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PAMFLETT • PAMPHLET 2/2015

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Utgivare: Tankesmedjan Magma
www.magma.fi

Magma-pamflett 2 · 2015

Tryck: Whyprint
Form och layout: Magnus Lindström
Omslagsbild: Wilfred Hildonen

ISBN: 978-952-5864-57-1 (print)
ISBN: 978-952-5864-58-8 (online)

Magma-pamflett:
ISSN : 2342-7876 (print)
ISSN : 2342-7884 (online)

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Managing the Nokia Shock

Why the impact of the collapse of Nokia's mobile phone business on the Finnish economy has been surprisingly small

Introduction

The Finnish economy has suffered two large shocks at the same time as the surrounding global economy has been very troubled. Considering the headwinds on many measures the consequences have been relatively mild. The living standard of the average Finn has suffered fairly little, and unemployment remains on single digit levels. This reflects the prudent policies conducted before the crisis that Finland needs to build upon in order to achieve a sustainable recovery.

With the rise of Nokia mobile phones Finland became an example of an economy with increasing reliance on the success of a single company. At its peak the telecom equipment sector that was built up around Nokia accounted for 20 per cent of Finnish goods exports.

In only a few years, exports of telecom equipment collapsed to practically zero, and thus almost 5 per cent of the value added of the Finnish economy evaporated. This happened at the same time as the global economy experienced its deepest recession after World War II, and was followed by the downturn in the economy of Finland's largest trading partner, Russia.

One would expect that such a collapse in exports would have a huge and widespread negative impact on the whole economy. Weaker revenue and rising unemployment in the sectors directly concerned would feed into weakening consumption, triggering a fall in domestic sectors. Plummeting tax revenues could trigger a

crisis in public finances.

When one appreciates the huge shocks, it becomes remarkable how well the Finnish economy has held up. Unemployment has risen modestly and private consumption is higher than before the collapse. Finland has not joined the ranks of debt-troubled euro countries but retains a top-notch credit rating and high credibility amongst international bond investors.

The reason for this solid performance is partly that Finnish public finances had been kept in surplus during the boom years. This provided room for letting the deficit increase to cushion the shock, without creating an unstoppable debt spiral.

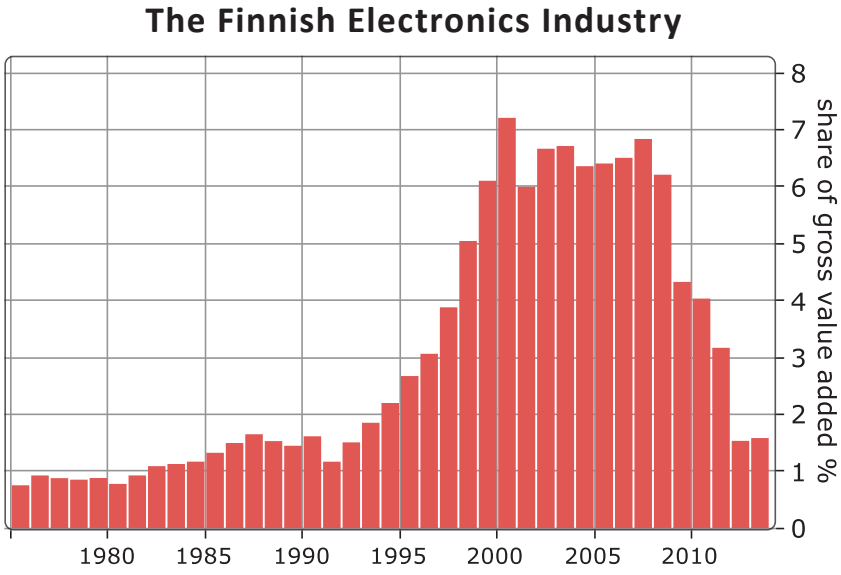
The prudent policies go beyond properly counter-cyclical economic policies. A focus on education and a relatively entrepreneur friendly economic climate also seem to have paid off. That being said, a lot could still be improved to encourage entrepreneurial innovations that are needed to fill the gap left by the sharp fall in exports of telecom equipment.

The rise and fall of Nokia mobile phones

The success story of Nokia started with the proliferation of mobile phones in the 90s, with Nokia quickly taking a leading role. While the Finnish electronics industry did not appear out of thin air, the shift was indeed dramatic. From being a mere percentage of the value added of the Finnish economy, in a few years the manufacturing of electronic equipment rose to account for six per cent of the total. With Nokia as a driver, a number of subcontractors and contract manufacturers prospered.

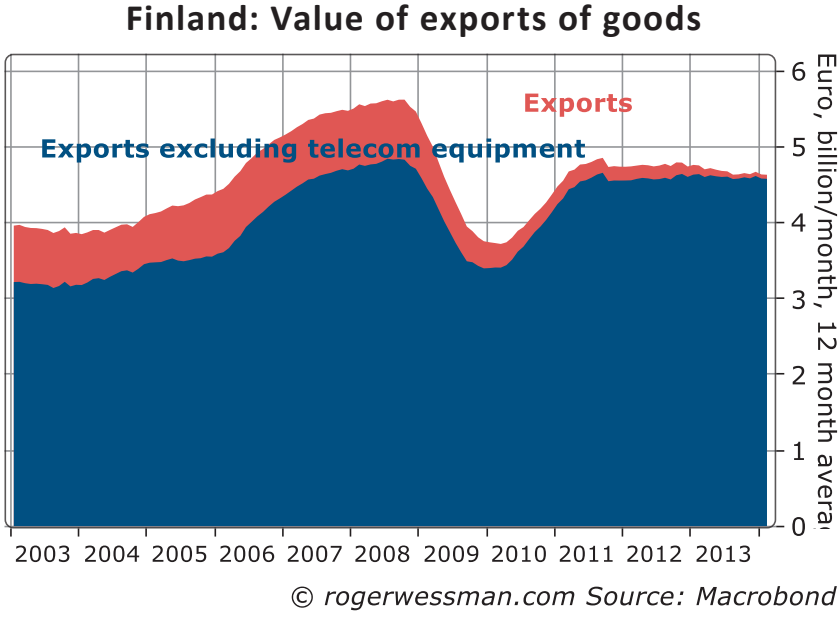
During the first years of this millennium, the GDP share of the electronics industry was stable. While Nokia continued to grow, production was increasingly relocated to other countries around the world.

The downfall started in 2008 after the release of the first iPhones and Android phones that quickly captured most of the smartphone market. The last mobile phone



was manufactured in Finland in 2012. The electronics industry was back to a mere one per cent of the gross value added of the Finnish economy.

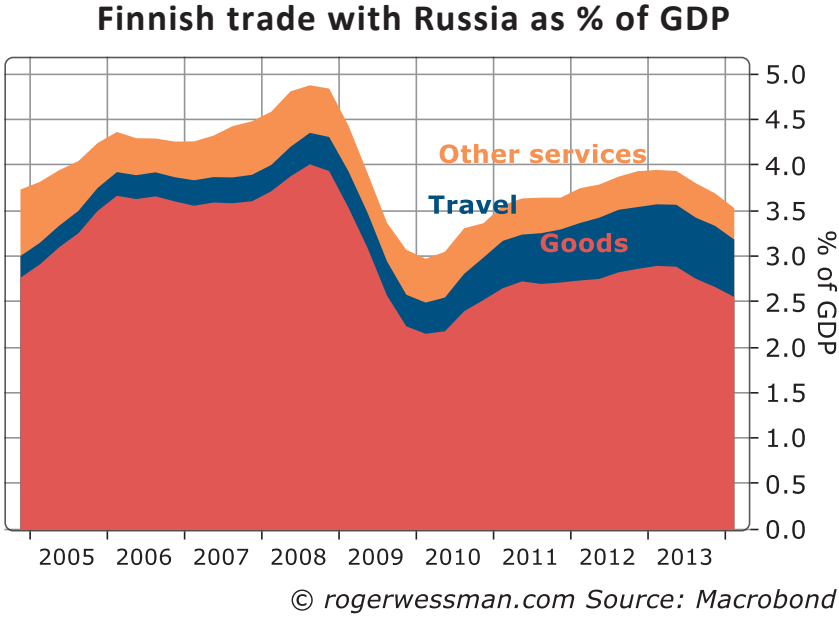
The downfall can also be seen in Finnish goods exports. At its peak the exports of telecom and related equipment accounted for almost 20 per cent of Finnish goods exports. With a boom in other export revenue the export share of telecom had declined to 14 per cent, before the downturn. The value of Finnish goods exports in the 12 months up to November 2014 was more than 15 per cent below their 2008 levels. Telecom equipment accounted for most of the decline. Other exports were also down due largely to the weak global and European economy, but only by 2.4 per cent.



Collapsing trade with Russia

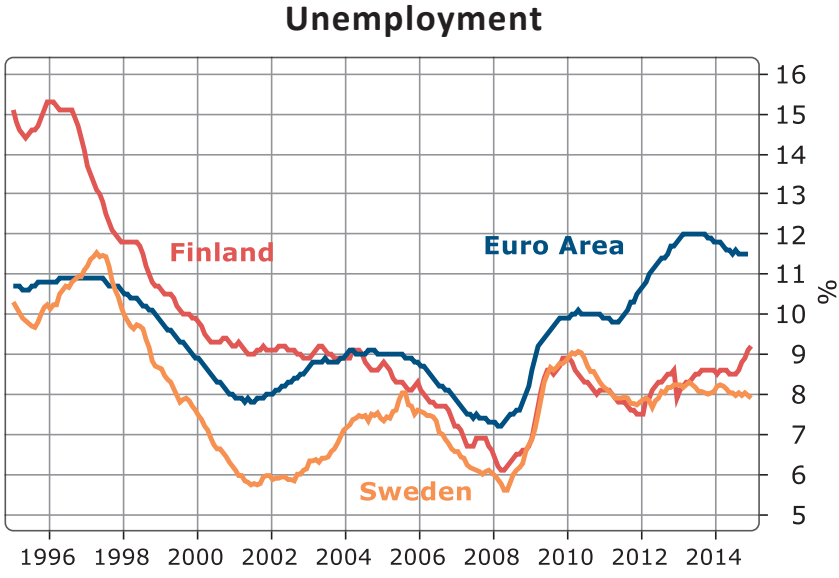
Another severe shock to the Finnish economy has been a turnaround in the fortunes of the Russian economy. Russia is one of the largest trading partners for Finland (indeed the largest before the decline in recent years). It is important both for goods exports as well as the largest single source of tourism.

Exports to Russia rose as soaring oil prices boosted the Russian economy. Total exports of goods and services peaked at a value of close to five per cent of Finnish GDP as the oil prices hit record highs in 2008. After that we have seen a roller coaster ride downwards driven mainly by the swings in the price of oil. In 2013 the share had declined to well below



four per cent of GDP. Preliminary figures on goods exports and tourism indicate another 20 per cent drop in 2014, i.e. a decline corresponding to almost one percentage point of GDP.

The worst shock is still ahead of us. With oil prices now down over 50 per cent from 2013 levels, triggering a collapse in the rouble and forcing the Russian authorities to sharply cut spending, the decline in exports is set to accelerate in 2015. In total it thus seems likely that in 2015 exports to Russia will correspond to less than two per cent of Finnish GDP – three percentage points down from its 2008 peak.



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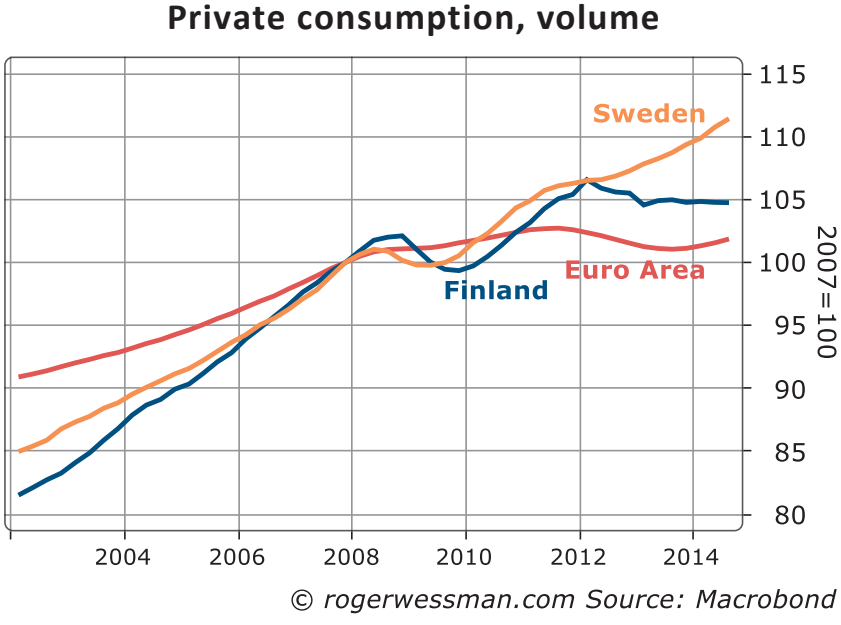
Surprising resilience

Given the collapse of two key export sectors at the same time as the global economy took a turn for the worse, one would have expected an extremely dire economic performance with sharply rising unemployment and a severe slump in domestic demand.

The development has not been that drastic. Unemployment has certainly risen during this time period. However the rise has been far smaller than in the rest of the euro area. In fact the development of unemployment is strikingly similar to neighbouring Sweden, which has been one of the most solidly performing economies in Europe.

The Finnish development looks somewhat less impressive when looking at employment figures. Partly the relatively small fall in un-



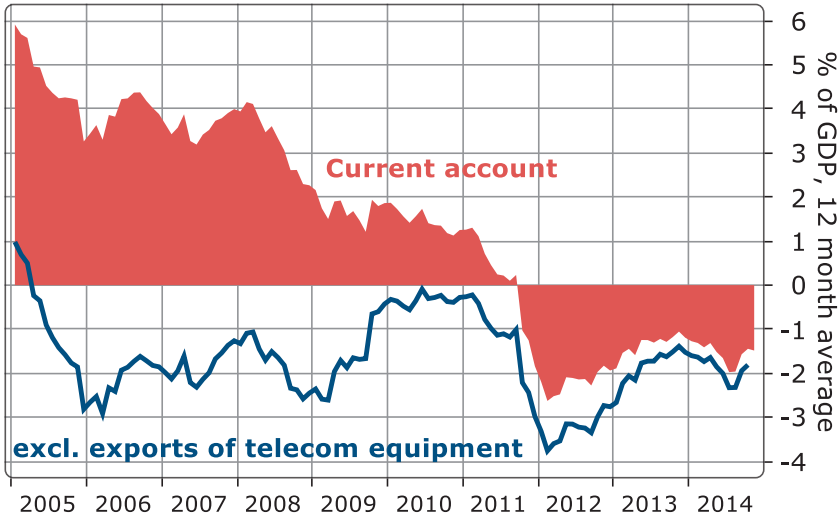
employment can be explained by a larger rise in hidden unemployment and a decline in the labour force due to an aging population. Still, even the fall in employment is fairly modest compared to the euro area average.

The development of private consumption shows a similar pattern. Domestic consumption did decline in 2009 but recovered and rose to new highs in the following years, roughly again following the development in Sweden.

In the past couple of years Finland has indeed diverged from Sweden, with consumption slightly declining. Finnish unemployment has continued to rise contrary to the general development in the euro area.

This recent weakness has taken place after the main decline in the telecom equipment

Finnish current account



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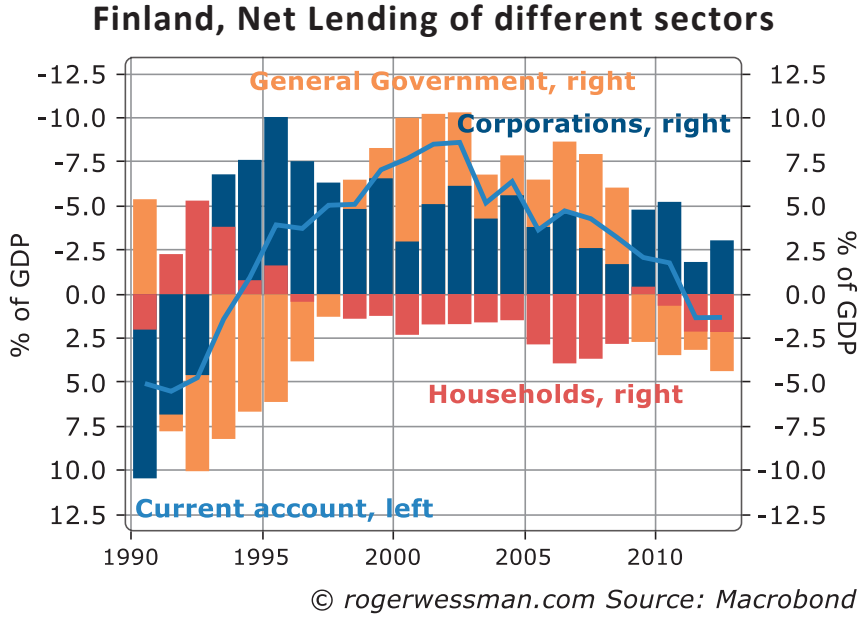
sector was over. It can partly be explained by delayed ripple effects of the decline, particularly the recent tightening of public finances to correct the deterioration in public finances caused by the downturn. The decline in trade with Russia that intensified towards the end of 2014 of course also puts Finland on a weaker course compared to the rest of Europe.

Buffered by a solid balance

A key reason for the relatively limited impact on consumption and unemployment was that Finland went into the downturn with a fairly solid buffer. The current account had a surplus of over 3 per cent of GDP before the collapse of telecom exports. This turned into a deficit of 2 per cent of GDP in 2012. Excluding



exports of telecom equipment the current account has remained fairly stable in the past decade.

Thus one can say that the whole shock has been absorbed by the decline in the current account. Instead of cutting expenditure to balance the loss of revenue, Finland as a nation has turned from a net lender to a net borrower. This thus explains (from an accounting perspective) the relatively robust development of Finnish consumption, and thus also to a large extent the favourable development in the labour market.

The source of this increased borrowing has been increased public sector deficits. After running a constant surplus in the decade before the collapse the Finnish public sector has shifted into a deficit. This turnaround more than accounts for the decline in net lending for the

whole economy. Household borrowing has somewhat decreased from its peak, dampening the overall rise in Finnish net borrowing.

Thus the downswing in the Finnish economy has been dampened by a traditional counter-cyclical fiscal policy. Finland has been able to conduct such a policy without running the danger of falling into a debt crisis, because the initial starting position was so solid. Even after the deterioration the public sector deficit peaked at 2.8 per cent of GDP in 2010. (Note that this figure refers to the whole public sector including the surplus of the pension funds.) Public sector debt in relation to GDP remains among the lowest in the euro area, after the surplus years preceding the economic downswing.

In this respect Finland stands apart from the general development in the euro area, where fiscal policy has tightened during the prolonged economic slump and thus kept the rise in the deficit modest. According to OECD figures the Finnish public deficit in 2014 was exactly at the euro area average of 2.6 per cent of GDP. In the pre-crisis years of 2003 to 2007 Finnish public finances had an average surplus of 3.3 per cent of GDP with the euro area as a whole running a 2.1 per cent deficit.

Sweden has also helped to boost the economy by turning a modest surplus in public finances to a deficit, but not as dramatically as Finland. Sweden as a non-euro country has also been able to stimulate the economy by letting the krona depreciate.

Resilient employment

The relatively benign unemployment figures cannot be explained merely by the lack of second order effects due to expansionary fiscal policy. Even though the decline in revenue has not caused a decline in expenditure because of the countervailing fiscal stimulus, employment in the telecom sector should nevertheless have suffered severely.

The manufacturing of mobile

phones was less important as a direct employer than its 5 per cent share of GDP indicates, as the labour intensity was very low. Thus the decline in employment in the manufacture of electronic products accounts for only one per cent of the total labour force – a fraction of the decline in value added.

This of course reflects the fact that the value of a mobile phone (or electronic product more generally) does not lie in the actual manufacturing process. The value is primarily created at other stages of the production process, mainly in product development and software.

The ability of the Finnish economy to create high-skill jobs seems to have held up well, in spite of the collapse of Nokia's mobile phone business. Employment in Professional, Technical and Scientific activities (which should comprise most employment in product development and software) was in the fourth quarter of 2014 almost 11 per cent above its 2008 peak.

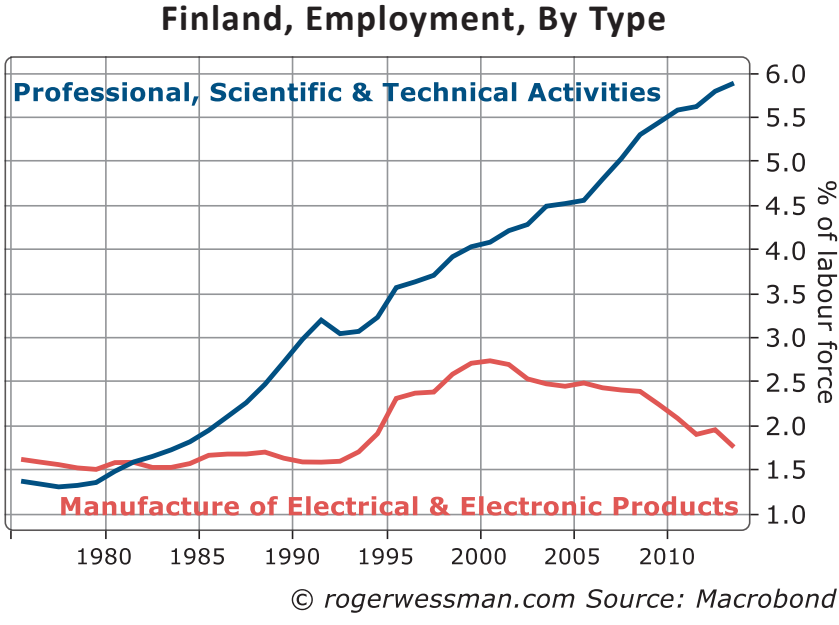
There are many reasons for this.

Firstly former Nokia product developers are still continuing their work as employees of Microsoft, which purchased Nokia's mobile phone bussiness in 2013. Product development for Microsoft has thus become a Finnish service exporting industry.

Secondly, Microsoft is not the only mobile phone manufacturer employing former Nokia employees. Chinese Huawei has, for example, opened up a product development unit in Finland.

The success of Nokia had also helped stimulate the growth of other tech enterprises, more or less tightly connected to the telecom sector. Notable successes in the consumer market are Finnish mobile game developers such as Rovio (Angry birds) and Supercell (Clash of clans etc.). The range of more established Finnish tech companies range from software for telecom operators (Comptel), Internet security (F-Secure) to wireless heart rate monitors (Polar electro).

To what extent their success can be attributed to Nokia undoubtedly varies. In any case they provide



a source of employment in the sector that is not purely, or at all, reliant on Nokia any more.

The re-employment of former Nokia employees has also been helped by the Bridge-programme set up by Nokia, aimed at assisting in finding a new job or starting up a new business. At least some 400 new companies have been set up under this programme since 2011, 90 per cent of them still being active at the beginning of 2014, according to a study made at the Aalto University Business School (Kiuru et al. 2014). According to a survey by HRM partners (who managed the outplacement of Nokia workers) in February 2014, 64 per cent of entrepreneurs reported that their business was doing well (Palmroth-Leino 2014).

Overall self-employment has risen robustly during the economic

downswing. Whether this reflects a desperate attempt to avoid unemployment, or genuine entrepreneurship can of course not be judged from these statistics alone.

However, the above-mentioned study of Nokia employees choosing entrepreneurship indicates that avoiding unemployment is not the main driving force behind becoming an entrepreneur. Only 13 per cent cited avoiding unemployment as the main reason for choosing the entrepreneurship track, with almost half stating a previous wish to become entrepreneurs (Kiuru et al. 2014 p. 4).

If anything, choosing entrepreneurship as a way of avoiding unemployment is even less attractive for people who have not received the support of the Bridge programme. The comprehensive Finnish unemployment insurance

system also gives little incentive to choose self-employment as a means to earn a living.

In February 2014 two thirds of former Nokia-employees either had a job (57 %) or were working as entrepreneurs (9 %). A further 11 per cent were studying, and therefore do not show up in the unemployment figures (Palmroth-Leino 2014).

The Finnish experience thus lends support to the view that a key to keeping up employment in today's world is a skilled and highly educated labour force. The workers are then attractive to employers even at Scandinavian wage levels, or are able to employ themselves and create growth in the economy as entrepreneurs.

Trouble spots: Salo and Oulu

The Nokia shock has of course tested cities that have been centres for Nokia's Finnish operations more severely. Particularly, this concerns the city of Salo that used to be the centre of mobile phone manufacturing. The city has lost up to 5 000 industrial jobs in recent years, corresponding to 20 per cent of the local labour force. The northern Finnish city of Oulu has gradually lost a total of 2 500 jobs in mobile phone development, ending with Microsoft closing the Oulu unit in 2014. This accounts for almost 3 per cent of the jobs in the area.

The unemployment rate in these cities stands above the national average with Salo at 15.6 per cent and Oulu at 16.2 per cent in 2014, according to Department of Employment figures. In the case of Salo this is a surprisingly low figure considering the extent of the shock. In the case of Oulu it should be noted that the unemployment rate already in 2008 was 3 per cent above the national average, which means that the rise in unemployment barely has been faster than in the rest of the country.

Another encouraging fact is that the share of long-term un-

employed is not much higher in Salo (31 %) than in the country as a whole (28 %). Thus at least so far, most of the unemployed have not permanently severed their ties with the labour market. In Oulu this figure is even slightly below the national average.

The re-employment of former Nokia employees has succeeded slightly less well in Salo than in the rest of the country, which is not surprising given the less skilled labour force. Especially the number of former employees becoming entrepreneurs is smaller. Still over half have found a new job and a further 13 per cent are educating themselves, leaving only a third of the former employees to boost the unemployment statistics (Palmroth-Leino 2014).

A small comfort is also that the former Nokia plant has been taken over by the pharmaceutical company Orion, which now uses it for packaging drugs. It employs 100 persons – half of whom are old Nokia employees.

The re-employment of Nokia employees in Salo has been helped by the city being situated in the fairly densely populated southern parts of Finland. Thus the potential for finding work is not that bleak, even if the decline of Nokia jobs seems severe in relation to the total employment in Salo.

Some stabilisation seemingly happened in Salo where unemployment roughly stayed on 2013 levels in 2014, even as the national average rose by one percentage point. However this seems to be driven mainly by workers migrating away from Salo, since the labour force has decreased by 2 percentage points.

Oulu is an altogether different story. The city is a population growth centre in northern Finland with a growing workforce. This is due both to its attraction as a university city, and to its high birth rate – the highest birth rate of any Finnish city, mainly due to cultural reasons. Employment in Oulu is actually up by three per cent since 2008, in spite of the jobs lost in the

telecom sector.

In 2010, the city started up a project (Takomo) to encourage the formation on new enterprises. In four years the project has generated 92 new companies that at present employ 200 persons directly and a further 100 subcontractors. The companies range from consultancies selling their expertise in mobile phone applications to traditional dotcom companies (e.g. a website helping to get competing offers from different car repair shops), down-to-earth service companies (e.g. a company arranging birthday parties for children) and export trade (e.g. exporting Finnish medical know-how to Vietnam).

So far the impact of Takomo is fairly modest, accounting for less than 10 per cent of the net increase of jobs in the Oulu area, and a fraction of that as a number of total new jobs created to replace jobs lost. Still it provides an encouraging testimony of the entrepreneurial spirit in the Oulu area.

What now?

So where is Finnish growth going to come from in the future? What can replace Nokia, and help the Finnish economy get out of its reliance on deficit-spending to keep unemployment down?

These are of course questions that on a very specific level are impossible to answer. Future successes depend on entrepreneurs finding and exploiting niches that have been neglected by other companies. To be able to forecast where future successes will come from, you would have to be able to see opportunities that so far no entrepreneur has seen, or at least not seen a way to profitably utilise.

No single individual can possibly be able to see any significant part of all the opportunities that can be found somewhere in the economy. The key is to get potential entrepreneurs motivated to reach for the opportunities they can see and create new enterprises or expand old businesses.

Post-Nokia Finnish exports are

indeed now diversified and shared among an increasing number of companies. In 2005 the ten largest export companies accounted for 42 per cent of Finnish goods exports; this has now declined to 33 per cent.

This is of course neither a surprising nor necessarily a positive development, as it reflects the decline of Nokia more than the rise of smaller companies. Still it is noteworthy that two thirds of Finnish goods exports come from companies that do not belong to the top ten. There is a significant group of second tier goods exporting companies in Finland. Indeed, a third of reported goods exports are accounted for by companies that are not even in the list of top 100 largest exporters.

The fraction of exports coming from the top 100 is admittedly larger than e.g. in Germany. This is hardly surprising however, as the population of Germany is 15 times larger than that of Finland, and the total number of corporations is correspondingly higher. Looking at the size distribution of export companies the difference is hardly noticeable (Rouvinen & Pajarinen 2014).

These figures do not include service exports, which have risen from 21 per cent of Finnish total exports in 2005, to 27 per cent in 2013. Services actually account for a third of the total value added of exports, when you take into account that foreign inputs account for 35 per cent of Finnish goods exports but only 15 per cent of services exports (Newby 2013).

With such a large number of export companies, pinpointing where the future growth is going to come from is thus not easy, even ignoring the potential of not yet existing companies.

Just to give a flavour of the range of companies these represent:

Halton Group with an annual turnover of 174 million euros produces indoor air quality solutions for offices, laboratories, ships etc. Its products can be found e.g. in nuclear submarines, the world's largest shopping mall in Dubai and

Dallas Cowboys stadium in Texas.

KWH Mirka has grown from making ordinary sand paper to taking polishing to a high tech level. The company produces equipment used for polishing used e.g. by car manufacturers, exported to 90 countries around the world, bringing export revenue of over 50 million euros.

CRF Health is in the business of assisting clinical trials via a system for electronic clinical outcome assessment. The idea is to gather information about the outcome of clinical trials more efficiently and reliably by collecting data over the internet from clinicians as well as patients using a combination of handheld devices and computers. This rapidly growing company is almost exclusively focused on exports with a 2013 turnover of over 20 million euros.

This is just an arbitrary, and by no means representative, sample of recently rapidly growing companies in Finland. It is just an indication of the kind of niches that companies can find to thrive in.

While these three are examples of technological excellence, they are not necessarily focused on the sectors that spring to mind when talking about technology industries.

In spite of notable individual successes there certainly appears to be potential for improvement in the environment for entrepreneurship. According to the global entrepreneurship and development index, Finland is fairly well placed in general but is relatively weak regarding growth and internationalisation and in the availability of risk capital (CEPP 2012).

As to public policy in Finland there is a notable focus on encouraging investments and entrepreneurship. There is extensive public support for start-up companies especially in the technology sector. The Finnish government has also tried to encourage investment by lowering corporate taxation.

However, merely supporting entrepreneurship through beneficial taxation rules for enterprises or subsidies for entrepreneurs is not enough. This risks merely

encouraging moving employment relationships to a corporate form, in order to take advantage e.g. of lower taxation of entrepreneurial income compared to wage income. It may also push unemployed to set up enterprises without a sustainable vision, in order to take advantage of subsidies.

At the same time as corporate taxation has been cut the taxation of dividends for private entrepreneurs has increased. While this has made financing of investments in already profitable enterprises marginally easier, in net terms the reward for successful entrepreneurs has not increased at all.

In a similar way there are hurdles for growth in rules that lower taxation of dividend income up to a modest amount, as long as the dividends come from unlisted companies. This does not encourage financing enterprises with risk capital from outside investors, as providing an exit for investors through a stock market listing may cause a higher taxation of the entrepreneurs. Selling out to (possibly foreign industrial) investors thus becomes a relatively more attractive solution.

Conclusions

The relatively limited suffering experienced by the Finnish economy given the huge adverse shock of the collapse of Nokia's mobile phone business is no miracle. The key elements reinforce the importance of prudent policies to minimize the impact of shocks.

First of all fiscal policy in Finland was prudently in surplus during the boom years. This has given the potential to dampen the negative economic impact by a sustained easing of fiscal policy, without triggering a fiscal crisis.

The experience also highlights the importance of investments in education. Highly educated people and skilled labour have to a large extent been able to find new jobs or start up their own enterprises when Nokia downsized.

Finally the Finnish experience

is a reminder of the importance of creating an environment that encourages entrepreneurs to seize opportunities and grow.

When thinking about encouraging entrepreneurship it is crucial to distinguish self-employment from real entrepreneurship. As the challenge is to get potential entrepreneurs to utilise their superior insights and information the solution cannot be that the authorities try to *ex ante* separate true entrepreneurs from "pro forma entrepreneurs". The key is to ensure the right incentives, by ensuring that *ex post* successful entrepreneurs can reap the reward from their successes. On this account there appears to be substantial room for improvement in Finnish policies.

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Roger Wessman is an independent economist with over two decades of experience in monitoring the Finnish economy and financial markets. He has worked at Nordea Markets as head of research and chief economist for Finland, and at Evli bank as head of equity research and chief fixed income analyst. Before his career in the financial sector he was a lecturer at the Hanken School of Economics.

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With the rise of Nokia's mobile phone industry Finland's economy became increasingly reliant on the success of a single company. At its peak the telecom equipment sector built up around Nokia accounted for 20 % of Finnish goods exports.

Within a few years, exports of telecom equipment collapsed to practically zero. Simultaneously the global economy experienced its deepest recession after World War II, followed by the downturn in the economy of Finland's largest trading partner, Russia.

Considering the shocks that the Finnish economy has suffered the consequences have been relatively mild. The living standard of the average Finn has suffered fairly little and unemployment remains on single digit levels. This reflects the prudent policies conducted before the crisis that Finland needs to build upon in order to achieve a sustainable recovery.

In Managing the Nokia Shock economist Roger Wessman looks at the Finnish experiences and tackles the unavoidable question: Where is Finnish growth going to come from in the future?