TECHNICAL REPORT

FINLAND

Nordic-Baltic Technical Assistance Project

Financial Flows Analysis and AML/CFT Supervision

November 2023

Prepared By

Grace Jackson, Maksym Markevych, Pierre Bardin, Alexander Malden, Santiago Texidor Mora, and Indulekha Thomas

Authoring Departments:

Legal Department

DISCLAIMER

The contents of this document constitute technical advice provided by the staff of the International Monetary Fund to the authorities of Finland in response to their request for technical assistance. This document (in whole or in part) or summaries thereof may be disclosed by the IMF to the IMF Executive Director for Finland, to other IMF Executive Directors and members of their staff, as well as to other agencies or instrumentalities of the CD recipient, and upon their request, to World Bank staff, and other technical assistance providers and donors with legitimate interest, including members of the Steering Committee of the relevant Thematic Trust Fund (TTF), unless the TA recipient specifically objects to such disclosure (see Operational Guidelines for the Dissemination of Technical Assistance Information). Publication or Disclosure of this report (in whole or in part) or summaries thereof to parties outside the IMF other than agencies or instrumentalities of the TA recipient, World Bank staff, other technical assistance providers and donors with legitimate interest, including members of the Steering Committee of the relevant TTF, shall require the explicit consent of the TA recipient and the IMF's Legal Department.

MEMBERS/PARTNERS

Denmark	Estonia	Finland	Iceland
Latvia	Lithuania	Norway	Sweden

Table of Contents

Acronyms and Abbreviations

AML	Anti-Money Laundering
CFT	Combatting the Financing of Terrorism
EBA	European Banking Authority
EC	European Commission
FATF	Financial Action Task Force
FIN-FSA	Finnish Financial Supervisory Authority
FIU	Financial Intelligence Unit
GDP	Gross Domestic Product
ML	Money Laundering
NBC	Nordic-Baltic Constituency
NPO	Non-Profit Organization
NRA	National Risk Assessment
PEP	Politically Exposed Person
SNRA	Supranational Risk Assessment
SREP	Supervisory Review and Evaluation Process
TF	Terrorist Financing
VA	Virtual Asset
VASP	Virtual Asset Service Provider

Executive Summary

A. BACKGROUND

1.   Finland's extensive banking sector and high interconnectivity in the region expose it to cross-border money laundering (ML) risks, as illustrated by its exposure to banking scandals in the region. Finland has a large banking sector (191 credit institutions), with a concentration around two entities (due to their size). Finland is the headquarters of one of the biggest banking groups in the region that have been involved in well-known ML cases, including the Laundromat scandal.

B. FINANCIAL FLOWS ANALYSIS

2.   Finland's cross-border financial flows have increased together with the regional financial flows steadily since 2013. Most of Finland's cross-border payments are with G7 and EU countries, with the U.K., Sweden, Germany, and the Netherlands as the main payment counterparties. This pattern of payments is in line with the main cross-border economic linkages of Finland's small and open economy The share of the EU countries has been increasing, while payments with the Commonwealth of Independent States countries, historically a region of elevated ML threat to the Nordic-Baltic countries, are minimal. Finland's cross-border activity is material to the country, as its ratio of cross-border payments' value to GDP and the value of deposits is above the Nordic-Baltic regional average. The authorities should consider[1] developing a national mechanism for comprehensive monitoring of macro-trends in cross-border financial flows, including correspondent payments, to identify and assess ML/TF risks.

3.   Finland's cross-border financial flows have extensive geographic spread, but the flows with the majority of countries-counterparties are sufficiently explained by the economic fundamentals. Finland has material financial flows with 115 jurisdictions–such extended geographical reach of the Finnish financial sector increases ML threats facing the country. However, the staff's analysis of cross-border payments data[2] indicates a strong link between the value of cross-border payments and underlying economic activity for the majority of counterparty countries. Among the main counterparts, decreasing payments with the U.K., as well as accelerating payments with Germany and Luxembourg, are insufficiently explained by the economic fundamentals.

4.   In addition, financial integrity screening of financial flows using machine learning identified elevated outlier activity in Finland since the end-2021, with the U.K. and Ireland being the main destination for outflows-outliers from and the main source of inflows-outliers to Finland, respectively. The authorities' national understanding of ML cross-border and non-resident risk would benefit from incorporating additional sources of data (e.g., on foreign trade and investments) and other information (e.g., business models of payment service providers) into the national/sectoral risk assessments.

---

[1] Authorities' considerations to develop the national mechanism can be supported by a feasibility analysis.

[2] For methodologic details on the financial flows analysis, definitions, and analytical approaches (i.e., economic fundamentals analysis and outlier detection unsupervised machine learning algorithm) please see Nordic-Baltic Regional AML/CFT Report. Due to the aggregation and anonymization of the payments data and macro-level nature of economic and other indicators used in the analysis, the project's findings are aimed at contributing to the understanding of ML risk from cross-border payments rather than identify illicit activity.

5. **For the identification of higher-risk countries, Finnish authorities rely primarily on the Financial Action Task Force (FATF) grey list, the European Commission's (EC's) higher-risk third country list, and a number of higher-risk countries identified domestically.** Finland has minimal payments with FATF and EC higher-risk countries and decreasing payments with countries identified as higher risk by the National Risk Assessment (NRA). In contrast, payments with the International Financial Centers (IFCs) [3] have more than quadrupled since 2017, and IFCs account for a third of jurisdictions with payments insufficiently explained by the economic fundamentals, including Luxembourg, Hong Kong, Singapore, United Arab Emirates, Mauritius, Liechtenstein, Isle of Man, and Curacao. In addition, rapidly growing flows with IFCs, importantly with Luxembourg and Ireland, were flagged by the outlier detection machine learning algorithm.

Other countries with flows insufficiently explained by the economic fundamentals include Kuwait, Saudi Arabia, Iraq, Azerbaijan, Georgia, Congo, Mali, and Mozambique. The authorities should add a focus on jurisdictions with substantial flows that have the potential for material ML threat based on Finland-specific risk factors. This should be completed in coordination with all anti-money laundering and combating the financing of terrorism (AML/CFT)-relevant agencies, including tax administration.

Figure 1. Finland's Flows with Financial Centers as a Share of Overall Flows, 2013–July 2022
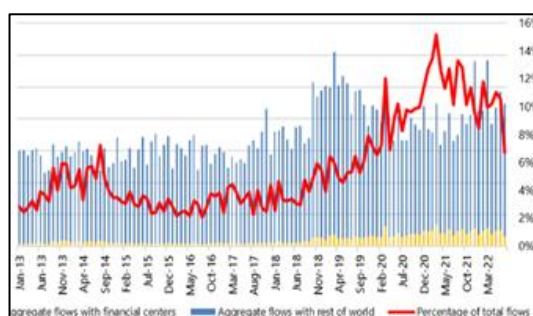
C. ML/TF RISK ASSESSMENT

6. **Finland has a detailed model for supervisory money laundering/terrorist financing (TF) risk assessment but could benefit from further review of what feeds into the ML/TF risk factors.** All classical inherent risk factors (products, customer, geography, and delivery channel), as well as key internal controls, are considered in calculation of the risk-score. In addition to the risk-score, the significance of the size of the business is separately considered in determining the depth of engagement. To fully align with a risk-based approach, the significance of size should be factored into inherent risk calculation instead of as a standalone assessment. The model could also benefit from more granular data input, including transaction-level information.

D. AML/CFT SUPERVISION

7. **The authorities carry out a combination of offsite and onsite supervision of banks, and work is underway to enhance the effectiveness of these activities, which may also necessitate an increase in resources.** While an inspection plan is formed on an annual basis, a documented supervisory strategy for the banking sector would enhance the effectiveness of the risk-based supervision of banks. An updated assessment of the adequacy of the current level of resources should be carried out once the minimum engagement model has been reviewed and updated. While the annual number of

---

[3] As defined in the past lists of Offshore Financial Centers as part of IMF's Assessment Programs: Past IMF Staff Assessments on Offshore Financial Centers (OFCs) Sorted by Jurisdiction.

onsite inspections has increased since 2019, in line with the development of a supervisory strategy, the AML Division may need to consider stepping up the level of onsite activities.

E.   VIRTUAL ASSETS (VAS) & VIRTUAL ASSET SERVICE PROVIDERS (VASPs)

8.   While Finland's VASP sector is small, aligning the domestic legal framework with the FATF recommendations and greater tailoring of risk tools for the sector is key for effective supervision. Finland has a small VASP sector comprising 11 registered VASPs. While the legal framework sets out a detailed assessment for VASP registration, limitations in coverage (gaps in the definition of VASPs and absence of registration requirements for VASPs which are incorporated in Finland but provide and market services exclusively outside of Finland) can affect the strength of market entry controls. The lack of provision for the 'travel rule' for VA transfers also presents a lacuna in the domestic legal framework. VASPs are subject to the Finnish Financial Supervisory Authority's (FIN-FSA) risk tools, including entity and sectoral risk assessment models and supervisory returns, which would benefit from further tailoring for the VASP sector to allow risk-based coverage. The authorities should ensure active supervision in the sector commensurate with assessed risk levels, with appropriate upskilling as needed, and proactively identify and sanction unauthorized VASPs.

Introduction and Background

Recent ML cases have exposed financial integrity risks and potential impact on financial stability to the integrated Nordic-Baltic financial sector, attracting international scrutiny of AML/CFT supervision throughout the region, and so accelerating the momentum for reform.

The purpose of the project was to conduct an analysis of cross-border ML threats and vulnerabilities in the Nordic-Baltic region – encompassing Denmark, Estonia, Finland, Iceland, Latvia, Lithuania, Norway, and Sweden (the Nordic-Baltic Constituency or NBC) – and issue a final report containing recommendations for mitigating those threats.

This report analyses selected aspects of Finland's AML/CFT regime, focusing on key ML threats and risks (including, non-residents and cross-border activity), financial flows analysis, AML/CFT supervision of the banking sector, and VA.

The team wishes to express its appreciation to the authorities for their input, assistance and collaboration extended to the mission team during the duration of the project and missions.

General Overview of the Country Profile

9.   **In a similar manner to other countries on the Nordic Baltic region, Finland has been exposed to several international banking scandals.** These cases highlighted the interconnectivity of the banking sector in the region and the spillover effects across different jurisdictions. Finland is the headquarter of some of the biggest banking group in the region that have been involved in well-known ML cases, including the Laundromat scandal. A Finnish group, later acquired by a Danish banking conglomerate, was also providing significant non-resident operations in Estonia with a significant non-domestic portfolio, mostly based on former ex-Soviet countries. The uncovering of suspicious transactions on this subset of customers led to one of the most well-known banking scandals in the region.

10.   **Finland has an extensive banking sector compared to other countries in the Nordic Baltic region with concentration around two entities.** There are approximately 191[4] credit institutions in the country aggregated in approximately 12 banking conglomerates. The sector is mainly concentrated around two institutions, OP Financial Group, holding approximately 39 percent of the total deposits placed by the public and Nordea, with approximately 28 percent.[5]

Figure 2. Overview of Banking Network in Finland

---

[4] https://www.suomenpankki.fi/en/Statistics/mfi-balance-sheet/list-of-mfis/
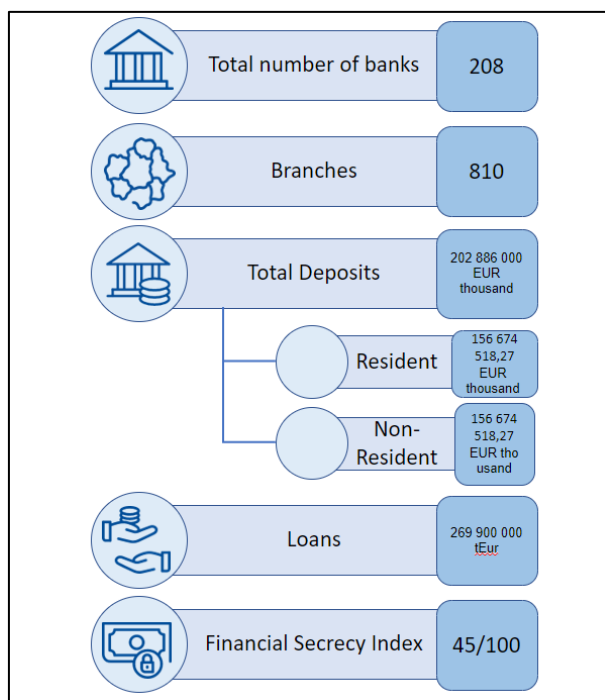
[5] https://www.suomenpankki.fi/en/Statistics/mfi-balance-sheet/tables/rati-taulukot-en/markkinaosuudet_luottolaitokset_en/

ML/TF Threats and Financial Flows Analysis

F. IFF THREATS ACCORDING TO THE AUTHORITIES

11.   Although counting with the input of relevant authorities and actors, the first NRA conducted in 2014/2015 was deemed by FATF assessors to be outdated at the time of the evaluation in 2019 and lacking adequate understanding of ML/TF risks. It identified six key risks items: real estate investments, transportation of cash, front companies, increasing online services, online shadow financing markets and customer fund accounts. The selected participants recognized that they did not have a full understanding of the ML/TF risk situation in the country, and there were methodology related issues. This compromised at that time the deployment of an effective AML action plan and the subsequent allocation of resources. The application of simplified or enhanced due diligence measures was equally hampered. This incomplete assessment led to limited use for setting a country-wide AML/CFT policy. The 2014/2015 NRA also identified divergences among authorities regarding their powers and sanctioning capabilities, which was seen a key vulnerability for combatting ML/TF.

12.   The recent iteration of the NRA, from 2021, was adopted along the development of the Action Plan 2021–2023. The highest risk actors are considered hawala operators, along with virtual currency providers. Other sectors with elevated risk include payment service providers and credit institutions. The use of front organizations and the hijacking of inactive companies are potential risk scenarios. ML in Finland is usually linked to fraud, theft, narcotics offences, tax offences and other forms of economic crime. A structural risk mentioned is that many sectors of obliged entities may over rely on the banks' monitoring systems, leading to inadequate establishment of source of funds.

G. FINANCIAL FLOWS ANALYSIS AND IDENTIFICATION OF POTENTIALLY HIGHER-RISK COUNTRIES

Macro-Trends in Cross-Border Payments

Methodological note: The financial flows analysis presented in this report is based on the IMF staff's analysis of cross-border payments data. The payments data analyzed in the report (except Section F) is composed of wire transfers between the customers of financial institutions, namely payments by households, non-financial corporates, and non-bank financial corporates. The origination and beneficiary countries are determined based on the registration country of a financial institution whose customer is the initiator or the final recipient of the payment order respectively.[6] This analysis does not cover non-financial instruments to transfer value, such as trade mis-invoicing, cross-border cash transportation and crypto assets.[7] While the payments data for 2013–2019 are included as contextual and background information, results of the data analytical approaches presented below are based on the data since January 2020. The analysis is presented on a nominal basis - factors such as inflation and growth in economic activity

---

[6] The provision of correspondent banking services, where a bank, in accordance with a contract or other agreement, makes payments on behalf of or used for depositing of funds of another financial institutions, is not included in the calculation of payments by customers of financial institutions and is analyzed separately (Section E).

[7] The payments data analyzed also does not capture fully credit and debit card payments and the settlement arrangements for some money transfer services might differ from the origination and destination country of a payment.

account for some of the changes in patterns of flows.[8] Due to the aggregation and anonymization of the payments data[9] and macro-level nature of economic and other indicators used in the analysis, the project's findings are aimed at contributing to the understanding of ML risk from cross-border payments on the country and regional levels rather than identify illicit activity.

13.   Finland's cross-border financial flows have increased steadily since 2013. The level of flows increased noticeably in 2018, with average monthly aggregate flows a quarter higher than in the previous year. This growth was more pronounced on the outflows side.

Figure 3. Finland's Inflows, Outflows, and Net Flows, 2013–July 2022
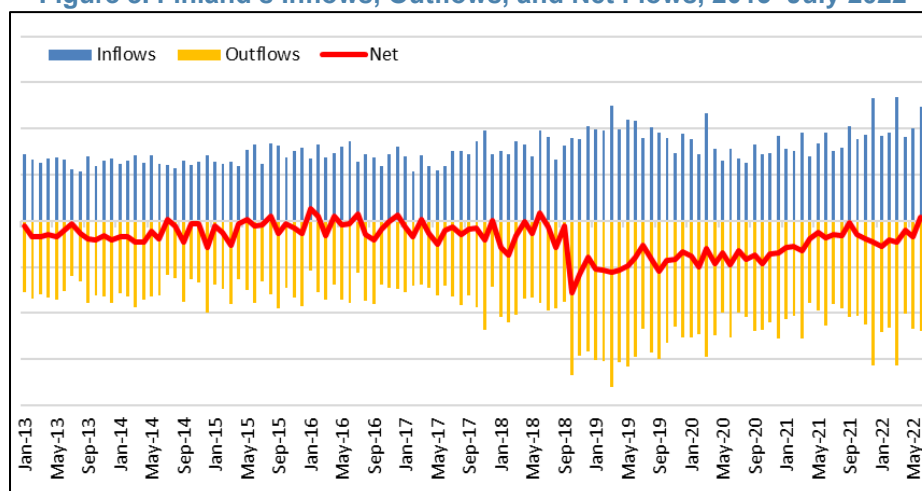

14.   Finland's financial flows are highly material, including after adjustment to the gross domestic product (GDP) and the value of deposits. The ratio of aggregate financial flows to GDP places Finland in the top three countries with the most material flows in the region, with only Sweden and Denmark having a greater degree of materiality. The high level of cross-border activity does not imply elevated ML/TF risks in itself given Finland's position with an open economy and sizeable financial sector, as well as extensive cross-border economic linkages.

---

[8] When benchmarked against regional GDP, the volatility in year-on-year flows is reduced, indicating aggregate flows at a regional level are at least in part driven by changes in GDP.

[9] The payments data is aggregated on a monthly basis on a bank payments corridor level, including the value and volume of payments. Importantly, the customer and purpose of the payment information was not available for this analysis.
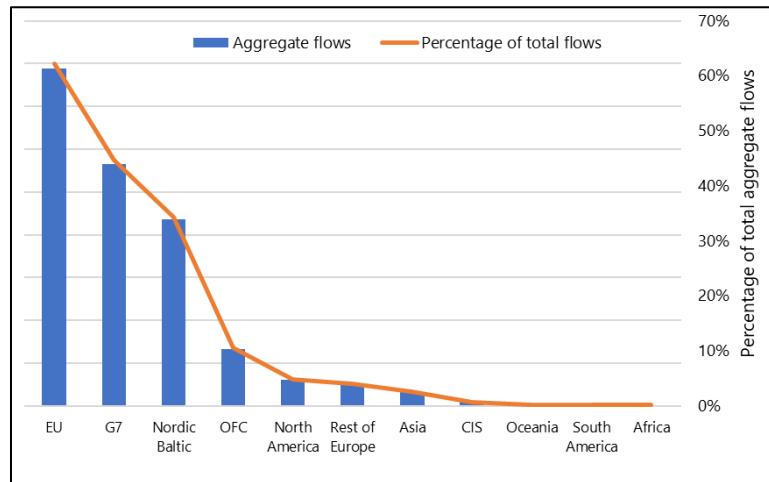
15. **EU and G7 countries have been Finland's largest regional counterparties since 2020.** The EU represents Finland's largest counterparty, equaling 62 percent of all cross border financial flows. Flows with the EU have also been increasing in recent years, driven by the increasing flows with countries including France, Germany, Ireland, Belgium, and Luxembourg. G7 countries account for almost half of flows, with the UK and U.S. in particular large counterparties in both directions. Nordic-Baltic intraregional flows also comprise a significant share of total aggregate flows, equaling 34 percent since 2020. Sweden (72 percent), Denmark (14 percent), and Norway (13 percent) represent the largest share of Finland's intraregional flows. Flows with the Commonwealth of Independent States (CIS), a region of elevated threat to the Nordic-Baltic region, are minimal, suggesting flows from these countries pose lower ML/TF risk

16. **Since 2013, the United Kingdom (UK) has been Finland's largest country counterparty for both inflows and outflows accounting for a third of Finland's total cross border financial flows.** While the UK has historically been Finland's largest counterparty, the levels of flows have been decreasing in recent years, falling by more than a third between 2017–2018 and 2020–2021. Germany and Sweden are Finland's fastest growing country counterparties - and the significant increase in flows with these two countries coincided with thedecrease in flows with UK (See Figure 7). This change in flows with UK, Germany, and Sweden appears to align with key dates as part of the UK's exit from the European Union process, suggesting this change in pattern of flows may be related to the UK's Brexit.

---

[10] The country groupings presented in this graph are not mutually exclusive. For example, Lithuania features in both the EU and Nordic-Baltic groupings.

Figure 5. Inflows, Outflows, and Net Flows with the United Kingdom
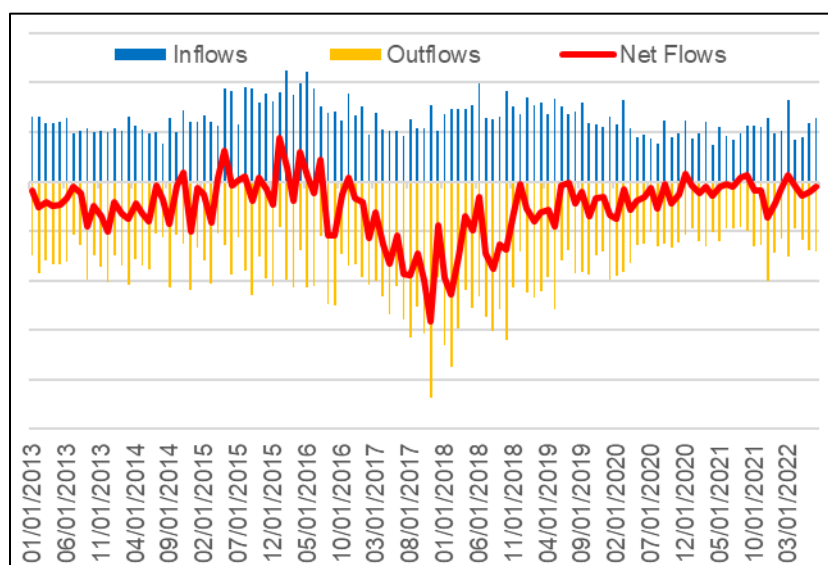
17. **EUR, USD, and SEK are the largest currencies for both inflows and outflows.** EUR is the dominant currency for inflows and to a lesser extent for outflows. This high share of the national currency and currencies of the main economic partners in cross-border payments may indicate lower ML/TF risks from cross-border activity.

Economic Context of Cross-Border Payments

Box 1. Economic Fundamentals Analysis

The economic fundamentals analysis in this section uses the main macro-economic indicators of cross-border economic linkages: (i) trade in goods; (ii) trade in services; (iii) portfolio investments; (iv) direct investments.[11] The purpose of the economic fundamentals analysis is to identify countries with value of cross-border payments significantly higher than the value of underlying economic activity between the countries as estimated using the four main cross-border economic indicators. For this objective, the financial flows are considered "sufficiently explained" if the ratio of economic fundamentals value to the payments value (inflows and outflows separately) is higher than the discretionary set threshold of 30 percent or if the overall ratio of economic linkages' value to payments value is higher than 75 percent[12]. As a result, economic fundamentals can explain the financial flows only in one direction.

Specifically, the economic fundamentals analysis is based on the value of exports and imports of goods and services as well as portfolio and direct investment inflows and outflows.[13] The countries

---

[11] Sources of data for the macro-economic indicators: Direction of Trade Statistics, Corrdinated Portfolio Investment Survey, Coordinated Direct Investment Survey, OECD-WTO Balanced Trade in Services Database.

[12] The threshold is set at 30 percent to capture cases in which the cross-border flows are significantly higher than underlying economic fundamentals.

[13] However, the investment flows may not necessarily be reflected in actual movement of funds across border, as investments value may change due to the exchange rate movements, asset valuation reappraisal, balance sheet operations, etc.

with the broadest geographic reach of the financial sector also have the highest number of jurisdictions with financial flows insufficiently explained by the economic fundamentals, which further stresses the importance of understanding cross-border ML risks for these countries. Insufficiently explained financial flows do not indicate illicit activity, which could include legal transactions other than the trade in goods and services and portfolio and direct investment. For example, this covers interpersonal transfers, cross-border payment intermediation by a regional financial group using a subsidiary/branch, or other economic activity that is not captured by trade and investment statistics. Identification of insufficiently explained financial flows and outlier payments in this report is mainly intended to serve as a contribution to countries' cross-border ML risk understanding and a starting point for further analysis and scrutiny.

18.   Finland's main cross-border economic linkages are with G7, Nordic countries and International Financial Centers (IFCs)[14]. The main types of economic linkages[15] in Finland are portfolio investments, accounting for 61 percent of total value of economic linkages, followed by trade in goods (20 percent), direct investments (12 percent) and trade in services (7 percent). Sweden is Finland's main economic partner, being second in portfolio inflows to and direct outflows from Finland, third in portfolio outflows and direct inflows, second for both goods imports and exports, and first in trade in services. Belgium is second by the value of economic linkages, being the main destinations for portfolio outflows from Finland, and less important direct investment and trading partner. The US is the main portfolio investment partner of Finland, important direct investment partner and first and third for services and goods exports respectively. Other G7 countries follow on the list of Finland's main economic partners: the U.K. (the main direct investment partner, third by portfolio inflows, an important trade in services partner), Germany (the main source of goods imports and destination for goods exports, top-10 by portfolio flows and less important direct flows) and France (an important portfolio partner, also links across all other subcomponents of economic linkages). Netherlands closely follows, being the first by direct investment inflows, fourth by goods exports and imports and second by services import. The IFCs are prominent among Finland's main economic partners, including Luxembourg (#8), Ireland (#9), Switzerland (#14), Cayman Islands (#19), Hong Kong (#23), Singapore (#26) due to strong investment flows, while Ireland and Switzerland are also important in trade in services and goods respectively. Nordic countries of Denmark and Norway (#10 and #11 respectively) have substantial linkages under all economic fundamentals subcomponents.

---

[14] As defined in the past lists of Offshore Financial Centers as part of IMF's Assessment Programs: Past IMF Staff Assessments on Offshore Financial Centers Sorted by Jurisdiction. The list does not include large international full-service centers with advanced settlement and payments systems that support large domestic economies, with deep and liquid markets, and where legal and regulatory frameworks are adequate to safeguard the integrity of principal-agent relationships and supervisory functions.

[15] The economic fundamentals analysis in this section uses the main macro-economic indicators of cross-border economic linkages: (i) trade in goods; (ii) trade in services; (iii) portfolio investments; (iv) direct investments.

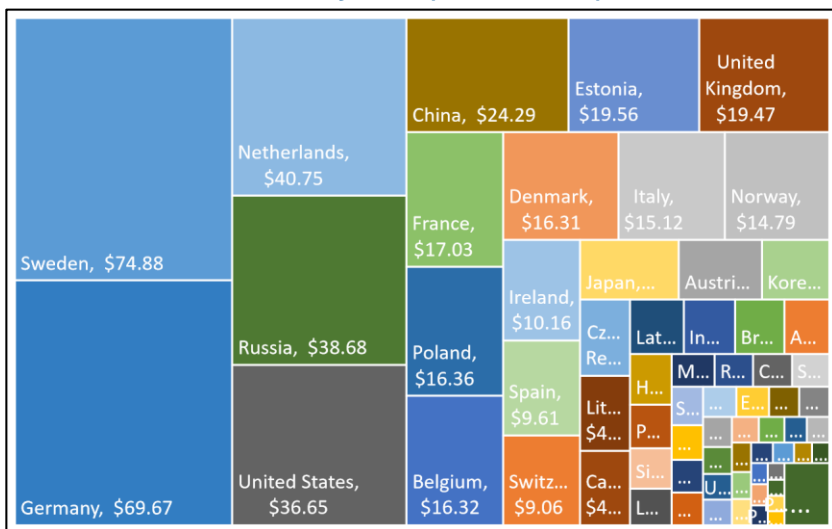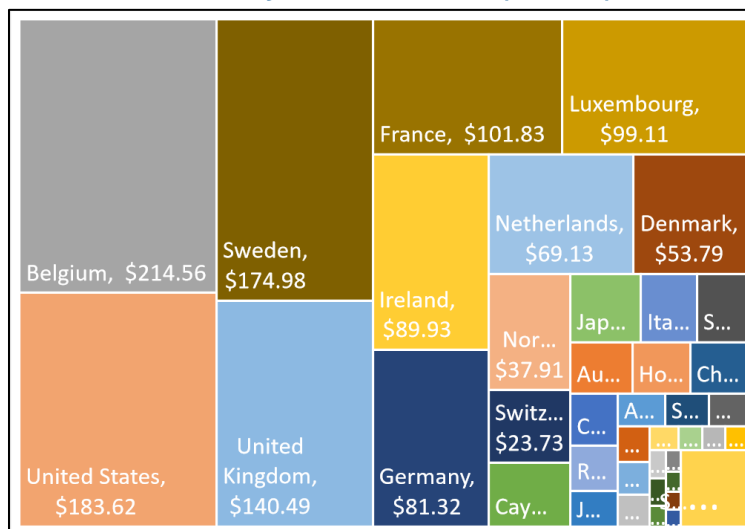**Figure 6. Finland's Trade by Country, 2020–July 2022 (USD Billions)**

Figure 7. Finland's Estimated Investment Flows by Country, 2020–2021 USD (Billions)

19.   Finland has material[16] financial flows with majority of the countries in the world, but the flows are mostly explained by the economic fundamentals[17]. Based on the IMF economic fundamentals analysis, staff compared the inflows to and outflows from Finland with underlying economic linkages between the countries to identify countries where cross-border payments are not sufficiently supported by the economic fundamentals. The economic fundamentals indicator represents strength of economic links between Finland and every counterparty-country, based on the value of exports and imports of goods and services as well as portfolio and direct investment inflows and outflows. Finland has material financial flows with 115 jurisdictions and immaterial flows with 104 jurisdictions - such moderately extended geographical reach of Finland's financial sector moderately increases ML risks. Among the jurisdictions with material flows, payments with 79 countries are sufficiently explained by the economic fundamentals, but both inflows and outflows are not sufficiently explained for 14 countries. In addition, Finland has insufficiently explained only inflows from 7 countries and insufficiently explained only outflows to 15 countries.

Main Counterparts

20.   The financial flows with majority of Finland's top-10 counterparty-countries by payments value could be explained by the economic fundamentals. The financial flows in both directions with the U.S., Netherlands, Ireland as well as inflows from Denmark, France and Norway could be explained by the economic fundamentals. Notably, flows in both directions with the top-4 payments counterparties – Sweden, the U.K., Germany, and Luxembourg are not sufficiently explained by the economic fundamentals data, however operational location of financial institutions may in part explain these

---

[16] Defined for the purposes of this analysis as overall payments of USD 100 million during January 2020-July 2022.

[17] The economic fundamentals analysis in this section uses the payments data and macro-economic indicators since January 2020.

heightened flows[18] [19]. The flows with the U.K.have the lowest ratio of value of economic fundamentals to the payments' value.

21.   Despite the significant decrease in payments with the U.K. since early 2020, the U.K. has remained Finland's main payments counterparty with flows insufficiently explained by the economic fundamentals. While Sweden is nominally Finland's main payments counterparty, the high level of payments and unusual pattern of flows, which started in October 2018, can be explained by the move of a prominent bank's HQ from Sweden to Finland, resulting in the U.K. continuing being Finland's main payments counterparty. The aggregate payments with the U.K. have peaked between June 2016 (Brexit Referendum) and January 2020 (when UK left the EU). Despite the significant decrease in payments with the U.K., the flows with the U.K. remain insufficiently explained by the economic fundamentals, with the lowest ratio of value of economic linkages to the payments' value.

22.   Following significant growth since mid-2018, Luxembourg became Finland's fourth payments counterparty by value and the main IFC with flows insufficiently explained by the fundamentals. Following the period of stable monthly average flows between 2015 and mid-2018, the flows with Luxembourg have increased more than fourfold between mid-2018 and 2020. Then the aggregate flows with Luxembourg have increased further since January 2020, although at a lower rate. Notably, the periods of acceleration of flows with Luxembourg coincide with the decrease in Finland's payments with the U.K, which may suggest relocation of financial activity and associated ML/TF risks from the U.K. to Luxembourg. The increase in flows with Luxembourg was higher in outflows to Luxembourg, reversing the earlier trend of net inflows to net outflows from Finland. This acceleration in flows with Luxembourg is not fully explained by the economic fundamentals, which mostly consist of portfolio and direct investments as trade in goods and services is insignificant. While the lower level of inflows from Luxembourg is better explained by the fundamentals, which also grew strongly in 2021 due to the increase in portfolio investments from Luxembourg, the outflows to Luxembourg are less explained by the fundamentals as investments outflows do not register the same trend towards the acceleration. Importantly, the correlation coefficient between inflows from and outflows to Luxembourg is high 0.87, indicating elevated risk of payments passing through the country's financial sector.

Figure 8. Inflows, Outflows, and Net Flows with Luxembourg

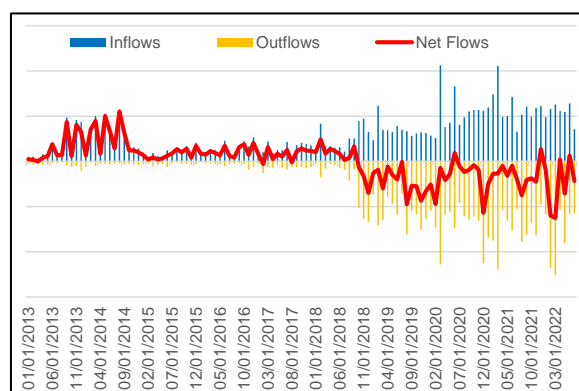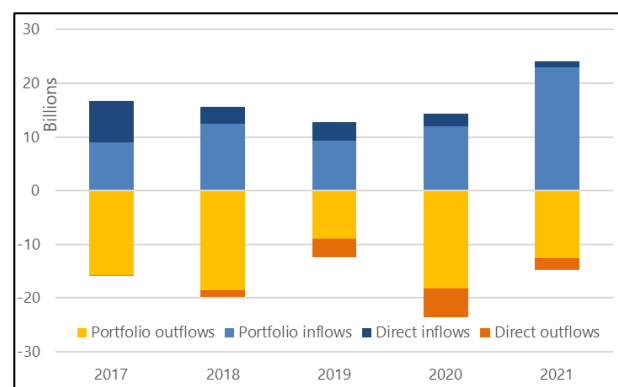**Figure 9. Estimate of Investment Flows between Finland and Luxembourg**

---

[18] Service providers that have submitted a notification - Registers - www.finanssivalvonta.fi

[19] https://www.nordea.com/en/doc/main-legal-structure-1-december-2022.pdf

23.   Ireland is another IFC among Finland's top-10 counterparties with accelerating flows.
Following stable aggregate flows in 2013–2018, payments with Ireland started to grow rapidly in early
2019 and accelerated further in early 2020. The inflows from Ireland were growing at a much faster rate
than outflows, increasing more than tenfold since 2018 . This may potentially be related to the UK leaving
the EU and associated relocation of some financial institutions to Ireland. The flows with Ireland could be
explained by the fundamentals, especially the lower level of outflows to Ireland, which is better explained
by the fundamentals due to strong import of services from Ireland and investment outflows, mostly
portfolio. The rapidly growing inflows from Ireland are less explained by the fundamentals, as portfolio
and direct investments are not showing the same trend towards increase.

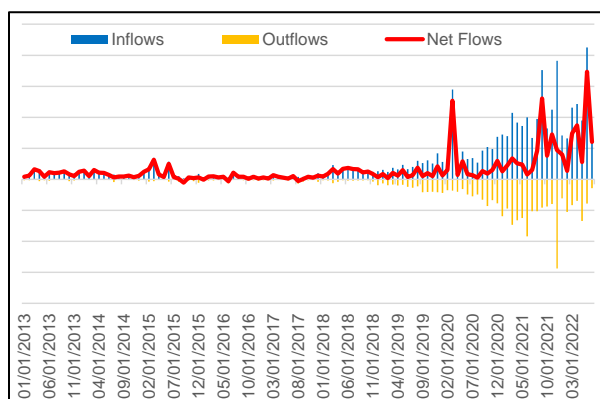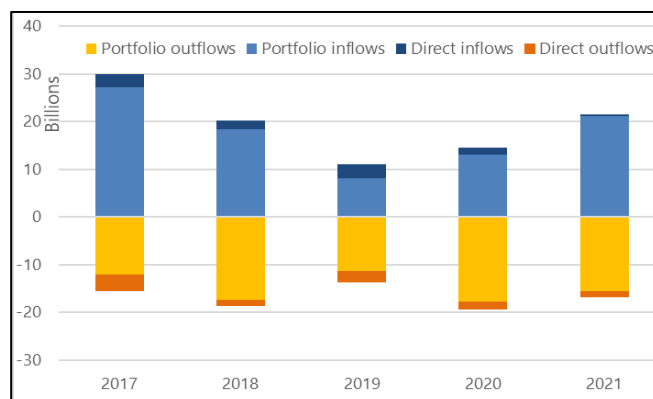**Figure 10. Inflows, Outflows, and Net Flows with Ireland**

Figure 11. Estimate of Investment Flows between Finland and Ireland

**24.   Recent acceleration in flows with Germany is also not explained by the economic
fundamentals.** The flows with Germany have started growing rapidly since late 2020 and the inflows and
outflows were increasing in parallel with high correlation coefficient of 0.86, indicating payments
potentially passing through Finland's financial sector. Both inflows from and outflows to Germany are not
sufficiently explained by the fundamentals, which almost equally consist of trade in goods and investment
flows. The investments inflows do not demonstrate increasing trend similar to the growth in payments and
while investment outflows are gradually growing, they still remain lower than the level reached in 2017
when payments were significantly lower.

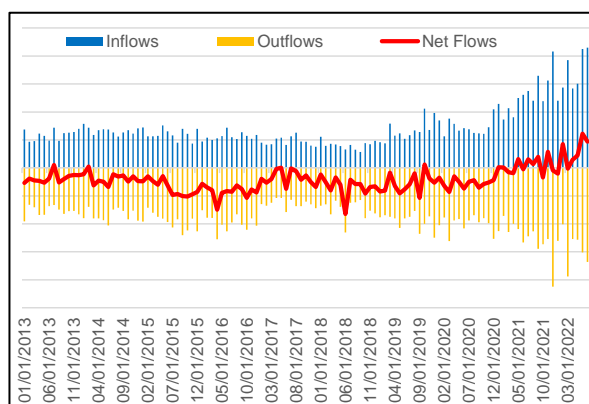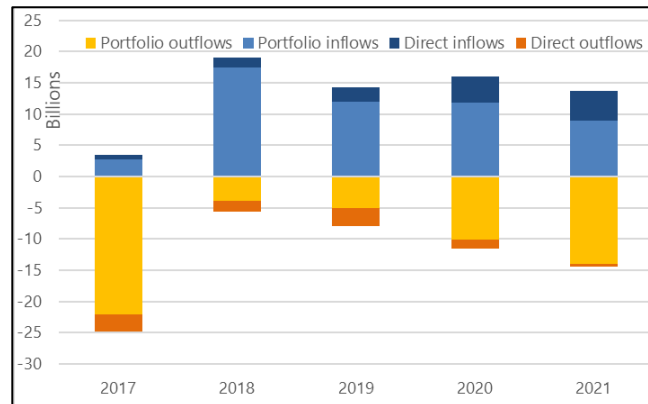**Figure 12. Inflows, Outflows, and Net Flows with Germany**

Figure 13. Estimate of Investment Flows between Finland and Germany

Secondary Counterparts

25.   **After the top-10 payments counterparties, most of the countries with financial flows not supported by the economic fundamentals are IFCs and, less materially, sub-Saharan African countries.** Out of these 29 countries – secondary counterparties by overall value insufficiently explained by the fundamentals, 8 are IFCs (in addition to Luxembourg above): Hong Kong (unexplained outflows), Singapore (unexplained inflows), United Arabs Emirates, Mauritius (unexplained inflows), Liechtenstein (unexplained outflows), Isle of Man (unexplained outflows), Curacao, and less materially[20], Aruba. Flows with some Middle Eastern countries also have flows not fully explained by the fundamentals: Saudi Arabia (unexplained outflows), Kuwait (unexplained outflows) and Iraq (unexplained inflows). In addition, flows with several CIS countries, Belarus (unexplained outflows), Azerbaijan (unexplained inflows) and Georgia (unexplained inflows), are insufficiently explained by the fundamentals. The most numerous regional grouping, with flows insufficiently explained by fundamentals, but lower materiality of payments, are sub-Saharan African countries – Congo, Guinea (unexplained outflows), Mali, Mozambique, and, less materially, Uganda (unexplained outflows), Burkina Faso, Zimbabwe, Cameroon (unexplained inflows) and Ethiopia (unexplained outflows). Other countries with less material insufficiently explained flows are Nepal (unexplained outflows), Guyana and Myanmar (unexplained outflows).

26.   **IFCs are the most material country grouping among Finland's secondary counterparties with financial flows insufficiently explained by the fundamentals with several IFCs on an upward trend.** Hong Kong is in top-20 of Finland's payments counterparty and while inflows could be explained by investment inflows (mostly direct investments), the outflows are less explained by the fundamentals, but have decreased in the last year. Singapore is another top-20 payments counterparty with growing payments - the inflows from Singapore are slightly below the economic fundamentals threshold, while outflows could be explained by investment outflows. The flows with the UAE are the least explained by the economic fundamentals in the IFC grouping and recorded a spike in inflows and some increase in overall flows since 2020. Since January 2020 the flows with Mauritius are characterized by uneven pattern with spiking inflows and outflows. The inflows from Mauritius are not sufficiently explained by the fundamentals, while the outflows are slightly above the fundamentals threshold. Flows with Liechtenstein included notable spikes in outflows of in the month of December in recent years, which may indicate tax administration relevance. Similarly, flows characterized by spiking uneven flows were recorded with Isle of Man, Curacao and Aruba.

27.   **Payments with several other major payments counterparties demonstrated acceleration that is not sufficiently explained by the economic fundamentals.** Outflows to Saudi Arabia have accelerated rapidly in early 2021, while investment outflows are insufficient to explain this increase and the Finnish imports from Saudi Arabia are minimal. In addition, inflows from another, but less material, Middle Eastern country - Iraq, are insufficiently explained by the fundamentals. Inflows from Serbia have increased in mid-2018 and grew further since late 2020. This increase in inflows is not sufficiently explained by the economic fundamentals, as exports to Serbia have not increased correspondingly and the investment outflows are low. While flows with Belarus have increased in 2020, they almost halted since April 2022, although low levels of inflows remain.

28.   **Sub-Saharan African countries is the largest regional grouping of countries with flows insufficiently explained by the economic fundamentals, although with lower materiality of payments.** Congo is the main sub-Saharan payments counterparty by value with flows in both directions insufficiently explained by the fundamentals, which is particularly important for gradually increased

---

[20] In this context less material payments are defined as lower than 200 mln. USD since January 2020.

outflows in 2021. Similarly, outflows to Guinea are not sufficiently explained by the fundamentals and were growing since January 2020. Inflows from Mali, Burkina Faso, Cameroon, overall flows with Mozambique and outflows to Uganda are insufficiently explained by the fundamentals and are increasing, although from a low base.

Identifying Unusual Cross-Border Flows Using Outlier Detection Methods

IMF staff developed an unsupervised machine learning algorithm[21] to monitor global financial flows to detect unusual and potentially suspicious patterns of financial flows using transactional payments data and indicators of higher (weak AML/CFT regime, higher economic crimes, financial secrecy, and harmful tax practices) and lower (underlying trade and investments) ML risks (See Annex I for more information). The unsupervised outlier detection algorithm is aimed at identifying rare events that are statistically different from the rest of the observations. Merging and incorporating indicators of higher and lower ML/TF risk with the payments data and indicators of economic activity results in the identification of outlier activity potentially posing higher financial integrity risks. Analysis of contribution of various indicators used in the model's output algorithm shows that the economic fundamentals variables (trade and investments, as above) have the largest impact on whether payments would be identified as outliers by the algorithm. The section below describes the results in the identification of global outlier payments for Nordic-Baltic region. While the machine learning algorithm is based on AML/CFT-specific risk factors, identified outlier activity does not indicate illicit financial flows[22].

---

[21] We use an unsupervised model for anomaly detection based on the Isolation Forest (Fei Tony Liu, Kai Ming Ting, and Zhi-Hua Zhou, 2008).

[22] Variety of exogenous shocks can result in outlier activity - for example, sudden changes in the pattern of payments due to the shift in the settlement arrangements of a bank.

29.   Financial flows outliers have gradually decreased since the peak in early 2019 but reemerged since end-2021. The number and value of outlier outflows from Finland have gradually decreased from the high levels between mid-2017 and mid-2019. The outlier outflows have gradually decreased in 2020–2021, with a spike in December 2021. It is notable that high level of outflows outliers by value was identified in few payment corridors. The outlier activity is significantly lower in inflows to Finland, with elevated activity between mid-2017 and mid-2019. Following almost no outlier activity in inflows since mid-2019, the inflows outliers have also registered a spike in December 2022.

<div style="display:flex">

Figure 14. Outflows-Outliers from Finland, 2015–2019
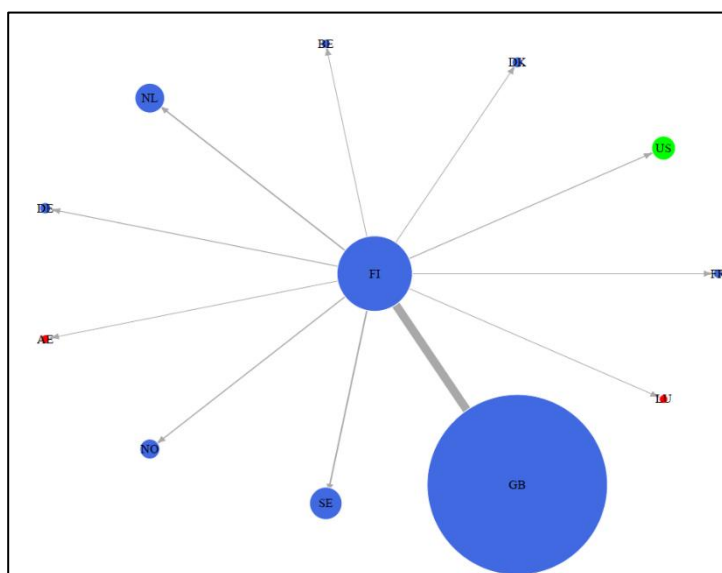
Figure 15. Outflows-Outliers from Finland, 2020–July 2022

</div>
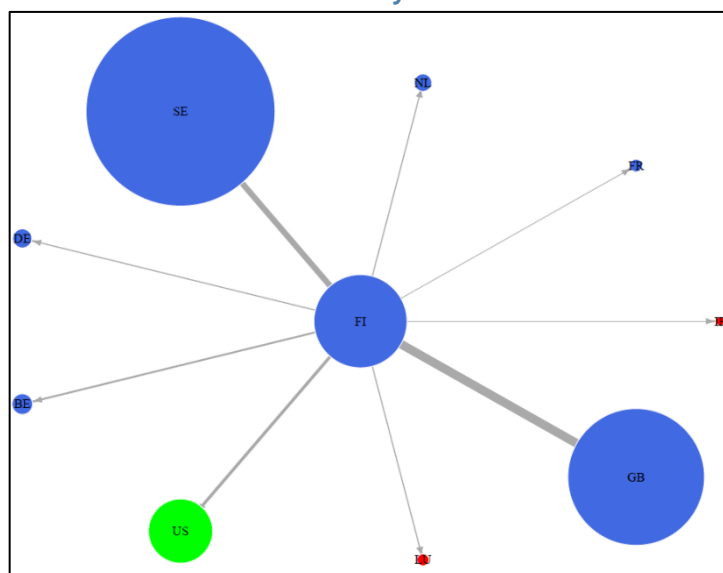
30.   The U.K. has remained the main destination for the outflows-outliers from Finland in the period since 2020 despite the reduction in the financial flows. As outflows activity with Sweden is most probably explained by the structure of the banking sectors discussed above, the U.K. is the main destination for outflows outliers during the period of analysis. The U.S. was the second largest destination for outflows-outliers from Finland in recent years, followed by Belgium. Outliers were also identified among accelerating outflows to Germany,Netherlands and France. Outliers were also identified among rapidly growing outflows to IFCs Luxembourg and Ireland.

31.   The number of countries with inflows-outliers to Finland has decreased with Ireland becoming the main source of inflows-outliers. Accelerating inflows from Ireland became the main source of inflows outliers to Finland since January 2020. Inflows from Denmark and the three Baltic countries also included outliers. Less materially, outliers were identified in inflows from IFCs Aruba and Antigua as well as from Guyana.

32.   Outlier detection algorithm findings reinforce the results of the economic fundamentals analysis, identifying countries for further scrutiny. Notably, flows with the U.K., Finland's main counterparty, were flagged by both economic fundamentals and outlier detection algorithm. Accelerating flows with Germany and outflows to France were also identified by both analytical approaches, although with lower values in the outlier detection results. Notably, rapidly growing payments with IFCs, importantly with Luxembourg, were identified by both analytical approaches. While flows with Ireland could mostly be explained by the fundamentals, accelerating and uneven pattern of payments merit further scrutiny. Flows with other IFCs, most material being Hong Kong, Singapore, and UAE, don't have the outlier patterns, but are not sufficiently explained by the fundamentals and could merit further monitoring.

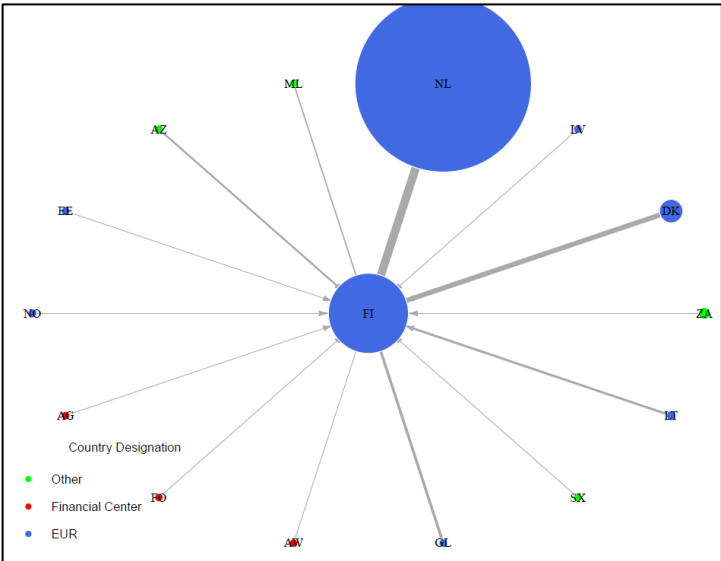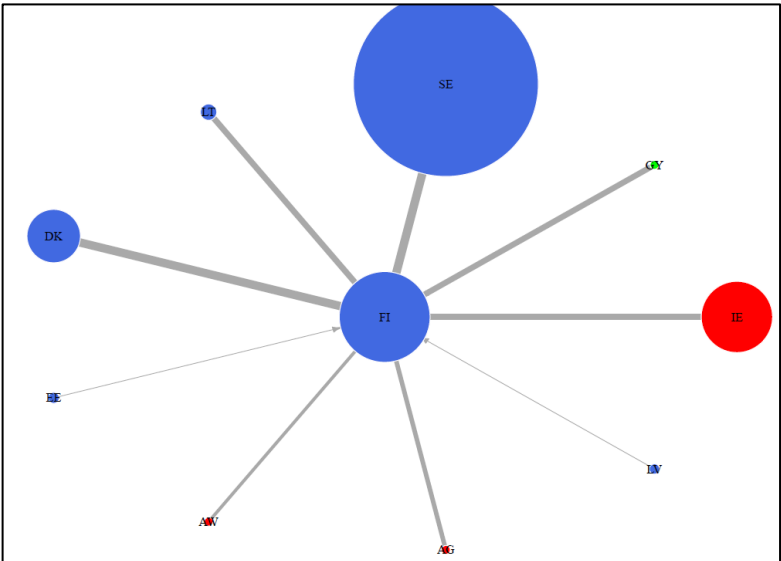Figure 16. Inflows-Outliers to Finland (2015–2019)

Figure 17. Inflows-Outliers to Finland (2020–July 2022)

Higher-Risk Countries Identified by the Authorities

33.   For the identification of higher-risk countries, Finish authorities utilize the FATF grey list, EC higher-risk third country list and a number of higher-risk countries produced by the authorities. As required by the international standards on AML/CFT, Finnish authorities are following the list of jurisdictions under the FATF increased monitoring. In addition, the EC produces a list of high risk third countries, which to a large extent overlap with the FATF list. Finland has consistently minimal flows with FATF and EC higher-risk countries.

34.   Finnish authorities identified two higher-risk country groupings, one resulting from the NRA process and one group generated as part of the Financial Intelligence Unit's (FIU) Annual report. Four countries were identified as higher risk as part of the NRA (Estonia, Latvia, Lithuania, and Russia). The flows with these countries have remained stable since 2020 until early 2022, when flows began to decline, driving by declining flows with Russia following the invasion of Ukraine. Monthly average aggregate flows with the NRA higher-risk countries reduced by a third in the first six months of 2022, compared to the monthly average in 2021. The second higher-risk country grouping was identified by the FIU. This country grouping includes several of Finland's largest country counterparties, including the UK, Germany and Ireland, in which a small proportion of transactions were identified as illegal, e.g. related to online fraud. Overall, this group represents more than a third of total aggregate flows since 2020. This share of total aggregate flows has remained stable since 2020. The identification of various types of higher-risk countries tailored to the country cross-border financial flows risk profile enables authorities to better calibrate efforts to mitigate geographic ML/TF risks and respond more effectively to their cross-border ML/TF risks.

35.   Finland has also seen an increase in the value and share of total flows with IFCs. The value and total share of aggregate flows with financial centers began to increase in 2018, more than doubling between 2017 and 2019. At the same time the share of total flows with financial centers rose from 3 percent to 6 percent. This rate of increase continued to 2021, as the share of total flows rose to 12 percent. Flows with financial centers have then decreased slightly in 2022, equaling 10 percent of total flows. This increase in flows has predominately been driven by an increase in flows with Luxembourg and Ireland. These two countries are the largest counterparties in the financial centers country grouping, accounting for 57 percent and 17 percent of all flows with this country grouping respectively. While Finland's share of total flows with financial centers remains in line with other countries in the Nordic-Baltic region, the rapid increase in flows with this financial center country grouping does potentially pose an elevated ML risk, possibly related to tax crimes. Given this, close monitoring of flows with these countries may be merited.

Figure 18. Aggregate Flows with Financial Centers as a Share of Total Flows, 2013–July 2022
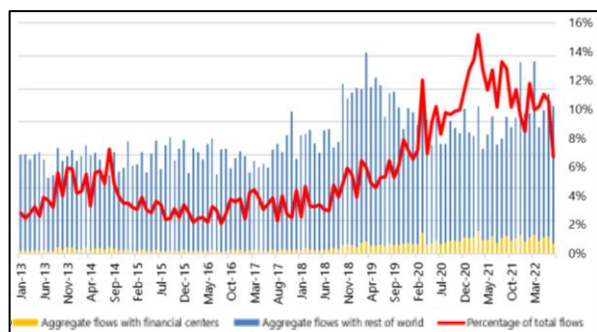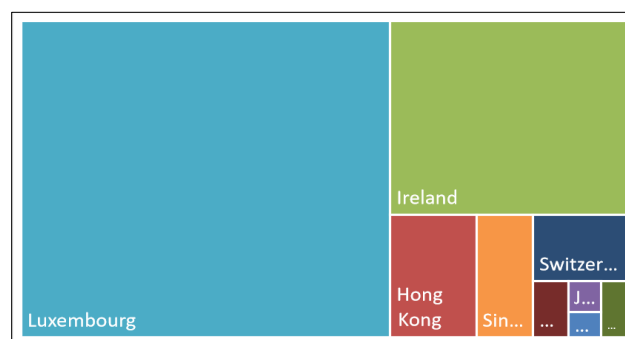

Figure 19. Aggregate Flows with Financial Centers by Country, 2020–July 2022

Correspondent Banking Services

Methodological note: The correspondent bank flows analysis presented below analyzes Nordic-Baltic countries role as facilitators of correspondent banking transactions. Specifically, the analysis focuses on financial flows in which a country in the region acts as a correspondent banking location[23] in the payment chain. This analysis does not cover the data on Nordic-Baltic countries as originators or beneficiaries of correspondent banking transactions. This correspondent banking flows analysis covers only correspondent's facilitation of payments between customers of financial institutions. It does not incorporate the findings of the outlier detection analysis or analyze correspondent banking flows for potential unexplained financial flows.

36.   **The value and volume of correspondent banking transactions through Finland have been volatile since 2018.** Both the value and volume of correspondent banking transactions through Finland peaked in in 2018. Both indicators of correspondent banking activity dropped significantly from 2018 to 2020, with the volume of transactions falling by a third in this period and the value dropping by almost two thirds. The value of correspondent banking flows has increased again in 2022, while the volume of correspondent banking transactions has increased only modestly, resulting in a significant increase in average transaction value. This increase in average correspondent banking transaction value can pose a ML/TF risk and may merit close monitoring scrutiny. Overall, the provision of the correspondent banking services in Finland is substantial – third in the region (as adjusted to GDP).

37.   **The majority of correspondent banking transactions through Finland originate in the Nordic-Baltic region.** In total, 76 percent of all correspondent banking flows originate in the region, with Denmark (43 percent), Sweden (26 percent), and Norway (7 percent) the largest originator countries in the region. On the recipient side, Sweden is the largest counterparty, as the final destination for 30 percent of all correspondent banking flows through Finland. Notably, Luxembourg is also the recipient of a significant share of correspondent banking flows through Finland, equaling 16 percent and representing Finland's second largest recipient counterparty. The jurisdictions where Finnish banks provide correspondent banking services and associated business model can be analyzed in addition to inflows and outflows in Finland's as part of country's ML/TF geographic risks.

---

[23] This analysis includes only cross-border provision of correspondent banking services for payments purposes, which may differ from the authorities' definitions of correspondent banking, including provision of correspondent services to domestic non-bank financial institutions.

Cross-Border Flows between Financial Institutions

38. **Finland's cross border payments between financial institutions have been stable since 2015.** The inflows to and outflows from Finland between the financial institutions have been balanced. As is the case with other similar economies in the region, the aggregate flows between the financial institutions are considerably larger than retail payments. For both inflows and outflows between the financial institutions, Sweden and the U.S. are the largest counterparties. Sweden accounts for a third of outflows and inflows since 2013, while the U.S. accounts for a fifth of inflows and a quarter of outflows. The country composition of Finland's flows between the financial institutions are to be expected given the strong Nordic-Baltic regional integration of countries financial sectors. Given this context, Finland's payments between financial institutions do not appear to represent a significant ML risk.

AML/CFT Vulnerabilities: Cross-Border Banking Sector and VAs

39.   **Finland was subject to the FATF's Fourth Round Mutual Evaluation in 2019, receiving a "Largely Compliant" rating on Recommendation 26, on Regulation and supervision of financial institutions.** Regarding financial institutions, FATF assessors identified that almost all the provisions of the recommendations were met for most types of financial institutions, with some exception on companies providing other financial services (e.g., non-consumer loans, financial leasing).

40.   **The AML/CFT Coordination Group, set in 2018, serves as the main point for interaction among different authorities on AML/CFT policy priorities.** Tasked with improving information flows between supervisors and operational authorities, it provides a forum for coordination between supervisors, FIU, and law enforcement and to harmonize the procedures for AML/CFT supervision. The Group has been further operationalized and provided guidance on ML/TF risks and the reporting of suspicious transactions. Among the latest initiatives conducted, the Group is examining the needs for legislative changes on VASPs, including the potential prevention of mixer services, and addressing TF related risks related to the non-profit organization (NPO) sector. On domestic cooperation, Finland has also implemented measures for coordination between authorities at both policy and operational levels for AML/CFT purposes.

41.   **The main national law on AML/CFT matters is the Anti-Money Laundering Act (Act on Detecting and Preventing Money Laundering and Terrorist Financing).** The new Act entered into force in 2017 and sets the main provisions on prevention of ML/TF, promotes the detection and investigation of ML/TF, and reinforces the tracing and recovery of the proceeds of crime. This law is supplement by other acts and decrees, on several areas, including virtual currencies, beneficial ownership, due diligence, and political exposed persons, among others. The current Act has focused on improvements on risk assessments, the register of beneficial owners, AML/CFT supervision, and cooperation between the concerned authorities. It also contains provisions on the ML supervision register.[24]

42.   **The Action Plan for the NRA for 2021–2023 also lays out the strategic priorities.** These are focused on five areas, including: i) raising public awareness of ML/TF; ii) improving the exchange of information, statistics, and updating national legislation in line with international standards; iii) promoting the currency and content of registers (e.g Beneficial Ownership and Trade registries, information from the Patent and Registration Office) available to authorities and obliged entities; iv) implementing measures to reduce the most significant risks highlighted in the assessment; and v) developing the digitalization of supervision and risk management on the prevention of ML/TF.

---

[24] The Finnish Anti-Money Laundering Act lays down the obligations and safeguards that businesses, organizations and other economic operators must observe in order to help to prevent and expose ML/TF. Regional State Administrative Agencies are the competent enforcement authority in respect of businesses and other economic operators that, due to the nature of their business, are in a position to expose ML/TF or likely to become a target for ML/TF. Regional State Administrative Agencies keep a register of these kinds of businesses and operators for AML purposes. The information is in the public domain, and anyone can access the register without creating an account. All these operators must have their details included in one of these registers.

43.   **Up until 2019, banks had an adequate understanding of their exposure to ML/TF risks although with uneven outcomes depending on the size of each group.** In line with other countries in the region, such understanding is more developed among larger banking groups belonging to international groups. New entrants to the market had a tendency to conduct generic "checklist" approaches, and larger international groups may risk entering the country without adapting and considering the Finnish market specificities. Although it is a legal requirement, the ongoing updates of FIs risk assessments on a yearly basis were still at an early adoption phase. Staffing issues were also challenging concerning the hiring of adequately trained compliance officers, along with some institutions having inadequate legacy systems without capabilities to interface with wider group entities or adequate information transfer channels.

44.   **From 2019 onwards, the authorities considered that there are inadequacies in the sharing of information, especially between obliged entities, which can make it more difficult to detect suspicious transactions.** While there has been some recent progress, via a PPP initiative and a MoF working group pn improving information exchange. Activities may still be hampered by the unclarities concerning the regulation on information sharing. Other issues include excessive trust in the customer relationship monitoring by banks, verification of the source of wealth/source of funds, customer due diligence and identification of beneficial ownership. The limitations on the exchange of information between banks and other entities augments the risks related to the ongoing monitoring of payments. Digital banking services and new technologies to conduct customer due diligence are also seen as potential ML risks.

Supervisory ML/TF Risk Assessment of Banks

Sectoral Determination of Product Risk

45.   **As part of the FIN-FSA's supervisor specific risk assessment, the FSA has calculated inherent risks associated with products and services offered by its supervisory population.** Sixteen products/services are covered in this determination, including payment accounts, cash services (covering cash withdrawals and deposits), loans, private banking services, corporate banking services, customer credit and investment services. The determination of risks associated with covered products is based on national and supranational assessments and is consistent with the European Banking Authority's (EBA's) four-tiered risk scale.

46.   **The sectoral supervisory risk assessment considers includes data from several sources.** Supervisory and regulatory data returns from supervised entities, annual surveys, FIN-FSA's registers, FIN-FSA and the Bank of Finland statistics, banks' internal risk assessments, information from authorisation and registration process ad information from the FIU.

47.   **The FSA should ensure, on an ongoing basis, the inclusion of all risk-relevant categories of product/services in the sector in its assessment and should reconsider the lack of inclusion of correspondent banking activities under this risk factor.** The products and services assessment includes, deposits and deposit accounts, sash services, payment services, payment accounts, payment transaction execution and reception, electronic money and issuance of means of payment, money intermediation, currency exchange, virtual currency services, mortgages and other high-value secured loans , consumer loans and other low-value loans, private banking services, banking services for community customers, credit and financial services for business customers, trade finance, safe deposit boxes and investment services. At present, the provision of correspondent banking services is included under the assessment of distribution channel, given the high ML/TF risk associated with this activity and

the nature of the service, this element should be considered under the product/services risk data collection component of the risk assessment. Distribution channel may include "the ability to reliably identify/verify customers through remote or digital onboarding, products or services delivered exclusively by post, telephone, internet etc., or the use of introducers or intermediaries (and the nature of their relationship with the entity)".[25] Through the inclusion of this product under distribution channel, the assessment of this activity may not get adequate weight and key aspects of product may not be considered since it is assessed through the narrower lense of distribution channel.

48.   The authorities should thus ensure full coverage of risk-relevant product/services in this assessment. Further, the available material does not adequately elaborate on the findings that underpin the risk-classifications for all covered products. This is particularly notable where there is some divergence between the FSA's findings and the EU Supranational Risk Assessment's (SNRA's) assessment of ML risks associated financial sector products. For instance, private banking services are considered as presenting moderately significant ML risks in the FIN-FSA's assessment while they are considered significant-very significant in the EU's SNRA. The authorities can certainly diverge from the SNRA's findings based on national assessments, in the absence of substantiation for the risk classifications the reasons for the divergence are difficult to ascertain.

Note to the authorities:

Product risk is central to the assessment of inherent risk but is not the sole determinant of inherent risk and nor, by itself, an accurate gauge of overall sectoral risk levels. To derive a measure of overall risk-ratings for the sector, it is important to consider other inherent risk factors (customer, geography, and delivery channel risks) as well as to assess risk mitigation systems and frameworks on a sectoral basis. The authorities are conducting a sectoral risk assessment of the banking sector which aims to provide a more thorough picture of sector-specific ML risks. In the meantime, deriving sectoral risk categories solely based on risk ratings of products typical to the sector may present an incomplete understanding of sectoral risk levels and thus provide minimal added utility to the supervisor's risk understanding. Instead, the sectoral risk assessment of the banking sector, once finalized, would provide a more complete picture of inherent risks and residual risks associated with the banking sector and can even serve as a de facto baseline in the determination of entity risk levels.

49.   While the entity-level risk assessment appears to consider the key aspects (i.e. inherent assessment, control environment and residual risk), due to limitations in available information, the overall risk scoring methodology remained unclear to the team. The risk level of an individual obliged entity is based on the automated scoring of RA-reporting, inherent risk of a specific sector (based on the risk assessment of the sector/inherent risk assessment) and manual ML/TF observations. The risk level of the risk and mitigation categories can be changed or confirmed based on the observations.

50.   The FSA collects [regular] information from supervised entities through supervisory returns, which form the key input source for the risk-assessment tool. The returns collect some information across the four classical inherent risk factors (product, customer, geography, and delivery channel). Data input collected include details on the number of customers (with breakdown by resident/non-resident customers, politically exposed persons (PEPs), sectors of activity), number of branches/subsidiaries/agents, number of correspondent banks, number of cash deposits, and availability

---

[25] FATF Guidance on Risk Based Supervision, 2021.

of remote onboarding options, among others. The supervisory returns also seek information on the entity's AML/CFT systems, including information on risk assessments, policies and procedures, oversight and training as well as processes for key internal control functions including customer due diligence, transaction monitoring and sanctions screening.

51.   Product/services data collected through the supervisory returns is significantly limited. Although the authorities assess risks associated with products and services relevant to the supervisory population at the sectoral level, minimal information is sought on product/service offerings in the data returns. This is particularly concerning since product risk is a central inherent risk factor, given the wide variability of ML risks associated with different products/services traditionally offered by the banking sector. Future iterations of the returns should seek information on the types of risk-relevant product/service offerings and respective revenues from offered product/service streams.

52.   Limitations in scope and granularity of data collected through supervisory returns could blunt the risk-sensitivity of the model. The data collected overwhelmingly focuses on numbers within each inherent risk categories (for instance, the numbers of resident/non-resident customers, transactions, correspondent banking relationships, agents/subsidiaries respectively). This approach could present an overly simplistic and unidimensional picture of risks associated with the entity's activities. Future iterations of the returns should therefore also collect data on the scale of activity relevant to each risk factor, for instance, seeking information on values and volumes of payments and deposits (with breakdowns by geographic spread and customer type (e.g., resident/non-resident/high-risk/PEP customers).

AML/CFT Risk-Based Supervision of Banks

53.   While an inspection plan is formed on an annual basis, , a documented supervisory strategy for the banking sector may enhance the effectiveness of the risk-based supervision of banks. The authorities have noted that a supervisory strategy was established outside the period under review. The supervisory strategy for the banking sector should first consider the sectoral ML/TF risk assessment of the banking sector, the strategy should then set out the supervisory activities that will address the identified ML/TF risks. This strategy should set out, in line with the minimum engagement model, the specific activities that supervisors will carry out (for example, areas of thematic focus, full-scope inspections, deep dive reviews), along with details on desk-based supervisory activities, and other key supervisory activities such as outreach, guidance, and collaboration (e.g., at a domestic level and participation in supervisory colleges).

54.   The authorities should develop and implement a minimum supervisory engagement model. A basic minimum engagement model should set out the frequency of supervisory activity per entity level of risk. The model could specify the frequency of onsite inspections, offsite assessments, and data collection each for high-risk, medium-high, medium-low, and low risk categories, with frequency of supervisory activities increasing in step with a move up risk-levels. The minimum engagement model should be sufficiently detailed and appropriately calibrated to ensure adequate risk-sensitive supervisory 'presence' in the sector to drive positive AML/CFT compliance outcomes.

55.   An assessment of the adequacy of the current level of resources should be carried out, once a minimum engagement model has been determined. The minimum engagement model would be a critical measure of resource adequacy on an ongoing basis, responsive to changes in size and ML/TF risk levels of the supervisory population. The model can be used to ensure that the resourcing of the AML division is sufficient to implement the model, with some flexibility to undertake responsive ad-hoc supervisory activities as needed.

56. **The authorities should ensure that the supervisory manual for inspections and ongoing supervision and the annual planning cycle document is adequately comprehensive.** A supervisory manual should clearly set out the types (offsite and onsite) of activities that supervisors carry out (e.g., desk-based reviews, onsite walkthroughs, interviews, sample testing), along with guidance to carry out each of these activities. It is essential that supervisors carry out their work in a thorough/consistent manner to ensure effective oversight of supervisory activities.

57. **Adherence to the supervisory manual should be monitored and mechanisms for oversight should be in place.** In order to drive effective supervision, supervisory activities should be reviewed to ensure that the work is in line with the supervisory manual. This involves both the review and sign off of activities, and assurance testing to drive consistent practices across all supervisory activities.

58. **While there appears to be good practices for collaboration with prudential supervisors, it is not clear that AML/CFT receives adequate attention when supervisory activities are combined with prudential exercises.** The discussions related to AML/CFT sometimes take place as part of broader supervisory activities (e.g., a prudential inspection), while this can be a good opportunity to discuss a wider range of topics and lessen the burden on banks (with regards to facilitating numerous supervisory engagements), there is a risk that AML/CFT does not get adequate coverage. The supervisory strategy should clearly state the objectives of a particular AML/CFT supervisory engagement (e.g., review of transaction monitoring systems and controls, review meeting with the Head of AML/CFT Compliance) and whether a joint engagement is suitable should be driven by whether it is feasible to so while meeting the planned objective.

59. **The level of resources dedicated to input into prudential exercises seems disproportion to those dedicated to core AML/CFT offsite and onsite activities**. In the AML Division, there are two inspection teams (each consisting of a team leader and four risk experts). Two staff members (equivalent to 0.5 FTE) are dedicated to the prudential Supervisory Review and Evaluation Process (SREP). While it is important that AML/CFT supervisors contribute to the SREP, the allocation of a quarter of the AML/CFT risk experts to these activities would appear disproportionate and would benefit from further consideration.

Table 1. Supervisory Activities 2019–2022

Year	Full scope inspection	On-site thematic inspection (please include the theme covered)	Document-based thematic review	Ad hoc inspections
2019	3			
2020	1			
2021		4 (company risk assessment and customer risk assessment)		
2022		3 (company risk assessment and customer risk assessment)	1 (de-risking, process for decline customers and exit process)	

60. **AML/CFT supervisors carried out a total of 41 activities from 2019 to 2021.** The AML Division engages in supervisory meetings, participation in AML/CFT supervisory colleges, registration/authorization meetings, and meetings regarding the supervisory review evaluation process.

61. **In line with the development of a supervisory strategy, the AML Division needs to step up the level of onsite activities.** In 2020, the AML Division did not finalize (please clarify if this relates to finalization or completion) any onsite inspections. While full scope inspections were carried out in two banks in 2019, there has been a lack of onsite supervisory presence since then. Onsite inspection form an important part of an effective AML/CFT supervisory regime, these inspections can either be full-scope, targeted or thematic.

62. **It is not clear whether breaches of AML/CFT requirements are being adequately dealt with through sanctions/enforcement action.** When shortcomings are identified and in the AML Division determines that there are breaches that could warrant enforcement action/sanctions (e.g., fines), although the authorities opined that their views are considered, it is not clear (based on a formalized process) whether the views of AML/CFT supervisors are being adequately considered in the decision-making process

63. **The possibility to enforce a sanction against a bank is not extended to deficiencies identified as part of "supervisory visits".** Enforcement action/sanctions cannot be issued for deficiencies identified as part of supervisory visits Steps should be taken to ensure that enforcement action/sanctions are possible regardless of the type of supervisory engagement.

ML/TF Risks, Regulation and Supervision of VA Service Providers

Overview of the Sector

64. **Finland has a small VASP sector comprising 6 registered VASPs.** Based on preliminary analysis by the authrotieis, the aggregate turnover in the sector 46 600 EUR thousands (2021) with a total volume of transactions of in 2021–2022. The total number of active customers is 982 261 (31-12-2021).

Legal Framework

65. **The coverage of VA service providers in Finland's legal framework covers is largely aligned with the FATF definition.** Covered VASPs include those providing VA exchange, custodial services, and transfer services. Entities providing financial services are only covered by the definition only where the concerned VA are considered securities. For VA considered e-money, the applicable legal framework comprises the Payment Institution Act and Payment Services Act.

66. **The AML/CFT preventive framework for the VASP sector is not fully compliant with FATF standards.** Covered VASPs are subject to the full host of AML/CFT preventive measures set out in law[26], with the occasional transactions threshold lowered to the FATF prescribed 1000 EURs. However, the legal framework does not provision for the 'travel rule' for VA transfers.

---

[26] Under the Act on Virtual Currency Providers, VASPs are specifically required to have in place adequate risk management frameworks only for customer risks in their operations.

Market Entry Controls

67.   Finland has established a registration regime for covered VASPs. The Act on Virtual Currency Providers 2019 sets out that all natural or legal persons seeking to offer VA services in Finland are required to register with the FIN-FSA. VASPs created or based in Finland solely providing services abroad are not subject to this registration requirement. Further, service providers who undertake occasional provision of virtual currency services in connection with other activity that requires authorization/registration/prior approvals are not required to obtain a separate registration for the provision of VA services.

68.   The authorities published registration guidelines for VASPs and carry out an assessment prior to granting a registration. The registration requires that the applicant has a right to conduct business in Finland and is not bankrupt and fit and proper checks are carried out(with a focus on propriety). The applicant is further required to provide the FIN-FSA with assessments/reports on the following topics: protection of client money and virtual currencies belonging to client funds; marketing practices; certain AML/CFT related information. The process is mainly based on documentation review and where necessary a meeting may be set up with the applicant.

69.   The legal framework sets out detailed assessments for VASP registrations; however, gaps in coverage can affect the overall strength of market entry controls. Applicants are required to provide information on their service offerings as well as their proposed AML/CFT preventive controls frameworks, including the ML/TF risk assessment, operating guidelines on key AML/CFT controls as well as the organization of compliance functions and training. The registration process also includes a fit and proper testing of the applicant (for natural person applicants) and management (for legal person applicants). Upon receipt of registration applicants, the FIN-FSA will assess it for compliance with the requirements set out in law. No time-limits have been prescribed in law for the processing and grant of registrations. While the law sets out a detailed registration process, gaps in coverage of VASPs (limitation in definition and absence of registration requirements for VASPs providing services abroad) could weaken the strength of market entry controls in the sector and impact the effectiveness of the AML/CFT preventive and supervisory frameworks.

70.   The FSA should ensure a broad toolkit to detect unauthorized VASP activity. Provision of covered virtual currency services without registration is prohibited by law with non-compliance punishable by fines. In the absence of proactive identification and sanctioning of unauthorized VASP activity, unregistered VASPs can undermine the market entry regime in place in Finland, particularly given the borderless and transient nature of VASP activity. The FSA uses open-source information, as well as information from reporting entities and the FIU to identify unauthorized VASP activity. Continuing on these efforts, the FIN-FSA should ensure a broad toolkit to detect unregistered VASPs in collaboration with other domestic competent authorities (e.g., LEAs), utilizing open-source information, blockchain analysis tools, and whistleblowing mechanisms with proactive information-sharing and collaboration with foreign counterparts.

Risk Assessment

71.   The FSA has a good overview of the ML risks associated with VAs. The understanding of risks is informed by the NRA of 2021 and the Supervisor Specific Risk Assessment 2020. The NRA assesses the virtual currency sector as high-risk for ML citing (inter alia) the prevalence in use of virtual currencies by organized criminal use as well as anonymity, limited traceability of transactions, instantaneous global reach. The supervisor specific risk assessment covers virtual currency services in its

assessment of ML risks associated with the products and services offered by the supervisory population, with virtual currency services are assessed as posing significant ML risks.

72. **The FSA could consider more granular categorization VASP services based on risk-relevance in its determination of risks associated with product/services.** As noted above, virtual currency services as a whole are covered in the sectoral product risk assessment, without distinction between types of virtual currency services. This lack of granularity will limit the value of the determination of product risks in the sector due to the wide variance in ML risks associated with differences in types of services (e.g., fiat to VA exchanges v. custodial wallet services). A more granular, risk-relevant categorization (for instance, based on FATF's classification of VA services) would be beneficial to accurately determine risks associated with specific VA service types, which can then determine the weightages to be accorded with each service type in risk models.

73. **The FSA should develop an entity risk assessment model for the VASP sector.** The FIN-FSA does not have a separate risk-assessment model for the VASP sector. A tailored risk model for the VASP sector would be a useful tool to guide risk-based supervisory engagement. The model should consider the classical inherent risk factors as well as AML/CFT controls framework, with calibration of variables and weightages as appropriate to the VASP sector. It is important to note that while product risk, geographic risk and customer risk remain key inherent risk factors in the context of VA, distribution channel may be less relevant, given that non face to face (as standard) channel for VA.

74. **The FSA should prioritize the development of appropriately tailored returns for the VASP sector to inform entity risk assessment.** While the supervisory returns for the banking and payments sectors seek limited input on provision of virtual currency services (i.e., whether entities in the respective sector provide VA services), the FSA does not have separate supervisory returns for the VASP sector. The development of appropriately tailored data collection tools is a priority for the sector to enable assessment of entity level risks. Questions on the scale of activity across the classical inherent risk factors (product, customer, geography, delivery channel) as well on AML/CFT controls will be relevant for VASPs. In addition, the returns should also collect risk-relevant information specific to the VASP sector, including information on the range of VASP services offered, types of virtual currencies used in the VASPs' transactions, any anonymity enhancing services provided, delivery channels used by customers, among others. These VASP specific questions will also be important additions to the returns for the banking and payments sector to ensure adequate information related to any VA activity undertaken by entities in the sector.

Supervisory Activity

75. **The FIN-FSA should commence active supervision in the VA sector.** While recognizing its relatively small size, the authorities indicated that no supervisory activity has yet been undertaken in the sector. This is concerning since the NRA assesses the sector as posing significant ML risks. The authorities should ensure active supervisory engagement in the sector commensurate with assessed risk levels, with upskilling of resources as needed to appropriately engage with the sector. As discussed above, subjecting VASPs to a minimum engagement model can help ensure risk-sensitive engagement while assessing resource adequacy on an ongoing basis.

Key Recommendations

Recommendations
Cross-border and Non-resident ML/TF Risk Understanding - Enhance further national understanding of ML/TF cross-border and non-resident risk, by incorporating additional sources of data (e.g., macro-economic variables such as investments) and other information (e.g., business models of payment service providers) into the national/sectoral risk assessments. - Develop a national mechanism for comprehensive monitoring of cross-border financial flows.
sssThe Supervisory ML/TF Risk Assessment **Banks** - At the sectoral level, the risk assessment methodology should be expanded to include a more comprehensive set of inherent risk factors (i.e. customer, geography, and delivery channel risk), along with the inclusion of all risk-relevant categories of product/services (e.g. correspondent banking) - The collection of more granular information on key risk areas (product/services) and the inclusion of transactional level information. **VAs** - The FSA could consider more granular categorization VASP services based on risk-relevance in its determination of risks associated with product/services. - The FSA should develop an entity risk assessment model for the VASP sector - The FSA should prioritize the development of appropriately tailored returns for the VASP sector to inform entity risk assessment.
AML/CFT Risk-Based Supervision **The authorities should take steps to ensure effective supervision of banks and VA service providers** - A more detailed supervisory strategy should be established for both banks and VASPs. - An assessment of the adequacy of the current level of resources should be carried out, once a minimum engagement model has been refined (including consideration of whether AML/CFT received adequate attention when supervisory activities are combined with prudential exercises).

- The development of an AML/CFT supervisory manual.

- An increase in the level of onsite supervisory activities in banks and the commencement of active supervision of VASPs.

- Full alignment of the AML/CFT preventive framework for the VASP sector with the FATF standards

- The FSA should ensure that a broad toolkit is implemented to detect unauthorized VASP activity

Annex I. Using Payments Data and Machine Learning for Financial Integrity Surveillance Data and Variables used for the Isolation Forest Model

Formulating ML as outlier payments activity, the IMF staff developed an unsupervised machine learning approach based on Isolation Forest algorithm. The unsupervised outlier detection algorithms are aimed at identifying rare events that are statistically different from the rest of the observations, providing an efficient tool to analyze "big data" on cross-border payments to detect outlier activity that poses higher financial integrity risk. One of the advantages of unsupervised machine learning is its ability to adapt to new data with evolving patterns without the need for manual adjustments, which is particularly useful for working with large and dynamic datasets, such as global payments system.

Targeting the outlier detection algorithm on financial integrity risks requires incorporation of ML-related risk factors. Application of anomaly detection algorithm directly on the global payments system results in identification of small number of large value transactions between the largest economies and financial centers as outliers. Monitoring global financial flows with an objective to detect unusual and potentially suspicious patterns of financial flows requires incorporation of indicators of higher and lower ML risks as outlined below.

Results of the outlier detection algorithm can contribute to countries' cross-border ML risk understanding and provide a starting point for further analysis and scrutiny. Aggregated information on the countries and payments activity identified by the outlier detection algorithm can contribute to detailed understanding of cross-border payments risks, identifying specific areas for further strengthening of geographic ML risk understanding, introduction of policy countermeasures as well as closer monitoring of certain types of institutions, payments and customers, if required to mitigate the ML risk. The outlier detection approaches can be also employed by the authorities leveraging more granular payments data, including on individual transactions with customer data, which can be an important tool to trigger tactical analysis.

Unsupervised learning-based anomaly detection methods may generate false positives. Moreover, identification of outliers presented in this section is based on the payments data with some degree of aggregation, which is different from the usual application of outlier algorithms to payments data[27] and not suited for detection of ML. As a result, while the machine learning algorithm is based on AML-specific risk factors, identified outlier activity does not indicate illicit financial flows.[28] These techniques (and the results of analysis) should be used as an input to risk assessments and operational analyses in conjunction with other methods, including expert knowledge and judgement.

Algorithm

Application of the Isolation Forest algorithm includes the following steps:

- **Random partitioning:** The algorithm randomly selects a feature and a split value within the range of that feature's values. This creates a partition that divides the data points into two

---

[27] For example as used by commercial banks for transaction monitoring and fraud detection.

[28] Variety of exogenous shocks can result in outlier activity - for example, sudden changes in the pattern of payments due to the shift in the settlement arrangements of a bank.

subsets. For example, the algorithm randomly selects a feature – e.g. transaction amount, and selects a split value (e.g., USD 1,000) within the range of transaction amounts.

- **Recursive partitioning:** The algorithm continues to split the data into two subsets based on the selected split values. It continues recursively, randomly selecting features and split values, until each subset contains a single transaction.
- **Building an isolation tree:** The recursive partitioning creates for each transaction in the dataset an isolation tree with a path length equal to the number of steps required to isolate the transaction.
- **Scoring anomalies:** All transactions are scored based on their average path length across all isolation trees. If a transaction has a shorter average path length compared to randomly generated normal transactions, it is considered more likely to be an anomaly. A threshold anomaly score was set so that 0.01 percent of all transactions constitute an anomaly.

Data

1) **Payment's data:** The project uses data on payments between the customers of financial institutions[29]. The payments data is aggregated on the level of a financial institution and anonymized by replacing the name of the financial institution with the corresponding country name. Payment's data includes the countries of financial institutions that originated and received the payments, as well as countries of correspondent financial institutions that facilitated the payment. The data includes the currency, number and value of transactions that passed through each of these payment corridors (originator-correspondents-beneficiary).

2) **Compliance with AML Standards:** The level of compliance with international AML Standards is based on the results of assessments by the FATF (international AML/CFT standard-setter) and respective regional bodies. The index of compliance with the AML/CFT Standards is based on the assessment's ratings of effectiveness of a given country's AML/CFT regime. Where not available (mostly earlier periods) the index is based on the technical compliance of a given country's legislation with the AML/CFT Standards. The AML compliance index is a time series, which takes into account new and follow-up assessments.

3) **Portfolio and direct investments.** Investment data from the Coordinated Portfolio and Direct Investment surveys.

4) **Foreign trade.** IMF's Direction of Trade data for trade in goods - we use the export data, which appears to be more accurate than the imports data also analyze mirror trade statistics to detect potential discrepancies in valuation of foreign trade by the counterparties. WTO and OECD data on trade in services.

5) **Trade in Services.** The OECD-WTO Balanced Trade in Services Database

6) **Corruption.** Control of corruption indicator from the Worldwide Governance Indicators.

---

[29] The category of customers of financial institutions includes households, non-financial corporates, and non-bank financial corporates. Data on payments by financial institutions also includes payments of some non-bank financial institutions that have own BIC numbers.

7) **Financial Secrecy and Tax Haven Indexes.** Financial Secrecy Score and Tax Haven Score from the Tax justice network.

Methodological Approach

76.   We use only cross-border payments, dropping the payments that originate and are received in the same country.

77.   The (i) *value of transactions* and (ii) *the average transaction* sent through a given payment corridor are normalized using z-scores and the means and standard deviations for the outflows from *the ordering country*, as not to bias the results towards the advanced economies and established financial centers that have higher value of transactions and the average transactions.

78.   We also normalize the (i) *value of transactions* and (ii) *the average transaction* of a given payment corridor using z-scores and means and standard deviations for the flows via a particular *payment corridor* (unique payment chain of originator-correspondents-beneficiary, in other words a unique set of banks involved in the transaction). This variable is designed to detect appearance of the new payment corridors or payment corridors that are processing unusually high overall values or have high average transaction value, which may potentially indicate abuse of a financial institution.

79.   The AML Compliance data is incorporated into the model by using interaction of the AML index with the variables (i) *value of transactions normalized by ordering country* and *by payment corridor* and (ii) *average transaction normalized by ordering country* and *by payment corridor.* We use the AML index for the ordering country to indicate the higher risk of outflows from a country with lower effectiveness of the AML/CFT regime. We multiply the normalized *value of transactions* and the *average transaction* by the AML index of the ordering country, which ranges from 0 to 1 (0 being the lowest level of compliance with the AML/CFT Standards), so the *value of transactions* and the *average transaction* are weighted proportionate to the degree of weakness of the AML compliance, thus increasing the likelihood of a payment corridor being an outlier.[30]

Economic activity, such as trade and portfolio/direct investment, provides the economic rationale for the financial flows, representing lower risk of ML. We introduce a ratio of the *value of transactions* between the two given countries and the portfolio/direct investment between these two countries.

80.   The lower the amount value of investments between the two countries, the higher this ratio, thus increasing the likelihood of being an outlier.

81.   Portfolio and direct investment have semiannual and annual frequency respectively, so for this ratio we sum up all of the flows between the two countries over 6 or 12 months correspondingly, which is then added to all payments between the two countries over the respective periods.

82.   Similarly, we introduce a ratio of the *value of transactions* between the two given countries and the foreign trade in goods and services (both imports and exports) between these two countries. The lower the amount of trade between the two countries, the higher this ratio, thus increasing the likelihood of being an outlier.

---

[30] The threshold for the outlier payments is set at the 0.0001 percent of all payment corridors.

83. Flows to/from countries with high financial secrecy or harmful tax practices represent higher risk and we introduce variables that are the result of multiplication of the *financial secrecy* and *tax haven indexes and* (i) *value of transactions normalized by ordering country* and *by payment corridor* as well as (ii) *average transaction normalized by ordering country* and *by payment corridor.* The higher are the indexes for financial secrecy and tax haven, the higher is the weighting of the corresponding payments, thus increasing the likelihood of being an outlier.

84. Outflows from countries with higher perceived corruption represent higher risk and we incorporate corruption perception variable by multiplying the control of corruption indicator by the (i) *value of transactions normalized by ordering country* and *by payment corridor* and (ii) *average transaction normalized by ordering country* and *by payment corridor*. The higher are the corruption perceptions, the higher is the product of this multiplication, thus increasing the likelihood of being an outlier.

85. Trade and investment data have longer lag in availability as compared to the payments data and in order to run the model once the payments data is available, we extrapolate the trade and investment data. We use the average of previous periods, adjusted for the projected GDP growth, and for the seasonality of the trade data, which is monthly.

86. A measure of macro-criticality of the outflows adds a focus on outflows big enough to have a potential to destabilize external or domestic stability of the ordering country. We add a ratio of the *value of transactions* (nominal values, not normalized) to the GDP of ordering country.

87. Based on the algorithm's results, the variables with the highest contribution to the output (based on the Shapley values analysis), are the (i) foreign direct investment, (ii) foreign portfolio investment and (iii) the foreign trade. In other words, whether the high financial flows between the two countries correspond to the high trade or portfolio or direct investment flows is the most important determinant of whether the payments would be identified as outliers.