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Article

Why did Finland lose its competitiveness from 2007 to 2017?

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Abstract

The aim of this research is to investigate the factors to explain Finland's loss of competitiveness from 2007 to 2017 by utilizing the World Economic Forum's global competitiveness index framework. Preliminary analysis shows that Finland lost its competitiveness mainly in the pillars of macroeconomic environment, goods market efficiency, and business sophistication. In-depth analysis suggests that the demise of Nokia, the global financial crisis, the European sovereign debt crisis, and the Russian crisis have triggered the deterioration of the government deficit. Accompanying budget cuts by the Finnish government from R&D, education, and funding support to start-ups, in order to balance the growing government deficit, have diminished the innovation and marketing capabilities of Finnish companies, resulting in the loss of Finland's competitiveness.

Keywords: Competitiveness, global competitiveness index, Finland.

1. Introduction

Both academics and policy makers have been equally interested in exploring how to improve the competitiveness of countries and regions. Competitiveness of a country means "the ability of the country's firms to compete in international markets while simultaneously expanding the prosperity and living standards of citizens" (Porter 1990). The World Economic Forum, which has been annually ranking countries by their competitiveness, defines it as "the set of institutions, policies, and factors that determine the level of productivity of an economy, which in turn sets the level of prosperity that the economy can achieve" (Schwab 2018). There have also been other rankings using different frameworks for countries (see IMD World Competitiveness Centre 2019), regions (see Huggins 2003; Dijkstra et al. 2011; Huggins et al. 2014), and states (see The Beacon Hill Institute 2015; Klowden et al. 2018). Furthermore, recent frameworks, such as the social progress index, have started to assess competitiveness from the perspectives of social goals, ecological goals, and goals for the quality of life (Aiginger and Vogel 2015).

In addition to rankings, earlier literature has also looked into understanding the impacts of independent factors on competitiveness (see Akpinar et al. 2015; 2017). These studies assume that competitiveness is a dynamic concept which can improve over time, and their focus has been on finding out how to achieve it. We extend this assumption to argue that the level of competitiveness can also degrade and aim to understand what can lead to its loss over time. The case of Finland presents a good context to study the phenomenon. The country transformed itself from a factor-driven economy in the 1960s to an innovation driven economy by 2000 (Sölvell and Porter 2011), and this miracle was investigated in earlier research as a model for other countries (see Rouvinen 2001; Blomström and Kokko 2003; Kettunen 2004; Oinas 2005; Sahlberg 2006). The situation, however, was reversed

during the last decade, and Finland's competitiveness ranking by the World Economic Forum's global competitiveness index dropped from 6th position in 2007 to 10th position in 2017. During the same period the country's gross domestic product (GDP) was down from USD 255.3 billion to USD 251.8 billion, GDP per capita was down from USD 48 288 to USD 45 597, exports were down from USD 65.7 billion to USD 59.7 billion, inward foreign direct investment stocks were down from USD 91.7 billion to USD 85.9 billion, and the unemployment rate was up from 6.8% to 8.6% (Statistics Finland 2019; Tulli 2019; UNCTAD 2019). This situation raises questions regarding the sustainability of competitiveness and calls for further research to investigate reasons behind its decline. This research responds to this call with an in-depth longitudinal study of Finland's competitiveness from 2007 to 2017. In doing that the global competitiveness index framework is utilized as the theoretical framework, and the analysis of the World Economic Forum's annual reports during the ten years reveals the areas where Finland's competitiveness has been declining. 2007 and 2017 are selected as the starting and ending years because the framework was revised in 2007 and 2018, so comparisons would not be consistent in the years before 2007 and after 2017. Afterwards, the identified areas of loss of competitiveness are investigated further via interviews with the Managing Director of the Central Finland Chamber of Commerce, the Managing Director of Central Finland Federation of Enterprises, and the Business Development Manager at Business Jyväskylä, as well as reliable rich secondary data. Results of the research offer suggestions to policy makers in Finland and similar small and competitive countries for sustaining the competitiveness of their countries.

The rest of the article is organized such that the theoretical framework is introduced in section 2 following literature review, and methodology is described in section 3. The results are presented in section 4, and they are discussed in section 5.

2. Literature review

2.1 Competitiveness

Early studies on competitiveness focused on price competitiveness and measured it with indices based on costs, a country's endowments, its labour pool, interest rates, and the value of its currency (Porter 1990; Aiginger and Vogel 2015). This was a narrow and misleading scope that could trigger a zero-sum race to minimize costs (Krugman 1994). Later studies moved away from price competitiveness to quality competitiveness, expanding their focus to include the innovation ecosystem, institutions, and clusters (Aiginger and Vogel 2015). They defined competitiveness as a location's ability to provide citizens with rising and sustainable living standards based on high levels of productivity and innovativeness (Porter 1990; Delgado et al. 2012). This ability covers the set of institutions, policies and structures that create a suitable environment for businesses to flourish and citizens to prosper (Garelli 2006). While some studies, e.g., the World Economic Forum's global competitiveness index, have measured the enablers of competitiveness, others have focused on outcome measures such as GDP per capita, employment, and "beyond GDP" measures related to social progress and the quality of life (Aiginger and Vogel 2015).

One popular framework to study competitiveness is the diamond model. This model assesses competitiveness by the strength of the country's factor conditions, demand conditions, related and supporting industries, and the context for firm strategy, structure and rivalry, as well as the strength of interactions between these determinants (Porter 1990). In addition, the government and chance events can impact on competitiveness indirectly through their influences on the four determinants (*ibid.*). Following globalization and regional integration initiatives, scholars have introduced the double diamond model, which takes into consideration also the diamond of a country's most important trading partner in assessing its competitiveness (Rugman and D'Cruz 1993; Moon et al. 1998; Cho and Moon 2005). A second framework of competitiveness is the emerald model, which sees competitiveness as the ability to attract foreign direct investments and assesses it by educational attractiveness, talent attractiveness, R&D and innovation attractiveness, ownership attractiveness, environmental attractiveness, and cluster attractiveness (Sasson and Reve 2012). This model has been used for benchmarking regions (see Akpınar et al. 2015), states (see Akpınar et al. 2017), and clusters (see Akpınar and Mermercioglu 2014a; 2014b). A third framework of competitiveness is the global competitiveness index framework by the World Economic

Forum. This framework assesses on a yearly basis the competitiveness of countries using 114 indicators grouped under 12 pillars (Schwab and Sala-i-Martin 2017). The structure of the framework was changed in 2007 and 2018. The latest change in 2018 introduced the global competitiveness index 4.0 framework, which aimed to better integrate developments coming with the Fourth Industrial Revolution (Schwab 2018). A fourth framework that also analyses competitiveness at country level on a yearly basis is the world competitiveness index developed by the IMD World Competitiveness Centre. This framework has 332 indicators on economic performance (81 indicators), government efficiency (71 indicators), business efficiency (72 indicators), and infrastructure (108 indicators) (IMD World Competitiveness Centre 2019). Out of these four alternative frameworks, we selected the global competitiveness index framework by the World Economic Forum as the theoretical framework for this research because it already contains comparable longitudinal data on Finland, and it is less complex with its 114 indicators than the world competitiveness index developed by the IMD World Competitiveness Centre, which has 332 indicators. The time scope of this longitudinal research starts in 2007 and ends in 2017 in order to ensure consistency over the years, taking into consideration that the global competitiveness index framework was revised in 2007 and 2018.

2.2 Theoretical framework

The global competitiveness index is a comprehensive framework that looks at the enablers of competitiveness measured by 114 indicators under 12 pillars (Schwab and Sala-i-Martin 2017). The pillars are of equal importance, and one cannot be replaced by another. The 12 pillars are the following.

1. *Institutions*. This comprehensive pillar includes 21 indicators related to security, property rights, intellectual property protection, judicial independence, transparency and efficiency of the public sector, and corporate governance.

2. *Infrastructure*. This pillar has nine indicators which reflect the quality of transportation, utility, and communication infrastructures in the country.

3. *Macroeconomic environment*. This pillar has five indicators that look at government budget deficit, gross national savings, inflation level, government debt, and country credit rating.

4. *Health and primary education*. This pillar has 10 indicators which assess the health of citizens and the quality of primary education.

5. *Higher education and training*. The pillar has eight indicators which address the quality of higher education and training services.

6. *Goods market efficiency*. This pillar has 16 indicators which cover market conditions in the country such as the degree of the market's openness to competition, the ease of starting and doing business in the country, openness of the country for trade and foreign investment, and buyer sophistication.

7. *Labour market efficiency*. This pillar has 10 indicators which look at for example employer-employee relationships, the rights of the employees, hiring and firing practices, the ability of the country to attract and retain talent, and female participation in the labour force.

8. *Financial market development*. This pillar has eight indicators that cover the availability of and the ease of access to financial products and services and the soundness of banks.

9. *Technological readiness*. This pillar has seven indicators which measure adoption of recent technologies as well as the penetration of mobile-cellular and fixed-broadband internet subscriptions.

10. *Market size*. This pillar has four indicators which assess the sizes of the country's domestic and export markets.

11. *Business sophistication*. This pillar has nine indicators which measure the quantity and quality of local suppliers, the state of cluster development, value chain breadth, and practices related to production, management and marketing.

12. *Innovation*. Finally, this pillar has seven indicators which address the quality of research institutes, extent of R&D activities and patenting, and university-industry collaboration in R&D.

3. Methodology

3.1 Research approach and context

This is a longitudinal study, and the aim is to explore the reasons behind the decline in Finland's competitiveness from 2007 to 2017 with the aid of the global competitiveness index framework. A longitudinal study is suitable to study change by integrating heterogeneous data from a variety of primary and secondary sources and analyzing the phenomenon at multiple levels over time (Langley 1999). Understanding contextual factors is important for making meaningful conclusions in longitudinal research (Pettigrew 1992). This research adopts the variance approach to change and focuses on outcomes rather than processes (Van de Ven and Poole 2005).

Finland is located in Scandinavia, northern Europe, between Russia in the east, the Baltic Sea and the Gulf of Finland in the south, Gulf of Bothnia and Sweden in the west, and Norway in the north. It is a small country with a population of 5.5 million and territory of ca. 338 000 square kilometres. Majority of the people live in the southern cities of Helsinki, the capital, Espoo, Vantaa, Turku and Tampere. Finland had a factor-driven economy historically, relying on the natural resources of forests, covering nearly 70% of its land, and metals, leading to the development of its traditional industries like pulp and paper, and ship building (Sölvell and Porter 2011). The economy was highly dependent on trade with the Soviet Union, and it suffered the greatest recession of its history in early 1990s after the break down of the Soviet Union when trade came to a halt (ibid.). A member of the European Union since 1995, Finland recovered from the crisis to become the world's most competitive economy by the turn of the century thanks to decades-long investments in its education system and R&D especially in the field of information technology, creating an innovation-driven economy from which the world's leading mobile phone manufacturer, Nokia, emerged (ibid.). The situation, however, changed starting in the second half of the first decade of the century. Finland's competitiveness measured by the global competitiveness index has been sliding since 2006 when it was 2nd in the ranking (see Figure 1). This research starts the analysis from 2007 rather than 2006 because the global competitiveness index changed its measurement system from using nine pillars in 2006 to 12 pillars in 2007, which to a certain extent explains Finland's slide from 2nd to 6th position (Schwab et al. 2006; Schwab and Porter 2007).

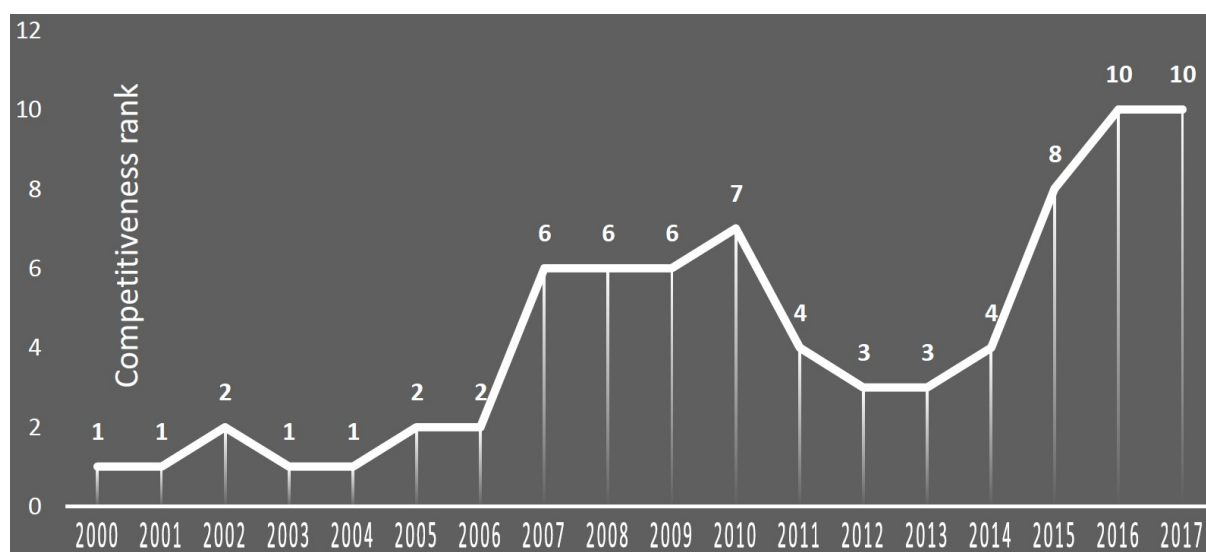


Figure 1. Finland's competitiveness rankings from 2000 to 2017 (sources: World Economic Forum's global competitiveness reports from 2000 to 2017).

When the global financial crisis hit in 2008, Finland was highly dependent on Nokia, which accounted for 2.6% of GDP, 5.5% of total manufacturing employment, 36.9% of total R&D expenditures, 43.0% of patents, and 9.0% of corporate taxes in Finland (Ali-Yrkkö 2010). Figure 1 shows that there was some improvement from 7th position in 2010 to 3rd position in 2012, and the real decline has been from 2013 onwards. The global financial crisis impacted negatively on most developed countries in Europe as well as the USA, but, as presented by the GDP index from 2005 to 2014 in Figure 2, Finland showed the least resilience in recovering from it.

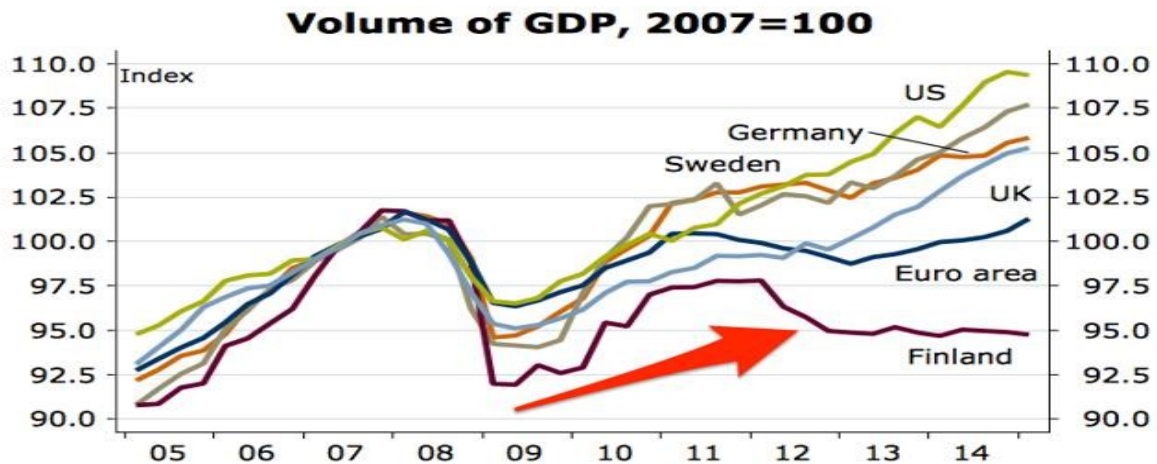


Figure 2. GDP indices of selected developed countries from 2005 to 2014 (World Economic Forum 2015).

Heavy dependence on Nokia and its consequent fall ending with the acquisition of its mobile phones division by Microsoft in 2014 may be one explanation behind this lack of resilience as Nokia's share in Finland's GDP fell down from 2.6% in 2008 to 0.6% in 2014 (Suni and Vihriälä 2016).

3.2 Data collection and analysis

This research made use of extensive secondary and primary data. The World Economic Forum's global competitiveness reports for the years from 2007 to 2017 formed the basis for the preliminary analysis to identify the key pillars and sub-pillars where Finland's competitiveness declined significantly. Further sources of secondary data that was used for the in-depth analysis included the statistics and reports of reliable international and national sources such as OECD, IMF, UNCTAD, the World Bank, Statistics Finland, Tulli (Finnish Customs), and ETLA (Research Institute of the Finnish Economy) as well as academic publications and reports on the competitiveness of Finland. Following the suggestion of Silverman (2000) we also collected primary data via interviews with three experts from Central Finland in order to achieve deeper insights. The expert interviewees were the Managing Director of the Central Finland Chamber of Commerce, the Managing Director of Central Finland Federation of Enterprises, and the Business Development Manager at Business Jyväskylä. Interviewing is a reliable data collection method for qualitative research (Eriksson and Kovalainen 2016). All interviews were semi-structured, and the questions were designed based on the identified pillars and sub-pillars from the preliminary analysis where Finland's competitiveness performance declined. The interviewees were asked permission to record the interviews and to share their titles in possible publications. All interviews were conducted face to face in English language between March 18, 2019 and April 1, 2019, and they lasted 56 minutes, 1 hour 10 minutes, and 1 hour 20 minutes respectively. Data collection and analysis went hand in hand. The recorded interviews were transcribed immediately to enable reliable analysis before conducting the next interview. Data was analysed by the method of qualitative content analysis using codes identified from the pillars and sub-pillars with the highest differences in Finland's competitiveness performance (Cresswell 2014). Data was first reduced and then organized by the aid of the codes using the filtering and sorting functions of Excel. As the amount of data was manageable, no special qualitative data analysis software was required.

3.3 Verification of findings

We applied certain measures to ensure the validity and reliability of our findings. First of all, the use of a well-selected theoretical framework consistently in the empirical study allowed to ensure valid findings. In doing that comparable statistics were utilized over the years from 2007 to 2017, and the interview questions and the codes for analysing the data were derived from the identified pillars and sub-pillars of the theoretical framework where Finland's competitiveness performance declined significantly. The use of multiple reliable secondary data sources

enabled us to triangulate the data and increase the reliability of our findings. One limitation in access to data was that we relied mostly on secondary data that was available in English, and the interviews were also conducted in English. This is because neither of the authors are native speakers of Finnish. We admit that although the English language skills of the authors and the interviewees are very good, and that one of the authors has fluency in understanding Finnish, there may be some little shortcoming. Thirdly, in order to further ensure validity and reliability, each interviewee was carefully selected to have good business and economics knowledge on Finland's near history. Finally, all interviews were recorded and transcribed for reliable analysis.

4. Results

4.1 Preliminary analysis

Table 1. Finland's competitiveness scores (1-7) and ranks in the pillars of the global competitiveness index (adapted from the global competitiveness reports of the World Economic Forum from 2007 to 2017).

Pillars		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
1. Institutions	Score	6.2	6.2	6.0	6.0	6.0	6.0	6.1	6.1	6.1	6.1	6.2
	Rank	1	2	4	4	4	3	1	2	1	1	1
2. Infrastructure	Score	5.8	5.9	5.9	5.6	5.6	5.6	5.6	5.6	5.4	5.3	5.4
	Rank	10	9	10	17	19	23	21	19	25	26	26
3. Macroeconomic environment	Score	5.9	6.0	5.8	5.6	5.7	5.7	5.4	5.3	5.4	5.1	5.5
	Rank	9	8	12	15	20	24	36	43	36	46	33
4. Health & primary education	Score	6.6	6.6	6.5	6.8	6.8	6.8	6.8	6.9	6.9	6.9	6.9
	Rank	1	1	1	2	1	1	1	1	1	1	1
5. Higher education & training	Score	6.0	6.1	6.0	6.1	6.1	6.2	6.3	6.2	6.1	6.2	6.2
	Rank	1	1	1	1	1	1	1	1	2	2	2
6. Goods market efficiency	Score	5.4	5.2	5.0	4.9	4.9	5.1	5.0	5.0	5.0	5.1	5.2
	Rank	10	11	19	24	21	18	15	18	21	19	17
7. Labour market efficiency	Score	4.8	4.8	4.9	4.8	4.9	5.0	4.8	4.7	4.7	4.8	4.8
	Rank	29	23	23	22	15	15	20	23	26	23	23
8. Financial market development	Score	5.6	5.5	5.3	5.4	5.9	5.5	5.6	5.5	5.4	5.5	5.5
	Rank	17	12	7	4	9	4	5	5	6	5	4
9. Technological readiness	Score	5.4	5.5	5.6	5.2	5.7	5.9	5.9	6.0	6.0	6.0	6.0
	Rank	11	14	10	15	12	10	11	11	13	16	16
10. Market size	Score	4.1	4.2	4.2	4.1	4.1	4.2	4.2	4.2	4.2	4.1	4.2
	Rank	49	52	53	56	54	54	55	55	59	59	60
11. Business sophistication	Score	5.5	5.5	5.4	5.3	5.4	5.5	5.5	5.9	5.3	5.3	5.3
	Rank	11	10	9	10	9	7	5	9	14	12	14
12. Innovation	Score	5.7	5.6	5.5	5.6	5.7	5.8	5.8	5.8	5.7	5.7	5.7
	Rank	3	2	3	3	3	2	1	1	2	3	4
Overall rank		6	6	6	7	4	3	3	4	8	10	10

Table 1 presents on a yearly basis changes in Finland's scores and ranks from 2007 to 2017 in each of the 12 pillars of the World Economic Forum's global competitiveness index. The results suggest that Finland's performance varied along the 12 pillars. Despite the overall decline in competitiveness, we notice improvements in for example pillar 7 (labour market efficiency) from rank 29 in 2007 to rank 23 in 2017, and pillar 8 (financial market development) from rank 17 in 2007 to rank 4 in 2017. Finland also managed to preserve its excellent ranks in pillar 1 (institutions), pillar 4 (health and primary education), pillar 5 (higher education and training), and pillar 12 (innovation). Moreover, although Finland's rank declined in pillar 9 (technological readiness) and pillar 10 (market

size), its scores soared in both pillars. Therefore, all of these pillars are excluded from further analysis at sub-pillar level. Pillar 10 is also excluded due to the fact that there is not much room for suggestions to develop a country's market size.

According to the statistics in Table 1, the loss of Finland's competitiveness seems to come mainly from declines in pillar 2 (infrastructure), pillar 3 (macroeconomic environment), pillar 6 (goods market efficiency), and pillar 11 (business sophistication). The score and rank of pillar 2 worsened from 5.8 and 10 in 2007 to 5.4 and 26 in 2017 respectively. In pillar 3 the decline of competitiveness was equally severe, from the score of 5.9 in 2007 to 5.5 in 2017, and from rank 9 to rank 33 respectively. The declines in competitiveness were milder in pillar 6 (from the score of 5.4 and rank 10 in 2007 to the score of 5.2 and rank 17 in 2017) and pillar 11 (from the score of 5.5 and rank 11 in 2007 to the score of 5.3 and rank 14 in 2017). Based on this assessment, pillars 2, 3, 6 and 11 are selected for further investigation at sub-pillar level.

The investigation at sub-pillar level suggests that the decline in pillar 2 (infrastructure) is due to the decreasing number of per capita telephone lines. We would not interpret this as a sign of loss of competitiveness because the Finnish society has been a pioneer in the transition to mobile phones, and that resulted in the abandoning of fixed land lines. This shift is understandable since the density of the population per square km is very low in especially northern Finland, and the expenses to maintain fixed land lines are high. In that respect pillar 2 is excluded from further in-depth analysis. Analysis of the sub-pillars of pillar 3 (macroeconomic environment) suggests that the problematic areas are government debt (down from rank 56 in 2007 to rank 95 in 2017), government surplus/deficit (down from rank 22 in 2007 to rank 47 in 2017), and national savings rate (down from rank 41 in 2007 to rank 69 in 2017). Under this pillar, there was also decline in the inflation sub-pillar from rank 6 in 2007 to rank 46 in 2017. We did not consider it for further analysis because it showed high volatility over the years, and Finland had even rank 1 in 2011, 2014, and 2015. Similarly, the most problematic sub-pillars under pillar 6 (goods market efficiency) are intensity of local competition (down from rank 16 in 2007 to rank 97 in 2017), time required to start a business (down from rank 20 in 2007 to rank 81 in 2017), extent of market dominance (down from rank 7 in 2007 to rank 33 in 2017), prevalence of foreign ownership (down from rank 9 in 2007 to rank 28 in 2017), and degree of customer orientation (down from rank 10 in 2007 to rank 24 in 2017). Finally, the most problematic sub-pillars of pillar 11 (business sophistication) are extent of marketing (down from rank 29 in 2007 to rank 87 in 2017) and local supplier quantity (down from rank 25 in 2007 to rank 78 in 2017). Table 2 presents the evolution of the rank of Finland in these problematic sub-pillars over the years. Note that only the ranks are presented in Table 2 and not the scores due to the nature of the data at sub-pillar level in the global competitiveness reports.

Table 2. Ranks of Finland in the problematic sub-pillars, selected for in-depth analysis (adapted from the global competitiveness reports of the World Economic Forum from 2007 to 2017).

Pillars and sub-pillars	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<i>Macroeconomic environment</i>											
Government debt	56	73	71	93	92	93	101	95	96	90	95
Government surplus/deficit	22	16	19	18	55	35	55	67	55	73	47
National savings rate	41	36	53	82	58	68	80	90	74	77	69
<i>Goods market efficiency</i>											
Intensity of local competition	16	16	31	52	71	68	86	108	89	94	97
Time required to start a business	20	27	38	52	58	66	68	69	79	81	81
Extent of market dominance	7	9	18	27	27	26	22	24	51	47	33
Prevalence of foreign ownership	9	8	9	23	39	27	29	44	50	42	28
Degree of customer orientation	10	19	27	25	15	20	29	26	26	23	24
<i>Business sophistication</i>											
Extent of marketing	29	34	31	29	26	20	16	26	39	84	87
Local supplier quantity	25	24	42	80	88	87	95	96	96	92	78

4.2 In-depth analysis of the problematic pillars and sub-pillars

4.2.1 Macroeconomic environment

The macroeconomic stability of Finland was distorted by three international crisis between 2007 and 2017, first by the global financial crisis in 2008, then by the European sovereign debt crisis during 2010-2012, and finally by the Russian crisis during 2014-2015. As a result, Finland's GDP declined by 8.3% in 2009, and there was a recession during 2012-2014 with annual GDP decline by 1.4%, 0.8% and 0.6% respectively. When the European Commission decided to support Greece in order to prevent the country's financial collapse, the share of the burden on Finland was 1.6 billion Euro (see Bank of Finland 2011; European Commission 2010). The Russian crisis emerged as a result of dropping oil prices, to which the Russian economy was highly dependent, and EU sanctions on Russia following Russia's entry to Crimea. Both developments impacted very negatively on the economy of Russia, which has been a key export market for Finnish businesses, and the share of Finnish exports to Russia dropped from 10.0% of Finland's total exports in 2013 to 5.9% in 2015 (Tulli 2019).

The Finnish economy was hit by two more developments during the same period. The first one was the demise of Nokia during 2008-2014, to which the Finnish economy was highly dependent, and the second one was the recession that hit the pulp and paper industry, one of Finland's traditional sectors, due to the diminishing global demand for paper products as a result of increasing digitalization. Consequently, Finland, characterized by the low diversification of its economy and export destinations, was the second from the last among European economies to recover from the crisis and named the "sick man of Europe" (European Commission 2015; BBC 2016). These unfortunate developments challenged the budget of the government of Finland, a country known also for its large public sector and high welfare society, and worsened the situation in the sub-pillars of government debt, government surplus/deficit, and national savings. The government debt increased from 63.4 billion Euro (34.0% of GDP) in 2007 to 137.3 billion Euro (61.3% of GDP) in 2017. Furthermore, the government made budget deficits every single year from 2009 to 2017, and the ratio of national savings to GDP decreased continuously and hit negative digits in 2016 and 2017 (see Table 3).

Table 3. Key indicators of Finland in the sub-pillars of the macroeconomic environment (adapted from Statistics Finland 2019; The World Bank 2019)

		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Government surplus / deficit	Billion Euro	9.6	8.1	-4.6	-4.9	-2.1	-4.4	-5.3	-6.6	-5.8	-3.7	-1.5
	% GDP	5.1	4.2	-2.5	-2.6	-1.0	-2.2	-2.6	-3.2	-2.8	-1.7	-0.7
National saving rate (% GDP)		-0.1	0	4.2	3.9	2.2	1.5	2.2	0.6	0.1	-0.6	-0.9
Government debt	Billion Euro	63.4	63.3	75.5	88.2	95.5	107.7	114.8	123.7	133.2	136.2	137.3
	% GDP	34.0	32.7	41.7	47.1	48.5	53.9	56.5	60.2	63.6	63.0	61.3

4.2.2 Goods market efficiency

According to the interviewees, one of the key factors behind Finland's loss of competitiveness in goods market efficiency was the decline of government funding for businesses, especially for growth-oriented start-ups. The shrinking funding was a direct result of the increasing government deficit and debt, as highlighted in the previous section. To worsen the situation, while the amount of public funding has shrunk, bureaucracy through excessive regulations and inefficient governance has increased the time required to access the funding and start new businesses. As told by the interviewees, getting public funding has become extremely difficult for start-ups in need of resources. This impacted negatively on the intensity of local competition when for example the ratio of business closures to new openings was between 80-100% during 2012-2016 vs. 66% in 2007 (Statistics Finland 2019). High closures and low new openings increased the gap in the structure of the goods market, resulting in its

dominance by a few large companies in the absence of mid-sized companies, and harming the intensity of local competition.

Most of the inward foreign investment in Finland before 2007 aimed to benefit from Finland's excellence in knowledge and human resources especially in the information and communication technology sector. However, the demise of Nokia and the shrinking R&D budgets from nearly 3.7% of GDP in 2010 to 2.8% in 2016 made Finland a less attractive location for foreign direct investments (OECD 2017). High wages and tax rates in Finland together with the ageing population structure contributed further to Finland's low level of attractiveness for investments. Finally, it was also mentioned during the interviews that Finnish companies were more product-oriented than customer-oriented, and this created a disadvantage for them, since most of Finnish businesses were in business-to-business sectors, exporting primarily intermediate goods, items that are more price sensitive and more vulnerable to cyclical fluctuations (Mäki-Fränti and Vilmi 2016). Finland's location, separated from main European markets by the Baltic Sea, and low level of integration of Finnish SMEs into global value chains further challenge the goods market efficiency (OECD 2017). A survey among leading Finnish managers suggested that most elements related to Finland's good market efficiency were not only weak but also deteriorating (Apunen and Pajarinen 2013).

4.2.3 Business sophistication

Among the sub-pillars of business sophistication, the extent of marketing and the quantity of local suppliers have deteriorated the most. As informed by the interviewees, Finland was known in global markets for its high quality products and services in business-to-business markets that were offered at premium prices, and the sales of premium products and services required extra marketing efforts. The issue related to the extent of marketing was two-fold. First, Finns by nature have been more technology-oriented engineers than marketing-oriented sales people, and second with the worsening of the economy Finnish companies have been cutting from their marketing budgets. As it was mentioned during the interviews: "Finns were focused on the technical side to make sure that their products were working 100%, and it was like a swear word if you asked for funding related to marketing and sales." Furthermore, innovations, which have been the driving force behind the high quality of Finnish products, were diminishing in the face of the increasing competition because of shrinking R&D budgets from both the public sector and the private sector.

Finland is a small country. As a result, the quantity of suppliers has always been limited, a restricting factor for the growth of Finnish companies. Finnish companies have responded to this challenge by recruiting foreign suppliers especially from low-cost countries, but these offshore suppliers have had serious quality issues. The situation of Finnish suppliers worsened following the demise of Nokia because Nokia's Finnish suppliers have not been able to adapt their product offerings to be able to tap into the value chains of foreign competitors like Apple and Samsung. Consequently, a number of them needed to close down their operations. Finally, Finland's high levels of costs and taxes have been also a drawback on the development of the supply industry in Finland.

5. Discussion

This research aimed to understand why Finland lost its competitiveness from 2007 to 2017 using World Economic Forum's global competitiveness index framework. The empirical study, which was a longitudinal study, had two parts. In the first part we compared Finland's competitiveness rank in all of the pillars and the sub-pillars of the framework. This allowed to identify the pillars and the sub-pillars behind Finland's loss of competitiveness (see Table 2). The second part investigated further the causes of decline in these pillars and sub-pillars with the aid of reliable secondary data and interviews with three business leaders from Central Finland. Most of the earlier research on Finland's competitiveness had aimed to explain the miracle of Finland's rise to become the world's most competitive economy (see Rouvinen 2001; Blomström and Kokko 2003; Kettunen 2004; Oinas 2005; Sahlberg 2006). The case of Finland, with its rise and decline, provides evidence for the argument that competitiveness is a dynamic concept, and this research makes a contribution to the literature by investigating the factors behind the loss of competitiveness. Finland's loss of competitiveness was triggered by external events,

such as the global financial crisis, the European sovereign debt crisis, and the Russian crisis, as well as internal events, like the demise of Nokia. The occurrence of these events in a row was a tough test for Finland's resilience. As a result, the events impacted negatively on the stability of Finland's macroeconomic environment, specifically on government deficit and debt. The government's response to increasing debt was to cut budgets from R&D, education, and funding of start-ups, which altogether diminished the innovation and marketing capabilities of Finnish companies and decreased their competitiveness in international markets.

We found the World Economic Forum's global competitiveness index framework (Schwab and Sala-i-Martin 2017) a useful tool for conducting this longitudinal research. Availability of reliable comparable data from 2007 to 2017 enabled valid comparisons over the years. The World Economic Forum revised the framework in 2018 and called it global competitiveness index 4.0 framework (Schwab 2018). This revision as well as the earlier revision in 2007 restrict making similar comparisons before 2007 and after 2017. As a result, the framework has a limitation to allow comparable studies over more years.

The lessons learned from the case of Finland enable us to make three important suggestions for policy makers, who wish to preserve the competitiveness of their countries. First, it is significant to realize that competitiveness is a dynamic concept which is not only gained but can also be lost over time by internal factors, such as own policy mistakes, or sometimes by external factors that are beyond the control of the decision makers of the country, such as the global financial crisis or the European sovereign debt crisis. Leaders of EU countries, like Finland, are restricted to a certain extent by decisions taken at the EU level, e.g., the sanctions against Russia. Despite uncontrollable external factors and limitations, policy makers have room to develop the resilience of their economies to unexpected shocks through "smart diversification". Finland's high level of dependency on Nokia as well as its traditional pulp and paper industry naturally diminished its resilience to recover from the three crisis. As recommended by OECD (2017), Finland still needs to diversify its economy in order to restore its competitiveness. Secondly, it was not a good choice by Finnish policy makers to cut funds from education and R&D during the crisis. This is an important lesson especially for policy makers of small countries whose companies mainly compete based on innovativeness. This is because qualified human resources and advanced knowledge resources establish the backbone of innovations. Cutting funds from education and R&D will downgrade the competitiveness of companies in the long-term. Thirdly, start-ups are the drivers of future growth. Governments should ease the bureaucracy around starting new businesses, and there should be an entrepreneurial support ecosystem to nurture their development. Accessing funding opportunities, international networks and value chains are important enablers for growth-oriented start-ups from small countries.

This research is subject to two major limitations that call for future research. The first one regards the generalizability of findings. As Finland is a small and competitive economy, the results can be fruitful for Finland or similar small and competitive economies. However, possible adaptations to similar economies should be treated with caution, taking into account the local context. This limitation calls for future research. We recommend similar longitudinal research from other similar small and competitive countries and compare and contrast their results with this research in order to increase our understanding on how competitiveness can be sustained over time. The second limitation is that this is a general study that looked into changes in the 12 pillars and 114 indicators of the global competitiveness index. As the pillars and their sub-pillars cover a wide spectrum, it was not possible to go very deep in any single area. Therefore, we recommend further in-depth studies on especially the problematic areas of Finland.

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