



# DIRECT CROSS-BORDER LENDING SCHEME FOR SMALL-SIZE EXPORT CONTRACTS

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## Abstract

This study is based on an extensive market survey of the availability of financing for foreign buyers of Finnish exporters. It identifies a gap in the market for small export contracts and makes several recommendations to correct this market failure.

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## ABBREVIATIONS & DEFINITIONS

Advisors	<b>Nicholas Anderson</b> and <b>Pirjo Pakkanen</b> – Both Advisors are independent financial advisors, who have extensive experience of international banking and the international capital markets, as well as first-hand experience from most aspects of global export finance.
Capital Goods	This is equivalent to the expression “Investment Goods” and is used interchangeably in this report. The two phrases refer to the product of plant and equipment used by buyers in their manufacturing process and involve an investment and production activity stretching over many years. The SBC financing for these investments is the central theme of this report.
ECA	Government-backed official Export Credit Agency
Expected Loss	Sum of values of all possible losses, each multiplied by the probability of that loss occurring.
Forfaiting	Discounting without recourse to the exporter
FV	Finnvera
International banks	European banks or large multinational banks with extensive international networks
Large Exporter	Larger Finnish exporters with turnover above €1 billion
Midcap	Finnish exporters with turnover above €50 million but below €1 billion
Nordic banks	These are the large banks with a Head Office in one of the Nordic countries and that offer a broad range of banking services in Finland to Large and/or Small Exporters.
SBC	Small Buyer’s Credits – this definition is generic and includes Buyer Credit and/or Forfaiting of credit instruments or invoice receivables transactions not exceeding €20 million
Small Exporter	Smaller Finnish exporters with turnover below €1 billion
SME	Finnish exporters with turnover not exceeding €50 million

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1. Finnvera
2. Finance Committee of Technology Industries - the Confederation of Finnish Industries
3. Finnish Chambers of Commerce
4. Federation of Finnish Enterprises.

## YHTEENVETO

Haastattelututkimus pienten ostajaluottojen tarpeesta ja saatavuudesta tehtiin maalissyyskuussa 2020. Pienillä ostajaluotoilla tarkoitetaan enintään 20 miljoonan euron suuruisia rahoittajan ulkomaiselle ostajalle myöntämiä luottoja ja rahoittajan viejältä ostamia vientikaupan saatavia kuten luottoinstrumentteja tai laskusaatavia (forfaiting).

Kyselyyn vastasi 47 vientiyritystä, joista 7 isoja yrityksiä, 18 midcap-yritystä ja loput 22 Pk-yrityksiä sekä 15 pankkia, 5 vienninrahoituslaitosta ja 2 kehitysrahoituslaitosta.

Ostajalle järjestettävä vientikaupan rahoitus on tärkeä kilpailukeino kansainvälisessä kaupassa, erityisesti pääomatavaroiden vientikaupassa, ja sen merkitys on haastateltujen yritysten mukaan viime vuosina kasvanut.

Suomessa toimivien kotimaisten, pohjoismaisten ja kansainvälisten pankkien kiinnostus vientikaupan rahoitukseen on merkittävästi vähentynyt viimeisten 5-10 vuoden aikana. Syynä on erityisesti regulaation lisääntymisestä aiheutunut kustannusten nousu ja kannattavuuspaineet mutta myös pankkien strategiamuutos. Viejien kansainvälisen kaupan ja erityisesti pienten, alle 20 miljoonaa euroa, vientikauppojen rahoitusta ei pidetä riittävän kannattavana toimintana, ja useimmat pohjoismaisista pankeista ovat lopettaneet ulkomaisten ostajaluottojen myöntämisen.

Isoilla yrityksillä on osaamista hakea kaupoilleen monipuolisia rahoitusratkaisuja, ja ne saavat merkittävänä asiakkaina pankeilta palvelua myös pienemmille kaupoille. Pienet yritykset joutuvat yleensä rahoittamaan vientikauppoja omalla taseellaan tai edellyttämään kaupan ehtona ennakkomaksuja. Jos ulkomaisesta ostajasta johtuvat riskit voidaan kattaa Finnveran takuutuotteilla tai luottoriskivakuutuksilla ja viejä ottaa kantaakseen residual-riskin, pohjoismaiset pankit voivat valikoidusti tarjota omille asiakkailleen luottoinstrumenttien tai saatavien diskonttausta.

Viejäyritysten kilpailijamaissa voi olla paikallisia pankkeja, jotka tarjoavat pienten kauppojen vienninrahoitusta, usein myös vientikauppojen rahoittajana toimiva ECA. Useat Euroopan ja kaikkien pohjoismaiden ECA:t ovat aiempien takuutuotteiden lisäksi ryhtyneet tarjoamaan ostajaluottoja tai ostajan luottoinstrumenttien tai saatavien diskonttausta. Suomesta nämä tuotteet puuttuvat. Suomesta puuttuvat myös paikalliset pankit, jotka olisivat valmiit tekemään pieniä ostajaluottoja.

Suomalaiset pienet vientiyrietykset ovat kilpailijoitaan heikommassa asemassa vientikaupan rahoituksessa johtuen paikallisen markkinan poikkeuksellisen niukasta tarjonnasta. Ratkaisuna esitetään, että Finnvera aloittaa alle 20 miljoonan euron suuruisten ostajaluottojen myöntämisen ulkomaisille ostajille ja alkaa ostaa viejiltä alle 20 miljoonan euron suuruisia ulkomaisten ostajien maksusitoumuksia kuten luottoinstrumentteja tai saatavia. ("Pienet Ostajaluotot")

Vaikka isot yritykset ovat paremmassa asemassa vientikaupan rahoitusratkaisuja hakiessaan, suurin osa haastatelluista yrityksistä näki mahdollisuuksia lisäkauppaan, jos Finnveralla olisi tarjota Pieniä Ostajaluottoja.

Finnveran Pienet Ostajaluotot vapauttavat Pk-yritysten taseet kasvun kehittämiseen, mahdollistavat aktiivisemmän vientikaupan tarjoustoiminnan, mahdollistavat lisämyynnin nykyisille asiakkaille, uusien asiakkaiden voittamisen sekä aivan uusien vientiyritysten synnyn. Viennin lisäyksellä paitsi Pk-, myös midcap- ja suurissa yrityksissä on merkittävä vaikutus työllisyyteen.

On todennäköistä, että osa pienistä pääomatavaraviejistä ei pysty pitämään vientikauppaa nykyisellä tasolla elleivät ne pysty tarjoamaan ostajille samanlaisia rahoitusvaihtoehtoja kuin kilpailijat. Covid-19:n vaikutuksesta myös ostajien pankkilimiitit ovat kiristyneet, joten ne pyrkivät varmistamaan oman kassatilanteensa vahvuuden ja ovat aikaisempaa kiinnostuneempia viejien tarjoamista rahoitusvaihtoehdoista.

Pienten Ostajaluottojen tarjonnan lisäksi PK-yritykset tarvitsevat koulutusta ja neuvontaa vienninrahoitustuotteiden käyttöön. Tarjonnan puutteesta johtuen vienninrahoitusinstrumenttien ja niiden tuomien mahdollisuuksien tuntemus oli merkittävässä osassa haastatelluista yrityksistä heikkoa.

Haastateltujen Pk- ja midcap-yritysten arvion mukaan ne tulisivat käyttämään Pieniä Ostajaluottoja noin 400 miljoonan euron arvosta vuosittain ja isot yritykset noin 150 miljoonan euron arvosta vuosittain.

Finnveran Pienien Ostajaluottojen tulisi olla dokumentaatioiltaan ja prosessiltaan yksinkertaisia. On myös tärkeää, että viejät voivat saada Pienistä Ostajaluotoista rahoitusindikaatioita vientikaupan tarjousprosessia tukemaan. Suosittelemme mallidokumentaation jakamista viejille toimitussopimusten liitteiksi vientikaupan rahoitusta selkeyttämään ja nopeuttamaan. Luottosopimusten ja saatavienostosopimusten jakaminen pankeille voisi auttaa pankkeja kiinnostumaan Pienistä Ostajaluotoista ja toimimaan Finnveran rinnalla rahoittajana ja riskinjakajana.

Haastattelujen perusteella Pienistä Ostajaluotoista koostuvan salkun luottoriski tulisi olemaan kohtuullinen tai hyvä (BB-B). Pienten Ostajaluottojen toteutus ei selvityksen perusteella vaadi merkittäviä lisäresursseja. Know Your Customer-prosessi, jota on jo pitkälle kehitetty Finnverassa, voidaan toteuttaa ilman merkittävää lisätyötä, ja käyttää hyväksi muiden ECA-rahoittajien kokemuksia.

Selvityksen tekijöiden näkemyksen mukaan uudet tuotteet voidaan toteuttaa kannattavasti. Kannattavuusrajaksi on arvioitu 100 miljoonan euron Pienten Ostajaluottojen vuosivolyymi.

## INTRODUCTION

It is fair to state after reviewing the responses to the questionnaires and the interviews of some 40 Small Exporters and 7 Large Exporters there is a unanimous conclusion that these exporters have expressed a need for SBC services from Finnvera. Their rationale is also reasonably unanimous:

**Small Exporters** say that they are not able to compete on a level playing field with their main competitors at the bidding stage by being able to offer such SBC services to their buyers or to the buyer's bank, even if the buyer has no intention of using SBC services, but needs the offer to compare debt pricing for his investment.

Small Exporters are sometimes forced to offer SBC financing through their own balance sheets, or they are disqualified from being shortlisted or forgo bidding altogether.

Exceptionally, a few Small Exporters are able to find an International Bank willing to take on the SBC financing because the buyer is already their client, but such deals are rare because these banks are not actively covering Small Exporters and Small Exporters seldom have the resources to find and deal with these banks.

**Large Exporters** can ask their main International Bank partners to perform a SBC service as a favor, which is far from being an optimal solution.

Over the last decade, most of the Nordic Banks have largely withdrawn from the export financing business, while the International Banks only focus on financing export deals that are larger than €20 million for Large Exporters.

The main competitors of Finnish exporters all have the support of SBC services from their ECA counterparts. In most cases such a service is simplified and standardized with competitive pricing that reflects market pricing. In some cases, the main competitors also have access to a competitive offer from local and international banks that are established in their own local markets.

## IDENTIFICATION OF MARKET FAILURE OR DEFICIENCY

The Advisors have identified a clear market failure where domestic and large international banks have basically stopped offering buyer's credits for small Finnish export deliveries of goods and services when the export finance transaction amount is lower than €20 million ("Small Buyers' Credits" = SBC).

## REGULATION AND CHANGES IN BANK STRATEGY ARE THE ORIGINS OF MARKET FAILURE

The often-reported adage that the Nordic countries are highly dependent on exports is not reflected in the activity of any of the Nordic banks' operations in Finland, all of whom either provide little or no support for SBCs that could benefit small Finnish exporters, with just the bare minimum of buyer financing granted to their largest corporate clients.

This fact is in sharp contrast to the competitors of Finnish exporters in many other countries, like Sweden, Denmark, Germany, France, Italy, Belgium, UK, Holland, etc., where local and international banks and/or national ECAs are providing these services.

The advisors approached 18 banks, the selection of which was agreed with Finnvera. Five of the banks are the largest Nordic Banks, four of which are the Finnish entities of Nordic banking groups, and one a resident national Finnish bank. The remaining banks are European banks or large multinational banks with extensive international networks ("international banks").

The banks were first sent a 4-page questionnaire by email with a series of some 20 key questions, and this was followed up by video conferences with the Advisors.

It was agreed with the banks that all the information collected in the questionnaire and in further discussions would be anonymised.

For obvious reasons, the Covid-19 virus pandemic proved to be a major impediment to secure answers with bankers because of the extra burden of work as their clients were fighting to avoid financial default, or to increase credit lines and short-term liquidity. In the end the Advisors secured an adequate response from 15 banks, 5 of whom had the HQ in the Nordic countries. The remainder were large international banks who are active in financing exports with broadly distributed networks or European banks active in export financing.

The results of this survey of banks are exceptionally clear:

### NORDIC BANKS

None of the Nordic banks are systematically offering SBC services to smaller companies and only two Nordic banks currently offer buyer credits to the foreign buyers of Finnish exporters. One bank's service is limited to bank borrowers, while the other bank has imposed a minimum transaction size of €20 million, with lower amounts permitted for top clients. Nordic banks are offering a limited SBC service for corporate clients on a case-by-case basis, meaning that the deal must be profitable (see below) and the risks minimal. It is our understanding that this is a very limited service executed by small teams some of whom are working on an ad hoc basis. One bank is offering SBC service for Nordic buyers only, while the other bank is only interested in SBC for highly rated foreign buyers from their existing Nordic clients. The deal must also be profitable (see below) or regarded to be an important factor in retaining a highly profitable client.

The major Nordic banks have closed their departments that have traditionally handled such business and have no intention in the coming years of re-opening this activity.

Two Nordic banks offer bill discounting service, and two buy export receivables, but only backed by export credit guarantees, private credit insurance or a letter of credit. The banks insist that the exporter takes the residual risk of these transactions. These services are limited to the banks' current customers.

#### **INTERNATIONAL BANKS**

Only 5 international banks are offering a limited service for SBCs. They said that they may be willing to offer SBC services to the buyers of Finnish Smaller Exporters (normally with an annual turnover between €500 million and €1 billion), with or without a FV guarantee, if the buyer is an existing customer of that bank through its current network.

However, profitability conditions apply, (see below) and the Finnish exporter may be in competition with the bank's other clients who may also be seeking to make the same sale. Secondly the pricing may not be as favorable since Finland is regarded as a secondary market from the bank's viewpoint. This service is being offered by small teams of staff.

Two international banks have also opened light-weight digital solutions for SBCs which are available for Finnish exporters to use with FV buyer credit guarantees. The management of this business is centered mainly on their European client networks around their home base in Germany/Austria/Italy. Finland is not a top priority country for either bank. In both cases the service is rather new and not fully implemented.

International banks ready to do SBC have a small sales teams serving Nordic clients with the core business in their HQ in the German/Italian language area. Their capacity and interest to cover the whole Nordic region and their capacity to offer Finnish clients SBC service is secondary to the home markets. Only one international bank active in export finance has presence in Finland. The remaining international banks active in Finland, and interviewed for this report, said that they are not interested in providing SBC services for Finnish exporters because the costs and/or risks of this activity are too high under the present regulatory environment.

#### **BANKERS' VIEW ON PROFITABILITY**

All the banks said that the breakeven point is close to €20 million even when FV or some other high credit quality guarantee is available for the loan. The reason for this is because of the requirements for profitability. Each transaction has legal and compliance costs imposed by the regulatory environment for risk management, capital adequacy, KYC and the avoidance of money laundering, and they are the same for small and large deals. The estimates of costs for banks entering such transactions fall between €50 000 and €200 000 according to the banks interviewed.

Large Finnish Exporters (annual turnover more than €1 billion) can exert pressure on these international partner banks to provide SBC in return for keeping their other profitable business. The Advisors noted that even this solution is not used systematically by large corporate exporters because it limits their ability to optimize banking relationships. Furthermore, the Advisors saw that the strategy of many of the banks interviewed has

changed over the last few years. Banks are focusing on more profitable business and have cut down export financing services due to manual work, fear of reputational risk in politically risky countries or reputational risk related to export finance transaction parties. Banks previously ready to work across industries have made decisions to exit certain industry sectors.

Only one of the interviewed banks was ready to extend an exporter driven small buyer credit, (€7 million to €15 million) i.e., they were ready to take on exporter’s client as a new borrower, perform a full credit analysis and KYC, and keep the residual risk. This service is available for exporters in their national market in Europe, but outside this area only for large customers (minimum €1 billion turnover). All others were borrower driven due to their high internal cost of taking on new clients - €65 000 was the cost mentioned by one of the banks.

If the exporter is new to the bank there is the cost of KYC to be performed on the exporter and if the client is a SME, performance and reputational risk, in addition to KYC costs, often kill the deal.

#### OTHER COMMENTS FROM THE BANKS

The interviewed banks had following ideas on how to improve bank interest in export financing and interest to look at smaller transactions:

1. A loan template from FV
2. FV to pay higher upfront fees to encourage banks to enter smaller deals
3. FV to carry higher risk on documentation, KYC and reporting
4. FV not to require legal opinions in smaller transactions
5. FV to take performance risk of small exporters
6. FV not to require pledge or other security for small transactions
7. More attractively pricing of FEC’s funding

These are interesting ideas and the Advisors support implementation of numbers 1 and 6, but do not believe that the other suggestions will improve competitive position of Finnish exporters. If all the above proposed changes were accepted, then the role of banks would not be much more than funding.

#### SEGMENTATION OF SBC SERVICES FROM BANKS

Below is a summary of Large and Small Exporters access to international banks, Nordic banks export finance services and to SBC and sizes of transaction meeting market failure:

Access to Banks	Large Exporters	Mid-Caps	SMEs
International banks	10-20 exporters	5-10 exporters	5 exporters
Nordic banks	All banks	2-3 banks	House bank
Small-size export finance solutions	Top clients usually buyer-driven	Limited access to a few international banks – buyer client driven solution	Depends on house bank, exceptionally international bank in buyer-driven solutions

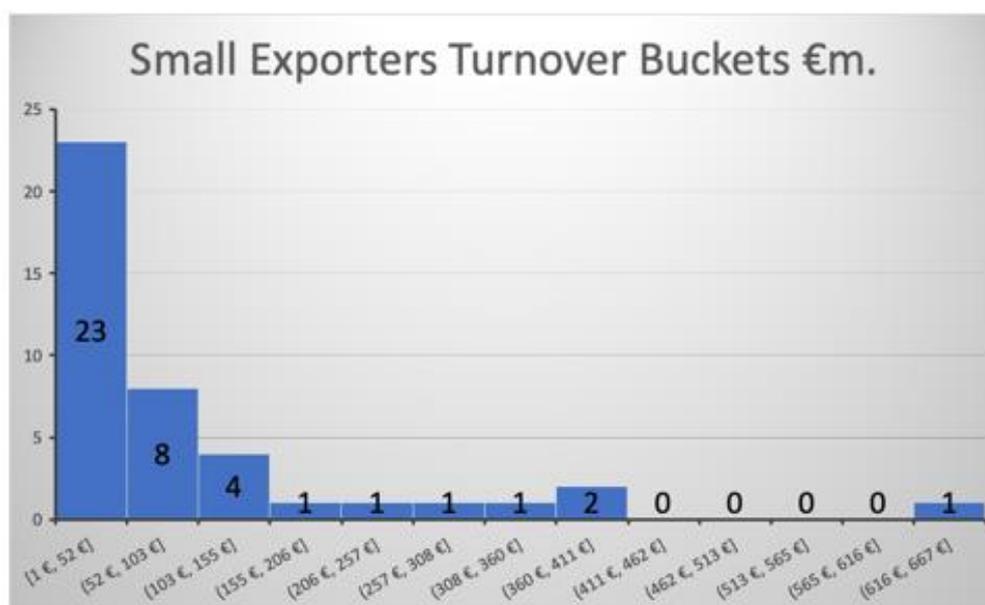
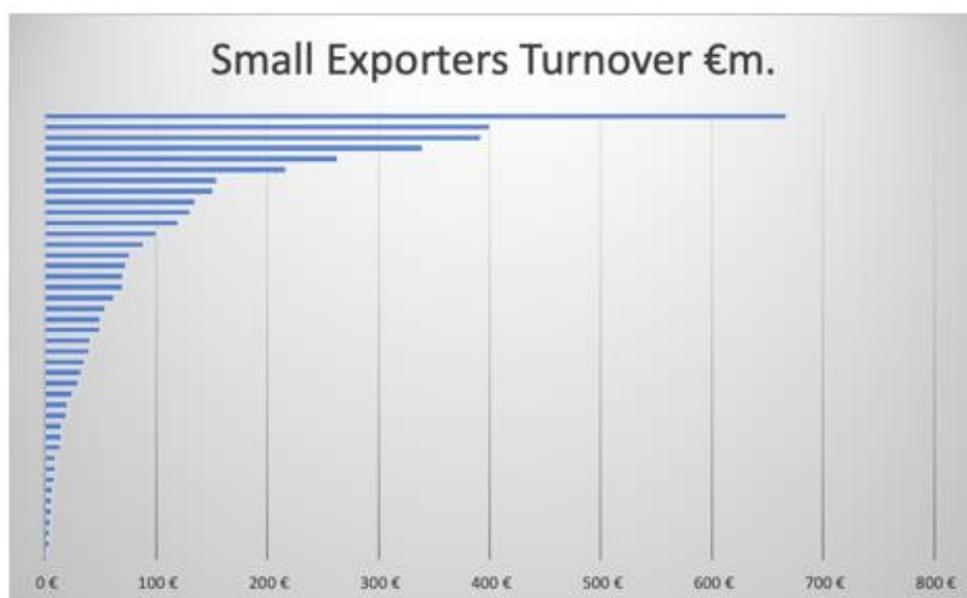
  

Failure Size or Access Limitation	Large Exporters	Mid-Caps	SMEs
Buyer credits	Below €10-40 million	Below €20 million	No access
Bills discounting	Below €5-10million limited access if credit covered	Depends on house bank - limited access if credit covered	Access if house bank offer & credit covered
Discounting of accounts receivables	Below €5-20 million limited access if credit covered	Depends on house bank - limited access if credit covered	Access if house bank offer & credit covered (Factoring possible but then no risk transfer)

## LARGE AND SMALL FINNISH EXPORTERS REVEAL THEIR WEAKER COMPETITIVE POSITION

The Advisors have collected data in questionnaires and interviews from a representative pool of 47 exporting SMEs, mid-caps and large corporations, and their main domestic and international banks involved in financing exports.

The list of companies was selected with the assistance of FV, The Confederation of Finnish Industry, the Federation of Finnish Enterprises and the Central Chamber of Commerce. An e-mail and questionnaire were sent by the associations to around 240 of their members. It was agreed that the Advisors interview a selection of 25 companies, but this number was expanded to improve the quality of the report by increasing that number and included a selection of the largest export companies (7) and of smaller exporters (40), of which 18 were midcaps and the rest 22 SMEs.



There can be no doubt that the conclusions drawn in this report are credible because the companies, Small Exporters and Large Exporters from whom the Advisors collected data and interviewed are strongly representative of Finland's capital goods export sector.

These Small Exporters represent some 3% (c. €3 billion) of the total volume of Finnish exports (€90 billion). This number understates their true export volume because many small companies are subcontractors to Large Exporters. A recent study estimates that more than 20 000 SMEs are involved as sub-contractors to the largest exporters. The total number of capital goods exporters who could benefit from SBC services are probably close to several hundreds. The Large Exporters that were interviewed represent some 53% (c. €48 billion) of Finland's total export volume of €90 billion. The Large Exporters include most Finland's major capital goods exporters. Together these two groups represent some 56% of total exports and as such the data collected from them can be considered to be sufficiently representative of the whole export sector.

In particular, the lack of SBCs impacts small export contracts of capital goods such as manufacturing equipment and their long-term maintenance and licensing contracts where the buyer has requested an indicative or committed offer for term financing.

The Advisors also interviewed Small Exporters that sold high-value smaller products like components, timber products, boats, automation systems, etc. These Small Exporters also noted that they have limited access to standardized short-term financing where their accounts receivables can be sold (discounted) or other short-term finance can be arranged for their dealers and agents with whom they traditionally have long-term relationships. Some 30%-40% of Finnish exports are low value-added bulk products which are sold with short-term financing and letters of credit. They do not demand any long-term financing arrangements for buyers. They are also mainly sold by the large companies leaving smaller companies to compete in manufacturing of more demanding long-term capital goods and small high-value products. High volumes of bulk products are seldom sold by small companies.

Small Exporters can only thrive in the global markets by manufacturing technically advanced and cost-efficient high value-added products and plants that incorporate innovative solutions for their manufacturing clients in Finland and abroad. This means that many of them are naturally interested in having SBC services for their buyers because these capital goods and smaller specialty products are expensive and have long life cycles. These buyers are committing themselves to long-term investments when procuring these capital goods and it is only natural that they need to finance these investments from their local banks, from the supplier or from the suppliers' banks. The Advisors established that many Small Exporters have neither the balance sheet capacity, financial skills or supporting banks and they have also established that banks in general have mainly pulled out of SBC market. This situation has been further aggravated by the impact of Covid-19, which has tightened bank lines and increased buyers' interest in financing arranged by the supplier.

One specific feature was repeated in exporters' replies and this was the lack of working solutions for dealer or reseller financing. Even a modest increase in finance lines would

enable much higher sales volume. Due to weak or limited financial strength of dealers and resellers exporter-driven solutions are typically used in this kind of business.

Recent statistics from Finnish Customs Statistics for 2019/2020 state that Small Exporters account for some 16%, or €10 billion, of exported goods, thus the Small Exporters interviewed account for one third of this total volume. It must be expected that there are many other Small Exporters that have similar needs for SBC services that the Advisors were unable to interview due to the limited mandate from FV and TEM. In any event the list was diversified – here is a list of the highly varied activities of the individual companies:

**Small Exporters interviewed:**

1. Heavy moving equipment and systems
2. Power crushing plant and equipment
3. Mining equipment and machinery
4. Wood handling and wood fiber plant and equipment
5. Factory automated logistic and control systems
6. Safety control systems
7. Marine and Power technology
8. Metal processing plant and equipment
9. Welding systems & automated welding plant
10. Hydraulic management systems
11. Wood harvesting equipment
12. Wood processing equipment and plant
13. Health technology equipment
14. Advanced energy plants
15. Large heat pump plants

16. Cleantech plant and equipment
17. Food processing equipment
18. Commercial, agricultural and forestry vehicles
19. Glass processing machinery
20. Cement element plant
21. Asphalt plants and handling equipment
22. Scrubbers for marine and power plants
23. Waste management plant equipment
24. Weather and traffic measurement technology

**Large Exporters interviewed:**

25. Digital & Mobile networks
26. Mining Aggregates
27. Marine & Power Systems
28. Heavy Industrial Plant
29. Heavy Lifting Equipment
30. Cargo Handling Equipment
31. Heavy Automation Systems

## COMPETITIVENESS OF FINNISH EXPORT FINANCE SCHEME

Based on the selected government-backed official Export Credit Agency ( “ECA”) interviews and data available on ECAs web-sites, below is a summary of peer ECAs SBC offering. Most ECAs can offer buyer credit and forfaiting products to their exporters. Finnvera does not offer any of these products.

<b>ECA’s SBC Offer</b>	<b>Local Banking Support &amp; Big markets</b>	<b>Buyer Credit</b>	<b>Forfaiting</b>
Atradius - Holland	Yes	No	Yes
Bpifrance -France	Yes	Yes	Yes
Credendo - Belgium	Yes	Yes	Yes
EKF – Denmark	No	Yes	Yes
ECN – Norway	No	Yes	No
KfW/AKA-Germany	Yes	Yes	Yes
SEK- Sweden	Partial	Yes	Yes
Finnvera- Finland	No	No	No

Peer ECAs are offering direct cross-border financing services to their exporters even if exporters in peer countries have better availability and access to SBC banks services than Finnish exporters. To help Finnish exporters to get closer to their peers Finnvera is expected to do more than the peer ECA.

The message from exporters, banks and ECAs was clear: the importance of ECAs in export financing continues to grow. Basel III have marginalized commercial banks involvement in export credits. Small company risks and long tenors are an unattractive business for the banks. A large corporate representative commented: *“the consequence is that in practice export financing will only be possible via ECA financing or support or with full private credit insurance cover”*. Basel IV is expected to further increase capital requirements and costs due to new provisioning and reporting requirements.

The Swedish ECA scheme was referred to by the banks and exporters as being a good example of support for Swedish exports. In addition to large export contracts, Swedish exporters have many small capital goods contracts of around €2 million which benefit from forfaiting that is available from SEK and local banks. One local bank in Sweden noted that they have currently 3500 clients using these export finance services.

The Advisors were impressed on the level of service and alternatives Credendo offers to Belgian exporters. Both buyer credit and forfaiting services are available and Credendo has successfully implemented forfaiting to cover 70 countries, including countries such as Burkina Faso, Ivory Coast, Senegal, and Ghana and without security. Template documents to be filled in by contract parties seemed to be one key success factor.

A short summary of peer ECAs SBC offering is to be found in the Annex 1.

## POTENTIAL VOLUME OF A NEW SBC SCHEME – EXPORTERS’ PERSPECTIVE

This section sets out the answers given to the Advisors by the Large and Small Exporters in response to the Questionnaires and Interviews regarding their expectations about future export growth if FV was offering SBC services.

Of the 47 exporters interviewed, 44 expressed an interest to use SBC solutions from FV. Exporters reaction, their interest to participate in the survey and interest in the proposed new products was a surprise to the Advisors. Exporters emphasized the importance of the simplicity of the product, ability to get a quick finance indication or a letter of intent, and a clear process. This same spreadsheet parts appears again when examining the potential impact of this SBC activity on Finnvera.

**Based on the 47 exporter responses from the Questionnaires and Interviews, the potential yearly volume of SBC is expected to amount to €550 million, of which Small Exporters are estimated to use €400 million and Large Exporters €150 million. This total is expected to be achieved over a period of several years and is reflected in all this report’s calculations.**

Some 50% of the €400 million of Small Exporter SBC expected volume was for medium-term finance needs, either buyer credits or forfaiting, 25 % for long-term buyer credits, and 25 % for short-term revolving buyer credits or forfaiting. Due to different needs of product lines around 25 % of interviewed Small Exporters had both short-term and medium-term SBC needs.

What Large & Small Exporters believe is possible (€m) with FV SBC offer										
Years	1	2	3	4	5	6	7	8	9	10
	Planning	Ramp-up period			Growth period					
<b>Large Exporters</b>										
Expected % growth exports if SBC services available	2,00 %									
Expected SBC volume	150 €	38 €	75 €	150 €	153 €	156 €	159 €	162 €	166 €	169 €
Current and future volume of group's exports	47 000 €	47 038 €	47 113 €	47 263 €	47 416 €	47 572 €	47 731 €	47 893 €	48 059 €	48 228 €
<b>Small Exporters</b>										
Expected % growth exports if SBC services available	10,0 %									
Expected SBC volume	400 €	100 €	200 €	400 €	440 €	484 €	532 €	586 €	644 €	709 €
Current and future volume of group's exports	3 000 €	3 100 €	3 300 €	3 700 €	4 140 €	4 624 €	5 156 €	5 742 €	6 386 €	7 095 €
Subtotal of SBC volumes for both groups		138 €	275 €	550 €	593 €	640 €	692 €	748 €	810 €	878 €
Total exports of both groups		50 138 €	50 413 €	50 963 €	51 556 €	52 196 €	52 887 €	53 635 €	54 445 €	55 323 €
<b>Remaining Small Exporters</b>										
Estimated % growth exports if SBC services available	5,0 %									
Expected SBC volume	100 €	25 €	50 €	100 €	105 €	110 €	116 €	122 €	128 €	134 €
Current and future volume of group's exports	7 000 €	7 025 €	7 075 €	7 175 €	7 280 €	7 390 €	7 506 €	7 628 €	7 755 €	7 889 €
<b>Total Capital Goods exports</b>		57 163 €	57 488 €	58 138 €	58 836 €	59 586 €	60 393 €	61 263 €	62 200 €	63 212 €
Growth as %		100 %	101 %	101 %	101,20 %	101,28 %	101,35 %	101,44 %	101,53 %	101,63 %
<b>GPD at given growth %</b>	0 %	240 000 €	240 000 €	240 000 €	240 000 €	240 000 €	240 000 €	240 000 €	240 000 €	240 000 €
Totals exports as percentage of GDP		21 %	21 %	21 %	25 %	25 %	25 %	26 %	26 %	26 %
		163 €	325 €	650 €	698 €	750 €	807 €	870 €	937 €	1 012 €

The Large Exporters’ SBC need of €150 million were mainly related to medium-term solutions. New developments were small-size financing solutions for supporting the sales of services and maintenance business, and the sales of new technical solutions to existing customers. Approximately €30 million to €40 million in the demand for short-term SBC solutions reflects the reduction or disappearance of credit insurance cover because of the changed environment due to of Covid-19. Based on the 47 exporter answers the estimated annual need of Buyers Credits is €260 million, and forfaiting was €290 million.

**Buyer Credits:** 28 Small Exporters, 6 Large Exporters, €260 million, of which €60 million would be from Large Exporters.

**Forfeiting Medium Term:** 11 Small Exporters, 5 Large Exporters, €160 million, of which €60 million would be from Large Exporters.

**SBC Short Term:** 25 Small Exporters, 5 Large Exporters, €130 million, of which €30 million would be from Large Exporters.

SBC transaction sizes vary from €0,01 million to €20 million within a range of €1 million to €5.5 million with required tenors on average between 1.5-3.5 years.

Medium and long-term SBCs transaction size varies between €1 million and €20 million, typically between €3 million and €10 million and tenors from 1-15 years, typically between 3-5 years. For Large Exporters the average transaction size is in €7 million and an average tenor of 5 years

When exporters learn to use SBC products it is likely that the share of smaller transactions will increase, and the portfolio will be further diversified. Belgian's ECA Credendo's average forfeiting transaction size is €300 000. The potential number of exporters using FV's SBC service is estimated to be between 150-250, starting from 30-50 companies and building up to 250 over 5 years. Approximately 20 Large Exporters are estimated to use this service, the rest will be Small Exporters. An international bank estimated that Finnish exporters looking for SBC services is below 100 and a Nordic bank estimated that Finnish exporters needing SBC solutions are several hundred in number.

#### THE BORROWER'S PERSPECTIVE

If FV is a SBC lender, the all-in cost of financing paid by the borrower is not expected to change materially, although it should be slightly lower and availability will increase significantly, when compared to FV's present trade and export financing solutions.

Those ECAs that have direct buyer credit or forfeiting programs follow market pricing. The expectation of banks and exporters we interviewed was that if FV was the lender instead of banks there would be little cost difference from borrower's perspective, market prices would prevail.

The main difference is in transaction cost structure. FV has public task to support Finnish exporters in a sustainable manner operating as an ECA and as such is not required to maximize profitability while having somewhat different regulatory and process requirements. Having one lender with standardized and simplified credit process, rather than dealing with one or two banks and a credit insurer should simplify and speed up the offer process for the exporter. One stop solution will free up resources for the exporters that are generally operating with limited resources.

Instead of a chain of partners, there is only one party which means that several fees, overlapping KYC and other checks and legal work will drop out and that will benefit both the exporter and the borrower. One banker commented: *"combining credit and funding will be a pillar of success"*.

A key enabler for better profitability of small transactions is FV's existing operations which add a lot of value in the credit and performance evaluation of the exporter, the borrower, and the country. FV should be able to extend smaller credits profitably.

Furthermore, banks pricing of FV risk would drop out of equation. Compared to solutions based on existing products, the banks' pricing of FV risk at between 0,30% and 1% p.a. over their cost of borrowing, including an occasional separate charge for operational risk, 0,2% to 0,3% p.a. for managing ECA cover – these would disappear. This pricing of essentially a state guarantee is not easily justified and hardly to be considered an intended consequence of public support of Finnish companies and exporters, but due to its conditionality, this cost does not disappear.

### TYPICAL BUYER'S CREDIT

The following spreadsheets set out a comparison of a **Buyer's Credit** between the present bank financed solution and the proposed solution where FV would be the financier. The terms and conditions are based on what appears to be current market terms for a rated buyer with a reasonable credit risk for a term of 4 years. Even though there is a degree of simplification in this example, such as equal annual installments instead of semi-annual and the absence of arrangement, legal, administration or other fees, the basic result is that there is a substantial cost saving for the exporter and his buyer if FV is the financier.

Current system with bank (Buyer Credit or Bills)	Starting date	End of year 1	End of year 2	End of year 3	End of year 4	TOTAL
Input - Export contract amount	10 000 000 €	7 500 000 €	5 000 000 €	2 500 000 €	0 €	
Cash payment by the buyer	1 500 000 €					
Maximum loan amount %	85 %					
Loan amount	8 500 000 €	6 375 000 €	4 250 000 €	2 125 000 €		
Finnvera annual insurance premium buyer risk	3,00 %					
Commercial risk cover %	95 %					
Finnvera's risk cover on buyer	8 075 000 €	6 056 250 €	4 037 500 €	2 018 750 €	0 €	
Finnvera's annual gross income on buyer's risk		255 000 €	191 250 €	127 500 €	60 563 €	634 313 €
Remaining residual risk	5 %					
Input - Bank margin on loan	2,00 %					
Bank risk on exporter	425 000 €	318 750 €	212 500 €	106 250 €	0 €	
Bank risk on Finnvera	8 075 000 €	6 056 250 €	4 037 500 €	2 018 750 €	0 €	
Total loan	8 500 000 €	6 375 000 €	4 250 000 €	2 125 000 €	0 €	
Bank's annual gross income on loan		170 000 €	127 500 €	85 000 €	42 500 €	425 000 €
Bank's margin on uncovered buyer risk or exporter risk	26 %					
Input - Bank's effective margin on FV risk	0,75 %					
Residual risk for exporter	425 000 €					
Total interest+ premium cost of loan for buyer		425 000 €	318 750 €	212 500 €	103 063 €	1 059 313 €

Proposed system - Finnvera provides SBC service	Starting date	End of year 1	End of year 2	End of year 3	End of year 4	TOTAL
Input - Export amount	10 000 000 €	7 500 000 €	5 000 000 €	2 500 000 €	0 €	
Cash payment by the buyer	1 500 000 €					
Input - How much cover does FV provide (%)	85 %					
Finnvera's loan to buyer	8 500 000 €	6 375 000 €	4 250 000 €	2 125 000 €	0 €	
Input - FV margin on loan	4,00 %					
FV's annual gross income on buyer's risk		340 000 €	255 000 €	170 000 €	85 000 €	850 000 €
Residual amount	425 000 €	318 750 €	212 500 €	106 250 €		
Residual risk for exporter	5,00 %					
Total cost for buyer		340 000 €	255 000 €	170 000 €	85 000 €	850 000 €

<b>Difference</b>		<b>-85 000 €</b>	<b>-63 750 €</b>	<b>-42 500 €</b>	<b>-18 063 €</b>	<b>-209 313 €</b>
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## TYPICAL SUPPLIER'S CREDIT

The second example here is a domestic loan that leads to a **Supplier's Credit** – the above assumptions and comments apply in the same manner here too. This example is based on Advisor's interview with a SME a capital goods exporter, who explained how he is able to finance his export contract and extend credit to the buyer. Due to the high cost the exporter was only able to charge an additional 1 % p.a. for extending credit to the buyer from his balance sheet. (The WACC -weighted cost of capital for using comparable SME balance sheet is between 10-20 % p.a.). The exporter noted that the arrangement creates a high level of debt for the company balance sheet and was hoping to be able to use bills discounting in the future. The SME contract amount was smaller than in the simplified example.

Current - Bank loan, Finance gtee, Supplier Credit	Starting date	End of year 1	End of year 2	End of year 3	End of year 4	TOTAL
<b>Domestic Bank loan with FV Finance guarantee</b>						
Input - Export contract amount	10 000 000 €					
Cash payment by buyer	1 500 000 €					
Maximum loan amount %	85 %					
Bank Loan amount	8 500 000 €					
Finnvera annual insurance premium	2,00 %					
Commercial risk cover %	80 %					
Finnvera's risk cover on exporter	6 800 000 €	5 100 000 €	3 400 000 €	1 700 000 €	0 €	
Finnvera's annual gross income on exporter's risk		136 000 €	102 000 €	68 000 €	34 000 €	340 000 €
Remaining residual risk	20 %					
Input - Bank margin on loan	3,00 %					
Bank risk on exporter	1 700 000 €	1 275 000 €	850 000 €	425 000 €	0 €	
Bank risk on Finnvera	6 800 000 €	5 100 000 €	3 400 000 €	1 700 000 €	0 €	
<b>Total loan on exporters balance sheet</b>	<b>8 500 000 €</b>	<b>6 375 000 €</b>	<b>4 250 000 €</b>	<b>2 125 000 €</b>	<b>0 €</b>	
Bank's annual gross income on loan		255 000 €	191 250 €	127 500 €	63 750 €	637 500 €
Bank's margin on exporter risk	12 %					
Input - Bank's effective margin on FV risk	0,75 %					
<b>Supplier Credit to buyer enabled by bank loan</b>						
Input -Finnvera annual insurance premium, 95 % credit cover for buy	3,00 %	255 000 €	191 250 €	127 500 €	63 750 €	637 500 €
Exporters credit to the buyer	8 500 000 €	6 375 000 €	4 250 000 €	2 125 000 €	0 €	
Input -Cost of using exporter's balance sheet (should be 12 %)	1,00 %	85 000 €	63 750 €	42 500 €	21 250 €	212 500 €
5 % Residual buyer risk for exporter	425 000 €					
<b>Total interest+ premium cost of bank loan for exporter</b>		<b>391 000 €</b>	<b>293 250 €</b>	<b>195 500 €</b>	<b>97 750 €</b>	<b>977 500 €</b>
<b>Exporter cost of extending credit to the buyer</b>		<b>340 000 €</b>	<b>255 000 €</b>	<b>170 000 €</b>	<b>85 000 €</b>	<b>850 000 €</b>
<b>Total export finance transaction cost</b>		<b>731 000 €</b>	<b>548 250 €</b>	<b>365 500 €</b>	<b>182 750 €</b>	<b>1 827 500 €</b>
<b>Proposed system - Finnvera provides SBC service</b>						
Input - Export amount	10 000 000 €	7 500 000 €	5 000 000 €	2 500 000 €	0 €	
Cash payment by the buyer	1 500 000 €					
Input - FV loan amount (%)	85 %					
<b>Finnvera's loan to buyer</b>	<b>8 500 000 €</b>	<b>6 375 000 €</b>	<b>4 250 000 €</b>	<b>2 125 000 €</b>	<b>0 €</b>	
Input - FV margin on loan	4,00 %					
FV cover %	95,00 %					
FV's annual gross income on buyer's risk		340 000 €	255 000 €	170 000 €	85 000 €	850 000 €
Residual risk for exporter	425 000 €					
<b>Total cost for the buyer/borrower</b>		<b>340 000 €</b>	<b>255 000 €</b>	<b>170 000 €</b>	<b>85 000 €</b>	<b>850 000 €</b>
<b>Difference of cost to the buyer/borrower</b>		<b>0 €</b>	<b>0 €</b>	<b>0 €</b>	<b>0 €</b>	
<b>Difference in total export finance transaction cost</b>		<b>-391 000 €</b>	<b>-293 250 €</b>	<b>-195 500 €</b>	<b>-97 750 €</b>	<b>-977 500 €</b>

Despite the substantial improvement in competitiveness for Finnish exporters that FV's offer of SBC would bring; the fact remains that exporters in countries in which local banks extend small credits to foreign buyers without ECA cover might be able to offer better pricing and more flexible terms to their borrowers.

## RECOMMENDATIONS & IMPACT FOR FINNVERA

### RECOMMENDATIONS

Due to the lack, or very limited availability, of SBC export finance services from Nordic or International banks to Finnish exporters, and given there is no change to be expected, the Advisors recommend that FV step up and fill in the market gap to help Finnish exporters to get closer to level playing field with their competitors.

The recommendation is that FV (or another entity in Finnvera group) starts to extend buyers credits and forfaiting services to below €20 million transaction sizes. Forfaiting services are recommended to cover purchase of credit instruments, invoice receivables or other buyer payment obligations.

Based on exporter interviews, key elements for successful products are:

1. Buyer credit: short documentation (10-20 pages), model agreement
2. Forfaiting: model documents from FV to be attached to supply contract, simple discounting facility agreement, no compulsory pledge or other security for small transactions.
3. Financing indication letter made available to exporters as a sales support instrument.

FV could also add value to exporters by taking small participations in bank club transactions. All banks interviewed would welcome FV as a club member. Such participations could help diversify FV's SBC portfolio.

The recommendation is that FV starts SBC business without any delay. The Advisors recommend that model documents created for buyer credit and forfaiting business will be made available to exporters and to banks. The model documentation is likely to encourage banks to enter smaller deals, collect pools of small transaction and to share risk with FV in SBC transaction.

When SBC business grows FV may consider developing the operation by inviting banks or other potentially interested parties to join as shareholders with some similarity to AKA in Germany. AKA is owned by banks and KfW-Ipex and extends small buyers' credits.

### RESOURCES NEEDED FOR SBC SERVICES

The SBC program implementation is estimated to require a headcount of 4 to 6 people, 1 or 2 of which work in KYC (Know Your Customer) and credit administration and potentially one legal counsel. This estimate is based on Advisors interviews of banks, ECAs and development finance institutions who run lending or forfaiting business comparable to FV SBC.

KYC work is usually performed by analyst and legal teams. Resourcing depends on how much of the work is done inhouse and how much acquired from external service providers such as Dow Jones which was mentioned as a service partner used by many. Dow Jones offer various KYC, AML (anti-money laundering), third party risk screening and adverse

media screening services. International banks with wide networks often do most of the work internally. ECAs and development finance institutions who seldom have strict formal KYC requirements set by regulators or guardian authorities have created their own written rules and checklists that are carefully followed. FV could potentially benefit from best practices of peer ECAs or development finance institutions who have several years' experience of SBC business.

The Advisors recommend that Facility Agency and Credit Administration be handled inhouse for control purposes and cost efficiency.

The requirements of the cross-border loans and forfaiting transactions should consider the possible implementation of a new IT system. On national level there will be significant improvement in efficiency, instead of each exporter trying to create solutions for credit administration. Consultation with EKF might be useful, they have recently selected a new Treasury management system, and their experience in small buyer credits could be useful in system design.

#### TRAINING

The data collected for the report, and based on the assessment of the Advisors, clearly indicates that most Small Exporters do not always have the requisite level of financial expertise for dealing with banks and credit insurance bodies. The table here shows clearly that around 30% of the respondents have adequate financial skills but 25% do not:

Skills Adequate	12	30 %
Skills Weaker than Adequate	18	45 %
Skills Poor	10	25 %
Total	40	100 %

To be successful SBC implementation requires Smaller Exporters to be trained to use export finance products. Banks do not actively sell products based on FV's product portfolio.

The Advisors came across lack of awareness of potential solutions, a lack of ability to structure finance transactions and also some lack of interest to change. A banker commented that for Finnish exporters letter of credit is a tradition and other solutions are not even considered. The options of advanced payments or letters of credit offered to buyers of capital goods by Finnish exporters are not competitive solutions.

According to one international banker even some Large Exporters lag their international peers regarding their ability to work as a filter before approaching the banks for buyer financing (level of homework done regarding the buyer, its background as well as coordination with their own sales organization).

#### CREDIT RISK

The credit ratings of borrowers proposed to be entering the program vary from BBB to CCC but are typically BB-B and these are estimated by exporters to be reliable credits.

Our interviews revealed that these exporter estimates are based on external credit reports and customers payment experience.

According to those interviewed, credit losses have been small, and the overall credit management of interviewed companies was prudent in general. Advance and milestone payments were often used to manage risk level and especially with new customers payment behavior was tested before delivery. Some small companies took high exposures relative to their balance sheet to be able to extend payment terms or financing required by their buyers. They had confidence in their buyers and did not have other means to accomplish the deal.

The data collected from the reports show that all but two exporters were ready to carry small residual risks in a FV SBC transaction. Their main concern was accounting treatment, not sharing the credit risk of the buyer/borrower. Buyer relationships were often long-term investments with repeating upgrades and renewals and continued relationship through services and maintenance business.

Even if good credit quality and long-term relationships of exporters were a positive surprise to the Advisors and give a solid outlook to the future credit quality of SBC portfolio, the outcome also raised some concern – where is the future growth if there are too few new customers.

#### **PROFITABILITY OF SBC SERVICE RECOMMENDATION FOR FINNVERA**

The following spreadsheet sets out a simplified estimate of costs and revenue for the proposed SBC service provided by FV. The final figures are at best a good estimate based on what the Advisors have been told by the exporters, with some guidance from the banks.

Note that the estimated SBC portfolio is based on the expected export financing figures given to the Advisors by the Small and Large Exporters (see above spreadsheet: “What Large and Small Exporters believe is possible (€m) with FV SBC offer”). The portfolio is expected to be lower than the actual volume of contracts made possible by the SBC service being available because not all contracts will ultimately require finance from FV while some contracts will be covered by credit insurance but financed through other channels. Furthermore, drawdowns of SBC services will be slow and spread over several years, as will information and training for Smaller Exporters regarding how to use SBC services.

The results are expected to be spread over several years, but the underlying trend is that the SBC portfolio should be comfortably profitable for FV even when credit losses (see below) are taken into consideration.

What Large & Small Exporters believe is possible (€m) with FV SBC offer											
Years	1	2	3	4	5	6	7	8	9	10	
	Planning	Ramp-up period			Growth period						
<b>Large Exporters</b>											
Expected % growth exports if SBC services available	2,00 %										
Expected SBC volume	150 €	38 €	75 €	150 €	153 €	156 €	159 €	162 €	166 €	169 €	
Current and future volume of group's exports	47 000 €	47 038 €	47 113 €	47 263 €	47 416 €	47 572 €	47 731 €	47 893 €	48 059 €	48 228 €	
<b>Small Exporters</b>											
Expected % growth exports if SBC services available	10,0 %										
Expected SBC volume	400 €	100 €	200 €	400 €	440 €	484 €	532 €	586 €	644 €	709 €	
Current and future volume of group's exports	3 000 €	3 100 €	3 300 €	3 700 €	4 140 €	4 624 €	5 156 €	5 742 €	6 386 €	7 095 €	
<b>Remaining Small Exporters</b>											
Estimated % growth exports if SBC services available	5,0 %										
Expected SBC volume	100 €	25 €	50 €	100 €	105 €	110 €	116 €	122 €	128 €	134 €	
Current and future volume of group's exports	7 000 €	7 025 €	7 075 €	7 175 €	7 280 €	7 390 €	7 506 €	7 628 €	7 755 €	7 889 €	
<b>Total Capital Goods exports</b>											
Growth as %		57 163 €	57 488 €	58 138 €	58 836 €	59 586 €	60 393 €	61 263 €	62 200 €	63 212 €	
		100 %	101 %	101 %	101,20 %	101,28 %	101,35 %	101,44 %	101,53 %	101,63 %	
<b>GPD at given growth %</b>											
Totals exports as percentage of GDP	0 %	240 000 €	240 000 €	240 000 €	240 000 €	240 000 €	240 000 €	240 000 €	240 000 €	240 000 €	
		21 %	21 %	21 %	25 %	25 %	25 %	26 %	26 %	26 %	
		163 €	325 €	650 €	698 €	750 €	807 €	870 €	937 €	1 012 €	

Finnvera's potential SBC portfolio (€m)											
Finnvera's loan portfolio assuming that SBCs completed for half of above export contracts		Planning	81 €	163 €	325 €	349 €	375 €	404 €	435 €	469 €	506 €
Total number of new staff for SBC services	6										
Average monthly cost of each staff member including rent	12 000 €										
Other monthly operating costs	150 000 €										
Total monthly costs	222 000 €										
Total annual costs	2 664 000 €										
Total annual cost %-increase	2,00 %										
Average net margin income	3,00 %										
			2 664 000 €	2 717 280 €	2 771 626 €	2 827 058 €	2 883 599 €	2 941 271 €	3 000 097 €	3 060 099 €	3 121 301 €
			2 437 500 €	4 875 000 €	9 750 000 €	10 470 000 €	11 254 650 €	12 110 156 €	13 043 332 €	14 061 664 €	15 173 375 €

Note that Average net margin income is reduced by Expected Losses of 1%

The percentage 3%p.a. margin in the spreadsheet for the SBC loans is given as a net lending margin with the Expected Loss (see Abbreviations and Definitions) of 1% removed for convenience. According to market professionals the 4% p.a. average gross margin is seen as a reliable current average market margin for SBC exposures.

The 1% Expected Loss used for the SBC portfolio is chosen deliberately as a higher loss rate in line with our other conservative assumptions. Based on the interviews of most likely users of FV SBC products, exporters credit losses were very low and buyers credit risk management well understood. Therefore, it should be noted that it is high figure in typical capital goods exporters long-term business relationships.

The Advisors have made conservative estimates about the potential size and growth of the SBC portfolio held by FV. It is assumed that the breakeven level around €100 million when the annual costs of personnel are around €2.5 million.

The results above are based on the above data and the following simplified assumptions:

1. Large Exporters are assumed to have low growth expectations – here we assume 2% growth.
2. Small Exporters are active exporters, and they can be expected to have high growth expectations – here we assume 10% growth.
3. Remaining Small Exporters are assumed to be less growth orientated or have less potential today for growth, thus are expected to grow by only 5% with a starting export volume of €7 billion, and with a rough estimated staff count of some 30 000, a proportionally similar staff count to the Small Exporters.
4. It is assumed that there is a Ramp-Up Period of 4 years during which time the impact of the FV's SBC policy starts to take full effect.

## THE IMPACT OF PROPOSED SCHEME FOR EXPORTERS

All Small Exporters (with 2 exceptions) and every Large Exporter (with 1 exception) that we interviewed have said conclusively that they are in favor of having FV as provider of SBC services. The consensus was justified by the fact that they are currently not able to find banks willing to offer such a service at all, or only as a favor in return for a promise to place other business with them, which is far from being an optimal solution. Small Exporters, especially SMEs, depend on what their house bank is able and willing to offer.

Both Large and Small Exporters were unwilling to use their own balance to finance customers for the most important following reasons:

- Restrictions/limitations of their own balance sheet
- Limited access to funding
- Lack of knowledge and competence
- Lack of credit administration capabilities
- Manual work because their treasury systems are not suitable for loan administration

Their situation is in sharp contrast to their competitors in all the neighboring markets where both the banks and /or their respective ECAs (*see Annex 1*) are able and willing to offer such services. Such a position puts them at a competitive disadvantage to their competitors who are able, in most cases to offer SBC services to their buyers. As stated above, the fact that Finnish exporters are not always able to offer SBC services may disqualify them from being shortlisted in the contract bidding process. For small companies the only alternative is to use of own balance sheet to finance a buyer. This will be on the top of possible advance payment and performance guarantee obligations which put pressure on exporter's balance sheet and heavily limit its ability to grow.

Below data collected from Small Exporters on the business impact of FV's SBC offering:

Enabler, all competitors offer finance	Enabler to stay in business, grow & compete
Significant sales increase	Increased sales
New solution could enable €20-30 m new sales	BC very interesting, enable bigger projects
Increased sales	BC enabler outside EU where BoE does not work
BoE discounting a must, BC good add-on	Lack of finance limit sales, simple BC needed
Important, all clients need extended terms	Important if productized solution for dealers/users
Important on case-by-case basis	Welcomed finance solution for SMEs
Entire operation would benefit from buyer finance	New opportunities if possibility to offer finance
Very important, double sales	Welcomed, increasing customer finance need
Big, 5 more contracts	Important for working capital, enables finance offer
Important when deferred LC too expensive	Competitiveness, competitors win with finance
Simple BC increased sales, tens of E5-10 m BCs	Speeds up contract closing, enables bigger share
Important for working capital and sales	20-40 % increase in Asian sales, finance must in India
Solution for countries in which BoE doesn't work	Increased sales opportunities
Solution for working capital	Very important, enables growth
Solution for working capital, enable bigger projects	

The impact, according to the results of our interview are threefold:

1. Many expected an increase in export volume because they will win more contracts when they can offer financing to their buyers.
2. When financing is offered with SBC instruments exporters' working capital situation is improved. Freed cash and balance sheet capacity will enable growth.
3. Exports may increase even without new SBC contracts because exporters are not automatically disqualified in the first round of bidding. Even if financing is not explicitly required by the buyer, finance components are actively offered to increase customer interest and are used by buyers to compare debt pricing. This is common service component, especially in capital goods export business. Buyers often find their own finance but will highly appreciate suppliers offer.

Not all the banks knew the Finnish market well enough to comment but 6 believed that Finnish exporters are in weaker position than their competitors to have access to SBC. The proposed solution of having FV as a supplier of SBC services should enable Smaller Exporters to reduce their financial risks, improve their financial position to enable further growth and generally improve their own financial competence.

Here are a few examples of Smaller Exporters who would greatly benefit from FV's SBC:

**Company W** (*turnover near €100 million*) has manufacturing plants in Finland, Russia, China and USA that manufactures top of the line investment goods that are sold to large public and private entities. They have a well-established network of dozens of sales representatives and subsidiaries in the USA, China, Europe, the Middle East and in South America. Unlike their main European competitors, the company is unable to provide or arrange finance for buyers through their own balance sheet. The CEO said that FV is not feasible because their offer is too complex, and banks are not working with the company because their deals are normally too small meaning that buyers either use their own cash or finance deals through their local banks. The CEO claims that Asian, ME, and European sales could expand by €15 to €25 million with SBC from FV.

**CEO: "The best way to expand exports is to provide financing."**

Offering simple-to-understand financing packages for buyers is the best way to grow exports, even when the customer does not end up requiring such financing. He has noted that all their main competitors have grabbed large market shares with such financing packages. He mentioned that they are looking at leasing solutions but that too requires financing.

**Company X** (*turnover near €200 million*) has manufacturing plants in Finland, North America and China that manufacture top of the line investment equipment for over 300 customers in the global forest industry. Some two thirds of exports are below €20 million. Their biggest competitors can provide finance for their buyers.

**CFO: "The bigger the deal, the more important the availability of financing. We don't have time to look for a bank each time we need to make an offer..."**

For small deals of €3 million to €5 million the required term is 3-5 years, and over 5 years is normally requested for deals over €10 million. The company was able to finance a €10 million deal using a buyer's credit guarantee from FV with one Nordic bank. Only one other bank was willing to buy bills of exchange for a max period of 5 years, but this term was too short for the buyer. Relationships with Nordic and international banks appear to be reasonably developed but not yet optimal. The company is interested in having FV for SBC buyers' credits, and they expect to see an increase of some €20 million to €50 million a year if FV accepts the credit risks.

**Company Y** (*Turnover near €100 million*) **CFO: "Too few banks are offering Bills of Exchange"**

**Company Z** (*Turnover near €20 million*) **CFO: "We need an easier to understand financing solution and a faster decision process"**

## IMPACT ASSESSMENT OF SCHEME FOR BANKS

The Advisors had long and deep discussions with the main Nordic banks who are closely involved with Small and Large Exporters, as well as with the big international banks who are mainly involved with the Large Exporters. All the Nordic banks and a clear majority of the big international banks are in favor of the FV starting to provide SBC services. Only two banks from the Germanic speaking area were less positive because they have been developing their own standardized version for SBC services. However, these latter services are not fully tested and implemented, nor are they systematically targeted at Finnish exporters, rather at the main competitors of Finnish exporters, and thirdly their geographical reach is limited.

Traditionally, Nordic and international banks have had an important role in assisting these exporters of capital goods in financing their buyers when the buyer is making a new investment using Finnish equipment and plant. Export credit agencies were created in the Nordic countries to help exporters and the banks finance these exports by providing insurance cover as the security for bank loans.

It is still common practice for buyers to request such financing from their suppliers of capital goods to be able to compare the price of the capital goods and the cost of financing from different sources to ensure that the best deal is achieved for such a long-term activity.

Finland is a small country with a few Large Exporters and many Small Exporters. One set of Large Exporters sell high volume bulk products like pulp, wood, metals or fuel that only require short term trade finance, currency services and occasional long-term debt for investments at home or abroad, while the second set of Large Exporters who concentrate on selling capital goods like heavy machinery and plant require buyer financing for capital goods that they sell to foreign buyers.

This latter activity involves large transactions of amounts more than €50 million that are generally handled by a decreasing number of the big international banks, with occasional support from a few of the five larger Nordic banks, depending on the counterparty and country risk. For amounts smaller than €50 million a Large Exporter must negotiate with an ever-smaller group of banks, and for less than €20 million they must promise quid pro quo if they are lucky enough to find a bank willing to help them.

Small Exporters are particularly fortunate if they can find a bank that is willing to finance the buyer or the buyer's bank for amounts smaller than €20 million. Banks are unwilling to provide the service even though FV's export credit cover is available or cover from private credit insurance companies. However, even when a bank is found the costs and complexity of the contracts are challenging. The most common result for most Small Exporters is that they must borrow money themselves with FV cover from their local bank with which to provide a buyer's credits for the investment made by the buyer using another export risk cover!

Using their own balance sheet is an expensive and punishing solution for exporters who generally do not have the balance sheet nor the resources for more than a few such deals. Large Exporters seldom, if ever, contemplate doing such transactions! The question one may ask is why are Small Exporters expected to thrive when they are not able to operate on a

level playing field unlike Large Exporters who also have vast financial resources at their disposal? Bank regulation seems to be driving smaller companies to take on bigger risks and higher levels of indebtedness into their balance sheets! This appears to be the unintended consequences of regulations aimed at plugging risk taking at banks without considering how they might impact ordinary companies operating in the real economy where most workers are employed.

Banks continue to offer SBC services and are supplemented by SBC services from ECAs in the countries of our main competitors. However, as mentioned above, regulation and profitability concerns have been the main driving forces that have reduced their interest in providing SBC services to Small and Large Exporters. Departments have been closed or significantly reduced, as have foreign branches and subsidiaries.

The impact of this downsizing is felt even more in small countries like Finland that are heavily dependent on the exports of capital goods. Without the possibility of having an indicative pricing for small export credits below €20 million means that many Small Exporters are disqualified from being short-listed from bidding for contracts.

There are several possible consequences of the above situation:

1. Small Exporters are taking on too many long-term risks on individual transactions, or
2. They are becoming heavily indebted, or
3. They are disqualified for new deals which means that there are fewer growth opportunities to build a more robust balance sheet. Without growth that competitors in bigger countries enjoy there are fewer opportunities to employ new staff.

The above scenario would not have positive implications for banks because it would weaken their ability to produce results. Therefore, the Advisors see that the adaption of the recommendations would reverse this adverse impact on banks:

1. Small Exporter clients of banks are expected to grow and become stronger credits risks, a fact that would reduce the regulatory demands for more capital for banks, and
2. The banks would earn more from such clients because the companies grow alongside the economies of the communities, and
3. As noted in Appendix 2, Finland has one of the lowest percentages of export volume relative to our GDP in the Nordic countries. This trend has a chance to be reversed because these exporters now having a stronger position in the global markets with SBC resources available for the export of capital goods. A stronger export performance means more innovation, more jobs, more incentives to pursue training and higher education, all of which are positive for banks.

As mentioned earlier in this report, the Advisors propose that FV should engage proactively with the banks to seek out opportunities for developing FV's services. We have therefore made the various proposals regarding the development of documentation and other possible areas of cooperation in the recommendation part of this report.

## SUMMARY OF IMPACT ASSESSMENT OF THE SCHEME FOR THE SOCIETY

### FOR EXPORTERS

After that Ramp-Up Period the growth rate should produce an increase in exports both in absolute and relative terms.

### FOR FINNVERA

The SBC service from can be expected to build a SBC portfolio that grows slowly from a zero base to around €300 million by the end of the 4<sup>th</sup> year and gradually grow to more than \$600m after year 10. The activity is expected to breakeven within 1 or 2 years after launch.

### FOR BANKS

Small Exporter clients of banks are expected to grow and become stronger credit risks with more robust balance sheets, a fact that would make it more attractive for the banks to provide working capital financing and other banking services and banks would earn more from such clients because the companies grow alongside the economies of the communities.

### SAVINGS AT THE NATIONAL LEVEL

The unintended consequences of banking regulation, as described above, and the small size of the Finnish economy means that Small Exporters suffer in two ways compared to their main competitors, and for society in general this far from being an optimal solution.

This paper establishes that there is a **clear market gap in the provision of SBC services in Finland**, and that **FV is well suited to provide such a service in the absence of the banks** to create a level playing field for our exporters. This paper has examined this matter from various angles, but the question of resource management by FV also needs to be clearly aired because this is a national matter of great importance when considering the potential for economic growth and employment opportunities resulting from FV intervention.

Small Exporters are unable to arrange SBC services for their buyers or for their receivables from their buyers. This means that they win fewer export contracts, or they must finance buyers through their own balance sheets. Small Exporters do not have the financial capacity, the credit administration processes nor financial competence to use their balance sheets in this manner or legal competence to draft credit instruments and loan documentation. This results in weaker results and weaker growth potential for Small Exporters, fewer employment opportunities and more credit risks for the banks and for FV.

**Financial Capacity** - Small Exporters, by definition, normally have limited human and financial resources. They are also often under-capitalized with access to just one local bank that does not have a deep understanding of export financing solutions. Their management teams are also stretched for time and other resources at the best of times. They have limited access to debt financing, and even when available, it is expensive. They have limited growth opportunities because the domestic market is small and export contracts are challenging to win and slow to accumulate. **FV has the financial capacity in its own balance**

sheet to manage such a SBC portfolio on behalf of these Small Exporters and thus opens up opportunities for economic growth and employment.

**Credit Administration, Risk management and Legal Competence and Resources** – Large Exporters avoid using their balance sheets to finance their buyers. They have banks willing and ready to provide competitively priced export financing services. Large Exporters also want to avoid investments in the treasury management software systems for loans that are mainly designed for banks. It is expensive to install and complex to use because of the nature of the market. Loans are complex with many variables and risk factors that can best be managed in a cost-efficient manner through a larger diversified portfolio of loans.

It is impossible for Small Exporters to consider installing and using such software. They do not have the required volume to afford the cost, nor do they have the required skills. **In the opinion of the Advisors there is a strong national interest for such credit administration and risk management software to be installed centrally with FV. They have the required volumes to cover the costs, the required financial competences to manage it effectively, and the legal competence to draft clear, simple, and binding credit instruments, loan agreements and other related legally binding documents.**

**Financial Skills** – FV already has all the financial and legal skills and resources necessary to extend their financial services to SBC services with modest additional needs for new resources.

Based on the above assumptions the Finland’s export volume relative to GDP should increase by around 1 percentage point. The basic assumption here is that Small Exporters should eventually win more deals because they can offer SBCs.

Impact on Employment											
Annual % increase of staff for Small Exporters = 75% of export growth	7,5 %										
Staff of interviewed group	13 000	13 000	13 100	13 200	13 400	14 405	15 485	16 647	17 895	19 237	20 680
									An increase of		7 580
Annual % increase of staff of Remaining Small Exporters = 75% of export growth	3,8 %										
Staff of interviewed group	30 333		30 637	31 249	32 187	33 394	34 646	35 945	37 293	38 692	40 143
									An increase of		9 506

During the Ramp-Up Period and the Growth Period Smaller Exporters and the Remaining Small Exporters experience relatively faster growth than Large Exporters and this has a positive impact for employment and for the economy at large. It is assumed that staff growth is 10% and 5% for the Small Exporters and Remaining Small Exporters respectively and this results in 39% (+17 000) increase in employment for the two groups.

Finland has one of the lowest percentages of export volume relative to our GDP. This trend has a chance to be reversed because these exporters now having a stronger position in the global markets with SBC resources available for the export of capital goods. A stronger export performance means more innovation, more jobs, more incentives to pursue training and higher education.

## ANNEX 1. SUMMARY OF SELECTED PEER ECAS FOR SUPPORTING SMALL TRANSACTIONS

### KfW Inex/AKA

#### **KfW Inex/AKA**

- KfW Inex: SBC forfeiting
- AKA: SBC buyer credits
- Solid buyer's credit track record for SBC
- Large portfolio of short-term trade receivables and buyer's credits
- Standardized documentation developed

#### **Germany:**

- Huge domestic market and political and economic center of EU
- Strong and well established domestic and international banking capacity for SBCs

### Bpifrance

#### **Bpifrance**

- SBC: buyer credits and forfeiting (assignment of supplier credits)
- Standardized documentation developed

#### **France:**

- Huge domestic market and political and economic center of EU
- Strong and well established domestic and international banking capacity for SBCs

### Credendo

#### **Credendo:**

- SBC: buyer credits and Bills of Exchange discounting
- Solid buyer's credit track record for SBC
- Large portfolio of short-term trade receivables
- Increasing volume with Mid-cap exporters
- Standardized documentation well developed

#### **Belgium:**

- Close physical proximity to huge markets like Germany, France and UK.
- Strong and well established domestic and international banking capacity for SBCs

### Atradius

#### **Atradius:**

- SBC: bills discounting using Development Fund

#### **Holland:**

- Strong and well established domestic and international banking capacity for SBC

## Swedish Export Credit

### Swedish Export Credit

- SBC: buyer credits and receivables discounting
- Solid buyer's credit track record, min €5 m
- Large portfolio for short-term trade receivables
- Increasing volume with Mid-cap exporters
- Standardized documentation being developed

### Sweden:

- Some domestic banking capacity and more large exporters with access to international banks for SBCs

## EKF

### EKF

- SBC: buyer credit and forfaiting
- Reasonable buyer's credit track record for SBC but low volume at 10% of total, remainder concentrated on large companies
- Standardized documentation not well developed
- See increased demand for SBCs

### Denmark:

- Close proximity to Germany and Sweden
- Weak domestic and international banking capacity for SBCs

## Eksportkredit/GIEK

### Eksportkredit/GIEK

- SBC: buyer credit
- Weak buyer's credit track record for SBC, but bigger share for Large Companies
- Increasing volume with Mid-cap exporters
- Standardized documentation not well developed

### Norway:

- Weak domestic and international banking capacity for SBCs

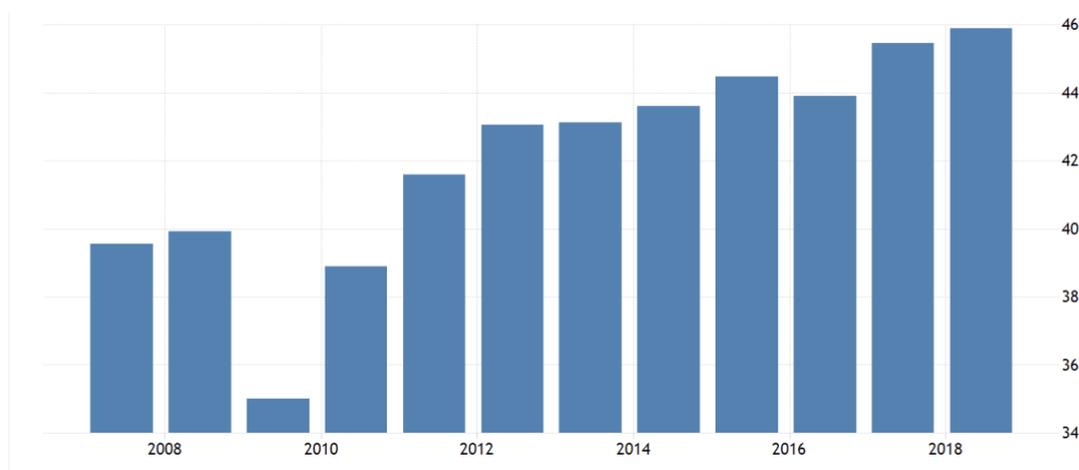
## ANNEX 2. OTHER IMPORTANT FACTORS WEAKENING FINNISH EXPORTS

Additional factors also appear to be weakening export performance relative to top peers. According to the Statistics Finland, Finnish exports have finally reached the same level as 2007. It has taken a long 13 years to achieve what many other countries have done in a much shorter period.

This past performance has been far from stellar, and it appears that there are several characteristics that give cause to believe that it will not improve without new measures.

Exports of goods and services as a percentage of GDP in the Euro area was reported at 45.9% in 2018, according to the World Bank collection of development indicators, compiled from officially recognized sources.

One of the most telling measures of Finnish export performance is to compare it to Euro area (see below) and to several key peer competition countries with similarly high levels of standard of living -



the other bigger Nordic countries, Austria and Germany.

Table - Euro area's exports of goods and services as % of GDP) - actual values, historical data, forecasts and projections were sourced from the [World Bank](#) on August of 2020.

According to a recent Eurostat 2020 figures and another recent report (Ahtonen, 2019) the relative size of Finnish exports is one of the lowest among its peer competitors when measured as a percentage of GDP or as a currency value per head of the population:

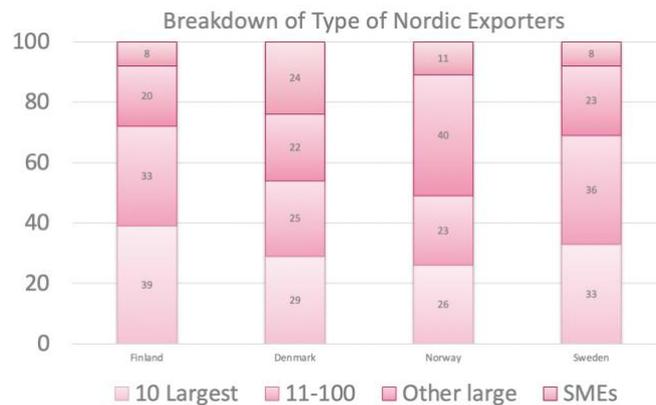
Country	Export volume	% of GDP	Compared to Finland
Finland	€90 billion	40%	100%
Sweden	€143 billion	47%	117%
Denmark	€100 billion	56%	142%
Austria	€160 billion	56%	146%
Germany	€1330 billion	47%	130%

The differences between peer competitors is huge and ranges between 17% an 46% based on 2018 figures.

## STRUCTURAL WEAKNESSES IN EXPORT SECTOR

Not only is Finland's relative total volume low compared to peers but there are serious structural weaknesses that need to be addressed.

The same study (Ahtonen et al., 2019) points out that Finnish exports are heavily concentrated in the hands of a very small number of big companies - as can be seen in the graph below from the same study. The study points out that Finnish SME's have a lower share of exports relative to our peer competitors.



The products of many of these big companies are dominated by low-value added products, and is estimated to be in the range of 40% of total value.

According to another study (Nordic Council of Ministers, 2016) Finnish exports are fairly concentrated even within manufacturing, traditionally in large enterprises within the electronics industry, in high value-added processing of metals, the chemical industry and paper mills that produce pulp and paper.

### FINLAND HAS A LARGER NUMBER OF SMALL SMES THAT EXPORT LESS THAN KEY PEER COMPETITORS

There are almost 300 000 SME's in Finland employing 1.4 million people, and of these some 93% employ fewer than 10 employees, with 16 000 (5.5%) small businesses, medium-sized 2 728 (1.0%) and large enterprises 591 (0.2%).

According to Business Finland in Finland, micro companies (<10 employees) account only for 3 % of exports. In Sweden, micro companies' share of exports is 12%, in Estonia 19% and in the UK 14%. Similarly, SMEs' (<50 employees) share of exports in Finland's is around 11%, in comparison to 21% in Sweden, 36% in Estonia and 22% in the UK.

The SME sector exports some 15% of total exports, which is a low figure when compared to our Nordic neighbors. More intensive and focused marketing and training is required as well as new approaches in working with banking partners.

### HIGHLY EDUCATED FINNS ARE NOT EMPLOYED TO THE SAME EXTENT AS PEER COMPETITORS

The other largest Nordic exporters have overtaken Finland in utilizing highly educated people according to Ahtonen, 2019.

The development of the share of highly educated personnel in Nordic companies has been on the rise since 2010 (Chart 3). The number of PhDs and Masters in relation to the total staff has grown steadily in all countries from 2010 to 2016, looking at the set of all companies.

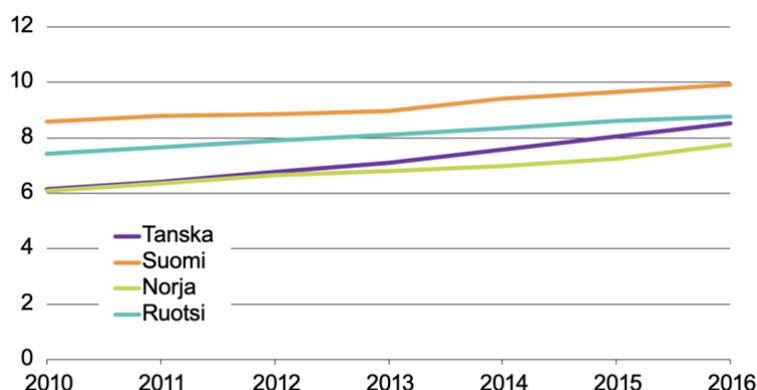


FIGURE 3. DEVELOPMENT OF THE SHARE OF DOCTORS AND MASTERS IN ALL COMPANIES BY COUNTRY 2010 – 2016 Source: Calculations of microdata in a Nordic project

In Finland, the relative share of masters and doctors in all companies has been the highest in the Nordic countries throughout the period. As also observed in Figure 2, top100 exporters clearly have more highly educated than this, ranging between 16 and 18 per cent in different countries in 2016. Top10 companies had an even higher level of education, with a share of higher education between 19 and 26 per cent in different countries.

Figure 4 shows the relative development of the number of highly educated top100 and top10 export companies in the 2010s. According to it, still in 2010, the top100 export companies in Finland had relatively the highest number of people with at least a master's degree in the Nordic countries. Over the years, however, all the other Nordic countries have taken Finland ahead in this respect.

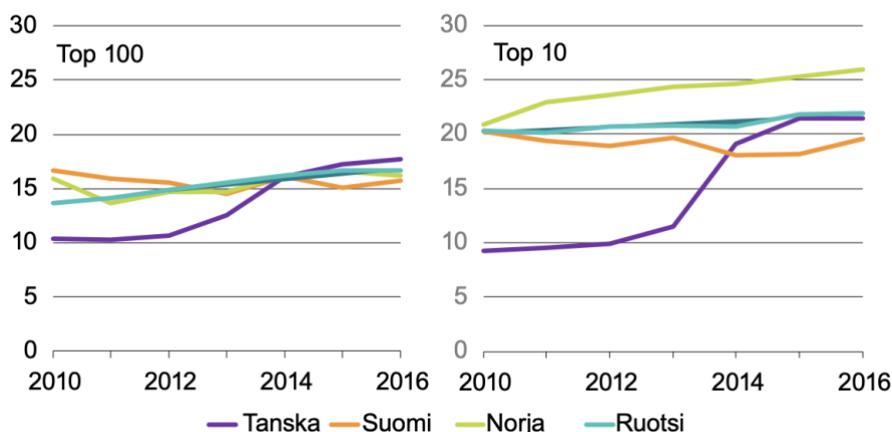


FIGURE 4. DEVELOPMENT OF THE SHARE OF DOCTORS AND MASTERS IN TOP100 AND TOP10 EXPORTING COMPANIES BY COUNTRY 2010 – 2016 Source: Calculations of microdata in a Nordic project

The share of people with higher education in Finland's top100 exporting companies has even decreased slightly from 2010 to 2016, while the share of people with higher education in the best export companies in Sweden and Denmark has increased. In Finland's top10 exporting companies, the share of masters and doctors has remained fairly even in less than one-fifth of the personnel.

It is striking that in Denmark there is a clear jump around 2013 in the relative share of higher education. This development is reflected in both the top10 and top100 exporting companies. The rapid increase in the number of Danish university degrees is thus also reflected in the top Danish export companies.

Finland's top exporters have a lot of technical know-how. In Denmark and Finland, almost one-fifth of the personnel are experts in trade, administration and economics, while in Norway only about one-tenth. In Finland, there are a particularly large number of people with ICT training (7%) in the staff of the 100 largest exporters. The share of natural sciences is emphasized in Norwegian export companies. The share of social sciences is less than 5 per cent in all Nordic countries.

Koivula M., Vanha-Majamaa I., 2020 Experimental evidence on biodiversity impacts of variable retention forestry, prescribed burning, and deadwood manipulation in Fennoscandia

[Ecological Processes](#) volume **9**, Article number: 11 (2020)

OECD and Statistics Finland, 2020. [Globalisation in Finland: Granular insights into the impact on businesses and employment](#)

Hanna Ahtonen, Hanna Jokamäki, Satu Nurmi., 2019. Suomen huippuviejät hyödyntää korkeimmin koulutettua työvoimaa? Finland Statistics 18.12.2019

Nordic Council of Ministers, 2016. Services and Goods Exports from the Nordics: Strongholds and profiles of exporting enterprises. TemaNord 2016: 555.

Haila, K., Karinen, R., Kaihovaara, A. Eronen A. ja Haapakorpi, A., 2016. Miten tohtorit työllistyvät. Opetus- ja kulttuuriministeriön julkaisuja 2016:3.

Vinnova 2019. Förutsättningar för systeminnovation för en hållbar framtid. Analysbilaga till Systeminnovation för en hållbar framtid. Vinnova rapport VR 2019:08.

Eurostar 2020, Exports of goods and services in % of GDP -  
<https://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=tet00003&plugin=1>