

The role of trade support mechanisms in promoting exports: an analysis for Italy.

Pietro Scacciante

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RESUMO

As agências de crédito à exportação (ECA) apoiam os exportadores nacionais, assumindo riscos comerciais e políticos que os credores privados evitam. Ainda são escassos os dados rigorosos relativos à Itália, apesar de o país depender fortemente da procura externa. Esta tese mede a forma como a SACE, a ECA italiana, afecta as exportações bilaterais de bens para 102 países parceiros entre 2012 e 2018. Utilizando um painel de modelos gravitacionais com controlos económicos, demográficos e geográficos padrão, o estudo conclui que a cobertura da garantia SACE tem um impacto positivo e estatisticamente significativo nas exportações italianas, depois de ter em conta o PIB do parceiro, a distância e o estatuto de país sem litoral. Por outras palavras, quando a SACE garante os riscos num mercado, a Itália envia mais mercadorias para esse mercado. A análise também confirma os padrões esperados: as economias maiores e mais abertas importam mais, enquanto a distância e a geografia sem litoral criam fricções ao comércio. Ao documentar a eficácia do SACE numa grande economia orientada para a exportação, o estudo alarga os dados sobre as ECAs e apoia a ideia de que estas desempenham funções tanto de seguro como de promoção estratégica do comércio.

PALAVRAS-CHAVE: Exportações italianas, agência de crédito à exportação, garantias de crédito à exportação, SACE, modelo gravitacional, financiamento do comércio

Título: O papel dos mecanismos de apoio ao comércio na promoção das exportações: uma análise para a Itália.

Autor: Pietro Scacciante

ABSTRACT

Export credit agencies (ECAs) support national exporters by taking on commercial and political risks that private lenders avoid. Rigorous evidence for Italy is still scarce, even though the country relies heavily on foreign demand. This thesis measures how SACE, Italy's ECA, affects bilateral goods exports to 102 partner countries over 2012-2018. Using a gravity-model panel with standard economic, demographic, and geographic controls, the study finds that SACE guarantee coverage has a statistically significant, positive impact on Italian exports after accounting for partner GDP, distance, and landlocked status. In other words, when SACE guarantees the risks in a market, Italy ships more goods there. The analysis also confirms expected patterns: larger, more open economies import more, while distance and landlocked geography create frictions for trade. By documenting SACE's effectiveness in a major export-oriented economy, the study extends the evidence on ECAs and supports the view that they serve both insurance and strategic trade-promotion roles.

KEY WORDS: Italian exports, export credit agency, export credit guarantees, SACE, gravity model, trade finance

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Author: Pietro Scacciante

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Chapter 1: Introduction

1.1 Introduction

It's widely recognized that international trade is a key driver of sustainable growth in the global economy. When businesses engage in export transactions, sellers often extend credit to buyers to make the purchase of goods and services possible, effectively financing these cross-border deals. However, stepping into international markets comes with greater risks than sticking to domestic ones. These risks can be political like a buyer's government blocking payment, or commercial, such as a buyer simply failing to pay up.

To tackle these uncertainties, export credit insurance steps in, offering protection against both political and commercial setbacks. In fact, private insurers often shy away from covering deals in emerging or unstable markets, leaving a gap that governments fill through Export Credit Agencies (ECAs). These agencies take on the risk of default in import markets by providing Export Credit Guarantees (ECGs), giving exporters a safety net to venture into new territories. Export Credit Agencies (ECAs) play a crucial role in addressing these barriers by offering insurance and financial guarantees, thereby facilitate companies to engage in global trade. Extensive research has explored the influence of ECAs on national export performance across various countries, such as Germany and United States, where studies consistently highlight their contributions to increased trade volumes. In contrast, Italy, an export-driven economy with a robust presence in global markets, has received surprisingly little scholarly attention regarding the impact of its ECA, SACE (Servizi Assicurativi del Commercio Estero), on its export dynamics. This absence of research stands out, given SACE's relevant role in supporting Italian businesses as they navigate the complexities of international trade.

SACE dedicates the majority of its efforts to export credit, providing critical support to Italian firms seeking to expand abroad. However, despite its prominence, the specific ways in which SACE's activities shape Italy's export trends remain largely unexplored. While studies on ECAs in other nations have mapped their tangible effects on export performance, no comparable body of work exists for Italy, leaving a significant gap in our understanding of SACE's influence. This thesis seeks to address this gap by investigating the relationship between SACE's role and Italian export.

1.2 Research objectives

This thesis builds on the research gap that has been identified regarding the empirical study of SACE's effect on Italian export dynamics. It sets out specific objectives for an investigation of this relationship. The aim is to quantitatively assess the magnitude and statistical significance of SACE's export credit guarantees on Italian bilateral export performance. To do this, the study's main goal is to create and use econometric models within a gravity model framework. It will use both Pooled Ordinary Least Squares and Fixed Effects models to get an estimation of SACE's effect while taking into account other known factors that affect trade. Furthermore, this study aims to find and explain the economic effects of other important factors that affect Italian exports, such as the GDP and population of the partner country, the distance between the two countries (exporter and importer), and the level of trade freedom. By achieving these goals, this thesis aims to provide evidence of SACE's role, which will add to the current academic literature on export credit agencies and offering insights into Italy's export promotion strategies.

Chapter 2: Italian export

2.1 Italian Export overview

Italy's export stands as crucial component of the country's economic structure. According to recent data from World Trade Organization (WTO), Italy ranks as a the sixth-largest export worldwide in 2024, with export values reaching \$670 billion (equivalent to €624 billion) in 2024. Italy also closed the year with a merchandise trade surplus of €54.9 billion, the widest since 2017, signaling that export growth is running ahead of import demand (ISTAT, 2024)

Italian export making up about 33% of Italy's GDP in 2024 (Trading Economics, 2024). The country has a varied mix of trading partners, with the European Union as it's leading market of destination, which absolve 51.6% of total exports. Beyond the EU, non-European countries, especially United states and UK, provide essential markets for Italian exports. Key export destinations include Germany (11.9%), the United States (10.7%), France (10.1%), Spain (5.3%), and Switzerland (4.9%) and UK (4.5%) (Comtrade, 2024). Exports to high-potential non-EU markets such as Türkiye, the United Arab Emirates and Saudi Arabia grew by more than 20 % in 2024, lifting the combined extra-EU share of Italian exports above 48 % for the

first time (MAECI, 2025). The vitality of Italian export is also evident, especially in the last decade. Compared to other G7 nations like France (+24%), Germany (+27%), Japan (+11%) and the United Kingdom (+12%), Italy's merchandise exports have increased by 41% in current US dollars since 2015 (OEC, 2024). Also, Italy's broad product and technological base is reflected in its 14th place on the global Economic Complexity Index in 2024, out-performing other European countries like Spain (OEC, 2025). OECD TiVA data further show that around 79 % of the value embodied in Italian exports is generated domestically, showing the deep local supply-chain footprint of the "Made in Italy" brand (OECD, 2021). This high domestic value-added shows the multiplier effect of export growth on the Italian economy, which translate directly into national income and employment. Italy's success in diverse, high-value sectors, from luxury goods to specialized machinery, demonstrates a resilience rooted in product differentiation and quality. The Italian exporting sector, according to a study from European commission (2021), directly sustains nearly 3.2 million job domestically. This trend emphasizes how important exports is for economic progress and job market and highlights the necessity of improving Italy's competitive position internationally.

Around 75% of Italy's national exports comes from industries such as machinery, metallurgy, fashion, automotive, agrifood, chemicals and pharmaceuticals. Within the celebrated "Made in Italy" label, the wine and beverage sector leads globally with a 9.4% market share, followed by textiles/clothing (6.1%), furniture (6.0%), machinery (5.4%), and jewelry (5.0%) (Confcommercio, 2024). Italy's major export industry is machinery and automation, which accounts for over 18% of its total international trade and places the nation as the fifth-largest exporter of machinery worldwide. This field spans a wide array of products, from industrial machinery to precision tools and automation systems. High-tech goods, including pharmaceuticals, aerospace components and precision instruments, now make up about 16 % of Italy's extra-EU shipments, one of the highest ratios among large EU economies (Eurostat, 2024). Italy's fashion and clothing sector, with more than 50,680 companies holds a significant leading position in the EU, With a turnover of over 96.4 billion euros, this sector accounts for 45% of the EU's overall output in this category (Eurostat, 2023). Fashion, textile and accessories are also the 2nd sector by contribution to the Italian trade balance, with a high export propensity (75% of turnover). Italy is the 2nd-largest exporter worldwide in the textiles, fashion, and accessories domain, following China, with an export value of 66.6 billion euros (Confindustria, 2023).

Meanwhile, the pharmaceutical industry, highly geared toward exports, recorded €48 billion in overseas sales in 2023, making up 7.5% of Italy's total export volume (OEC, 2024).

On the other hand, in the agri-food sector, Italian agri-food products are known worldwide and thus their demand is very high, accounting for a total of more than 62 billion euro worth of exports (OEC, 2024).

The significant role played by these industries in Italy's export performance is closely tied to the contributions of small and medium-sized enterprises (SMEs), which are central to Italy's economy production.

Italian SMEs (businesses employing between 10 and 249 people) are projected to reach approximately €273 billion in exports by 2026, reflecting their growing importance in the national economy. These businesses produce a combined turnover of 1.4 trillion euros and contribute about half of national exports (45%, compared to 20% of German and French SMEs and 32% of Spanish counterparts) (SACE & The European House – Ambrosetti, 2023). Despite their significance, Italian SMEs face significant challenges in export markets, particularly related to financing constraints. Forlani (2010) indicates that entry probability into export markets is affected by cash availability for constrained firms, as new exporters must rely on internal liquidity to cover the substantial sunk costs associated with internationalization. Moreover, Minetti and Zhu (2011) find that the probability of exporting is 39% lower for credit-rationed Italian firms and that rationing reduces foreign sales by more than 38%. While credit rationing also appears to depress domestic sales, its impact on foreign sales is significantly stronger, especially SMEs with limited banking relationships. These financial barriers can seriously limit the expansion potential of otherwise competitive firms. These challenges are central for Italian economy to be approached since the role played by small and medium-sized enterprises (SMEs), which form the core of Italy's economic system, play a substantial contributions of Italy's export performance. Positioned strategically within global value chains and industrial districts, these enterprises significantly contribute to the international diffusion of the "Made in Italy" brand. Despite facing periodic economic challenges, SMEs in Italy have notably strengthened their financial structures in recent years, maintaining relatively moderate debt levels. Between 2010 and 2019, Italian SMEs demonstrated substantial productivity growth, approximately 7%, surpassing productivity levels in both Germany and Spain, achieving over €50,000 of added value per employee in 2019 (SACE & The European House – Ambrosetti, 2023). By 2021, Italy counted over 200,000 SMEs employing nearly 5.4 million

people and generating close to 40% of Italy's total added value.

Italian SMEs have a significant international presence, especially within manufacturing. Remarkably, 57% of small manufacturing firms and over 90% of medium-sized enterprises engage in exporting activities (Eurostat, 2023). Italian SMEs exhibit a strong export propensity, generating more than one-third of their total revenue internationally, a higher percentage than SMEs in key European economies like Germany, France, and Spain. To give some context, In 2022 alone, Italian SMEs exported goods valued at €219 billion, accounting for 46% of Italy's total exports and experiencing an annual growth rate of 2.7% between 2017 and 2022, reflecting a robust recovery from the COVID-19 pandemic. Medium-sized enterprises have notably driven this growth. Although fewer in number compared to small enterprises, medium-sized companies exported more and achieved superior performance compared to Italy's overall export growth. Manufacturing remains central to SME exports: approximately 7 out of 10 exporting SMEs operate within manufacturing sectors (around 35,000 firms, including 26,000 small enterprises). Indeed, manufacturing accounts for 80% of total SME value exports, dominated by three main sectors: mechanical engineering (€38.8 billion in 2021), metal products (€31.8 billion), and food and beverages (€19.3 billion) (ICE-ISTAT, 2023). Regarding export destinations, most exporting SMEs primarily targeted European markets in 2021, particularly within the EU, which absorbed over half (€123.5 billion) of SME exports. Although small enterprises constitute the majority of exporting SMEs, they typically export lower values and encounter more significant barriers to international markets compared to medium-sized enterprises. Consequently, their export propensity is notably lower than that of medium-sized firms.

In conclusion, Italy's export strength, pushed by the vitality of its SMEs, is a crucial catalyst for economic development and creation of jobs. Mitigating the financial and credit obstacles encountered by these firms through supportive institutions and favorable regulation is crucial for maintaining Italy's competitive in international markets, as well as sustaining ongoing economic growth and the global significance of the "Made in Italy" brand.

Chapter 3: The Export Credit Agencies

3.1 The role of Export Credit Agencies

Export credit agencies (ECAs) are specialized financial institutions, typically public or quasi-public entities, that play a significant role in international trade by providing government-backed financing and insurance support to exporters. Around one hundred countries worldwide maintain ECAs to help their domestic firms compete in global markets (Kabir et al., 2024). Governments utilize ECAs as policy instruments to address financing gaps and risk management in export transactions. International trade often involves substantial frictions and risks: exporters need working capital to produce goods before payment, and they face the possibility of foreign buyers defaulting on payment or requiring credit to make purchases. Private financial institutions can be hesitant or unable to fully meet this demand, as trade finance markets tend to be specialized and concentrated, which may lead to an under-provision of credit and insurance for cross-border deals (Niepmann & Schmidt-Eisenlohr, 2017; Xu, 2022). ECAs have emerged to fill these gaps by offering financial products that reduce risk and improve access to capital for export transactions, thereby aiming to boost national exports and associated employment and growth. Governments provide officially supported export credits through ECAs as a way to support domestic exporters in overseas sales, and ECAs can be either government institutions or private companies operating on behalf of the government (OECD, 2021). They do not typically compete directly with commercial banks; rather, ECAs complement the private sector by taking on risks or extending credit terms that private lenders find too difficult or costly, essentially serving as lenders or insurers for export deals. The forms of support ECAs provide generally fall into a few broad categories. One major form is export credit insurance, which protects exporters (or their financing banks) against losses from buyer non-payment due to commercial risks (e.g. insolvency) or political risks (e.g. war or government expropriation) in the importing country. Another key instrument is the export credit guarantee, whereby an ECA guarantees a loan made by a commercial bank to a foreign buyer (or to the exporter), so that if the buyer defaults, the ECA will compensate the lender for most of the loss. A third common modality is direct lending, in which the ECA provides a loan directly to the foreign buyer of the domestic export, often at fixed interest rates or with other advantageous terms. Some ECAs also offer refinancing or interest-rate support programs, for instance, subsidizing the interest cost on export loans or providing funds to commercial banks

to finance exports, although such practices are constrained by international rules to prevent unfair competition. In practice, officially supported export credits can thus take the form of “pure cover” support (insurance or guarantees that cover loans extended by private institutions) or “direct financing” support (government-backed loans or interest subsidies for export deals). These tools allow exporters to offer attractive payment terms to foreign buyers (such as deferred payments over several years) with confidence that the risk of non-payment is mitigated by the ECA’s backing.

The structure and organization of ECAs vary across countries, reflecting different legal frameworks and economic priorities. In some countries, the ECA operates as a government department or program within a ministry, whereas in others it is set up as an autonomous state-owned corporation or as a specialized export-import bank. There are even hybrid models where private insurance companies administer export credit programs with government guarantees, effectively acting on behalf of the state. Despite these institutional differences, ECAs worldwide share broadly similar mandates and often adhere to common international guidelines. Most leading ECAs are participants in the OECD’s Arrangement on Officially Supported Export Credits, a framework established to coordinate terms and conditions of export credit support among major trading nations. The OECD Arrangement sets limits on the most financing terms (such as minimum interest rates and maximum repayment periods) that participating countries’ ECAs can offer. This helps to level the playing field and curtail a race to the bottom in subsidized export financing, in line with World Trade Organization rules. Not all major exporting nations are OECD members or Participants to the Arrangement, but over time there has been convergence in practices and a recognition of the need to avoid destructive subsidy competition. Aside from such rules, ECAs differ in the scope of their activities. Some ECAs focus exclusively on medium and long-term export credits while leaving short-term trade credit insurance to the private market. Other ECAs (especially in emerging markets or smaller economies) cover a mix of short-term and long-term transactions, since private insurers or banks may not adequately serve high-risk or small-scale export sectors in those countries. These differences in mandate mean that the volume of support provided by ECAs can vary widely. In absolute terms, China, Germany, Korea, and the United States are among the countries spending the most on export credit programs, while relative to their total exports, countries like those in Scandinavia are particularly heavy users of ECA support (Kabir et al., 2024). Recent estimates indicate that ECAs collectively have a significant global footprint: the world’s fifteen largest

ECAs together accounted for over \$1.3 trillion in new commitments (Smith School of Enterprise and the Environment, 2024). At the same time, many ECAs strive to operate on a break-even or self-sustaining financial basis over the long run, charging fees or premia that correspond to the risks taken. Following heavy losses in the 1980s debt crisis era, most industrial-country ECAs underwent reforms in the 1990s to tighten risk management and pricing, and by the 2000s many had returned to profitability. Thus, contemporary ECAs often seek to support exports in a way that is financially conscious and compliant with international disciplines, blending public policy objectives with commercial principles (OECD, 2008).

Theoretical perspectives on ECAs center on the justification for their existence and the potential distortions they might introduce. From a public economics viewpoint, the primary rationale is twofold: (1) to counteract market imperfections in export financing, and (2) to level the playing field against foreign government support (Stephens, 1999). Market failures in trade finance can arise due to information asymmetries and high risks: banks may be reluctant to lend to an overseas buyer or to a small exporter with limited collateral, especially for sales to developing countries or unstable regions. In such cases, a profitable export opportunity might be lost simply for lack of affordable credit insurance or lending, representing a welfare loss. By providing insurance or guarantees, ECAs enable these transactions to proceed, effectively internalizing external benefits (e.g. broader export-led growth or employment) that private financiers do not consider. The “self-defense” rationale is closely related, if exporters from other countries are benefiting from state-backed credits, a nation may feel compelled to offer its own support or risk seeing its firms lose contracts despite being otherwise competitive (Kabir et al., 2024). This perspective frames ECAs as necessary tools in an environment where many governments engage in export promotion. In contrast, a more skeptical theoretical perspective draws from free-market and public-choice theories: it posits that if capital markets are sufficiently developed, ECAs might be redundant or even counterproductive. Critics argue that in modern financial systems, large banks and insurers can diversify risks and have global reach, so most creditworthy export deals should find private funding without government intervention. If an export deal cannot attract any private financing, perhaps it is too risky or economically unviable, and subsidizing it would misallocate resources (Bau and Matray 2023). Furthermore, there is the concern of additionality: are ECAs truly creating additional exports, or simply underwriting deals that would have happened anyway? From this angle, ECAs could merely be offering cheaper financing to big companies, effectively constituting a subsidy or “corporate welfare”

that boosts the firms' profits but does not change their export behavior. There is also a concern about international spillovers, widespread use of ECAs might lead to overcapacity in certain industries globally or distorted trade patterns if support is heavily biased towards certain sectors like aerospace or defense. These debates mean that the net impact of ECAs is ultimately an empirical question, and researchers have tried to determine whether ECAs truly enhance export performance or not.

In summary, export credit agencies have become integral components of the trade policy toolkit in many countries, functioning at the intersection of finance and international commerce to support national exporters. They provide insurance, guarantees, and direct loans that enable exporters to extend credit to foreign buyers or to secure working capital for international sales, in cases where commercial lenders alone might be unwilling to assume the risk. ECAs thus serve to bridge gaps in the market, helping domestic businesses reach overseas customers and helping foreign buyers obtain the financing needed to import goods and services. While ECAs differ in their institutional setups and can vary in aggressiveness or focus, their common objective is to facilitate exports that contribute to home-country economic growth. The academic and policy literature largely affirms that ECAs fulfill this objective: when properly managed and subject to agreed-upon international disciplines, they have been effective in boosting exports.

3.2 The role of SACE

Servizi Assicurativi del Commercio Estero (SACE) operates as Italy's Export Credit Agency (ECA). Sace's main role is to facilitate Italian exports and improve international competitiveness of Italian businesses. In the Italian economic framework, the role of the governmental agency SACE is especially important given the structure of the Italian economy, where, as already mention, almost 40% of total added value is driven by small and medium-sized enterprises (SMEs). These SMEs are the ones more exposed to credit constraints and risk management challenges, which significantly limit their ability to compete internationally. SACE's support, through tools like export credit insurance, helps address these barriers, improving the resilience and global reach of Italian businesses. This is accomplished using various financial instruments that reduce risks linked to international trade and investments (Roberto de Bortoli, 2024). Export credit insurance serves as a fundamental service, covering companies from non-payment or contract termination by foreign buyers. In this way, SACE can

facilitate Italian companies access to credit and to promote investments.

SACE's history shows how important it has become to Italy's economy over time. Established in 1977 as a special section of the National Insurance Institute to provide export credit guarantees, it was later reorganized in 1998 into an entity with legal personality under public law, formally adopting the name SACE. In the early 2000s, SACE changed again. On January 1, 2004, it became a joint-stock company, and the Italian Ministry of Economy and Finance owned all of its shares. To raise capital during the sovereign debt crisis in 2012, the government sold SACE to Cassa Depositi e Prestiti (CDP), a state-owned financial group. However, recognizing SACE's strategic role which expanded further when SACE took on economic support duties during the COVID-19 pandemic, the Italian Treasury decided to reassert direct control. In 2022, ownership of SACE was transferred back to the Ministry of Economy and, demonstrating the agency's national importance. Italy also set up SIMEST in 1990 as a complementary organization to help with international investments; while SIMEST later worked alongside SACE as part of an export support hub, it is now under CDP's umbrella, which shows how Italy's export-support institutions have been restructured over time. The SACE group comprises multiple subsidiaries, each of them designated for a particular role. The entities comprise SACE FCT, which specializes in factoring; SACE BT focused on credit insurance, surety bonds and property damage protection; and finally SACE SRV, responsible for credit recovery and information asset management (Sace, 2021). Altogether these entities collaborate to facilitate the expansion of Italian companies internationally.

The management risk is crucial for an ECA and for SACE framework the risk management framework is composed by: capital requirements, capital adequacy processes and disclosure requirements. Based on these components, SACE annually establishes a risk appetite framework to govern the levels and categories of risk it is ready to accept to support Italian businesses. In practice, this framework is based on the "three pillars" of Solvency II-style supervision. Pillar 1 sets quantitative capital charges for the four main types of risk: technical/credit, market, counterparty, and operational. Pillar 2 says that SACE must do an Own-Risk-and-Solvency Assessment (ORSA) and approve a Board-level Risk-Appetite Framework (RAF) every year. Pillar 3 mandates public disclosure on capital adequacy, risk exposure and governance arrangements (SACE Risk Management Report, 2024).

The RAF is turned into strict limits and metrics (like Economic Capital, Market-VaR, single-obligor, and sector concentration caps) that are passed down to every underwriting desk. An

independent Risk Management department that reports directly to the Chief Risk Officer updates these limits, checks the accuracy of internal models, runs stress tests and determines both current and prospective internal capital.

SACE divides its risks into five main groups:

- (i) Technical/Credit risk (the risk of obligors defaulting);
- (ii) Market risk on the investment portfolio, which is managed through asset-liability matching;
- (iii) Operational risk, which is tracked through regular risk self-assessments;
- (iv) Liquidity and funding risk;
- (v) Concentration risk by obligor, industry, or geography.

It also maps and reports on other types of risk, like interest-rate risk on non-trading assets, reputational risk and compliance risk.

As shown by his financial results, SACE operations have significantly contribute to the Italian economy. In fact, SACE supported projects for a total amount of 54.6 billion euro (Financial results, Sace, 2023). According to their financial statement, This support approximately 50000 companies of which many small and medium enterprises. Moreover, SACE's activities produced an impact of 145 billion euro on the Italian economy and supported approximately 950000 jobs (Financial results, Sace, 2023).

To further show the volume of the agency, the portfolio of insured commitments and guaranteed transactions amounted to 260 billion euro, reflecting a 7% increase on 2022. Building on these strong results, SACE launched an innovative tool in 2017 the "Push Strategy" an untied buyer-credit scheme that proactively pushes Made-in-Italy content into high-potential markets and complements its traditional, contract-tied export-credit tools. Under the programme, SACE guarantees medium to long-term loans (typically 5-12 years, minimum size about USD 30 million) arranged by international banks for selected foreign buyers before any supply contract is signed. In return, each borrower signs a "Push Letter" that (i) pledges to source a pre-agreed volume of Italian goods and services within 3-5 years, (ii) mandates participation in at least two annual business-matching events organised by SACE and Italian industry associations, and (iii) requires quarterly reporting on procurement progress. Because the facility is untied and therefore not subject to the OECD Arrangement, its structure can be flexibly adapted to the borrower's cash-flow profile while SACE can cover up to 100 % of political and commercial risk, making it attractive for large infrastructure, energy and manufacturing projects.

The results demonstrate its effectiveness: since 2017 the Push Strategy has mobilised more than

€7 billion in financing, generated over 150 matchmaking events and involved 5,500+ Italian companies, mostly SMEs, in new global supply chains (SACE, 2023). Recent transactions illustrate both its scale and evolution, such as the US \$42 million facility for Vietnam's TTC AgriS in 2024 and the first "Green Push" deal in 2023 with Brazil's Raízen, integrating ESG targets into the mechanism and aligning it with SACE's INSIEME 2025 business plan. Through this combination of untied financing, structured procurement commitments and active business networking, the Push Strategy has become a cornerstone of SACE's mission to expand Italy's export footprint in emerging and strategic markets. Complementing these innovative financial initiatives, SACE's strategic international network further amplifies its capacity to promote Italian exports on a global scale. In fact, another crucial factor in SACE success is the presence in multiple countries, operating 13 international offices that function as hubs for Italian businesses. The offices establish relationships with local counterparts and promote business opportunities for Italian companies. SACE's success lies in its multifaceted approach: risk mitigation, financial innovation, and strategic global presence. By integrating insurance, guarantees, and targeted financing, it addresses the complexities of international trade while advancing Italy's economic interests.

3.3 The complementary role of SIMEST

SIMEST (Società Italiana per le Imprese all'Estero) is a public financial institution established in 1991 under the umbrella of Cassa Depositi e Prestiti, specifically addressed in supporting the international expansion of Italian companies. Working together with SACE, SIMEST contributes to Italy's export assistance framework by offering financial tools that improve SACE's risk-reduction functions. In 2024, SIMEST approved over €1.6 billion in soft loan transactions across thousands of deals (SIMEST, 2024). Thousands of businesses across more than 100 countries benefited from its broader portfolio, which also included export credit assistance, equity investments, and soft loans for internationalization (SIMEST, 2024). The venture capital fund of SIMEST, which has made equity commitments in hundreds of businesses, further demonstrates the company's commitment to long-term, structural engagement in international markets by emphasizing a durable global presence.

This level of financial commitment addresses a gap that insurance and guarantee tools alone, such as those offered by SACE, cannot fill. SIMEST operates by providing subsidized financing

for various stages of a company's internationalization journey. This includes providing assistance for important preliminary steps, such as feasibility studies and attending international trade fairs, which are necessary for networking and market research. Additionally, it provides funding for setting up foreign offices to establish a direct presence abroad and for adapting to local commerce via e-commerce development. By providing this specialized funding, SIMEST guarantees that Italian businesses, especially SMEs, have the resources and expertise needed to launch and maintain their internationalization plans. This funding strengthens the practical value of SACE's guarantees: when businesses can obtain reasonably priced credit and equity through SIMEST, SACE's guarantees form a more integrated, dual support system, increasing the viability of the internationalization process as a whole. This synergy is strengthened by the two organizations' institutional integration. Both SIMEST and SACE share digital platforms, customer service channels, and joint export initiatives, structured under the “SACE SIMEST Hub” branding, to offer a unified application process. These arrangements allow SIMEST to finance the working capital or early phases of a project while SACE offers the necessary insurance coverage against non-payment risks. The result are solutions that combine risk and credit protection in a way that reduced bureaucracy and gives faster market access.

In conclusion, SIMEST's strategic significance within Italy's export support ecosystem is highlighted by its significant financial volumes and variety of instruments. By aligning its financial tools with SACE's guarantee mechanisms, SIMEST ensures that Italian exporters not only receive crucial protection from political and commercial risks but also gain access to the necessary resources to execute international strategies effectively. This institutional complementarity strengthens Italian enterprises' worldwide competitiveness, making SIMEST an essential partner to SACE in accomplishing Italy's export goals.

Chapter 4: Literature Review

4.1 Introduction

A growing body of empirical literature has examined the role of export credit guarantees (ECGs) as a mechanism to mitigate trade frictions and improve export performance. Although national export credit agencies (ECAs) have different strategies and structures, they all aim to minimize

the political and financial risks that prevent businesses from entering foreign markets. Recent studies have evaluated the efficacy of ECGs using trade econometrics and panel data, building on theoretical foundations like the gravity model, which ties trade flows to characteristics like distance, GDP and institutional quality. These contributions provide insightful information on how public support instruments function in various economic environments.

Studies conducted on ECAs in nations such as Germany, Austria, South Korea, and Spain have shown the beneficial and sometimes countercyclical impacts of ECGs in maintaining exports, particularly in periods of economic distress or geopolitical uncertainty. These studies frequently find that guarantees are most impactful in sectors reliant on external financing or when firms expand into politically or economically unstable markets. Despite this extensive empirical literature, Italy is still left out from academic analysis, despite the fact that SACE, Italy's government export credit agency, has long been actively involved in promoting Italian national exports.

With an emphasis on gravity model applications, this literature review critically evaluates significant contributions that evaluate the effect of ECGs on trade flows. This study establishes the foundation for assessing Italy's situation by highlighting similar results, methodological methods, and gaps in the body of current research. In doing so, it offers the essential framework for the empirical analysis in this thesis of how SACE's guarantees affected Italian exports in 102 partner countries between 2012 and 2018.

4.2 Literature Review

One essential component of international trade is the effect that trade costs have on cross-border transactions. Trade barriers include more than just trade costs, which are frequently linked to transportation-related costs. The dynamics of international trade are significantly shaped by additional financial trade costs, such as financing trade credit, insuring trade credit, hedging exchange rate risks, and insuring transportation costs. These mechanisms, including both traditional and long-term and short-term instruments, have significantly supported the growth of international trade in the 21st century. These monetary expenses create friction, which can lower trade volumes and change the global trade's regional structure. According to Anderson and van Wincoop (2004), trade costs have the potential to shift trade toward nearby nations, especially when transportation costs increase as trading partners' distances from one another

increase. Export credit guarantees are a significant tool that governments can use to reduce trade costs. By lowering exporters' uncertainty, these guarantees increase access to overseas markets. They enable the funding of international business opportunities that might otherwise remain unexploited. In Europe, where it helps reduce the possible financial losses from export sales on credit, export credit guarantees are especially important. Since it lowers the risks involved in sales on credit, a prevalent aspect of contemporary trade relationships, this kind of insurance is essential in international trade. However, because insurance companies charge premiums, it also increases production costs. Ford et al. (1996) and Funatsu (1986) argue that although trade credit insurance raises production costs, it also improves output, which indicate that the advantages of insurance outweigh the drawbacks by increasing foreign sales. In addition to mitigating financial risks, public export credit guarantees play an important role in addressing market imperfections. Especially industries that require significant upfront investment or benefit from economies of scale often struggle to enter global markets without this form of support (for example machinery and infrastructure).

Export credit guarantees, therefore, serve as vital tools for exporters operating in high-risk environments, where political or economic instability can increase the uncertainty of international transactions. However, in order to prevent trade distortions and make sure that the guarantees do not unjustly benefit particular nations or industries, export credit guarantees are also subject to international supervision. International organizations like the Organisation for Economic Co-operation and Development (OECD) keep a careful eye on these guarantees to make sure they don't result in hidden export subsidies that distort trade patterns. Trade credit insurance risks can be broadly divided into two categories: political risks and commercial risks. Commercial risks are caused by risks like the contracting partner's or the transaction bank's insolvency or payment default. On the other hand, political risks include war, revolution, currency conversion restrictions, or public buyers in the importing country not paying. In order to understand how such risks influence trade performance requires a robust analytical framework. The gravity model, a well-known framework for examining trade flows, has gained popularity in international trade studies since the 1960s. It links trade volumes to variables such as bilateral distance, country size, and relative factor endowments, using distance as a proxy for transportation costs. The model's theoretical foundations were later formalized by Anderson (1979) and Bergstrand (1989) in which these contributions helped justify the model's empirical success and affirm its credibility as a framework for studying international trade patterns.

Building on this foundation, several country-specific studies have applied the gravity model to explore how export support mechanisms influence trade flows. Egger and Url (2006) utilize Austrian data from 1996 to 2002 to demonstrate that export guarantees significantly boost export volumes. These effects are particularly strong in destinations marked by higher informational frictions where private credit markets often underperform. Their analysis of industry-level panel data reveals that newly covered export credit creates additional short-term exports of approximately 25% to 40%. Notably, the overall trade effect remains significant even while export composition by industry stays relatively constant. This indicates that the policy has a limited impact on the inherent structure of exported goods. Instead, the focus remains on increasing total trade volume. In fact, the study predicts a multiplier of roughly 2.8. This implies that each unit of newly covered business results in nearly three times as much in additional exports over time. Furthermore, these assurances appear especially effective for trade with politically or economically riskier nations. They function as strategic instruments for mitigating external uncertainties without disrupting the general trend of trade specialization.

Similarly, Moser, Nestmann, and Wedow (2008) examine the role of export credit guarantees within German trade. They identify political risk as a major source of friction in international trade activities. Their research emphasizes the necessity of addressing these risks to prevent exporters from being discouraged by high entry barriers. Factors such as political instability and default risk often deter entry into specific foreign markets. By incorporating political risk into the gravity model, Moser et al. (2008) provide a significant empirical assessment of the German Export Credit Agency, Euler Hermes. Their findings demonstrate that political risk remains a fundamental barrier to trade between countries. Public guarantees effectively lower these perceived hazards, facilitating trade flows that would otherwise be lost to risk aversion. According to the study, public export credit guarantees can reduce perceived risks and thus the uncertainties that exporters face. Moreover, their panel data-based dynamic model shows that historical export activity has a major impact on current export volumes. This emphasizes how crucial sunk costs, such as the investments required to enter and establish operations in a foreign market, and learning effects on past experience. Firms are often reluctant to enter high-risk markets due to these upfront costs and the uncertainty of returns. Export credit guarantees help to lower these barriers by reducing the financial risks of market entry. In fact, having the support of export credit guarantees can definitely make it easier for them to take that step, providing added security when venturing into new markets. This supports the findings also of Anderson

and Marcouiller (2002), who contend that a nation's involvement in international trade is greatly influenced by institutional quality and political risk. In this regard, export credit guarantees are a crucial tool for policymakers to promote trade between nations. Moser et al. (2008) and Egger and Url (2006) both emphasize the important role that export credit guarantees play in promoting global trade, especially by mitigating political and financial risks. Building upon the research of Moser et al., Felbermayr and Yalcin (2011) examine Germany's Hermes guarantees utilizing sector-specific data from 2000 to 2009. Their fixed-effects methodology, in contrast to Moser et al.'s random-effects model, demonstrates a more conservative export elasticity (0.012–0.017). The study reveals sectoral heterogeneity, showing that guarantees disproportionately advantage industries such as machinery and transport equipment, which are characterized by a significant reliance on external financing. Furthermore, Hermes guarantees demonstrated countercyclical trends, increasing during the 2008 crisis to alleviate export reductions in economically vulnerable sectors. The financial development of the destination country positively correlates with exports; however, its interaction with Hermes guarantees is weak, meaning that these guarantees primarily mitigate exporter-side financial frictions, such as liquidity shortages, rather than addressing deficiencies in importer-side institutions and risks. The study further establishes the effects of income levels: guarantees had negligible influence in low-income markets, presumably due to restricted demand for capital-intensive goods, while proving most efficacious in middle-income nations, where financial limitations and market potential converge.

For the case of Spain, the contribution from Cea et al. (2022) shows how the ECGs provided by CESCE (the Spanish Export Credit Agency) play a role in supporting exporters, particularly in markets with less-developed financial systems. The study that expands on Ma and Xie's (2019) findings, demonstrates that CESCE's guarantees had a particularly significant effect during Spain's financial crisis (2008–2014). According to the study, which uses a dynamic panel data model, CESCE acted countercyclically, assisting Spanish exporters in diversifying into non-traditional markets (such as MENA and Asia-Pacific) as exports to conventional EU markets decreased. CESCE's significance in filling gaps during financial restraints was highlighted by the fact that the financial development of destination nations only had a positive impact on Spanish exports during non-crisis periods. In other words, even when trading partners offered relatively credit-friendly environments, Spanish exporters continued to face difficulties in securing trade finance or insurance without CESCE's intervention.

For Czech republic, Janda et al. (2013) investigate how the Czech Export Bank's (CEB) export credit guarantee increased Czech exports in the post-transition era (1996–2008). The results, which also were obtained using a gravity model framework, show that these guarantees had a positive, though relatively modest, impact on export performance. Specifically, the dynamic model estimates a long-term export elasticity of 0.064, meaning that a 1% increase in export credit guarantees is associated with a 0.064% increase in exports over time. This delayed effect suggests that guarantees help firms gradually build market access and trading relationships, which then translate into export growth. In contrast, the static model, which captures more immediate effects, estimates a lower elasticity of 0.011. Robust statistical methods, including Least Trimmed Squares (LTS), were employed to address outliers, primarily low-export, high-risk countries in Africa, Asia, and Central America, which had skewed initial results. After excluding these outliers, the dynamic models confirmed the countercyclical role of guarantees, particularly in stabilizing exports to politically riskier markets.

Key factors influencing Czech exports are highlighted in the study: Political risk emerged as a critical barrier which reduce export flows to unstable regions, while GDP and proximity of destination countries were consistently significant, aligning with gravity model expectations. There were clear regional differences, with Eastern Europe, a historically and geographically close region, gaining more from guarantees than areas that were farther away or had weaker institutions.

It's interesting to note that Africa and Latin America were less responsive, most likely as a result of weaker financial ties and higher perceived risks. The authors emphasize the dual role of CEB in mitigating commercial risks and indirectly reducing information asymmetries for exporters. This work contributes to understanding how post-transition economies leverage export credit agencies to navigate global trade complexities.

In their 2017 research, Polat and Yeşilyaprak analyze the impact of export credit insurance on Turkey's export performance, paying particular attention to the function of Turk Eximbank, the country's official export credit agency. Using a gravity model framework, the study examines trade relations between Turkey and 212 nations between 2000 and 2015 in order to determine whether export credit insurance has a significant positive impact on Turkish exports and to measure its magnitude.

The main conclusion of the study shows that Turkish exports are positively and statistically significantly impacted by the export credit insurance offered by Turk Eximbank. In particular,

a 1% increase in export credit insurance is associated with a 3.4 % increase in exports, a modest but significant effect at the 1% level. In order to account for unobserved heterogeneity in the panel data, the authors chose the preferred fixed effects model, which yields this result. This study emphasizes how Turk Eximbank supports Turkey's export strategy.

For the United States, the case of Export-Import Bank of the United States (EXIM) illustrates the significance of the export credit agency role in facilitating firms exporting abroad. Kabir et al. (2024) Examine the temporary shutdown of the export credit agency from 2015 to 2019, a policy interruption that functioned as an natural experiment to evaluate the actual effects of the ECAs. The results shows that companies reliant on EXIM support faced an 18% reduction in global sales, due a decrease in exports. In fact these firms could not adequately compensate through alternative financing, especially when financially constrained which leads them to a reductions in investments and workforce.

Instead, the evidence points to EXIM acting as a critical enabler of growth, especially in sectors with elevated working capital needs, such as for example those engaged in maritime exports, which are more sensitive to financing frictions.

The findings strengthen the case for export credit agencies even in highly developed financial markets like the U.S., which shows that well-designed public support can fill financing gaps and facilitate trade without leading to resource misallocation.

For Switzerland, Herger and Lobsiger (2009) examine the function of export risk guarantees, as administered by the Swiss Export Risk Insurance (SERV), in facilitating the expansion of Swiss exports. Through an analysis of data from the period 2006 to 2008, the researchers determine that the provision of SERV guarantees results in a modest aggregate increase in manufacturing exports, approximating 1%. Nevertheless, this impact exhibits considerable variation across markets, with exports to prominent emerging economies, namely Russia, Iran, Turkey, Mexico, and Indonesia, demonstrating substantially greater promotion effects, surpassing 6%. Correspondingly, the chemical and machinery sectors emerge as the principal beneficiaries, registering export growth exceeding 15% and ranging between 5% and 6%, respectively. The investigation further reveals that the influence of these guarantees manifests gradually, a phenomenon attributable to the extended production and delivery timelines characteristic of capital-intensive commodities.

Building on the European and Swiss evidence, Choi and Kim (2021) contribute complementary insights from Asia by analyzing Korea's short-term export-credit-insurance scheme

administered by K-SURE. Using transaction-level data covering 102 destination markets and 22 manufacturing industries for the period 2010-2018, and estimating a gravity-type model, they show that a 10 percent rise in the stock of insured contracts (“effective policies”) boosts Korean exports by roughly 0.13–0.20 percent. The effect works mainly through the alleviation of exporters’ financial constraints: it is much stronger for sectors with limited access to trade credit, for small and medium-sized enterprises, and for sales to developing countries. Sectoral heterogeneity points to particularly large elasticities in electronics, pharmaceuticals and transport equipment, whereas no significant impact is found for financially unconstrained large firms. Regionally, the largest gains accrue in Latin America, which confirm that public insurance delivers the greatest value where private trade finance is scarce. Extensive robustness checks, re-estimating with newly issued (“acquisition”) policies, alternative financial-vulnerability proxies and corrections for zero-trade flows, corroborate the main findings, demonstrating again that export-credit insurance’s role as a counter-cyclical instrument for mitigating financial frictions and expanding market reach. Furthermore, Molina and Roa (2014), demonstrated that improved access to credit directly translated into higher export revenues for Colombian manufacturing firms, primarily by empowering those firms to diversify and expand into a greater number of export destinations full spectrum of trade finance needs.

Xie Kuznetsova and Toan (2023), Russia's EXIAR coverage from 2016 to 2020 increases both the likelihood of export survival and the value shipped. This effect is strongest for high-risk developing economies and technology-intensive sectors like machinery, chemicals, and pharmaceuticals. Complementary evidence from Sweden changes the focus from levels to persistence: Lodefalk, Tang, and Yu (2022) demonstrate that export guarantees help firms keep exporting over time, not just increase sales. In fact, they make it 50% less likely that a company stops exporting to a given market, with the benefit more pronounced on small and medium-sized businesses, modest contract sizes and sales to politically or commercially risky markets. Furthermore, both the Swedish and Russian studies show that guarantee elasticities are much higher when the exporter’s domestic bank has a limited credit capacity. This supports the idea public support doesn't replace private loans as it actually helps banks lend more.

The available research continuously emphasizes the importance of export credit guarantees as vehicles for reducing trade-related frictions, improving access to foreign markets, and supporting export performance, especially in times of financial constraints or political risk. Studies conducted across multiple national context, including Germany, Austria, Spain, Turkey,

and the United States, have demonstrated that these public support mechanism systems help to diversify market destinations, increase export volumes, and stabilize trade during period of crises.

Methodologically, most contributions apply the gravity model, often enhanced by panel data econometrics, to isolate the impact of export credit support on bilateral trade flows. These approaches provide a solid framework for evaluating export promotion tools and have demonstrated how guarantees can be especially effective in markets characterized by high uncertainty or institutional weaknesses.

Despite this growing body of work, a systematic empirical investigation into the role of export credit guarantees in the Italian context remains limited. Although institutional reports underline the significance of SACE as Italy's official export credit agency and exports are a vital component of the country's economy, supported in large part by a dynamic SME sector, academic studies on the trade effects of such mechanisms in Italy are lacking. In short, while other countries' ECAs have been studied in depth, SACE's impact remains an open empirical question.

Chapter 5: Empirical Analysis

5.1 Introduction

This chapter defines the empirical analysis aimed at examining the correlation between Export Credit Guarantees (ECGs) offered by SACE and the export performance of Italy. This part elaborates on the econometric approach, data collection and interpretation of regression results, based in the theoretical foundations of the gravity model and the comprehensive literature reviewed in Chapter 4. The primary objective is to quantitatively assess the magnitude and significance of SACE's contribution to Italy's bilateral trade flows, thereby filling a gap in the existing academic literature in regard of Italy's export promotion strategies.

The analysis employs a panel data approach, allowing for the analysis of export dynamics across multiple destination countries over a specific time period. This approach offers advantages over cross-sectional analysis by enabling the control of unobserved heterogeneity and time-specific effects. The analysis specifically estimates two distinct models: a Pooled Ordinary Least Squares (OLS) regression and a Panel Linear Fixed Effects model with year-

specific fixed effects.

5.2 Data and variable description

A panel dataset that covers Italian bilateral exports to 102 partner countries between 2012 and 2018 was used for this study. This time frame was chosen to reflect developments in the dynamics of international commerce and is guided by the data available for SACE's export credit guarantee operations. The 102 partner countries represent a diverse set of economies, including developed, emerging, and developing markets, reflecting Italy's broad export reach. A total of 714 observations are available for the analysis, which indicate seven years of data for the 102 countries. The variables included in the regression models are specified as follow.

5.2.1 Dependent Variable:

$\ln_exp_{i,t}$ (Log of Exports): This variable represents the natural logarithm of Italian bilateral exports (in Euros) to a specific partner country in a given year. The data for bilateral exports are sourced from *UN Comtrade* (Italy to Partner Country). The natural logarithm is used to linearize the multiplicative relationships inherent in gravity models, allowing parameters to be estimated using linear regression. This transformation is standard in gravity model specifications, as trade flows are non-negative and exhibit exponential growth patterns. Furthermore, it enables a straightforward interpretation of the regression coefficients: when an independent variable is also expressed in logarithmic form (a log-log specification), its coefficient directly represents elasticity, indicating the percentage change in exports in response to a one percent change in that independent variable. In contrast, the coefficients of independent variables that are included in their original, linear scale (a log-linear specification, which is common for dummy variables or continuous indices that are not logged) represent the percentage change in exports for a one-unit change in the independent variable. This transformation is widely adopted in international trade literature, as highlighted by foundational works on the gravity model such as Anderson and van Wincoop (2003), who emphasize the importance of dealing with trade costs and the inherently multiplicative nature of trade flows, which are linearized through logarithmic transformation.

5.2.2 Independent Variables:

$\ln_ecg_{i,t}$ (Log of Export Credit Guarantees): This variable captures, for each partner country i and year t , the natural logarithm of an estimated euro value of SACE guarantees, reconstructed from “*Bilanci Consolidati*” financial statements of SACE for the period 2012–2018. The natural logarithm of guarantee values is used to facilitate an elasticity interpretation and mitigate the influence of extreme observations. In this form, a 1% increase in $\ln_ecg$ corresponds to an estimated $\beta\%$ increase in Italian exports to that destination, *ceteris paribus*. Constructing the variable requires moving from available SACE’s region-level totals to a destination-level series. The allocation procedure mimics the twin criteria that drive any export-credit agency’s portfolio choices: “insurance motive” (controlling repayment risk) and the “strategic action motive” (promoting commercially valuable trade). First, according to the SACE financial statements, for each region R and year t the published totals of buyer-credit, supplier-credit and financial guarantees are summed into one figure:

$$ECG_{R,t}^{tot} = ECG_{R,t}^{buyer} + ECG_{R,t}^{supplier} + ECG_{R,t}^{financial}$$

Next, those regional values in euros are split across individual countries through a weighting scheme. The commercial weight is the share of Italian exports that each partner received in the previous year:

$$w_{i,t-1}^{trade} = \frac{exports_{i,t-1}}{\sum_{k \in R} exports_{k,t-1}}$$

Lagging exports by one period addresses potential simultaneity, this approach is conceptually aligned with the emphasis on dynamic relationships in trade and export promotion literature, where studies such as Egger & Url (2006) and Moser, Nestmann & Wedow (2008) incorporate lagged trade flows in their econometric models. While their primary objective was to control for endogeneity and capture dynamic effects between export promotion and exports, the underlying principle that past trade relationships influence current export dynamics and ECA

decision-making processes supports the use of $\text{exports}_{i,t-1}$ as a component which reflects commercial presence within this proxy.

Each trade weight is subsequently adjusted for sovereign risk, as Export Credit Agencies (ECAs) are designed to underwrite transactions that are riskier and often those that the private market is unwilling or unable to insure (a concept frequently termed 'non-marketable risks' within the OECD framework). This focus on markets with higher inherent risks, where private insurance might be insufficient or too costly, aligns with the multifaceted rationales for public export credit provision, extending beyond pure insurance to encompass strategic market promotion or even aid-like functions in specific contexts (Dewit, 2001). The premium-rate schedule of the OECD Arrangement on Officially Supported Export Credits is directly anchored by the OECD Country-Risk Classification (CRC), which rates countries from 0 (very low risk) to 7 (very high risk). Particularly for the significant export agreements backed by ECAs, this classification is recognized as a measure of the overall institutional and economic stability impacting commercial transactions (Dawar, 2020). To temper excessive leverage from the riskiest classes while preserving their attractiveness for public support, the square-root of the index is used:

$$w_{i,t-1}^{\text{risk}} = \sqrt{\text{CRC}_{i,t-1} + 1}$$

There are two reasons for changing the risk index in the weighting scheme. First, the OECD Arrangement's premium tables demonstrate that rates increase more steeply than linearly as risk escalates. Second, the square-root transformation makes sure that the proxy's allocation to individual countries, out of a finite regional envelope, still proportionately reflects the higher risk of certain destinations without allowing a small number of extremely distressed economies to disproportionately absorb the regional guarantee budget due to their high risk scores. Comparable concave weighting rules are well established in aid-allocation practice: the Dutch Ministry of Development Cooperation, for example, multiplies country performance scores by the square root of population to prevent very large recipients from dominating the aid envelope (OECD, 2005). This decision offers a strong fit with the way ECAs control risk throughout a portfolio, striking a balance between exposure and encouraging trade in riskier but economically significant markets. By combine the two factor the country-level estimate is:

$$ECG_{i,t} = \left(\frac{\text{exports}_{i,t-1} \sqrt{CRC_{i,t-1} + 1}}{\sum_{k \in R} \text{exports}_{k,t-1} \sqrt{CRC_{k,t-1} + 1}} \right) ECG_{R,t}^{\text{tot}}$$

This entire proxy construction, including its dual-factor weighting and the specific transformations, is rigorously supported by academic principles and prior research. Theoretically, as explained by Dewit (2001), it directly defines the two main motivations for public export credit support: the "insurance motive" and the "strategic action motive". The development of this proxy is in line with the accurate findings of established studies in the field (e.g., Egger & Url, 2006; Felbermayr & Yalcin 2013). These studies consistently highlight market size and country risk as determinants of export credit provision and its impact on trade. For instance, Egger & Url (2006) observed that Austrian cover tended to follow existing trade patterns rather than solely initiating new trade; Moser, Nestmann & Wedow (2008) found German Hermes guarantees to be larger and most effective precisely in markets with high political risk; and Felbermayr & Yalcin (2013) estimated a significant export elasticity, noting its intensification with destination risk countries. This proxy is grounded in precisely those country-level factors that previous research has confirmed are essential for comprehending ECA activity by including both lagged exports and sovereign risk in our allocation. Moreover, the inclusion of lagged export data within the proxy's formula directly adopts the endogeneity mitigation strategies employed in these studies.

ln_gdp_{i,t} (Log of Partner Country GDP): This variable represents the natural logarithm of the Gross Domestic Product (GDP) of the importing partner country, in euro constant levels. The data are obtained from the *World Bank's GDP* dataset. In the gravity model, GDP serves as a proxy for the economic size and purchasing power of the destination market. In general, Larger economies generally have greater demand for imported goods. So, the results should see a positive and statistically significant coefficient, which means that as the economy of a partner nation grows, so does its need for goods. This aligns with the fundamental premise of the gravity model, which posits that economic mass attracts trade, a concept central to the framework proposed by Anderson and van Wincoop (2003).

ln_pop_{i,t} (Log of Partner Country Population): This variable represents the natural logarithm of

the population of the importing partner country. Population data are sourced from the *World Bank's Population* (SP.POP.TOTL) dataset. Population and GDP are combined in gravity models to represent the destination market's economic mass. Higher levels of imports may result from a larger population since it usually indicates higher domestic demand and a wider consumer base. Its role as an driver of bilateral trade flows is confirmed by empirical studies, such as Cea et al. (2022), which find a positive and significant relationship between population and exports. Accordingly, population is included as a standard control variable in gravity-based trade regressions.

Freedom to trade ($FTT_{i,t}$): This variable measures the “Freedom to Trade” score for importing countries, according to the *Fraser Institute's Economic Freedom of the World* (EFW) report. The index creates a scale from 0 to 10 by combining a number of objective policy indicators, such as tariff levels, non-tariff barriers, black-market exchange rates, and limitations on labor and capital mobility. These elements are taken from both domestic and foreign data sources and are categorized under the fourth dimension of the larger EFW framework, which particularly assesses trade and investment openness. Therefore, a higher score indicates fewer limitations on the free movement of capital, goods, and services. This index provides a strong indicator for the institutional components of trade costs in gravity model specifications by accounting for barriers to international trade. Beyond direct tariff and non-tariff barriers, a higher trade freedom score signals a more transparent and predictable regulatory environment, which reduce compliance costs and improve greater business confidence among exporters. A higher freedom to trade value is expected to be associated with higher Italian exports since it represents a domestic importer environment with fewer barriers. This expectation is consistent with the structural trade-cost framework developed by Anderson and van Wincoop (2003), which highlights the importance of policy-induced friction in determining overall trade costs. It is also empirically supported by studies like Naanwaab & Diarrassouba (2013), who find that both exporting and importing countries with greater trade freedom experience higher bilateral trade volumes.

$\ln_dist_{i,t}$ (Log of Bilateral Distance): This variable represents the natural logarithm of the geographic distance between Italy and the partner country. Distance data are sourced from *CEPII GeoDist* database. Distance is a primary proxy for transportation costs, communication

costs, and other non-tariff barriers related to physical distance. The gravity model predicts that higher trade costs, which are linked to greater distance, will discourage trade. Consequently, a negative and statistically significant coefficient is expected, which indicates that Italian exports to a trading partner tend to decline as the distance between Italy and that partner increases. This is consistent with the literature, which shows that distance acts as a persistent barrier to trade (Redding & Venables, 2004).

Landlocked_i (Dummy): This binary variable takes the value 1 if the partner country is landlocked (i.e. without direct access to the sea), and 0 otherwise. Data are sourced from the *CEPII GeoDist* database. Because goods must travel through third countries to reach ports, being landlocked creates major logistical challenges that increase costs and delays. According to Limao and Venables (2001), landlocked country's transportation expenses are roughly 50% greater than those of similar coastal economies and land-locked countries trade on average only 30 % of the trade volume of the coastal states, i.e. a drop of about 70 %. In regions where transport infrastructure is particularly weak, the reduction in trade volumes ranges between 60% and 75%, in line with the higher transport costs estimated by the authors. Therefore, a negative and statistically significant coefficient is expected, as landlocked countries typically receive fewer exports due to these persistent structural disadvantages.

5.3 Econometric Models

Building upon the variable specifications outlined in the preceding section, this study proceeds to an empirical assessment of the relationship between Italian exports and all the variables mentioned in the previous chapter. The quantitative analysis is conducted using two econometric models, each of which provides a specific framework for estimation. This section delineates the form and structure of each model employed in the regression analysis.

5.3.1 Pooled Ordinary Least Squares (OLS)

The Pooled OLS model serves as a foundational baseline regression. It treats each country-year observation as an independent unit and combines all observations into a single cross-sectional pool. This approach estimates an overall average relationship between the variables across all countries and years. However, it does not control for unobserved characteristics that may vary

across countries or over time. The relationship is estimated using the following equation:

$$\ln(\text{Exports}_{i,t}) = \beta_0 + \beta_1 \cdot \ln(\text{ECG}_{i,t}) + \beta_2 \cdot \ln(\text{GDP}_{i,t}) + \beta_3 \cdot \ln(\text{Pop}_{i,t}) + \beta_4 \cdot \text{FTT}_{i,t} + \beta_5 \cdot \ln(\text{Distance}_i) + \beta_6 \cdot \text{Landlocked}_i + \varepsilon_{i,t}$$

Where:

- i denotes the country and t denotes the year.
- β_0 is the intercept.
- β_1 to β_6 are the coefficients for the respective independent variables.
- $\varepsilon_{i,t}$ is the error term.

This model provides a straightforward estimation of the average relationship between the variables across all observations, serving as a valuable benchmark for analysis.

5.3.2 Fixed Effects (FE)

The Panel Linear Fixed Effects model with year fixed effects. This model is made to take into account factors that change over time. As they capture macroeconomic shocks, global changes in trade policies, or technological advances that affect trading relationships at the same time in a given year (Baltagi, 2005), these year-specific fixed effects are important for international trade analyses. This specification takes into account overall time trends in Italian exports by accounting for these common temporal effects. This makes it possible to get a more accurate picture of the relationships between the dependent variable and the independent variables after accounting for these temporal shifts. Many gravity models use this method to reduce bias from omitted variables that change over time. Anderson & van Wincoop (2003), talk about how important it is to control for multilateral resistance, which is something that time fixed effects do in panel settings. The model explicitly accounts for these common time trends by including a set of dummy variables for each year:

$$\ln(\text{Exports}_{i,t}) = \beta_0 + \beta_1 \cdot \ln(\text{ECG}_{i,t}) + \beta_2 \cdot \ln(\text{GDP}_{i,t}) + \beta_3 \cdot \ln(\text{Pop}_{i,t}) + \beta_4 \cdot \text{FTT}_{i,t} + \beta_5 \cdot \ln(\text{Distance}_i) + \beta_6 \cdot \text{Landlocked}_i + \lambda_t + \varepsilon_{i,t}$$

Where:

- λ_t represents the year-specific fixed effects, which capture all unobserved time-varying characteristics common to countries.
- $\varepsilon_{i,t}$ is the idiosyncratic error term.

3

This approach isolates the effect of time-varying factors while allowing for the estimation of time-invariant country characteristics such as distance and landlocked status. In other words, this specification is applied to capture common temporal shifts in the dependent variable, allowing for distinct relationships with independent variables after accounting for these time-based variations. The choice to utilize year fixed effects is a deliberate methodological trade-off designed to preserve the analysis of time-invariant geographic variables. In a standard country fixed effects framework, factors such as bilateral distance and landlocked status would be collinear with the country intercepts and subsequently dropped from the model. By specifically isolating temporal shocks through λ_t , the model accounts for global macroeconomic shifts while retaining the cross-sectional variation necessary to estimate the fundamental gravity components that drive Italian export patterns.

5.4 Estimation Strategy and Robustness Checks

The econometric analysis included methods to validate the estimated coefficients in order to make sure that the empirical findings were reliable. This was especially important when looking at how SACE's Export Credit Guarantees (ECGs) affected Italian exports. These measures aim to confirm that the identified relationships are stable and not influenced by common econometric challenges inherent in panel data.

Correctly specifying standard errors is an important part of making sure that panel data models can make strong inferences, especially when different units are observed over time. When looking at bilateral trade data, observations from the same country over different years are often related, which can cause serial correlation. At the same time, the error term's variance might not be the same for all observations, which would mean that there is heteroskedasticity. To account for both potential heteroskedasticity and serial correlation within countries, standard errors were robustly clustered at the country level in all regression specifications. Econometric literature supports this method for analyzing panel data (Cameron & Miller, 2015), as it gives

more conservative tests of statistical significance.

Also, as explained before, the Panel Linear Fixed Effects model includes year-fixed effects, which makes the analysis more reliable. These fixed effects for each year deal with global economic conditions, and other common shocks that happen over time and affect trading partners in that year. The model can better separate the effects of the independent variables on Italian exports by taking into account these overall time effects.

Chapter 6: Empirical Results

The regression results for both the Pooled OLS and Panel Linear FE models are presented in the table below. The dependent variable in both specifications is the natural logarithm of Italian exports ($\ln_exp_{i,t}$). Coefficients, with robust standard errors in parentheses, are reported, along with significance levels indicated by asterisks (* $p<0.1$; ** $p<0.05$; *** $p<0.01$).

Regression Results for Italian Exports (2012-2018)

Dependent variable $\ln(exp)$		
Variables	OLS (1)	FE – Time (2)
$\ln_ecg_{i,t}$	0.164*** (0.019)	0.194*** (0.038)
$\ln_GDP_{i,t}$	0.872*** (0.032)	0.855*** (0.061)
$\ln_pop_{i,t}$	-0.132*** (0.028)	-0.134** (0.057)
Freedom to trade $_{i,t}$	0.087*** (0.030)	0.097* (0.058)
$\ln_dist_i$	-0.804*** (0.028)	-0.776*** (0.055)
Landlocked $_i$	-0.467*** (0.068)	-0.454*** (0.160)
Constant	3.839*** (0.396)	
Observations	714	714
R ²	0.916	0.920
Adjusted R ²	0.915	0.918

Standard errors in parentheses

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

6.1 Empirical results and coefficient analysis

The table above shows the results of the regression analysis of Italian bilateral exports from 2012 to 2018. It shows the results from both the Pooled Ordinary Least Squares (OLS) model and the Panel Linear Fixed Effects (FE) model with year fixed effects. This section discusses the coefficients that were found for each explanatory variable and what they mean statistically and economically for Italian export flows.

The main finding of these regressions is about how SACE's support affects the coefficient $\ln_ecg_{i,t}$ (Log of Export Credit Guarantees). The Pooled OLS model (Column 1) gives a value of 0.164 for this coefficient, which is statistically significant at the 1% level ($p < 0.01$). This means that, in this model, a 1% rise in SACE's export credit guarantees is linked to a 0.164% rise in Italian exports. The Panel Linear Fixed Effects model (Column 2) shows an even higher positive relationship, with the coefficient for $\lnExports_{i,t}$ rising to 0.194. This relationship is still statistically significant at the 1% level ($p < 0.01$). With an elasticity of 0.194, this means that if SACE gives 1% more export credit guarantees, Italian exports are expected to increase by about 0.194%, *ceteris paribus*. This finding is economically significant, especially considering the scale of Italian exports and the central role of SMEs, which are particularly reliant on such support. This result is in line with what other research has found about how effectively Export Credit Agencies (ECAs) work in other countries like, Egger and Url (2006) investigated Austria, and Heiland and Yalcin (2013) in investigated Germany. All of these studies found that ECGs had similar positive effects on their countries' export performances. The findings confirm the role of ECGs in mitigating commercial and political risks, thereby reducing uncertainty for Italian exporters supported into international markets, a factor particularly important for Italian company structures and dimensions which often face greater financial constraints and risk aversion than larger corporations. SACE's guarantees make companies less at risk of not getting paid or having their contracts end, which encourages them to do business across borders, enter new and possibly riskier markets, and increase their export volumes. This proves that SACE's support is effective and strategically important for Italy's overall export promotion strategy. The $\ln_gdp_{i,t}$ (Log of Partner Country GDP) variable, which shows the size of the importing partner country's economy, has positive and significant coefficients in both models. The coefficient for $\ln_gdp_{i,t}$ in the Pooled OLS model (Column 1) is 0.872, and it is statistically significant at the 1% level ($p < 0.01$). Column 2, the Panel Linear Fixed Effects model, shows that the coefficient

stays strongly positive and significant at 0.855 ($p < 0.01$), in line with Moser (2008) and Herger (2009) results. These results support the fundamental concept of the gravity model: bigger economies tend to import more (Kepaptsoglou et al., 2010). This finding confirms that economic development and market size in destination countries are important drivers of Italian export demand, as Italian exporters find greater opportunities in economies with higher aggregate demand, capable of absorbing larger volumes of goods and services.

On the other hand, $\ln_pop_{i,t}$ (Log of partner country population), which shows the size of the population in the importing partner country, has negative and statistically significant coefficients. The coefficient for $\ln_pop_{i,t}$ in the Pooled OLS model (Column 1) is -0.132, which is statistically significant at the 1% level ($p < 0.01$). The coefficient stays negative and statistically significant at -0.134 ($p < 0.05$) in Column 2. The negative and statistically significant coefficients for $\ln_pop_{i,t}$ suggest that, all else being equal, a larger population in a partner country is linked to a small drop in Italian exports to that country. There are a few theoretical reasons that could explain this negative relationship. A key factor is the "domestic market absorption" effect, which suggests that countries with larger populations tend to have more expansive domestic markets capable of consuming a greater share of their own production (Rahman et al., 2006). This means that fewer goods are available for export because more goods are consumed in the country (Almunia et al., 2018). This happens a lot more in markets where there isn't significant foreign demand. For instance, when demand rises in the home country, exports may fall because producers put more value on selling goods to people in their own country than on selling them to people in other countries. This is in line with research that shows that a growing domestic market helps industries grow and that manufacturers may shift their focus to domestic sales when demand from outside the country drops (Nisar, 2019).

The Freedom to trade $_{i,t}$ variable, which shows how open an economy is to international trade, has positive coefficients, which means that these policies significantly promote Italian exports. The coefficient for Freedom of trade in the Pooled OLS model (Column 1) is 0.087, which is statistically significant at the 1% level ($p < 0.01$). The Column 2 gives a coefficient of 0.097, which is statistically significant at the 10% level ($p < 0.1$). As a continuous index where higher values indicate greater trade freedom, these positive coefficients suggest that improved trade freedom promotes Italian exports. The consistent positive sign shows that policies that lower trade barriers and encourage trade freedom are important for boosting Italian exports. This is in line with with general trade theory and empirical findings.

The $\ln_dist_i$ (Log of Bilateral Distance) variable, measure the geographic distance between Italy and its trading partners, demonstrates negative and statistical significant coefficients in both models. The coefficient for $\ln_dist_i$ in the Pooled OLS model (Column 1) is -0.804, which is statistically significant at the 1% level ($p < 0.01$). The coefficient is -0.776 in Column 2, which is still very statistically significant at the 1% level ($p < 0.01$). The coefficients in question show that distance has an effect on trade in the gravity. An elasticity of about -0.78 to -0.80 suggests that a 1% increase in the geographic distance between Italy and a trading partner leads to an approximate 0.78-0.80% decrease in Italian exports to that country. This shows how higher transportation costs, longer lead times, and possibly larger informational and cultural barriers that come with being farther away affect trade and are in line with Moser (2008) and Herger et. (2009) studies.

Finally, the $Landlocked_i$ (Landlocked Dummy) variable, which tells if a partner country is landlocked, has negative and significant coefficients in both models. The coefficient for landlock in the Pooled OLS model (Column 1) is -0.467, which is statistically significant at the 1% level ($p < 0.01$). The coefficient in the Panel Linear Fixed Effects model (Column 2) is -0.454, which is still statistically significant at the 1% level ($p < 0.01$). These results show that being landlocked makes it more difficult for Italy to export goods. When everything else is equal, Italian exports to a landlocked partner country are approximately 37–36% ($[\exp(-0.467) - 1] \times 100\%$) lower than exports to a country that is not landlocked. This big effect could show how much more expensive and difficult it is to do business when you can't get to maritime routes directly. In fact, globally, about 80 % of merchandise trade by volume is carried by sea (Unctad, 2024). Even within the EU, sea transport still accounts for roughly 74 % of extra-EU goods trade by volume and around 44 % of exports by value (Eurostat, 2024). This finding adds to the evidence that geography and trade infrastructure are important in determining the flow of trade between two countries.

Chapter 7: Practical Implications and Future Research

7.1 Interpretation of Findings

The empirical analysis, which used Pooled Ordinary Least Squares and Fixed Effects models

with year fixed effect, produced results that offer information about how SACE's Export Credit Guarantees (ECGs) help Italian exports. In fact, $\ln_ecg_{i,t}$ has a positive and statistically significant effect on Italian bilateral exports. The estimated elasticity, which was explained in the previous section, shows that SACE's guarantees are linked to an increase in Italian exports, all else being equal. This strong result clearly shows that SACE's work is an important and effective part of Italian export.

The consistent positive effect seen for $\ln_ecg_{i,t}$ aligns with studies on Austria (Egger et al., 2006) and South Korea (Choi & Kim, 2021), suggesting a positive export response to public ECA support in advanced economies. Similar magnitudes are also reported by Heiland and Yalcin (2013) for Germany, where firm-level estimates imply elasticities around 0.18–0.20, closely matching the 0.194 found for Italy. Some studies say that elasticities are lower, but Italy's relatively higher impact can be explained by the structure and dynamics of its exporting sector. Italy's vast network of small and medium-sized businesses (SMEs) has an important impact on the country's exports. As mentioned earlier, these businesses account for about 45% of all exports and are key to the "Made in Italy" brand. These small and medium-sized businesses (SMEs) are productive and have a presence in other countries, but they often have to deal with big financial problems and are less willing to take risks when they enter complicated international markets (Minetti & Zhu, 2011). This financial vulnerability of Italian SMEs show why SACE's support could yield a particularly strong positive impact, as it directly mitigates the credit and political risks that disproportionately impede smaller firms from internationalization. SACE's approach is meant to deal with these specific problems in many ways, including traditional export credit insurance and new tools like the Push Strategy. The Push Strategy is a good example of how SACE is flexible and proactive in helping Italian exports. SACE creates demand for Italian goods and services in high-potential markets by giving foreign businesses buyer-credit loans for certain projects (like infrastructure or energy) contingent on sourcing a pre-agreed volume of Italian goods and services. This system works outside of the usual OECD Arrangement rules and lets SACE cover up to 100% of political and business risk. This makes it a very appealing option for complex initiatives that often involve a lot of Italian suppliers, many of whom are small and medium-sized businesses. The documented success of the Push Strategy, which raised millions of dollars in funding and got thousands of Italian companies involved in new global supply chains, adds to the quantitative finding of $\ln_ecg_{i,t}$'s positive impact (SACE, 2023). It suggests that SACE is not just reacting to market

failure, but is also actively creating new export opportunities, especially in areas where Italian companies are already strong but might not have the capital to take on such big, risky projects. The focus on long-term loans (usually 5 to 12 years) and large minimum sizes for Push Strategy deals shows how it helps with big projects that would be hard for private markets to finance on their own, which makes high-value "Made in Italy" exports possible (SACE, 2023).

Moreover, SACE's large international network of 13 offices around the world further amplifies its capacity to facilitate exports. These offices are important centers that build relationships with local businesses and actively promote business opportunities for Italian companies. This global presence allow SACE to identify nascent market needs and proactively connect Italian exporters, including SMEs, to new international buyers, thereby reducing informational asymmetries and fostering new trade relationships. Furthermore, the agency's commitment to sustainability by the inclusion of ESG goals in its mechanisms, such as the "Green Push" deals puts Italian exports in a good position in a changing global trade environment that values social and environmental responsibility more and more (SACE, 2023). This forward-looking approach makes sure that SACE is still important and has an effect on international trade.

The study findings for other standard gravity model variables add to what we already know about how Italian exports work within existing theoretical frameworks. The $\ln_gdp_{i,t}$ coefficient is positive and significant, which supports the main idea of the gravity model: larger economies attract more Italian exports because they have more aggregate demand and purchasing power. On the other hand, the negative and significant coefficient for $\ln_dist_i$ shows that distance is a constant barrier to trade because it raises transportation costs and causes other non-tariff problems. The negative and significant effect of being landlocked also shows how much more difficult and expensive it is for geographically disadvantaged partners to do business, which is exactly what other research says about trade costs (Lim & Venables, 2001). The negative effect of $\ln_pop_{i,t}$ is also consistent with prior research (Moser, 2008) suggesting the dominance of domestic market absorption certain types of exports, indicating that for Italian exports, market sophistication and income levels are more influential than sheer demographic size. Finally, the positive coefficient for Freedom to trade shows how important it is for Italy to have open trade policies that make it easier for Italian goods to be sold abroad.

7.2 Practical Implications

The fact that SACE has been proven to have a positive effect on Italian exports has important practical implications on various stakeholders, including SACE itself, Italian exporters, and government policymakers that promote trade. These results go beyond just confirming what we already know; they give us useful information that can help make strategic decisions and allocate resources in a way that strengthens Italy's position in the global economy.

For SACE, the findings shows the effectiveness of its core mission and its operational instruments. The positive impact of guarantees on exports provides empirical justification for SACE's existing portfolio management and initiatives. This proof supports SACE's claim that its export credit insurance is an effective means to lower risk, especially given how unstable the global economy and politics are in recent years. The results show that SACE ought to continue investing into its ability to assess and underwrite risks, especially in markets where private insurance is still limited. Furthermore, the overall positive effect of SACE's guarantees provides supporting evidence that the Push Strategy can be effective in practice. This implies that SACE should explore expanding such innovative, proactive approaches, possibly by tailoring them to specific high-potential sectors or regions where Italy has a competitive advantage and where SMEs can be effectively integrated into large projects. Regular reviews of these strategic tools will make sure they stay flexible enough to meet the changing needs of the market and have the biggest effect on Italian exports. SACE's large international network is also important for risk assessment, market intelligence, and business matching. This directly supports the "strategic action motive" of ECAs. Improving this network's ability to reach more buyers and connect Italian businesses with foreign opportunities could lead to even more export growth, especially for industries that want to diversify or break into new markets.

Moreover, the study's results show how Italian exporters, especially the small and medium-sized businesses (SMEs) that make up the backbone of Italy's export dynamism, can benefit from using SACE's help. In fact, SACE tools are an effective way to lower the risks of nonpayment and contract termination, which lowers financial exposure in international trade. This is particularly relevant for SMEs, which often lack the financial resilience and extensive international networks of larger corporations. The documented positive effect shows that SACE's guarantees really do lead to more exports. This means that Italian companies, especially those thinking about expanding into new or higher-risk markets, should actively use all of

SACE's tools. This could mean not only getting traditional export credit insurance but also looking into joining SACE's innovative initiatives when possible or working with SACE's international offices for market research and business development support. Small and medium-sized businesses (SMEs) should be encouraged to get over the initial hurdles that keep them from using SACE services. They should realize that this type of help can be a key part of their plans to go global and a way to get around the financial problems that often limit their global reach (Forlani, 2010; Minetti & Zhu, 2011).

Finally, the strong empirical evidence confirms that SACE is a strategically important state-owned export credit agency. The fact that export credit guarantees have been shown to have a positive effect on national exports justifies continued, and possibly even increased, public investment in SACE's operational capacity and financial reserves. In a world where the economy is becoming more and more unstable, SACE protects Italian exporters from shocks from outside the country and keeps the market open for them. The results give an empirical basis for arguing for SACE's role in supporting its ongoing adaptation to changes in global trade, such as its commitment to green transition and sustainable finance goals. A robust SACE leads to a more flexible and resilient Italian export sector, which helps the economy grow, create jobs, and strengthen the "Made in Italy" brand around the world. Finally, SACE's broader function shows how important it is to ensure that national trade policy is in line with the agency's goals. This will make sure that political and economic support structures help it achieve its objective of assisting Italian exports grow.

7.3 Limitations of the Study

This thesis gives insights about the relationship between SACE's Export Credit agency and Italian exports, but it's important to note certain limitations inherent in its design and available data. It is important to know about these limitations in order to understand the results and implications for future research.

A primary limitation stems from the nature of the $\ln_ecg_{i,t}$ variable construction. As the methodology explains in detail, $\ln_ecg_{i,t}$ is not direct country-level guarantee data but rather a proxy based on SACE's publicly available regional aggregates. The way the construction is done is based on theory and has been tested using established literature. However, the process of assigning regional totals to specific countries makes the results less accurate. The assumption that the weighting scheme captures SACE's bilateral allocation logic, especially since broad

regional areas are so different from each other, means that the proxy could have measurement error. This methodological limitation is still a necessary compromise, though, because data detailed on destination countries levels were not available.

Furthermore, the Panel Linear Fixed Effects model effectively controls over time-varying characteristics that are not seen and are common to countries (through year fixed effects). However, it does not account for time-invariant heterogeneity that is not seen across countries. This model doesn't explicitly include or control for things like long-standing trade ties, colonial legacies, cultural similarities that last over time. If these unobserved country-specific factors are related to the independent variables, the estimated coefficients might still be biased because they don't take into account the missing variables. The chosen model estimates theoretically important time-invariant variables like distance and being landlocked, but it trades off control over country-specific effects.

This exclusion was an informed modeling choice. Including country fixed effects, while useful in absorbing all time-invariant unobserved heterogeneity, would have made it not possible to estimate the impact of any variables that do not vary over time (such as distance and landlocked status). Since this thesis aims to analyze both the effect of export credit guarantees and the influence of structural country-level determinants, the inclusion of country fixed effects would have absorbed much of the variation of interest. Therefore, by choosing to keep time-invariant country-level controls in the model and excluding country fixed effects, this study prioritizes a more interpretable coefficient structure for these theoretically relevant variables.

The study's timeframe (2012–2018) was also limited by the availability of data for SACE's operations. This means that the results may not be as applicable to more recent times. Moreover, the study focus on aggregate Italian bilateral exports, while comprehensive, does not allow for an investigation into heterogeneous effects at more granular levels, such as specific industries or firm sizes. Even though the discussion puts the results in the context of SMEs, the econometric model, due to a lack in granular data, doesn't directly break down the effects by firm size or sector.

In summary, the findings from both econometric models and the fact that the $\ln_ecg_{i,t}$ impact is consistent with the literature give confidence in the main conclusions about SACE's role in promoting Italian exports, even though the limitations found need to be taken into account when interpreting the results. These recognized limitations primarily serve to delineate the scope of the study and highlight directions for future research.

7.4 Avenues for Future Research

The limitations identified in this study, together with the evolving landscape of international trade and finance, offer several avenues for future research. Expanding upon the current work can provide deeper insights into the mechanisms through which Export Credit Agencies (ECAs) influence trade and contribute to national economic export.

One important area for future research is looking into the level of detail in export credit guarantees. Getting SACE's disaggregate, country-specific (or even industrial-level) guarantee data would make the $\ln_ecg_{i,t}$ variable much more accurate. This detailed data would make it achievable to directly measure the amounts of bilateral guarantees, which would eliminate the need for proxy construction and lower the chance of measurement error. With more precise data, researchers could apply more advanced econometric techniques, potentially including instrumental variable approaches if truly exogenous instruments can be identified, to strengthen causal inference regarding SACE's impact. This would be a big step forward in understanding the direct effects of ECA interventions.

A second important avenue is to explore the heterogeneous effects of SACE's support across different dimensions of Italian exports. This could imply looking into whether SACE has a big effect on important Italian export sectors like machinery, fashion, agri-food, and pharmaceuticals. Because different industries are more vulnerable to financial constraints and geopolitical risks, a more detailed analysis could show which ones benefit the most from SACE's support and where it has the biggest impact. Furthermore, separating the analysis for small and medium-sized enterprises (SMEs) versus large corporations would provide critical insights, as it is hypothesized that SACE's guarantees have a more pronounced impact on the export performance of Italian SMEs, given their disproportionate reliance on external financing and risk management. Such insights could be achieved through firm-level data analysis, if accessible.

Additionally, breaking down partner countries even more by income level, for example, separating high-income, middle-income, and low-income economies or by risk profiles, like political risk or the maturity of the financial market, could help show where SACE's support has the most impact, especially in line with the "non-marketable risks" reason for public ECAs. These collective research directions could further develop the strategic significance of SACE and its multifaceted contribution to Italy's sustained export-driven growth.

Chapter 8: Conclusion

International trade stands as an indispensable engine of global economic growth and national competitiveness. In this complex global system, export credit agencies (ECAs) play a unique and growing role by lowering the financial and political risks that come with doing business into new and challenging markets. This thesis analyzed in great detail the relationship between the work of SACE, Italy's Export Credit Agency, and the country's export performance across 102 partner countries from 2012 to 2018.

The study aimed to fill a gap in the academic literature, particularly concerning a major export-driven economy like Italy. It aimed to provide an explanation of the role of the Italian export agency and quantitatively measure the magnitude and significance of SACE's contribution to Italian bilateral trade flows.

The empirical analysis showed that SACE's export credit guarantees had a statistically significant positive effect on Italian exports. This main finding not only gives an empirical proof of SACE's role in Italy, but it additionally positions Italy's context in the larger academic debate about how effective ECAs are in exporting countries.

Moreover, the study's results for other gravity model variables also showed the primary forces that shape Italian export dynamics. The GDP of the partner country emerged to be a strong positive factor, confirming the principal that bigger and larger economies have more demand for imports. On the other hand, distance between exporter and importer and being landlocked had strong negative effects. This shows how transportation costs, logistical complexities, and informational frictions discourage Italian trade.

Nevertheless, the contributions of this thesis are multi-faceted. First, it fills a major gap in the academic literature by providing an empirical analysis of SACE's effect on Italian exports. This makes it a foundational study for future research in this under-examined national context. Secondly, it contributes to the broader understanding of ECA functions by analyzing their effectiveness across diverse national contexts, reinforcing the theoretical framework of their 'insurance' and 'strategic action' motives within the trade finance ecosystem.

However, limitations remain. This study relies on aggregated regional-level data, which may overlook important differences between countries or sectors within the same region. Future research could benefit from more granular level data to further test the effectiveness of ECAs, particularly across firm sizes and industries.

To conclude, the practical implications for Italy's export-driven economy are clear: SACE's role is not merely supplementary but plays an important role.

The empirically validated effectiveness of its guarantees along with its strategies and large international network, shows how important it is to keep investing in Sace's capacity and operations. As global trade conditions become increasingly volatile, SACE's support will likely grow in significance as stabilizer and enabler of trade for Italian businesses.

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