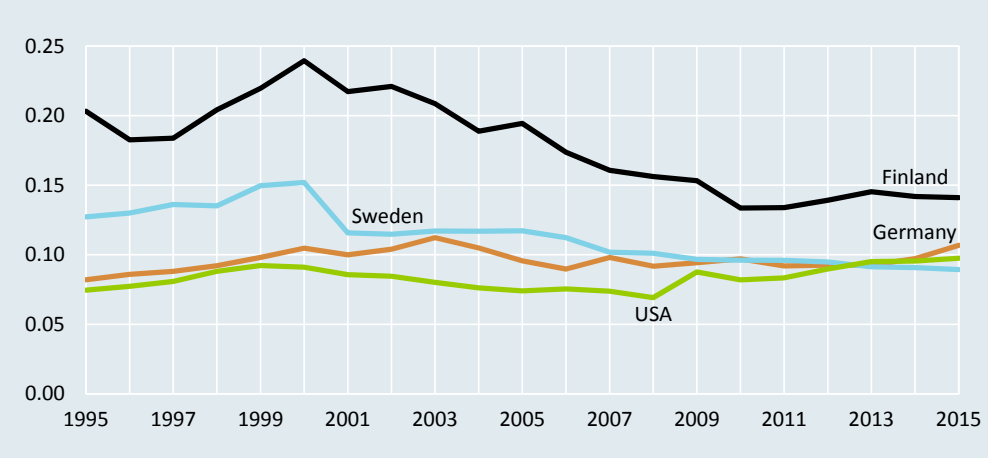
The rapid growth of the ICT sector since the mid-1990s made it the third, 'high-tech', pillar of the Finnish export industry, alongside the forest industry and technology industry (excluding ICT). At the same time, however, the ICT industry was very dependent on one company – Nokia. The overall success of the manufacturing sector also implied that, unlike in most other developed countries (Germany being a notable exception), the share of manufacturing in value-added and employment held up very well, despite the general trend towards the services-dominated economies.

The external shocks that impacted the Finnish economy, however, corroded the exceptionality of the Finnish production structure. The high share of ICT production, and with that the production that is classified as 'high- tech', declined. In fact, based on the technology level of exports, Finland suddenly appeared to move from a country specialising in high-tech to one with a rather average technological specialisation. In tandem

with this, the dependence on a single company was obviously reduced as well, and the exceptional product concentration of merchandise exports declined, even though it still remains relatively high (Figure 6.6).

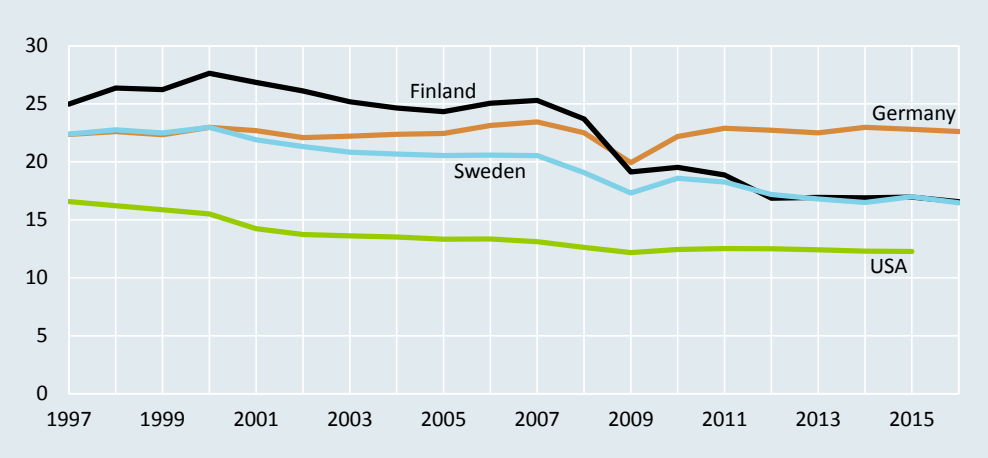
Finland also re-joined the great majority of countries where the shares of manufacturing value-added, and particularly employment, declined (Figure 6.7). In this this regard, Finland now very much resembles neigh-

Figure 6.6
Concentration index of merchandise exports, %



Note: Herfindahl-Hirschman index.
Source: Kaitila and Virkola (2014), updated. *Data source*: Unctad, Merchandise trade matrix.

Figure 6.7
Share of manufacturing (value added) of GDP, %



Data source: World Bank.

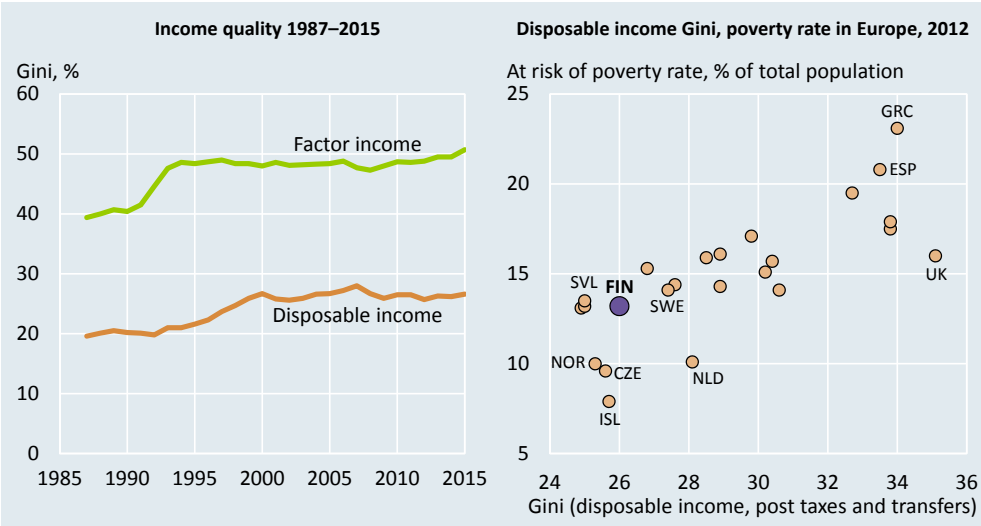
bouring Sweden. Thus, the exceptional features of the Finnish production structure that had been associated with a period of rapid growth have now normalised.

Social pain more limited than in the 1990s crisis

The social consequences of the recession experienced this time around have differed significantly from those associated with the crisis of the early 1990s. A crucial difference, as previously discussed, is that most of the loss of output related to the pre-crisis trend has been due to a decline and subsequent stagnation of productivity, rather than to a loss of employment. Combined with a moderate decline of the working age population since 2010 this has implied that unemployment rose only by some 3 percentage points at most. While the unemployment rate came close to 10 percentage points at the peak, it still remained in a different ballpark from in the early 1990s (when it hit almost 17%) and is very different from the unemployment levels in the Eurozone crisis countries during the current crisis.

Another important factor has been fiscal policy. As noted above, Finland's fiscal policy has been the most expansionary among the EU countries. In the first two years, 2009 and 2010, tax reductions and expenditure increases contributed to this outcome. Although more lately taxes have been raised and

Figure 6.8
Inequality in Finland and the EU countries



Sources: Statistics Finland and Eurostat.

expenditures cut to reduce deficits, automatic stabilisers and the pension system have kept the fiscal stance broadly neutral or slightly expansionary.

While obviously the unemployed have suffered a loss of income, inequality of disposable incomes has not increased at all during the recession. In fact, the inequality of disposable incomes, and the share of the poor in the population, have remained essentially unchanged since 2000, including through many boom years and many recession years. This presents strong evidence that the safety nets have functioned well. Finland has remained a country of minor income disparities throughout the crisis (Figure 6.8).

The stable income distribution notwithstanding, many localities have been hit hard by the crisis. Particularly affected have been smaller towns and regions specialising in certain types of manufacturing activities, such as the paper industry and ICT activity.

The relative painlessness of the recession has nevertheless come at a cost. Public expenditure has risen to 57% of GDP, which is the highest share among the OECD countries and exceeds those in the other Nordics by several percentage points (Table 3.2). Public sector debt has increased from a little over 30% of GDP to close to 65%, despite discretionary consolidation measures, which cumulatively amount to some 5% of GDP. A further cost is that the accomodative fiscal stance has probably slowed down the necessary adjustment of the economy.

One of the most competitive countries slow to react

The Finnish economic performance since 2008 appears to be a paradox. At the start of the global crisis, Finland was ranked as being one of the most competitive economies of the world in various international comparisons, such as those of the World Economic Forum (WEF) *'Global Competitive Index'*, and the Institute for Management Development (IMD) '*World Competitiveness Ranking*'. Although Finland's overall rankings have come down since, it is still assessed as being amongst the strongest countries in the world with regard to a number of factors considered to be essential for economic growth in the medium and long term, i.e. human capital, innovation capacity, digital capabilities, quality of institutions, etc. (Table 6.1).

The explanation must lie in the interplay between the external shocks and the adjustment capacity of the economy. As noted earlier, Finland was undoubtedly hit by harder shocks than its key western European peers. However, the fact that the GDP was several percentage points below the

pre-crisis level in 2016, or eight years after the crisis began, suggests that there has been a lack of resilience as well.

The development of cost competitiveness aggravated the other export problems

In comparison to the 1990s crisis, an obvious shortcoming in the current crisis has been the weak response of cost competitiveness. In the previous crisis the relative unit labour costs of Finland's production declined by some 30% in less than two years, and remained very competitive for a long time. This was originally because of a 30% effective depreciation of the currency. That the competitiveness remained strong for several years was, in turn, due to a rapid growth of productivity and a wage moderation supported by historically exceptionally high unemployment. As a result, exports began to grow in the middle of the crisis and continued to grow quickly for more than a decade. While a significant part of this was the booming ICT export, export performance was also good in other parts of the manufacturing sector. The recovery and the rapid growth was very much export-led.

This time around, Finland's membership of the currency union has prevented a depreciation, and wage moderation was slow to materialise.

Table 6.1
Northern European countries' rankings in selected competitiveness comparisons*

Human Capital	Education	Innovation	Quality of institutions
Fin (1)	Fin (1)	Fin (3)	Fin (1)
Swe (2)	Den (3)	Ger (5)	Den (2)
Den (7)	Ger (7)	Swe (6)	Swe (3)
Nld (8)	Swe (11)	Nld (7)	Nld (4)
Ger (11)	Nld (16)	Den (8)	Ger (6)
UK (19)	UK (25)	UK (13)	UK (7)
WEF Human Capital Report 2016	OECD Better Life Index	WEF Global Competitiveness Report	World Bank WGI Index

Network readiness	Digitalization	Proficiency of English	Globalization
Fin (2)	Den (1)	Nld (1)	Nld (1)
Swe (3)	Fin (2)	Den (2)	Den (7)
Nld (6)	Swe (3)	Swe (3)	Swe (8)
UK (8)	Nld (4)	Fin (5)	Fin (11)
Den (11)	UK (7)	Ger (9)	UK (20)
Ger (15)	Ger (11)		Ger (27)
WEF Global Competitiveness Report	EU Digital Economy and Society Index	Education First (EF)	KOF Index of Globalization

* The number in parenthesis refers to the country's global rank.

Wages in fact increased rapidly in 2008 and 2009. Combined with plummeting productivity in 2009 this led to an almost 10% increase in relative unit labour costs, precisely at the time when export demand was hit by the global financial crisis. Thus, the development of cost competitiveness aggravated, rather than alleviated, the other export problems. This is clearly a part of the reason why the volume of goods and services exports remained stagnant between 2010 and 2016.

The need for greater labour cost flexibility in response to asymmetric shocks was discussed prior to the decision to join the EMU in the late 1990s. This did not, however, lead to significant changes in wage formation or in labour market practices more generally. Furthermore, when the crisis hit in 2009, it was considered a symmetric (rather than an asymmetric) temporary demand shock by the government and labour market partners. The policy reaction was, as noted, expansionary fiscal policy rather than labour-cost adjustment. That Finland had been hit harder than many other countries, and in particular that cost competitiveness would need to be improved, was acknowledged slowly, and it was only in 2014 that the rate of growth of the earnings index decelerated below 2%.

One of the reasons for the slow wage reaction was, in all likelihood, the relatively small increase in open unemployment on the one hand and the extensive social safety nets on the other hand, which have shielded the unemployed from extreme hardship. The pressure at the individual level, as well as at the level of labour unions, to accept real wage adjustment therefore remained weak for many years. The Finnish labour market failed to function well in response to its first real test within the EMU.

By 2015 it had nevertheless become more widely accepted that better cost competitiveness was needed to improve Finland's dismal export performance. In 2016, the government pushed through a "competitiveness pact", which involved longer working hours and some cuts in employer contributions. It has been estimated that unit labour costs will as a result be reduced by 3.5%, starting from 2017.

Despite its strengths the real economy has also lacked resilience

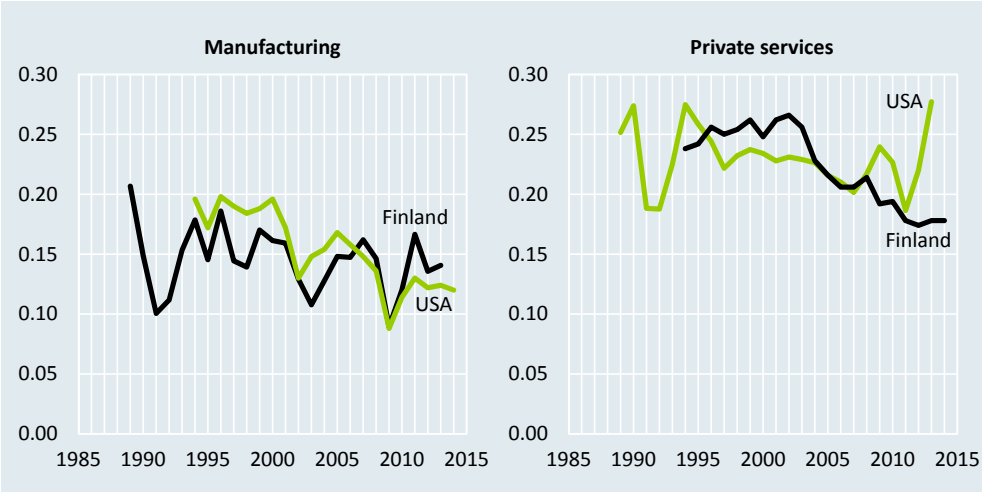
Inflexible labour costs, however, cannot be the only explanation for the weakness of Finnish growth. Exports declined mainly in those manufacturing branches where labour costs were relatively less important than in many other parts of the economy. Furthermore, as weak productivity growth rather than a massive decline in labour input, has been the source

of stagnation, a stronger wage response would hardly have eliminated a significant part of the growth weakness. In addition to weak cost adjustment, the real side of the economy has proved to lack on adjustment capacity relative to the size of the shocks.

When existing high value-added production turns out to be unprofitable, the only way to maintain value creation and living standards is through innovation and resource reallocation. New high value-added products need to be developed, for which there is demand, and idle and under-utilised resources need to be shifted to support the production of these new products. It is difficult to consider Finland particularly weak on either count. For example, Finland has been listed as one of the innovation leaders by the European Innovation Scoreboard (IES). Similarly, in terms of triadic patents *per capita*, Finland has been well above average among the OECD countries, even recently when the number of new Nokia-related patents has fallen. On the other hand, labour reallocation between companies and plants has been at the same level as in the US, which has been considered one of, if not the most, efficient economy in this regard (Figure 6.9).

However, the Finnish innovation system and individual companies may have been ill-prepared for the type of innovations that were needed, or best suited, for the new circumstances. The R&D activity of Finnish companies has centred very much on ICT technology, and was conducted, to an exceptional degree, by one company (Nokia) prior to the crisis. The

Figure 6.9
Reallocation of jobs, 1989–2014



Renewal of jobs at the level of establishments measured by "the excess job reallocation rate" (EJR).
Source: Maliranta (2017).

level of R&D spending (relative to sales or value-added) by other companies, other than those in the ICT sector, has not been particularly high in international comparison. When Nokia cut R&D expenditure in response to its weaker profitability, a significant fraction of the innovation capacity became idle, or underused, at least for a while, and some competences that were strictly oriented towards developing mobile phones were rendered redundant.

Another feature of the Finnish innovation scene is that the activities concern more product and process innovations than marketing or organisational innovations (http://ec.europa.eu/eurostat/web/microdata/community-innovation-survey). Finland has been a country of engineers rather than marketing experts. It could quite well be that the disruptions experienced by the key Finnish export industries were such that an incremental product or process innovation, in which the Finnish companies had been strong, would not solve the problem. A more radical reorientation would be needed, perhaps towards completely different products and different types of customers. And it is precisely here that the Finnish innovation tradition has fallen short.

In addition to these shortcomings in the innovation system, there have been other factors that have no doubt slowed down the restructuring of the economy. One of these factors relates to economic geography. The Finnish population of 5.4 million is relatively thinly spread over a large area. New business and job opportunities do not necessarily emerge in the same localities as where the old ones disappear. This is clearly a bigger challenge for Finland than even for Sweden, not to mention other northern European countries, such as Denmark, the Netherlands or Germany.

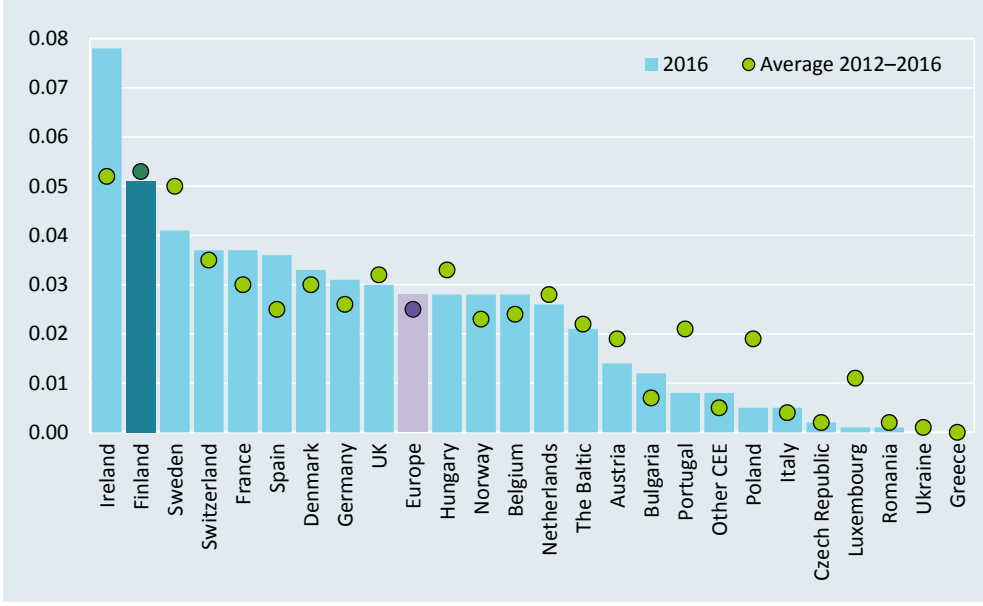
The labour supply has also been weak, and may have impacted on potential business expansion. First, the working age population is declining. Second, the employment rate, currently at below 70%, has been low by Nordic standards, irrespective of the cyclical situation. Therefore, even though the degree of job reallocation has been relatively high, new and expanding businesses may have been unable to have trust in the availability of appropriate labour. Many elements of the social security system have probably contributed to this outcome. For example, the earnings-related unemployment benefits, while not exceptionally high by European standards, are available for a long period of time, i.e. 400-500 working days continuously. Also, the incentives for older workers to remain in the labour market have been reduced through the provision of easy access to early retirement. The supply of female labour has also been discouraged by generous subsidies for childcare at home.

Similarly, employment protection legislation has made it difficult for companies to hire employees with different skill sets from those of the people they have recently laid off. New hires have also been discouraged by the strict rules on dismissing individual employees. Training new workers through apprenticeships has been made unattractive by the requirement of treating the trainees as employees, with virtually full benefits. The employment of immigrant labour from outside the European Economic Area (EEA) has been subject to needs-testing.

Adjustment has started and the economy is recovering

Although it has taken a long time, policies have begun to respond, and so has the economy. First, as previously noted, wage costs have been reduced by a one-off measure in parallel with accelerating wage increases in competitor countries. Some steps have also been taken to make working conditions more responsive to firm- and plant-level circumstances. In addition, several reforms have been implemented to improve labour supply incentives and to reduce employers' risks associated with hiring. For example, the duration of unemployment benefits has been cut by 100 days.

Figure 6.10
Venture capital investments in Europe, % of GDP



Other CEE consists of Ex-Yugoslavia & Slovakia.
Sources: FVCA, Invest Europe, EDC, Thomson Reuters Datastream (GDP).

Second, goods market regulations have been streamlined. Shopping hours have been completely liberalised. The regulation of transportation services is being eased; the quantitative limits for taxi licences will be eliminated and transport service providers will be required to open up their data to outside users, which should enable new types of services to emerge. A major reform of the social and health care services to incentivise new ways of producing such services is underway, etc.

Third, start-up activity has increased substantially. While small in absolute terms, the Finnish venture capital market has been able to attract investments, which are among the highest in Europe, relative to GDP (Figure 6.10). The Finnish start-up event, 'Slush', has become one of the biggest of its kind in Europe. At the same time, the corporate R&D investments outside the ICT sector have increased consistently.

Fourth, most of the skilled people laid off in the ICT sector have been re-employed, partly in the ICT sector itself, where many new businesses have emerged. Others have migrated to other, often more traditional industries. This has obviously been easiest to achieve in the deepest local labour market areas, such as in the Metropolitan Area of Helsinki. However, a particularly good example of local resilience is the Oulu region of Finland, which was highly dependent on Nokia and its R&D activity prior to the crisis. Start-ups by previous Nokia employees have been numerous, and several global companies have established operations in the Oulu region to make use of the skilled labour. Empty office spaces have disappeared.

Fifth, a significant transformation is also taking place in the more traditional industries. In the forest industry, for example, the production of print paper has been reduced, while the production of packaging material has increased. Perhaps more importantly, the concept of bio-refinery appears to be taking hold, in that different parts of wood are being used more efficiently for different purposes. All major forest companies are investing in the new technologies and processes that make better use of different elements of the raw material.

Restructuring has also taken place in the technology industry, outside ICT. Shipbuilding, which was under threat of disappearance, has begun to grow again, thanks to the acquisition of a major shipyard by a strong European shipbuilding company. The assembly of high-end autos has been expanding, and companies in energy technology have diversified from equipment building increasingly towards providing services. Several domestic and foreign companies utilise Finland as a base to develop

and experiment with new remote-control technologies to be used, for example, in power generation and shipping.

These developments have finally started to show up in the aggregate numbers. In 2016, GDP grew by almost 2% on the back of expanding consumption and investment. For 2017, GDP growth projections have been repeatedly revised upwards, with most recent estimates being between 2.5% and 3%. Importantly, export growth has now picked up and begun to contribute to growth significantly. For the first time since the crisis began, Finland is growing faster than its main competitors. There are also signs of productivity growth picking up.

7

What lies ahead – what is the role of policy?

The two faces of globalisation

Baldwin's vision of globalisation is built around the cascading relaxation of three constraints: first, the cost of transport (exchange of goods); second, the cost of communication (exchange of ideas); and ultimately – and at this point somewhat speculatively – the cost of face-to-face interaction (exchange of tacit knowledge).

Even though globalisation has resulted in more intense competition, both the range of opportunities to compete and the reward for succeeding have grown. Globalisation deepens specialisation, which in turn leads to welfare gains (distributional issues aside). Overall, globalisation has vastly expanded the range of opportunities, especially for small countries such as Finland. As Baldwin (2016, p. 175) points out, however, in the era of trade in technology – as opposed to trading just goods (embodying technology) – "the ironclad logic that all nations gain from trade is no longer ironclad".

As we have shown in previous chapters, Finland is a textbook example of a country riding the great unbundlings and adapting to the new economic realities they brought about. While the adjustment has, at times, been anything but easy, it has taken place. When the current phase of globalisation dawned in the early 1990s, Finland was in deep economic crisis and it set out to succeed on the basis of technological competence. Over the following 15 years, Finland did very well on the basis of that strategy. Indeed, research by Bertelsmann Stiftung (Böhmer, Funke, Sachs, Weinelt, & Weiß, 2016) suggests that Finland is among the greatest beneficiaries of globalisation during 1990–2014.

However, the travails of Finland, for almost a decade now, show that the chosen strategy can be vulnerable. High productivity requires specialisation, in terms of technologies, activities, and even tasks. Changes in glob-

al demand for a given product or technology can be sudden and unpredictable – the fate of Nokia's mobile phone business is a prime example of this. And, when several of the few pillars of a small economy are hit at the same time, the result can be devastating.

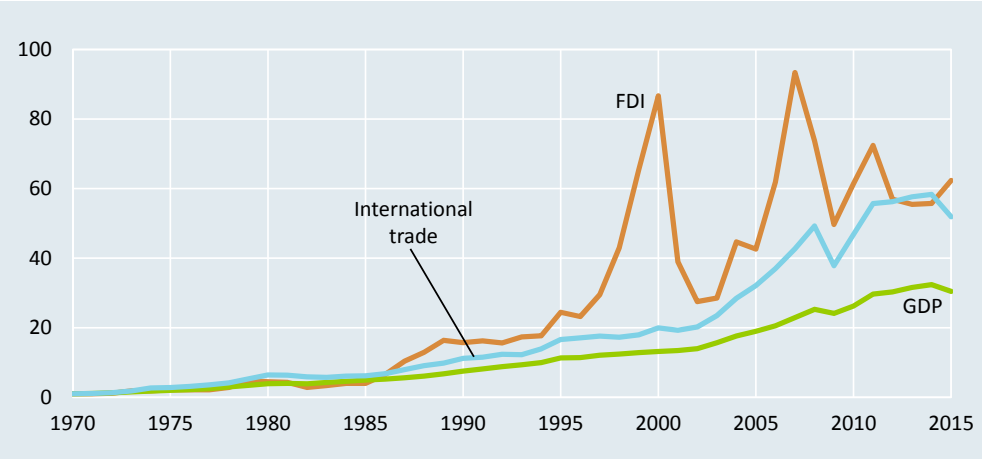
In 2017, Finland has finally begun to recover, and is doing so on a wider basis than in the aftermath of the 1990s crisis. Nevertheless, it is obvious that the challenges a small country like Finland faces as part of the global economic system are not over. They may even intensify.

Globalisation at the crossroads

There are indications that the most rapid progress of globalisation has come to a halt. Unlike in the pre-crisis years, the rate of change in global trade has not anymore exceeded that of global GDP (Figure 7.1). The share of exports that participate in cross-border supply chains has stabilised, and even reduced, since the global financial crisis (Figure 7.2). The total flow of foreign direct investment in relation to global GDP has declined in the same period (Figure 7.1).

These changes are likely to stem, in part, from changed business strategies. At least in some cases, coordination and other costs associated with globally dispersed production have been underestimated, or the features

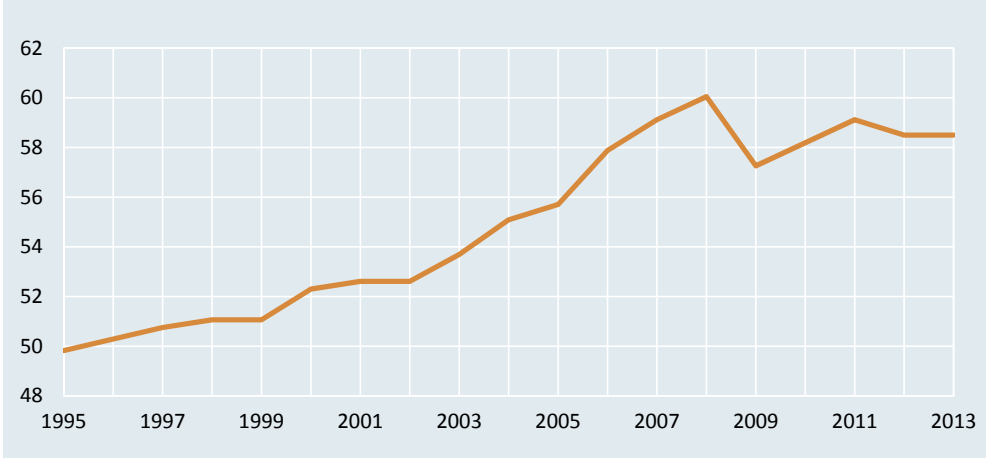
Figure 7.1
International trade and foreign direct investment have grown faster than world GDP, index (1970=1)



Source : Authors' calculations.
Data sources: FDI (World Investment Report, FDI outflow); GDP (World Investment Report, GDP in current prices); Trade (World Investment Report, Export of goods and non-factor services, in current prices).

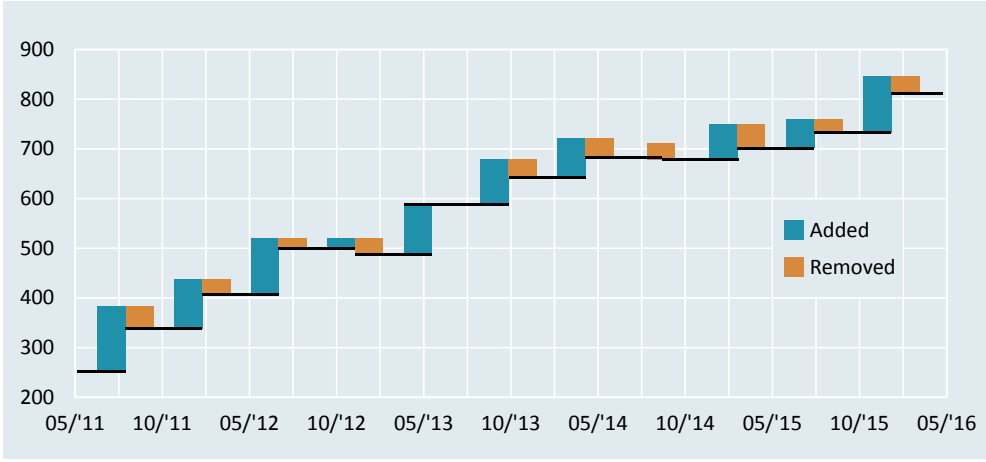
of home operating environments under appreciated. Timmer et al. (2016) further suggest that a shift in demand towards less trade-intensive services, as well as China's internal development – and thus its reduced need for imported intermediate inputs – have contributed to the recent drop in the global trade-to-GDP ratio. But in part the halt may be due to protectionist political tendencies that have become more prevalent again (Figure 7.3).

Figure 7.2
Share of global exports that participate in cross-border supply chains, %



Sources: IMF, UNCTAD (The Economist, 28 January 2017).

Figure 7.3
G20 trade restriction measures since 2010



Source: WTO (The Economist, 28 January 2017).

In any case, recent political events have called into question the commitment to free trade and economic openness of many important players. Under Trump, the US has ditched multilateral trade liberalisation in favour of bilateral arrangements and the current administration appear to have no qualms in openly favouring American production at the expense of imports. And while the UK continues to support the principle of free trade, the country's departure from the EU, and most probably from the single market, will weaken its economic linkages with Europe, regardless of how the country's future trading relations with the rest of the world develop. Furthermore, while China is formally committed to free trade, it continues to favour its own companies and seems to invest in creating its own sphere of economic influence.

Does all this mean that globalisation is about to be reversed? We don't think so.

First, it should be noted that in thinking of the second unbundling, from around 1990, the increasing prevalence of global value chains should never have been thought of as an ever-increasing linear trend, but rather as an 'S-curve'. China, the former Soviet bloc, and other emerging countries could enter the global trading system only once, and following some adjustment period their entries would no longer provide further impetus for globalisation. At the global level, we may now be at the stage where the S-curve has levelled off, after which it continues at a new higher plateau, perhaps with some fluctuations due to global business cycles and political fortunes in major economies.

The core technological forces are still advancing

Second, the core technological forces of the first and second unbundlings are still advancing. Even though technology does not dictate societal outcomes, we believe that the underlying drivers are so strong that extraordinary political reorientations would be needed to reverse their impacts. Furthermore, global differences in both wages and per worker exploitation of available knowledge are still large, which in turn suggest further gains to be seized via international arbitrage. This does not mean that the roles of various countries would remain the same. For example, during the past ten years wages in China have almost tripled. If this trend continues, it is not at all clear that China will remain as 'the world's factory' in 10–20 years' time – some assembly/fabrication activities will seek new, low-cost locations.

Third, it is quite possible that something close to what Baldwin calls the 'third unbundling' will indeed take place in the decade or two ahead. Tele-presence and tele-robotics sound like science fiction but are not – remote-controlled drones are already employed in wars, and surgeons

can perform from a distance. Skype and other reasonable substitutes for face-to-face communication have become widespread and are virtually free. Thus, some elements of Baldwin's third unbundling are already here.

But Baldwin suggests an order of magnitude type of change. For example, what if cheap tele-presence would be convincing enough to the extent that you would be uncertain whether you were visiting a distant location physically or virtually? With such a technology, leisure and especially business travel, for example, would change dramatically. Baldwin (2016, p. 6) notes that the second unbundling redefined the international boundaries of knowledge; it seems that the third unbundling might only deepen this development.

Even if the third unbundling did not involve a qualitative change in the importance of physical presence, the need for face-to-face communication may be reducing in reaction to the development of artificial intelligence, automation, and machine-to-machine communication; 3D printing not only substitutes transmission of data for transportation of goods but also eliminates any communication needs in the fabrication stage. Generally, the more well-defined and modular production technologies are, the less business operations depend on face-to-face interaction. Thus, one of the things enabling the second unbundling may be reducing the need for the third unbundling.

Overall, it is hard to project the extent and precise nature of globalisation over the coming years. There are currently political efforts to tame, and even to stop globalisation, although in this respect the pendulum may already have reached its limit. It seems that, at least in some countries, populist forces flagging openly for protectionism have lost support. Furthermore, as the rhetoric has become uglier, many politicians may have begun to remember the lessons from the interwar period, when protectionism really was pursued and had dire consequences. And, as hinted above, even though today's politicians would want to halt globalisation, they have less ability to do so due to the myriad of cross-border linkages they are unable to control.

On balance, it is hard to see a permanent decline in the progress of globalisation, even though politics may create temporary steps backwards. On the other hand, it is too early to tell whether or not there will a jump in the near future to the third unbundling phase, involving a dramatic decline of the importance of physical presence. The safest bet is to assume that globalisation will continue to increase, although at a slower pace than was the case up to the global financial crisis, and possibly with temporary reversals.

The developed countries' advantages are not permanent

Since knowledge is not consumed in the process of using it (it is 'non-rival'), during the first phase the main beneficiaries of the second unbundling have been the guardians of more extensively-used knowledge, i.e. multinational enterprises in the North. Over time, knowledge is also non-rival in another way – it spills over to third parties without having to provide full compensation to its original creator (which is especially the case in contexts where such knowledge diffusion is both socially accepted and promoted by lax enforcement of intellectual property rights, e.g. in China). It is apparent to us that during the process of globalisation, producers in advanced countries have collectively created their own worst enemies, i.e. through their conscious actions they have unintentionally shared their technologies and production skills with the rest of the world. These effects are obviously strengthened by the determined efforts of many developing countries to improve their populations' skills and competences by upgrading their education systems, and by making use of the educational establishments of the more advanced countries.

Fabrication knowledge has become commoditised

Indeed, despite the best efforts of multinational enterprises, ever more advanced technologies become shared, after which the genie cannot be put back into the bottle. In this process, fabrication knowledge, in particular, has become commoditised. This, along with economic and technological advances that are not directly related to globalisation, has diminished the economic value created in the fabrication stage, relative to the pre- and post-fabrication stages. This has led to a 'servicification' of many manufacturing industries. More broadly, returns on intangibles increasingly dominate the returns attributable to the direct provision of goods and services. At least initially, servicification and the prominence of intellectual property has favoured the North. But this may not be permanent.

Earlier, knowledge spilled over almost exclusively in the North – and often within its nation states. With increasing activity in the South, this is no longer the case. Furthermore, as more and more production takes place in the South, there may be benefits in terms of volume. There may also be a newer vintage of productive capital and a later incarnation of relevant knowledge. Since new knowledge is, in part, generated in the process of applying the latest existing knowledge, the South may have a surprising advantage in the provision of new solutions.

On the other hand, growing digitalisation and automation of production processes have reduced the South's core advantage – i.e. its abundance of

cheap, unskilled labour. Rising wage costs in many emerging economies has further reduced this advantage. However, these factors do not automatically lead to a reshoring of production, and almost certainly do not increase manufacturing employment in the North.

Small countries face specific challenges

As noted earlier, a fundamental issue for small countries is that being at the global technology frontier requires specialisation, in one form or another. Small countries, on the other hand, do not have resources to specialise in many things. This makes such countries vulnerable to shocks to the demand for the type of goods, services, or technologies that the country happens to be specialised in. The impact of the loss of a given activity can be significant for the economy, and overcoming a shock may require exceptional agility in adjustment. The Finnish troubles since 2008 are a case in point.

Another fundamental challenge is the difficulty of establishing sufficient agglomerations or ecosystems, where many specific competences can be combined and knowledge spillovers flourish. Such environments are likely to be important for various headquarters functions. London's role as the preferred place of financial institutions' (European) headquarters is a prominent example of this. It is advantageous to locate the headquarters in a place where there are many kinds of specialised services readily available, and where there is a deep market for many types of skills one might want to hire. Similarly, technology hubs tend to be spatially very concentrated.

Headquarters are important for capturing value

Headquarters are, on the other hand, important for capturing value in the global value chains. Our global value chain case studies, summarised in Ali-Yrkkö and Rouvinen (2015), suggest that there are three main ways for a company to capture over-sized value: (i) being the orchestrator and/or brand owner; (ii) controlling the customer/user interface; and (iii) retaining a gate-keeping position (e.g. by cornering the market for a key input). Overall, this seems to suggest that hosting multinational enterprises' (broadly-understood) headquarters functions is likely to be good for a country's value capture.

There is also the question of political power of a nation state over multinational corporations. A big company with presence in many parts of the world is in a good position to pressure national authorities for advantages, be it taxation, subsidies, or regulation. A big country, however, has a lucra-

tive domestic market and it can better influence the rules of game globally. If it so wishes, it can also bend the rules to its advantage, without dire consequences. Individual, small countries do not have this opportunity.

Policy: strengthening fundamentals is the best option

The second unbundling has induced a fundamental shift in national policy thinking – as businesses, and even individuals, become more international, they increasingly lack one well-defined nationality and the interests associated with it. The success of any country cannot be equated with the success of the companies having operations in the country – interests of national champions and their host economies are less aligned than they used to be. The issue is about the capacity of a country (i.e. the individuals separately and collectively) to create maximum value with the available resources, and to capture as much as possible of the value from the value chains, in which the entities of the country participate.

There is no magic bullet for a nation state

There is no magic bullet for a nation state, particularly for a small one, to succeed in this environment. While no country would benefit from trying to insulate itself from the global economic system, for the smaller ones there is no such option. Nor can a small country dictate the rules of the game. What it can do is to make the country as efficient as possible in using its existing resources and to be as attractive a place as possible for footloose activities and resources, regardless of their origin.

There are no great surprises in what might be considered sensible policies for a small country like Finland to pursue. In our view, they can be discussed under six headings: (i) openness; (ii) knowledge; (iii) flexicurity; (iv) renewal; (v) social capital; and (vi) stability. In our view, these are essential elements in what has become to be called the Nordic model. We do not claim that the Nordics have found the perfect, or unique, universally applicable recipe to meet the challenges of globalisation. In fact, there are many versions of the Nordic model, and all of them have had their respective challenges.[9] Nevertheless, we think that the central building blocks of the Nordic policy approach are a very good starting point for any developed small country trying to navigate through the turbulent waters of global competition and constant technological change.

[9] The central features of the Nordic model and its capacity to address the challenges faced by nation states in the era of deep global competition have been analysed in a number of publications over the past decade, see e.g. Andersen et al. (2007), Gylfason et al. (2010), Valkonen and Vihriälä (2014).

Openness

Given the great opportunities globalisation creates, and the likely further march of global value chains, there is no point in trying to resist economic openness. It should be embraced and effort directed towards ensuring an effective and equitable governance of the processes. This means support for multilateral approaches to trade and investment rules. For Finland, the EU is the vehicle through which to work.

At the national level, there is no point in making differences between people, capital or technology depending on their origin. As long as they are put to good use in Finland, they should be equally welcome and treated in the same way. Thus, even though domestic ownership does have some virtues, Finland should also welcome foreign ownership. Likewise, cross-border movement of people should ultimately promote domestic employment and welfare.

Knowledge

Growth stems from productivity. Productivity is based on innovation (i.e. new ideas employed in offering goods and services), and innovation is based on knowledge. It is not possible for a country to create or capture value without a competent labour force and investment in innovation. Finland's success has been very much based on its capacity to create and make use of knowledge. Given some worrying signs in the trend of young generations' basic competences, the stagnation of the average educational attainment, the relative rareness of academic excellence, and the recent reduction of public and private spending on R&D activities, there is a need for a rethink in education and research policies – and an obvious need to invest more public money into this effort.

Knowledge employed in Finland is, to an overwhelming degree, created elsewhere. The importance of international linkages in the research community cannot be underestimated. Similarly, Finland cannot rely solely on its own people for the skills needed. Thus, promotion of the internationalisation of higher education and research, and proactive polities to attract foreign talent, should be priorities.

Flexicurity

The need to specialise makes a small country vulnerable. The unpredictability, suddenness, and uniqueness of change in a world dominated by

global value chains add to the vulnerability. Thus, an extraordinary capacity to reallocate (and re-price) resources is needed. This calls for a significantly greater flexibility in the labour market than has recently been observed in Finland, and, given the much lower employment rate than in the other Nordics, determined action to stimulate labour supply.

At the same time, people must be protected from the sudden changes in the demand for their productive services. Individuals need to be able to take risks in acquiring education, in taking on a job with uncertain prospects, and in starting a new business. This calls for an effective unemployment compensation system, a retraining system, and a system that allows failed entrepreneurs to start again without a stigma of failure – all of this while avoiding incentives to remain inactive for extensive periods of time. It appears likely that the Finnish safety nets and retraining policies need reforms as well.

Renewal

Constant technological change and global competition necessarily lead to downsizing and the discontinuation of some business activities. Therefore, a great capacity for renewal of national businesses is a must.

The easiest way to become a prominent player in the most desirable global value chains is to create them, which points towards both entrepreneurial and ownership engagement in new ventures. This calls for policies that promote a dynamic, national business environment with plenty of entry opportunity, intense selection among entrants, and the possibility to scale-up promising activities quickly.

While competition policy increasingly supports renewal in Finland, as in many other countries, most business subsidies tend to go to incumbent companies and distort domestic competition against new entrants. There is a case to rethink the scale and allocation of various subsidies. Emphasis should clearly be on R&D subsidies, instead of reducing the costs of current production.

The second unbundling creates a new challenge in allocating R&D subsidies. Multi-nationally operating companies have an incentive to utilise their knowledge in all their units, no matter where they locate. Thus, the fruits of nationally-supported knowledge generation tend to be exploited globally. The right policy response is not necessarily to cut subsidies, but rather to define more clearly what they are aimed at, and to encourage the local utilisation of the created knowledge.

Social capital

In considering policy, Baldwin suggests focusing on internationally immobile and (for others) hard-to-replicate factors of production that generate local positive spill-overs. The most extreme example in all three dimensions is what Baldwin and Evenett (2012) refer to as 'urban and social capital' affecting the attractiveness of workers and firms.

In Finland, as well as in other Nordic countries, this type of social and urban capital can be argued to be at a highly advanced level. Finland is one the world's least corrupt countries (Transparency International); people trust others (OECD - Society at a Glance 2016); streets are safe and business costs of crime are low (Safety and Security index by World Economic Forum). Also, the availability of higher-level education for children is a distinct advantage of Finland.

These advantages should be further enhanced and developed and made more accessible to people of foreign origin. This will require action in integration policies and, for example, in the provision of education in English.

Stability

In an environment where technology and competitive pressures are subject to abrupt and unpredictable changes that are beyond the control of a nation state, it is important to ensure a stable framework within which companies and individuals can operate. Macroeconomic stability is key in this respect. In the case of Finland, where monetary policy is determined at the level of the Eurozone, and where the automatic stabilisers are strong, this means primarily ensuring in good times that there will be fiscal capacity for stabilisation when the need might arise.

Globalisation makes capital and labour increasingly mobile across jurisdictions implying tighter constrains on the tax rates that can be applied to such production factors. Given the high level of public expenditure as a share of GDP and the pressures an ageing population is creating on public finances, containing spending growth is a must for Finland. This underlines the importance of reforms that increase public sector efficiency.

Predictability of regulation and taxation is also valuable. The preferable approach is to have long-term evidence-based reform programmes rather than tinkering with small, *ad hoc* parameter changes in the annual budget and policy processes. There is clearly room for improvement in this regard in Finland.

8

Concluding remarks

Our brief review of the Finland's economic history describes how the country's transition from being a very poor part of Europe to becoming one of the rich and 'high-quality-of-life' countries globally has been closely linked to its participation in the global division of labour and trade. While we have not attempted to propose any counterfactual paths of lesser integration, it is nevertheless clear to us that there is a causal link between the access to technologies developed globally and the wider markets for products and inputs, and the rapid growth of productivity and welfare in Finland.

At the same time, it is evident that the economic development of Finland has not been plain sailing. The country has experienced considerable disturbances. Each phase of globalisation we looked at began with, and ended in, a massive disruption or turbulence: famine at the beginning of Baldwin's 'first unbundling'; civil war, economic collapse and a loss of a key market when WWI brought about a period of protectionism; a heavy human toll and economic disruption during WWII, which led to a steady march of globalisation during the final phase of the 'first unbundling'; a deep economic crisis at the beginning of the 1990s when a new phase of globalisation, the 'second unbundling, gathered speed; and again a steep decline of output and a long period of stagnation following the global financial crisis in 2008, which coincided with a cessation in globalisation.

Overall, Finland has done well, not because of a lack of disturbances but, rather, *despite* the disturbances. Neither has the growth of welfare been based on exceptional natural resources. While forests have been, and still are, an important basis for much of export production in Finland, their importance cannot be compared to that of oil or gas in several rich coun-

tries, and there are examples of countries that have even bigger forest resources without any noteworthy economic success.

A logical conclusion is that Finland's success has been based on sound institutions and broadly sensible policies. In our view this sort of policy approach can best be called the 'Nordic model', or the Finnish version of it. At the same time, it is fair to say that the policies pursued in Finland have not been perfect and that the institutions have not always evolved sufficiently to match the requirements of the times. There is clearly room, and indeed a great need for improvement going forward.

However, as a whole, we believe that the story of Finland is an encouraging example of how a small country can benefit from global economic integration while managing the associated adjustment challenges. It is far better to embrace globalisation than to imagine there is going to be a viable alternative.

Tiivistelmä

Eräs taloustieteen perusviesteistä on, että taloudellinen vaihdanta – kauppa sen eri muodoissaan – on hyväksi voimavarojen käytön tehokkuudelle ja hyvinvoinnille. Erityisesti pienten maiden voi olettaa hyötyvän kansainvälisestä vaihdannasta. Tämän mukaisesti pienet maat tapaavatkin olla avoimempia kaupan, pääomaliikkeiden ja myös väestöliikkeiden suhteen kuin isot maat. Toisaalta, pienet maat ovat jo olosuhteiden pakosta isoja maita erikoistuneempia, eikä niillä ole yksin voimaa vaikuttaa kansainvälisen vaihdannan pelisääntöihin. Siksi pienet maat ovat myös haavoittuvampia erilaisille ulkoisille häiriöille.

Suomi on koko itsenäisyytensä ajan – ja jo autonomian aikana teollistumisen lähtiessä liikkeelle – suhtautunut positiivisesti kansainväliseen vaihdantaan. Myös viime vuosina, kun kritiikki ja epäluulo globalisaatiota kohtaan ovat voimistuneet monissa kehittyneissä maissa, Suomi on pysynyt varsin selvästi vapaakauppaa puolustavien maiden rintamassa.

Tämän kirjan pyrkimyksenä on osoittaa, että Suomen myönteinen suhtautuminen kansainväliseen vaihdantaan – ja yleensä taloudelliseen avoimuuteen – on ollut ja on hyvin perusteltua. Suomen talouskasvu on ollut keskimäärin hyvin vahvaa ja suomalaisten elämänlaatu on noussut maailman kärkijoukkoon. Tämä kehitys on ollut vahvasti sidoksissa Suomen osallistumiseen kansainväliseen vaihdantaan. Hyvä tulos ei johdu siitä, että Suomi olisi ollut poikkeuksellisen edullisessa asemassa vaihdannan etujen hyödyntämisessä, tai että olisimme onnistuneet välttämään isot avoimuuteen liittyvät häiriöt ja sopeutumistarpeet. Päinvastoin, ongelmia on matkan varrella ollut riittämiin. Suomi on hyötynyt merkittävästi vaihdannasta erilaisista häiriöistä *huolimatta*.

Tarkastelemme hyvin tiiviisti Suomen taloushistoriaa, ja erityisesti Suomen osallistumista kansainväliseen vaihdantaan siinä globalisaation periodisoinnin valossa, minkä Richard Baldwin esittää syksyllä 2016 julkaistussa kirjassaan ”*The Great Convergence: Information Technology and the New Globalisation*”. Päähuomiomme kohdistuu viimeiseen neljännesvuosisataan, jolloin globalisaatiossa on Baldwinin mukaan ollut laadullisesti uusi vaihe. Hän kutsuu sitä nimellä ”toinen osittuminen”, *”the second unbundling”*. Käymme kuitenkin läpi myös Suomen aiemman talouskehityksen pääpiirteitä teollistumisen alusta tähän päivään.

Kun Suomen teollistuminen lähti liikkeelle 1800-luvun puolivälin jälkeen, nojautui Suomi muualla luodun uuden teknologian (höyrykone!) käyttöön, kotimaisen raaka-aineen eli puun ja sen pohjalle rakentuneen tuotannon vientiin, sen mahdollistamaan tuontiin sekä myös ulkomaiseen osaamiseen (yrittäjät, ammattimiehet). Suomi oli hyvin edustava, joskin hieman jälkijunassa tullut esimerkki Baldwinin ”ensimmäisen osittumisen” toteutumisesta vapaakaupan oloissa: tuotanto ja kulutus eriytyivät maantieteellisesti ja taloudet erikoistuivat suhteellisten etujen periaatteen mukaisesti. Tuloksena oli nopea vientivetoinen kasvu, joka nosti Suomen asukasta kohden laskettua tuotannon tasoa jotakuinkin samalla vauhdilla kuin Länsi-Euroopassa yleensä. Kehitys oli kuitenkin kaikkea muuta kuin ongelmatonta. Liikkeelle lähdettäessä maassa oli nälänhätä, joka tappoi kymmenesosan väestöstä, ja ulkomaankaupan suhdanteet heiluttivat taloutta pahoin.

Ensimmäinen maailmansota katkaisi globalisaation etenemisen. Sodan aikana kaupankäynti ymmärrettävistä syistä romahti, mutta myös sen jälkeen, aina toisen maailmansodan loppuun saakka, protektionistinen kauppapolitiikka rajoitti vaihdannan kasvua merkittävästi. Suomelle ensimmäinen maailmansota merkitsi paitsi itsenäistymistä, myös suurinta talouden romahdusta teollistumisen alun jälkeen. Bkt supistui yli 30 %. Sodan jälkeen talouden täytyikin orientoitua uudelleen. Tärkeät Venäjän markkinat olivat kiinni, eikä protektionismi suosinut vaihdantaa ylipäätään.

Suomi onnistui kuitenkin toipumaan varsin nopeasti itsenäistymisen alun romahduksesta. Tämä perustui metsäteollisuuden viennin kasvuun, jota Venäjän vetäytyminen markkinoilta aluksi tuki. Ulkomaankaupan määrä suhteessa bkt:hen säilyi varsin suurena, jopa selvästi suurempana kuin Ruotsissa. Valuuttakurssin kilpailukykyisyyden voi olettaa yhdeksi tärkeäksi viennin edistäjäksi. Suomen kasvu asukasta kohden oli jälleen muihin läntisen Euroopan maihin verrattavaa, ja juuri ennen toista maailmansotaa Suomi otti monien muiden maiden tapaan kiinni myös Yhdysvaltoja, jolla oli suuria vaikeuksia toipua 1930-luvun alun lamasta.

Toinen maailmansota katkaisi jälleen hyvinvoinnin kasvun. Vaikka Suomi ei kärsinytkään samanlaisia sotatuhoja kuin Neuvostoliitto, Baltian maat, Puola tai Saksa, kuoli taisteluissa yli 2 % väestöstä ja 10 % maan pinta-alasta jouduttiin luovuttamaan. Lisäksi yli 10 % väestöstä täytyi asuttaa uudelleen ja tuotannosta piti useiden vuosien ajan luovuttaa noin 5 % bkt:sta sotakorvauksina Neuvostoliittoon. Suomi lähti taas pitkältä takamatkalta rakentamaan hyvinvoinnin kasvua.

Kasvustrategian ytimeksi kiteytyivät investoinnit vientiteollisuuteen ja näiden rahoittaminen kotimaisella säästämisellä. Sen kohdentumista haluttuihin kohteisiin tavoiteltiin rahoitusmarkkinoiden tiukalla säännöstelyllä. Toinen keskeinen elementti oli pyrkimys hyödyntää maksimaalisesti kansainvälisen vaihdannan ja yhteistyön uusia mahdollisuuksia sitä mukaa kuin niitä sotien jälkeen alkoi ilmaantua. Ulkomaankaupan suhde bkt:hen nousi sodanaikaisesta pohjasta tasaisesti ja saavutti vuonna 1980 sotia edeltäneen tason. Kärkenä oli edelleen metsäteollisuustuotteiden vienti, mutta myös muun teollisuuden tuotanto ja vienti kasvoivat ripeästi. 1980-luvulta alkaen talouden kansainvälistyminen alkoi ulottua myös suoriin sijoituksiin ulkomaille ja Suomeen.

1960-luvulta lähtien alkoi suomalaisen hyvinvointivaltion varsinainen rakentaminen, vaikka julkisen talouden koko pysyikin pitkään selvästi muita pohjoismaita pienempänä. Tulonjaon tasaamisen ohella tavoitteena oli myös tietoisesti vahvistaa kasvun edellytyksiä tasaamalla riskejä ja erityisesti nostamalla väestön koulutustasoa.

Tulokset olivat erinomaisia. Neljän vuosikymmenen ajan Suomen bkt:n kasvu asukasta kohden oli keskimäärin 3,5 % vuodessa. Kasvu oli useimpia verrokkimaita selvästi nopeampaa ja 1980-luvun lopulla Suomea kutsuttiinkin Euroopan Japaniksi. Suomi saavutti 70 % USA:n bkt/asukastasosta, saavutti Saksan tason ja jäi vain vähän jälkeen Ruotsista. Kulutusmahdollisuudet eivät kuitenkaan nousseet yhtä suotuisasti, mikä johtui kokonaiskysynnän poikkeuksellisen suuresta painottumisesta investointeihin ja investointien tehottomuudesta. Lisäksi kasvu oli monia muita maita vaihtelevampaa ja riittämätöntä työllistämään työikään tulevia suuria ikäluokkia kunnon ansiotasolla. Satoja tuhansia suomalaisia muutti tämän vuoksi työvoimapulasta kärsineeseen, vauraampaan Ruotsiin 1960-luvulla ja 1970-luvun alussa.

1990-luvun alussa vahvan talouskasvun vaihe pysähtyi kuin seinään. Rahoitusmarkkinoiden vapauttamista seurannutta ylikuumenemista ei hallittu, ja kun vielä Neuvostoliiton luhistuessa tärkeä Neuvostoliiton vienti tyrehtyi kokonaan, oli seurauksena massiivinen talouskriisi. Bkt laski yli 10 %, ja joka viides työpaikka tuhoutui. Työttömyys nousi lähes 17 prosenttiin ja julkinen talous painui pahoin alijäämäiseksi.

Vaikka kriisi oli suuri katastrofi ja sen yhteydessä tehtiin myös isoja politiikkavirheitä, johti kriisi talouden tulevan kasvun kannalta tärkeisiin muutoksiin. Kriisin myötä huomattava määrä suhteellisen alhaisen tuottavuuden tuotantoa katosi kannattavuuspaineiden takia, mikä vapautti voimavaroja tehokkaampaan käyttöön. Kriisi myös pakotti arvioimaan

politiikkaa uudelleen ja vähintäänkin myötävaikutti tärkeisiin ratkaisuihin. Panostuksia innovaatiotoimintaan lisättiin tuntuvasti, Suomi liittyi Euroopan unioniin, verotusta kehitettiin tehokkuutta kannustavaan suuntaan ja kilpailupolitiikkaa vahvistettiin. Valuutan arvon lasku paransi rajusti suomalaisen tuotannon kilpailukykyä. Monitoimialayritys Nokia keskittyi mobiiliteknologiaan ja loi itselleen siinä vahvan aseman juuri kun matkapuhelinala oli lähdössä räjähtävään kasvuun. Suomi oli siis hyvässä asemassa, kun globalisaation uusi vaihe – Baldwinin ”toinen osittuminen” – lähti toden teolla käyntiin ja loi uusia mahdollisuuksia kansainväliselle työnjaolle.

Suomen talouskasvu oli seuraavat 15 vuotta aina globaalin finanssikriisin alkuun eli vuoteen 2008 saakka erinomaista. Nopeasti lisääntyneen viennin vetämänä asukasta kohden laskettu bkt kasvoi 3,5 % vuosivauhtia, mikä oli selvästi nopeampaa kuin EU:n keskimääräinen kasvu (1,8 %) tai USA:n kasvu (1,9 %). Suomi kuroi umpeen vauraampien maiden tulostasoa ja saavutti vuoteen 2008 mennessä 80 % USA:n ja 95 % Ruotsin bkt/asukas-tasosta, sekä ylitti Saksan tason kolmella prosentilla. Samanaikaisesti korkean teknologian osuus Suomen viennistä nousi korkealle ja talous kansainvälistyi tuntuvasti. Suomalaiset yritykset alkoivat toden teolla sijoittaa osia tuotannostaan ulkomaille ja ulkomaalaisomistus Suomessa laajeni. Kun lisäksi kasvun hedelmät jakautuivat kansainvälisessä vertailussa varsin tasaisesti, Suomesta tuli hyvään osaamiseen ja innovaatioihin perustuvan talouskasvun mallimaa.

Nopean kasvun periodi päättyi jälleen yhtäkkiä. Globaalin finanssikriisin seurauksena Suomen bkt laski peräti 8,3 % vuonna 2009. Muista pohjoisen Euroopan maista poiketen Suomen toipuminen finanssikriisistä lopahti pahoin vuonna 2011, ja talous polki paikallaan aina vuoteen 2016 saakka. Suomen heikon kehityksen keskeisenä syynä olivat poikkeuksellisen suuret epäsymmetriset shokit, jotka osuivat Suomeen muita maita raskaammin: Nokian matkapuhelinliiketoiminta romahti, paperin kysyntä heikentyi, investointiaste laski globaalisti ja vuodesta 2014 lähtien Venäjän ostovoimakin hiipui.

Isot shokit eivät kuitenkaan ole riittävä selitys Suomen vaikeuksille. Se, että maailman kilpailukykyisimpien maiden joukkoon kuuluneen maan kasvu jäi lähes vuosikymmeneksi pahoin jälkeen muista pohjoisen Euroopan maista viittaa myös puutteelliseen sopeutumiskykyyn. Tämä koskee sekä kustannuskilpailukykyä että reaalista kilpailukykyä, ts. kykyä luoda nopeasti uusia tuotteita ja siirtää voimavaroja näiden tuotantoon. Näyttää siltä, että aiempi hyvä menestys johti eri tasoilla perusteettomaan itsetyy-

tyväisyyteen, ja shokkien edellyttämään sopeutumistarpeeseen herättiin tämän vuoksi liian hitaasti. Viime vuosina tilanne on kuitenkin alkanut korjaantua. Vuonna 2016 kestävältä vaikuttava kasvu näyttää vihdoin päässeen käyntiin ja vuoden 2017 kasvun ennustetaan kiihtyvän useimpia verrokkimaita selvästi nopeammaksi.

Suomen taloushistorian keskeisten ilmiöiden tarkastelu Baldwinin globalisaatioanalyysin valossa osoittaa selvästi, että nopean kasvun vaiheiden taustalla on aina ollut Suomen ulkopuolella syntyneen teknologian ja ulkomaisten tuote- ja panosmarkkinoiden tehokas hyödyntäminen. Ongelmatonta Suomen kehitys ei kuitenkaan ole ollut, vaan kaikkiin globalisaation vaiheisiin on liittynyt pahoja taloutta horjuttaneita häiriöitä. Se, että Suomi on kaikesta huolimatta noussut yhdeksi maailman vauraista maista, ei voikaan perustua poikkeuksellisen suotuisaan toimintaympäristöön tai poikkeuksellisiin luonnonvaroihin. Menestys perustuu päälinjoiltaan hyvään politiikkaan ja vahvoihin instituutioihin. Politiikan peruslinjaa voidaan kutsua pohjoismaiseksi malliksi, johon kuuluvat avoimuuden hyväksyminen ja suosiminen, väestön osaamisen kehittäminen, innovaatioiden tukeminen, riskien jakaminen, toimivat taloudelliset ja poliittiset instituutiot sekä toimintaympäristön ennustettavuus.

Tämä ei tarkoita sitä, että politiikka olisi ollut virheetöntä tai että instituutiot olisivat aina nopeasti mukautuneet olosuhteiden muutoksiin. Monia politiikkavirheitä on helppo identifioida, kuten myös ongelmallisia instituutioiden jäykkyyksiä – viime vuosien ongelmat ovat tästä selvä osoitus. Suomi on kuitenkin hyvä esimerkki siitä, kuinka pieni talous pystyy hyödyntämään talouden integraation tuomia mahdollisuuksia ja hallitsemaan siihen liittyvät sopeutumistarpeet ainakin kohtuullisesti.

Vaikka globalisaatio onkin juuri nyt vastatuulessa, emme usko sen olevan pysyvä ilmiö. Globalisaatiota eteenpäin vievät teknologiset voimat ovat nähdäksemme niin vahvoja, ettei niitä kyetä millään järkevällä politiikalla pysäyttämään. On siis parempi sopeutua ja keskittää huomio siihen, miten parhaiten hallitsemme muutoksiin väistämättä liittyvät sopeutumisongelmat.

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Riding the Wave

Finland in the Changing Tides of Globalisation

Riding the Wave: Finland in the Changing Tides of Globalisation recounts Finnish economic history during successive phases of globalisation. The book demonstrates that Finland has significantly benefited from its participation in the international division of labour and exchange, and that this is not due to exceptionally favourable endowments or a lack of disturbances and adversities. Rather, Finland has benefitted from globalisation despite the serious turbulences that have been associated with it.

Finland's success has been based on sound institutions and broadly sensible policies, i.e. the 'Nordic model' – or, more accurately, the Finnish version of it. The policies pursued have not been perfect and the relevant institutions have not always evolved sufficiently to match the requirements of the time. A long period of stagnation since the onset of the global crisis in 2008 is a good illustration of this. There is clearly room, and considerable need, for improvement going forward.

However, as a whole, the story of Finland is an encouraging example of how a small country can benefit from global economic integration while managing the associated adjustment challenges. It is far better to embrace globalisation than to imagine there is going to be a viable alternative.

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