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Thesis

Mechanisms of Successful EU Business Expansion in East Asia: Evidence from Germany's Performance in Japan and South Korea

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Abstract

This thesis examines why Germany developed and maintained stronger export competitiveness in Japan and South Korea compared to France and Italy. Although the three countries are large, advanced Western European economies, integrated into the European trade framework and broadly aligned within the same geopolitical order, their export performance in these advanced East Asian markets has differed significantly over time. Germany has maintained a stronger and more stable relative position, raising the question of which mechanisms explain this advantage.

The thesis argues that Germany's export competitiveness cannot be explained by market size, trade openness, political alignment, or general economic development alone. Instead, it is best understood as the result of a sequential process combining political alignment, export structure, asymmetric interdependence, path dependence, and gradual institutional adaptation. Political alignment within the Western bloc created favourable conditions for trade relations to develop, but it did not determine which European country benefited most. The decisive difference lies in the structure of Germany's exports, which were more concentrated in machinery, transport equipment, chemicals, and production-related goods. These exports were more closely connected to industrial production processes and therefore less easily substitutable than many French and Italian exports.

Methodologically, the thesis combines a Most Similar Systems Design with process tracing. Germany, France, and Italy are selected as comparable cases, while Japan and South Korea serve as advanced East Asian destination markets. The analysis relies on long-run trade data from IMF International Merchandise Trade Statistics and sectoral data from UN Comtrade SITC LTS, complemented by contextual indicators from Macrotrends, the World Bank, and the Observatory of Economic Complexity. The main indicators include export composition, value-chain position, trade dependence, stability of export shares, upgrading of export composition, sectoral specialisation, and relative export shares.

The findings show that Germany's advantage is strongest in indicators capturing export structure and temporal stability. Germany displays a higher concentration in machinery and transport equipment, a stronger share of production-related exports, greater sectoral specialisation, and a more stable export position over time. Trade dependence and upgrading provide more ambiguous evidence: dependence alone does not explain Germany's advantage, while upgrading does not show a simple linear increase in advanced industrial goods. Overall, the thesis concludes that Germany's stronger export competitiveness is best understood as a long-term structural and relational process, based on production embeddedness, lower substitutability, and self-reinforcing trade relationships over time.

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Introduction

International trade between Europe and East Asia represents one of the most important dimensions of the contemporary global economy. Among European countries, Germany has historically occupied a particularly strong position in exports to advanced East Asian markets, especially Japan and South Korea. While France and Italy are also large, advanced, and internationally integrated economies, their export performance in these markets has generally remained weaker than Germany's. This raises an important question: why has Germany been able to develop and maintain a stronger export position in Japan and South Korea compared to other major European economies?

This thesis addresses this question by examining Germany's export competitiveness in Japan and South Korea in comparison with France and Italy. The central puzzle is not simply that Germany exports more in absolute terms, but that its relative export position has remained stronger and more stable over time. Germany, France, and Italy share several important similarities: they are all advanced industrial economies, they are founding members of the European integration process, they belong to the same broad Western geopolitical bloc, and they operate within the same European trade framework. Yet, despite these similarities, their export performance in Japan and South Korea differs significantly. This makes the comparison analytically useful, because it allows the thesis to investigate why structurally similar countries may produce different outcomes in the same external markets.

The research question guiding the thesis is therefore:

Why did Germany develop and maintain stronger export competitiveness in Japan and South Korea compared to France and Italy?

The thesis argues that Germany's advantage cannot be explained by political alignment, market size, or trade openness alone. These factors matter, but they do not fully account for the specific pattern observed in Japan and South Korea. Instead, Germany's stronger position is best understood through a sequential causal mechanism. First, shared political alignment within the Western bloc created favourable conditions for trade relations to develop. Second, Germany's export structure, especially its stronger concentration in machinery, transport equipment, chemicals, and production-related goods, generated a stronger potential for asymmetric interdependence. Third, once this position was established, it became more stable through path-dependent mechanisms, including learning effects, coordination effects, and adaptive expectations. Finally, Germany's advantage was maintained over time through gradual institutional adaptation and the continued reproduction of specialised industrial capabilities.

The theoretical framework combines insights from international political economy and historical institutionalism. Hirschman's work on trade and dependence provides the basis for understanding how trade relations can generate asymmetric power relations when partners differ in their ability to replace specific exchanges (Hirschman 1945). Keohane and Nye's distinction between sensitivity and vulnerability further clarifies why interdependence does not imply equality, and why the ability to adjust to disruption is central to the distribution of power (Keohane & Nye 1977). Mansfield and Bronson's work on alliances and trade explains why political alignment can facilitate trade relations among strategically aligned countries, even if it does not determine the distribution of gains (Mansfield & Bronson 1997). To explain persistence and consolidation, the thesis uses Pierson's theory of path dependence and increasing returns, together with Thelen's work on gradual institutional change (Pierson 2000; Thelen 1999).

Methodologically, the thesis combines a Most Similar Systems Design with process tracing. The MSSD compares Germany, France, and Italy as broadly similar cases that differ in the outcome of interest.

This helps to narrow the explanation by holding constant major contextual conditions, while focusing attention on the explanatory indicators where meaningful variation is expected. Process tracing is then used to examine the development of Germany's advantage over time. The analysis is structured around three phases: the early post-war rise from 1958 to 1965, the reinforcement phase from 1967 to 1978, and the long-term consolidation phase from 1987 to the present.

The empirical analysis relies primarily on IMF International Merchandise Trade Statistics for long-run export data from 1955 to 2024, and on UN Comtrade SITC LTS data for sectoral indicators from 1962 to 2024. Additional contextual indicators are drawn from Macrotrends, the World Bank, and the Observatory of Economic Complexity. The outcome variable is export competitiveness, operationalised as each country's share of European exports to Japan and South Korea. The explanatory indicators include export composition, value-chain position, trade dependence, stability of export shares, upgrading of export composition, and sectoral specialisation.

The contribution of the thesis is twofold. Empirically, it provides a long-term comparative analysis of Germany, France, and Italy in two major East Asian markets. Theoretically, it integrates approaches that are often treated separately: theories of trade-induced power and asymmetric interdependence, on the one hand, and theories of path dependence and institutional change, on the other. By doing so, the thesis shows that export competitiveness should not be understood only as a static outcome based on scale or efficiency, but as a dynamic process shaped by trade structure, vulnerability, and institutional reproduction over time.

The thesis is structured as follows. The first chapter develops the theoretical framework, defining the key concepts and presenting the main theoretical expectations. The second chapter outlines the research design, case selection, data sources, and indicators. The third chapter presents the empirical analysis, beginning with descriptive statistics and then tracing the three phases through which Germany's advantage emerged, persisted, and was consolidated. The fourth chapter discusses the findings, including the strongest explanatory indicators, ambiguous evidence, limitations of the explanation, and implications for France and Italy. The conclusion summarises the argument and reflects on the broader implications of the thesis.

Theory

This chapter develops the theoretical framework used to address the research question of this thesis, namely why Germany developed and maintained a competitive advantage in exports to Japan and South Korea compared to other European countries. It builds on the idea that trade relations are not solely determined by market forces, but are shaped by political alignment, structures of interdependence, and long-term institutional dynamics.

The chapter is structured in three parts. It begins by defining the key concepts that will guide the analysis. It then reviews the relevant literature, focusing on trade, power, and interdependence, as well as on persistence and institutional change. Finally, it presents the central argument(s) of the thesis and derives a set of theoretical expectations that will be tested in the analysis.

Concepts

This section defines the key concepts that characterise the theoretical framework of this thesis. These concepts provide the analytical tools through which the empirical analysis will be conducted. In particular, the section clarifies the meaning of the following concepts: export competitiveness, political alignment, interdependence and vulnerability, asymmetric dependence, path dependence, and gradual institutional change. Defining these terms is essential to ensure conceptual clarity before jumping into the analysis.

Export Competitiveness. In this thesis, export competitiveness is understood as the ability of a country to establish and maintain a relatively strong position in specific export markets over time. This definition emphasises not only performance at a given moment, but also the persistence and evolution of that position in comparison to other countries. Competitiveness is therefore conceived as a relative and dynamic concept, rather than a static measure of export volumes or shares. In particular, the focus is on differences in performances among countries operating within similar economic and political macro-contexts, such as Germany, France, and Italy, in their export relations with Japan and South Korea.

This conceptualisation also implies that export competitiveness cannot be reduced to price-based factors alone. Instead, it will include structural characteristics coherent with the theoretical framework applied, such as the nature of the goods exported, the degree of specialisation, and the ability to sustain long-term trade relationships. Consequently, competitiveness is understood in the sense that a country will be (or not be) able to maintain and reinforce a dominant position over time, in the face of potential competition.

Political Alignment. Political alignment refers to the existence of shared strategic interests between states, often institutionalised through alliances or other forms of political coordination. In international trade, such alignment reduces uncertainty and fosters trust. Against this background, trade relations are more likely to emerge and develop among countries that share common geopolitical views.

In this work, political alignment is understood as a facilitating condition for the establishment of trade relations rather than a determinant of their distributional outcomes. While countries may operate from the same geopolitical sphere, in fact, this does not imply that they will achieve the same levels of competitiveness and advantage. Instead, political alignment merely creates the conditions under which trade can develop; it is the structure of interdependence between partners that will determine how the benefits of that trade are distributed.

Interdependence and Vulnerability. Interdependence is defined as a situation of mutual dependence between states, in which economic interactions generate reciprocal costs and benefits (Keohane

& Nye 1977, 7). However, such relationships are rarely balanced, as countries differ in their ability to respond to changes in trade relations (Ibid., 10). Hence, the concept of vulnerability is central to understanding the distribution of power within interdependent relations.

Vulnerability refers to the extent to which a country is exposed to costs even after it has attempted to adjust its policies or behaviour in response to external changes (Ibid., 10-11). It depends on the availability and cost of alternative partners, as well as the ease at which existing trade relations can be replaced. Countries that face lower vulnerability, therefore, are in a stronger position, as they are better able to absorb disruptions (Ibid.).

Asymmetric Dependence. Asymmetric dependence refers to situations in which interdependence between countries is unevenly distributed, which is the majority of the cases (Hirschman 1945, 32-33; Keohane & Nye 1977, 10). In such cases, one country depends more heavily on the relationship than the other, creating an imbalance that can translate into a structural advantage for the less dependent partner.

This asymmetry is shaped by several factors, which will be introduced in the next sections. When trade involves highly specialised goods, for example, dependence tends to increase particularly for the importing country, as these goods will be hard to replace. As a result, countries that are less dependent on specific partners are better positioned to adjust to changes and therefore occupy a more advantageous position within trade relationships.

Path Dependence. Path dependence covers the process in which initial events or choices shape subsequent development in a self-reinforcing manner, making alternative paths increasingly more expensive over time (Pierson 2000, 251-252). Under conditions of increasing returns, the benefits of remaining on a given trajectory grow with each step, while the costs of deviation rise, resulting in stable and persistent patterns which will be likely to persist rather than converge.

In the context of international trade, path dependence implies that early advantages can generate long-term effects, as actors – i.e. firms and countries – build capabilities and knowledge that reinforce their dominant position. Thus, trade patterns tend to exhibit stability over time, and initial differences in performance are more likely to persist rather than converge.

Gradual Institutional Change. Gradual institutional change refers to the process through which existing economic and institutional arrangements are adapted and transformed over time. It is important to state that this change, rather than occurring through sudden shifts or external shocks, will happen gradually through ongoing interactions among actors, which as said before tend to develop over time (Thelen 1999, 384-385).

A key mechanism in this process is the presence of so-called “feedback effects”, which reinforce existing structures by generating incentives for their continuation (Ibid., 392-393). At the same time, actors actively reinterpret and modify institutions, other than keeping them static and in an active position. This means that long-term outcomes are shaped not only by initial conditions but also by continuous processes of refinement, which will strengthen and deepen existing patterns.

Literature Review

This section aims to review the relevant theoretical literature that will be employed in the analysis of this thesis, with a particular focus on the political and institutional dimensions of economic exchange between countries. Rather than treating trade as a purely market-driven phenomenon, existing scholarship highlights

the role of factors such as power, political alignment, and institutional dynamics in characterising international trade.

The literature can be broadly divided into two strands: one focusing on trade, power, and interdependence, while the other one on persistence and the evolution of economic advantages over time. Additionally, research gaps will be explored in the last sub-section.

Trade, Power, and Interdependence

A first strand of literature emphasises the political dimension of international trade, challenging the view that trade relations are determined solely by comparative advantage or market efficiency. Instead, these approaches highlight how economic exchange generates interdependence between states, which may in turn produce asymmetrical power relations. Texts employed in this section are: *National Power and the Structure of Foreign Trade* (1945), by Albert O. Hirschman; *Power and Interdependence* (1977), by Robert O. Keohane & Joseph S. Nye; *Alliances, Preferential Trading Arrangements, and International Trade* (1997), by Edward D. Mansfield & Rachel Bronson.

A foundational contribution in this area is provided by Hirschman, who argues that trade relations create structures of dependence that can be used as instruments of political influence (Hirschman 1945, 13-16). In his idea, the key issue is not the total trade volume of a country, but the extent to which one country depends on another, which he conceptualises as "mutual dependence", or interdependence (Ibid., 10). Dependence, in this sense, is shaped not only by the gains derived from trade, but also by the availability of alternative partners and the costs associated with a possible disruption in the trade relation (Ibid., 17-18).

Hirschman further shows that these dynamics are not equal; on the contrary, they tend to generate asymmetrical patterns of interdependence, as countries differ in their ability to replace existing trade relationships. Factors that contribute to shaping dependence can be, for example, trade concentration or the nature of the goods exchanged (Ibid., 28-29). Over time, these relationships become more and more entrenched, as trade creates "vested interests" and reinforces existing economic linkages (Ibid., 17-18). As a result, countries that are less dependent on specific partners are able to occupy more advantageous positions within the international systems (Ibid., 32-33). The concepts of Hirschman can be summarised through the following table.

Step	Mechanism	Implication
1	Trade creates interdependence	States become economically connected
2	Interdependence is often asymmetric	Dependence is unevenly distributed
3	Dependence is shaped by structural factors (gains, adjustment costs, substitutability, trade concentration, vested interests)	Some countries become more dependent than others
4	Unequal dependence generates influence	Less dependent country gains leverage
5	Dependence reflects difficulty of substitution	Power lies in ability to replace partners

Table 1. Hirschman's process of trade-induced asymmetric dependence

This perspective has been further developed later on by Keohane & Nye, who conceptualised international relations – and international trade – in terms of complex interdependence, opposed to the views of political realists (Keohane & Nye 1977, 19). While realists prioritise military power and national security, the authors argue that states are increasingly connected through multiple economic and political channels, where issues are not hierarchically ordered; therefore, military force is less relevant (Ibid., 20-21). Within this framework, interdependence is defined as a situation of mutual dependence characterised by reciprocal costly effects, distinguishing it from mere "interconnectedness" (Ibid., 8).

Crucially, however, interdependence does not imply equality, thus aligning with Hirschman's earlier take. Keohane & Nye write that asymmetries in dependence generate power differences, as actors vary in their ability to cope with disruptions in their external relations (Ibid., 10). In this regard, they introduce a fundamental distinction between two characteristics: "sensitivity" and "vulnerability". The former refers to the immediate impact of changes in interactions; the latter, on the other hand, captures the long-term ability of a country on the availability and cost of changes (Ibid., 10-11). Therefore, countries that face lower vulnerability are in a stronger position within interdependent relations, connecting with the idea that trade can generate unequal outcomes across states.

A complementary perspective is provided by Mansfield & Brunson, who highlight the role of political-military alliances in shaping patterns of international trade (Mansfield & Brunson 1997, 94). Their work shows that alliances and "preferential trading arrangements" create incentives for states to engage in economic exchange. Additionally, trade among allies generates positive security externalities and contributes to national power (Ibid.). With "allies", the authors refer to the definition of Gowa (1994), meaning "states with common security goals" (Ibid., 94-95).

Moreover, trade relations are often supported by relationship-specific investments, which further reinforce economic ties between partners (Ibid., 95). The authors find out that alliances and trade agreements promote bilateral trade, and their combined effect is particularly strong, especially when major powers are involved (Ibid., 101-103).

If put together, this part of literature suggests that trade relations are embedded in broader political and strategic contexts, and that the distribution of benefits from trade depends not only on economic factors but also on the structure of interdependence and the nature of political relationships between states.

Persistence and Institutional Dynamics

A second strand of literature focuses on the persistence and evolution of economic outcomes over time, particularly through the lens of historical institutionalism. These approaches challenge static views of economic performance by emphasising the importance of temporal processes, self-reinforcing dynamics, and gradual change over time. Texts used in this section are: *Increasing Returns, Path Dependence, and the Study of Politics* (2000), by Paul Pierson; *Historical Institutionalism in Comparative Politics* (1999), by Kathleen Thelen.

Pierson develops the concept of path dependence as a process that produces increasing returns (Pierson 2000, 251). Contrary to approaches that assume predictability and reversible outcomes, this perspective highlights the importance of timing and sequence, suggesting that small events can generate long-lasting consequences (Ibid., 251-252). Once a particular path is established, it becomes progressively more difficult to reverse, since the costs associated with changing partners or suppliers increase over time.

This dynamic is driven by self-reinforcing mechanisms: the benefits of remaining on a given path grow after each step, while the costs of change rise (Ibid., 252). As a result, early advantages tend to persist, even in the absence of continuous external shocks. Pierson shows that these processes are relevant in many fields of study, including international trade, where increasing returns can lead to the development of highly specialised comparative advantages (Ibid., 255). Countries and firms that gain an early advantage in specific sectors are therefore likely to consolidate that dominant position over time simply thanks to the cumulative effects of past decisions and interactions.

Around the same time, Kathleen Thelen develops a historical institutional approach that explains how institutions are shaped and transformed over time. In contrast to rational choice perspectives that view institutions as efficient and stable entities, she argues that they are the product of historical processes, often

reflecting conflict and "unintended consequences" (Ibid., 381-382). Coherently with both this perspective and Pierson's one, timing and sequence play a central role, as similar initial conditions may lead to different outcomes depending on how institutional trajectories develop and the "critical junctures" that influence them (Ibid., 384-385).

At the same time, Thelen highlights that path dependence does not imply complete stability or "lock-in". Instead, institutions are continuously reproduced and adapted through ongoing interactors among actors (Ibid., 388-389). A key mechanism in this process is the presence of "feedback effects", which both stabilise existing arrangements and generate incentives for their continuation and consolidation (Ibid., 392-395). As a result, institutional change often occurs gradually, rather than being transformed only through major shocks, suggesting the fact that long-term outcomes are shaped not only by initial conditions but also by continuous adaptation within existing institutional frameworks.

Summing it up, this second part of literature conveys the idea that economic advantages are not only the result of initial conditions but are also shaped by gradual processes that develop over time. persistence is explained by self-reinforcing mechanisms that stabilise existing trajectories, while consolidation is understood as the outcome of gradual adaptation institutional change within those trajectories.

Research Gaps

While the literature reviewed above provides important insights on the political and institutional foundations of trade relations, it remains fragmented. Existing studies tend to focus either on the role of interdependence and power in shaping trade outcomes or on the mechanisms through which economic structures persist and evolve over time. However, these perspectives are not integrated within a single analytical framework.

After a deep look into the libraries, there is a lack of research that combines insights from power-based approaches to trade with theories of path dependence and institutional change to explain differences in trade performance between comparable countries. While scholars have put attention on the generation of asymmetric dependence, less attention has been given on how these mechanisms interact to produce sustained and differentiated outcomes across similar actors.

As a result, existing literature does not provide a comprehensive explanation for why countries with comparable economic and political characteristics may develop different levels of competitive advantage in specific bilateral trade relationships. This thesis, consequently, aims to address this gap by integrating insights from these strands of literature into a unified framework that dives deep into each of the stages: the emergence, the persistence, and the consolidation of competitive advantage in trade.

Argument

This section delves into the central theoretical argument of the thesis, explaining why Germany, in the first place, had a competitive advantage in exports to Japan and South Korea compared to other European countries, as well as how it developed and maintained it. The argument builds on the idea that trade relations are shaped not only by economic factors, but also by political alignment and the structure of interdependence between states.

The core argument unfolds through a sequential causal chain. First, political alignment facilitates the emergence of stable trade relations between countries. Second, these trade relations generate asymmetric patterns of dependence, as the costs of adjusting to trade disruption differ across partners and situations. This asymmetry, in particular, creates an initial advantage for the less dependent country. Third, once established, this advantage tends to persist through self-reinforcing mechanisms characterised by

increasing returns and path dependence. Finally, these dynamics are further reinforced over time through processes of either decisive or gradual institutional change, which tend to consolidate and deepen the initial advantage.

Each of these steps will be developed in this section. It begins by explaining the emergence of Germany's initial advantage, before examining the mechanisms that sustained it over time, and concluding with exploring the processes through which it was further consolidated. Lastly, a small section regarding some theoretical expectations will be provided.

Initial Advantage: Alliance and Trade-Induced Power

Trade relations between advanced industrial economies are not solely determined by market forces. Instead, they are deeply embedded in political and strategic contexts. In particular, security alliances play a crucial role in shaping patterns of international trade by reducing uncertainty, fostering trust, and encouraging policy coordination among states (Mansfield & Bronson 1997, 94-95). As a result, trade flows are not randomly distributed across countries and regions but tend to be concentrated among politically aligned partners. Therefore, both alliances and preferential trading arrangements are factors that likely promote trade among members (Ibid., 94).

In the post-World War II period, Germany, Japan, and South Korea were all integrated into a common Western-aligned geopolitical sphere of influence, notoriously guided by the United States of America. This shared alignment created a stable and predictable environment for economic exchange, as governments had incentives to promote trade within the alliance network and to support economic cooperation among partners. At the same time, firms operating within these countries faced lower levels of political risk and uncertainty, and this encouraged cross-border investment and long-term commercial engagement. Against this background, trade relations between Germany and its East Asian partners were not only more likely to emerge, but also more likely to develop early and consolidate over time.

However, the existence of trade relations alone is not sufficient to explain the emergence of competitive advantage. France and Italy, in fact, together with other European countries, were also part of that Western-aligned geopolitical bloc. While political alignment helps explain why trade happens, it does not clarify why one country may benefit more than other ones within the same environment. To understand this, it is necessary to examine the distributional consequence of trade relations and the mechanisms through which they generate unequal outcomes.

Hirschman provides a crucial insight in this direction by arguing that international trade generates interdependence between states, although this interdependence is rarely symmetrical (Hirschman 1945, 30). What matters for power is not the overall trade volume, but the degree to which one country depends on another – what Hirschman explains through the concept of "distribution of the mutual dependence" (Ibid., 11). Dependence, in this sense, is not simply a function of how much one country trades, but of how difficult it is to replace a given trade relationship relative to the partner (Ibid., 20-21).

Going deeper, the level of dependence between trading partners is shaped by several key factors. First, trade concentration increases dependence when a country relies heavily on a limited number of markets or suppliers (Ibid., 98). In such cases, the disruption of a single trade relationship can have significant economic consequences. Second, the availability of alternative partners plays a critical role. When substitutes are readily available, in fact, dependence is low; conversely, when alternatives are limited or less efficient, dependence increases (Ibid., 10). Third, the nature of the goods exchanged plays a critical role in judging the intensity of the dependence. Trade involving highly specialised or technologically advanced goods tends to generate higher levels of dependence, since these goods are more difficult to

substitute and often require specific knowledge or standards. Conversely, if trade involves goods that are easily replaceable, dependence is low (Ibid., 28-29).

A central element in Hirschman's framework is the role of adjustment costs. When trade relations are disrupted, countries must reorganise production, identify markets and/or suppliers, and adapt existing economic structures to new environments. This process can be both costly and time-consuming, especially when trade is deeply embedded in domestic industries. Therefore, the longer and more painful the adjustment process, the greater the degree of dependence (Ibid., 32-33).

These dynamics imply that trade relations inherently generate asymmetries. When one country is more dependent on a trade relationship than the other, the less dependent country occupies a structurally advantageous position. In fact, this country can more easily absorb disruptions, shift to other partners, or use its position as leverage in the trade interaction with that country (Ibid., 30). This point is automatically intertwined with the nature of the goods that are exchanged. As it has been said that industrial and technologically advanced goods are harder to replace, the exporters of such goods are often able to diversity their markets more easily. This creates an asymmetry in adjustment costs, where the importing country faces higher barriers to exit than the exporting country.

Furthermore, the concept of interdependence developed by Keohane & Nye provides additional clarity on this point. While trade relations generate mutual dependence, what determines power is what the authors call "vulnerability" – namely, the extent to which a country is exposed to costs even after it has attempted to adjust its policies and behaviour (Keohane & Nye 1977, 10-11). In other words, vulnerability depends on the availability of alternatives and the cost of switching to them. Consequently, countries that can more easily replace a trade relationship are less vulnerable and therefore in a stronger position.

The distinction that the authors make between sensitivity and vulnerability is highly important. While both trading partners may be affected by disruption in trade (sensitivity), the long-term distribution of power depends on their relative ability to change and/or adapt (vulnerability) (Ibid.). In asymmetric relationships, the country with lower vulnerability is better able to absorb shocks and maintain its position, while the more vulnerable partner faces greater limits.

Taken together, these arguments provide a theoretical explanation for how an initial competitive advantage can emerge within trade relationships. Political alignment increases the likelihood that trade relations are established and sustained over time, although it is just a piece of the puzzle. Once these relations are in place, in fact, the distribution of benefits depends on the structure of interdependence between partners. When trade generates asymmetric dependence, the less dependent country occupies a structurally advantageous position. This advantage is not derived from trade volume itself, but from the relative ability to absorb disruptions and adapt to changes.

Against this background, competitive advantage in export markets can be understood as the outcome of asymmetric interdependence, where different levels of vulnerability across countries translate into unequal positions within trade relationships. This mechanism provides the theoretical foundation for explaining how an initial advantage may emerge between otherwise comparable countries operating within the same broader economic and political alignment.

Persistence: Path Dependence and Increased Returns

While the previous section explained how an initial competitive advantage can emerge from asymmetrical trade relations, this alone does not account for its persistence over time. In principle, such advantages could be temporary, as other countries may adapt, develop similar capabilities, or enter the same market with

similar or more knowledge. To understand why advantages may endure, it is necessary to consider the role of path dependence and increasing returns.

Pierson argues that many political and economic processes exhibit increasing returns, meaning that the benefits of a given path increase over time, while the costs of switching to alternatives rise (Pierson 2000, 251). Under these conditions, early events can have long-lasting effects, as initial advantages become self-reinforcing and progressively more difficult to reverse. Outcomes are therefore shaped not only by efficiency but also by the sequence of events through which they develop (Ibid.).

A key implication of this argument is that timing and sequence matter. Early entry into a particular market or sector can generate advantages that later entrants struggle to replicate or keep the pace. Once a position of dominance is established, a range of so-called positive feedback mechanisms may emerge, reinforcing that position over time (Ibid.). Among these mechanisms, three are particularly relevant: learning effects, coordination effects, and adaptive expectations.

Learning effects refer to the accumulation of knowledge and experience through repeated activity. When firms operate in specific markets, in fact, they refine production processes, improve technological capabilities, and develop expertise that enhance their competitiveness. This is especially evident in knowledge-intensive sectors, resulting in a high degree of specialisation (Ibid., 255).

Coordination effects appear when economic actors adjust their behaviour in ways that reinforce existing patterns of interaction. In trade relationships, this may involve, for example, the alignment of production processes or technical standards. As these connections deepen, switching to alternative partners becomes more complex and costly, therefore reinforcing the persistence of existing relationships.

Lastly, adaptive expectations refine this dynamic. When firms and buyers develop stable expectations regarding the reliability and quality of the products of a specific partner, they are more likely to continue engaging with that partner. This will reduce uncertainty and make existing trade relationships more resilient over time.

Taken together, these mechanisms generate self-reinforcing dynamics in which the benefits of maintaining an established relationship increase, while the eventual costs of switching to a new partner rise. As Pierson emphasises, this leads to a situation in which "the probability of further steps along the same path increases with each move down that path" (Ibid., 252).

This persistence can also be linked to Hirschman's earlier insight that trade relationships tend to become more entrenched and intertwined over time. As economic actors adapt to existing patterns of exchange, trade becomes embedded in domestic production logics, making it more difficult to change (Hirschman 1945, 26-27). Initial asymmetries, therefore, are not easily corrected but, on the contrary, tend to be reproduced and remarked through ongoing interaction.

It is important to say, however, that path dependence – this whole process that exhibits increasing returns – does not imply that change is impossible; it just suggests that it becomes increasingly costly and constrained. Countries attempting to challenge this status quo by establishing a stronger share in the market must overcome both existing differences in capability and the accumulated advantages generated by past interactions. This creates barriers at the entrance that limit the ability of competitors to challenge the dominant actor.

Summing up, these arguments suggest that once a country acquires an initial advantage in a trade relationship, this advantage is likely to persist over time due to the process of path dependence that

generates increasing returns. As a result, patterns of trade and specialisation become stable, and relative shares among countries are reinforced rather than balanced.

Consolidation: Gradual Change and Institutional Dynamics

After having looked at the causes of the formation for a competitive advantage and its persistence over time, it is necessary to tackle the reasons behind its consolidation. As the terms "persistence" and "consolidation" may look similar, an explanation of the differences will be provided here. Persistence, as developed by Pierson, refers to the mechanisms through which an initial advantage is maintained over time, as increasing returns raise the costs of switching and reinforce existing patterns and trajectories (Pierson 2000, 251-252). Consolidation, on the other hand, captures the processes through which this advantage is further strengthened and deepened. Rather than simply remaining on the same path – as it happens during the persistence stage – actors adapt and upgrade their methods within existing structures (Thelen 1999, 388-389).

Building on this distinction, historical institutionalism provides the tools to explain how competitive advantages are not only maintained but actively reinforced and upgraded over time. Rather than viewing institutions and economic structures as static, in fact, Thelen emphasises that these are continuously reproduced and transformed through ongoing interactions among actors (Ibid., 384). This perspective highlights that stability and change can actually coexist, as existing arrangements are sustained while being gradually adapted to new conditions.

A central mechanism in this process is the presence of so-called feedback effects (Ibid., 392). Institutional and economic arrangements generate incentives that encourage actors to reproduce existing patterns of interaction. At the same time, they produce distributional effects, with the result of benefiting certain actors more than others. These actors, in turn, develop a vested interest in maintaining and strengthening the existing system, consequently reinforcing its stability (Ibid., 394-395).

In the context of international trade, these dynamics imply that economic actors do not passively remain on a precise given path but actively adapt within it. These actors may be simply firms that can upgrade production processes, improve technological capabilities, or move into more advanced segments of the value chain of a specific market segment. These changes that firms enable do not alter the overall trajectory; instead, they reinforce and extend it over time, making it even more difficult for competitors to challenge the established status quo of a specific trade relationship.

At the core of her logic, Thelen emphasises that such transformations and changes typically occur gradually rather than through disruptive and sudden shifts. Instead of being driven solely by major external shocks, institutional and economical change takes place through incremental adjustments that accumulate over time (Ibid., 384-385; 396-397). These gradual processes allow existing structures to adapt to changing conditions while preserving their core features.

Ending this section, these arguments suggest that competitive advantage is not only maintained through path dependence but also consolidated through continuous processes of adaptation and refinement. As actors – governments and firms – adjust their strategies within existing structures, and as feedback effects strengthen established relationships, the initial advantage becomes deepened and resilient over time. This may help explain why differences in trade performance between similar countries may not only persist but also become more pronounced over time.

Theoretical Expectations

Building on the theoretical framework developed previously, this study derives a set of expectations regarding the empirical patterns that should be observed if the argument holds. These expectations

correspond to the three stages identified above: the emergence of an initial advantage, its persistence over time, and its subsequent consolidation.

First, if political alignment facilitates the formation of trade relations but does not determine their distributional effects, it is expected that countries operating within similar geopolitical contexts will develop trade linkages with the same partners, yet not achieve the same level of advantage (Mansfield & Brunson 1997, 94-95). Instead, differences should arise from the structure of interdependence within these relationships. In particular, countries exporting more specialised and less substitutable goods are expected to face lower vulnerability, as their trading partners would incur higher costs in the event of disruption and change of partner (Hirschman 1945, 17-18; Keohane & Nye, 10-11). Consequently, these countries should occupy a more advantageous position within trade relationships. As for this case, Germany is expected to exhibit export patterns consistent with lower vulnerability relative to other European countries, such as France and Italy, for the nature of most of the goods they export with Japan and South Korea.

Second, if increasing returns and path dependence reinforce initial advantages, it is expected that early differences in trade performance will persist over time rather than converge (Pierson 2000, 251-252). This implies that trade patterns will display stability, with limited evidence of convergence among countries operating in similar markets. Here, Germany is expected to maintain a relatively strong and stable position as for exports to Japan and South Korea over time, even as other European countries attempt to expand their presence in these markets.

Third, if competitive advantages are consolidated through gradual institutional change and feedback effects, it is expected that these advantages will not only persist but also deepen over time (Thelen 1999). Rather than remaining static, trade relationships should evolve through processes of upgrading, increased specialisation, and stronger coordination between economic actors. These dynamics should lead to a reinforcement of existing patterns, making them more embedded and resilient. In this case, Germany's trade relationships with Japan and South Korea are expected to display increasing levels of integration and complexity over time, further strengthening its position relative to other European countries like France and Italy (Pierson 2000, 252; Thelen 1999, 392-395).

Concluding the theoretical section of this thesis, these expectations imply that Germany's competitive advantage should be observable not only in its initial position of advantage, but also in the persistence and deepening of that position over time. The following sections present the data and methodological approach through which these expectations will be assessed.

Data and Methods

This chapter presents the research design and methodological approach used to answer the research question of the thesis. Its main purpose is to show how the theoretical framework developed in the previous chapter is translated into an analysis capable of explaining why Germany developed and maintained a stronger export position in Japan and South Korea compared to other European countries. In doing so, the chapter combines a comparative case-study design with a qualitative focus on causal mechanisms, while basing the analysis on quantitative trade data and indicators.

The chapter is structured into five parts. It begins with the selection of the cases and explain why Germany, France, and Italy, as well as Japan and South Korea as destination markets, have been chosen. It then presents the Most Similar Systems Design and the use of process tracing as the main methodological tools for the development of this thesis. After that, the chapter outlines the data sources and all the indicators that will be employed in the analysis. Finally, it concludes with an essential statement on the use of artificial intelligence in the research and writing process.

Case Selection

The case selection in this thesis is designed to enable a meaningful comparison of export performance across similar countries operating within the same external environment. The analysis focuses on Germany, France, and Italy as exporting countries, and on Japan and South Korea as destination markets. This configuration allows for the examination of differences in export competitiveness across comparable European economies within a shared international context.

Germany, France, and Italy represent appropriate cases due to their high degree of similarity. In fact, all three are advanced industrial economies, founding members of the European Union, and part of the same institutional and regulatory framework governing trade policy. They share comparable levels of economic development, technological capacity, and integration into global markets. In addition, they operate under the same EU trade agreements and face similar challenges when exporting to third countries. These common features make them suitable for analysing variation in export performance that cannot be translated to broad structural differences.

Despite these similarities, however, the three countries show clear variation in their export performance in Japan and South Korea, which constitutes the central outcome of this thesis. Germany has consistently maintained a stronger position in these markets compared to France and Italy, being the top European exporter for many consecutive decades until today. This divergence provides the empirical basis for investigating the mechanisms that explain why countries with comparable characteristics achieve different outcomes in similar contexts.

The choice of Japan and South Korea as destination markets is equally deliberate. Both countries are highly developed economies with advanced industrial structures and strong integration into global trade networks, unlike other countries in the region. They share a stable geopolitical alignment with European countries and represent important economic partners for the European Union. At the same time, they are highly competitive and technologically advanced markets, particularly in sectors characterised by high levels of specialisation. This makes them especially relevant for assessing differences in export competitiveness among European exporters.

Lastly, beyond methodological considerations, the case selection is also driven by a broader interest in the economic and political relations between Europe and East Asia. The interactions between these

regions represent a key dimension of the contemporary global economic. Analysing Germany's export dominance in Japan and South Korea, and comparing it with France and Italy, allows this thesis to contribute to a deeper understanding of how advanced economies compete within this interregional context.

Overall, the case selection combines a high degree of comparability with meaningful variation in the outcome. This makes the countries selected particularly well suited for a structured comparative analysis, which is further developed through the application of a Most Similar Systems Design, which will be presented in the next section.

Most Similar Systems Design (MSSD)

Most Similar Systems Design (MSSD) is employed as the comparative research strategy of this thesis. This approach is particularly suitable for examining why countries that share a broad set of structural similarities display different outcomes in a specific domain. In this case, the method is used to analyse why Germany has developed and maintained a stronger export position in Japan and South Korea compared to other "similar" European countries, such as France and Italy.

MSSD operates by selecting cases that are similar across a wide range of relevant characteristics while differing in the outcome of interest. The underlying logic is that, by holding constant as many background factors as possible, the researcher can better isolate the variables that contribute to the observed differences (Anckar 2008, 389). In the context of this thesis, Germany, France, and Italy share key similarities: for examples, they are all advanced industrial economies, they are members of the European Union, and they are embedded in the same broader geopolitical bloc. At the same time, they display variation in export performance in East Asian advanced markets, like Japan and South Korea, which constitutes the outcome to be explained.

To structure the comparison, this thesis adopts a distinction between three types of variables. First, *contextual* indicators capture the structural similarities across cases. Second, *explanatory* indicators refer to the factors derived from the theoretical framework that might give hints on where the difference in the outcomes comes from. Third, the *outcome* variable is the object of the MSSD, which clarifies which is the different outcome for the similar cases. This classification simplifies the comparative logic and ensures a clear distinction between what is held constant and what is expected to explain variation. The variables and their method of operationalisation will be explained within the section on data, later on in this chapter.

The use of MSSD is particularly appropriate in a cross-country comparison such as this one. By focusing on countries that are broadly comparable in terms of economic structure and political alignment, the analysis reduces the likelihood that observed differences are driven by unrelated structural factors. On the contrary, it allows greater attention to be put on the mechanisms identified in the theoretical framework, such as asymmetric dependence or institutional dynamics.

At the same time, the application of MSSD in this thesis follows a "loose" rather than strict logic. As highlighted by Anckar, it is virtually impossible to identify cases that are identical in all relevant aspects except for one variable (Anckar 2008, 390). Even among similar European economies, differences may remain, for example, in industrial composition, policy choices, historical past and trajectories, and much more. As a result, the aim is not to isolate a single causal factor, but to narrow down plausible explanations by controlling for major similarities and identifying consistent patterns over time.

This last clarification also points to the main limitation of this method. Because cases are never perfectly comparable, in fact, multiple factors may simultaneously contribute to the observed outcome, making causal inference more complex. However, this limitation does not undermine the usefulness of

MSSD. On the contrary, it better highlights the importance of combining it with a complementary method capable of tracing causal mechanisms in greater detail. Exactly for this reason, MSSD is paired in this thesis with process tracing, which allows for a more in-depth examination of how the identified mechanisms operate over time.

Summing it up, MSSD provides the comparative logic and structure of the research design. It enables a clear comparison between similar countries: on one hand, it helps the researcher to identify why Germany differs from its peers in terms of export competitiveness, while remaining consistent with the theoretical framework developed in the previous chapter; on the other hand, it gives the reader way much ease at reading the analysis, going through all the cases and factors with a clear structure.

Process Tracing

Process tracing is employed as the main analytical method of this thesis in order to identify and assess the causal mechanisms linking political alignment, trade relations, and the emergence and evolution of competitive advantage. As a qualitative method, process tracing allows for the systematic examination of the causal mechanisms that connect contextual and explanatory variables (Collier 2011, 823). Rather than focusing solely on correlations, it enables the reconstruction of the underlying causal chain through which outcomes are reproduced (Beach & Pedersen 2013, 1).

In this thesis, process tracing is used in an explaining-outcome variant, which aims to account for a specific empirical outcome within a given case (Ibid., 3). The outcome of interest is Germany's competitive advantage in exports to Japan and South Korea compared to other European countries. The method of process tracing is therefore applied to trace how this advantage emerged, persisted, and was consolidated over time, in line with the theoretical framework developed in the previous chapter.

More specifically, the analysis section will be structured around three sequential phases that correspond to the theoretical argument: 1) the emergence of an initial advantage, linked to political alignment and the formation of trade relations; 2) the persistence of this advantage, explained through mechanisms of path dependence and increasing returns; 3) its consolidation, driven by gradual institutional change and feedback effects. Within each phase, the empirical analysis focuses on identifying observable implications of the mechanisms, such as patterns of trade concentration, stability of export shares, increasing levels of specialisation, or others.

The use of process tracing is particularly suitable for this study because the research question is explicitly "why"-oriented, seeking to uncover the mechanisms underlying observed differences in trade performance. Combined with MSSD, this approach allows for a structured comparison across cases while maintaining an in-depth focus on the causal mechanisms that generate divergent outcomes.

Data

This section outlines the empirical basis of the thesis by presenting the data sources and the indicators used in the analysis. Its purpose is to showcase the operationalisation of the theoretical framework by translating each key concept into observable and measurable variables. In doing so, it establishes the link between the theoretical argument and the analysis.

It will be divided into two main parts. First, the data sources that will be employed in the study will be introduced. Second, it presents the indicators and measures, organised into contextual indicators,

explanatory indicators, and the outcome indicator. For each, the section explains the reasons behind the selection of the indicators, as well as how they will be operationalised in practice.

Data Sources

The analysis in this thesis relies primarily on quantitative trade data, complemented by selected macroeconomic and institutional indicators to provide contextual background. The main objective is to capture patterns of export performance and trade relations between Germany, France, and Italy and the East Asian markets of Japan and South Korea over time, in order to assess the theoretical mechanisms outlined in the previous chapter.

The main source for long-run bilateral trade data is the International Monetary Fund (IMF), specifically its International Merchandise Trade Statistics (IMTS) database (International Monetary Fund 2026). This dataset provides standardised information on bilateral merchandise trade flows over an extended time frame, covering the period from 1955 to 2024. For this reason, IMF IMTS is used as the primary source for the outcome indicator, trade dependence, and the stability of export shares. Its long temporal coverage makes it particularly suitable for analysing the emergence, persistence, and consolidation of export competitiveness over time.

However, IMF IMTS does not provide sufficient product-level detail for the sectoral indicators used in the analysis. Therefore, the thesis also relies on UN Comtrade SITC LTS data (UN Comtrade 2026). This dataset is used to calculate export composition, value-chain position, sectoral specialisation, and upgrading of export composition. The use of SITC LTS allows for a longer historical comparison of product categories, with available data from 1962 to 2024. Since sectoral data starts later than the IMF bilateral trade data, the first phase is measured from 1962 for these specific indicators. For the period before German reunification, Germany refers to the Federal Republic of Germany/West Germany, while the German Democratic Republic is excluded because the analysis focuses on Western-aligned capitalist economies integrated into the GATT/EEC trade framework.

The Observatory of Economic Complexity (OEC) is used for the Economic Complexity Index - Trade (ECI Trade) (Observatory of Economic Complexity 2026). Although OEC trade composition data covers a shorter period, it provides a useful measure of productive complexity and export capability. In this thesis, ECI Trade is used as a contextual indicator, calculated as an average over the available period from 1998 to 2024.

In addition to trade data, selected macroeconomic indicators are used to assess the structural comparability of the cases. Population and GDP are calculated using Macrotrends data, while trade openness is calculated using World Bank data (World Bank 2026). These indicators are not used as the main explanation for Germany's export advantage, but they support the logic of the Most Similar Systems Design by showing that Germany, France, and Italy are all large, advanced, and trade-integrated European economies. Given differences in data availability, each contextual indicator is calculated over the longest available historical period: population from 1955 to 2024, GDP from 1960 to 2024, trade openness from 1970 to 2024, and ECI Trade from 1998 to 2024.

Finally, selected historical and institutional sources are used to contextualise the quantitative evidence. These sources are not used to measure the indicators directly, but to interpret the historical and institutional conditions under which trade relations developed, particularly in relation to post-war reconstruction, Western alignment, and the evolution of the German industrial model. Overall, the combination of IMF IMTS, UN Comtrade, OEC, Macrotrends, World Bank data, and secondary literature

provides the empirical basis for examining export competitiveness, trade structure, and their evolution over time.

Indicators and Measures

This section operationalises the theoretical framework by translating the key concepts into observable indicators. Building on the research design, the indicators are organised into three groups: *contextual indicators*, *explanatory indicators*, and the *outcome indicator*. This structure follows the logic of the MSSD: contextual indicators establish comparability across cases; explanatory indicators capture the mechanisms derived from the theory; and the outcome indicator represents the result to be explained.

For each group of indicators, the selection is guided by both theoretical relevance and data availability. Because the thesis covers a long historical period, not all indicators are available for exactly the same years. For this reason, indicators are calculated over the longest available period for each source, and cases where operationalisation is based on proxies are explicitly stated.

Contextual Indicators. This group of indicators is used to demonstrate the structural similarity of the selected cases. They do not directly explain variation in the outcome; rather, they establish the background conditions under which Germany, France, and Italy can be compared.

A first set of indicators captures "pure" contextual characteristics. *Population* is included to capture demographic size and potential domestic market scale. It is operationalised as the average annual population over the period 1955-2024, using Macrotrends data. *GDP* is used as a proxy for overall economic size and is operationalised as average GDP over the period 1960-2024, also using Macrotrends data. *Trade openness* captures the degree to which each economy is integrated into global trade. It is calculated as the average ratio of exports plus imports to GDP over the period 1970-2024, using World Bank data.

A second set of contextual indicators is more directly connected to the theoretical framework. *ECI Trade* is used to capture productive complexity and the capacity to export sophisticated goods. It is sourced from the Observatory of Economic Complexity and calculated as an average over the available period from 1998 to 2024. This indicator provides a background condition related to the accumulation of capabilities and increasing returns over time (Pierson 2000, 251-252), as well as the ability to produce and export complex goods (Hirschman 1945, 28-29).

Alliance alignment is included as a categorical indicator reflecting the geopolitical positioning of the three countries. It captures whether the cases belonged to the same broad strategic bloc during the Cold War and is treated as a historical control. This is relevant because political alignment is expected to facilitate trade relations, although not necessarily to determine their distributional outcomes (Mansfield & Bronson 1997, 94-95). Finally, the *institutional trade environment* captures participation in common international and regional trade frameworks, including the GATT/WTO system and the European/EEC-EU trade framework. This indicator is operationalised qualitatively and reflects the institutional context within which trade relations developed, coherently with the emphasis on institutions as structures that shape economic interaction over time (Thelen 1999, 384-385).

Together, these contextual indicators are used to assess whether Germany, France, and Italy are sufficiently comparable for the purposes of the MSSD. They do not serve as the main explanatory variables, but establish the background conditions against which variation in the explanatory indicators and in export competitiveness can be interpreted.

Contextual Indicators	Trade, Power, and Interdependence	Persistence and Institutional Dynamics
Population	(Context)	
GDP	(Context)	
Trade Openness	(Context)	
ECI Trade	**Yes**	**Yes**
Alliance Alignment	**Yes**	No
Institutional Trade Environment	**Yes**	**Yes**

Table 2. Theoretical relevance of contextual indicators

Explanatory Indicators. Explanatory indicators are derived directly from the theoretical framework and are used to capture the mechanisms through which competitive advantage is expected to emerge, persist, and consolidate. Unlike contextual indicators, these variables are expected to vary across cases and over time.

A first key indicator is *export composition* toward Japan and South Korea. This captures the type of goods exported and is operationalised through UN Comtrade SITC LTS one-digit categories. For each country, export composition is measured as the share of each SITC category in total exports to Japan and South Korea over the period 1962-2024. This indicator reflects the theoretical expectation that specialised and less substitutable exports generate asymmetric dependence and structural advantage (Hirschman 1945, 28-29).

The *value chain position* of exports captures the extent to which exports are production-related and embedded in industrial processes. It is proxied through the share of intermediate/production-related exports, measured as SITC 5 + 6 + 7. These categories include chemicals, manufactured goods by material, and machinery and transport equipment. Since SITC one-digit categories are broad, this indicator is not treated as a direct measure of intermediate goods, but as a proxy for production-related export embeddedness. This captures the expectation that production-related exports are harder to replace and therefore associated with lower vulnerability (Keohane & Nye 1977, 10-11).

Trade dependence on Japan and South Korea is operationalised as the share of each country's total exports directed toward these markets, using IMF IMTS data. This indicator captures the degree to which each exporter is exposed to Japan and South Korea. In line with Hirschman (1945) and Keohane & Nye (1977), higher dependence may indicate greater vulnerability, although the analysis treats this indicator carefully because vulnerability also depends on substitutability and adjustment costs.

To capture persistence over time, the *stability of export shares* is measured using the coefficient of variation. Specifically, the indicator is calculated as the average coefficient of variation of each country's share of European exports to Japan and South Korea over the period 1955-2024. A lower coefficient of variation indicates greater stability. This indicator is directly connected to the concept of path dependence and increasing returns, as stable export shares suggest that early advantages are reproduced rather than easily displaced (Pierson 2000).

The *upgrading of export composition* captures the process of long-term adaptation and consolidation. It is operationalised as the share of selected advanced industrial SITC two-digit categories across the three phases of the analysis. The selected categories are 51, 54, 57, 58, 59, 71, 72, 73, 74, and 77, covering advanced chemical inputs, machinery, industrial equipment, and electrical machinery. This indicator is treated as a proxy for advanced industrial export composition rather than as a perfect measure of technological upgrading. It reflects the expectation that competitive advantages may be consolidated

through adaptation and movement toward more advanced export segments, in line with Thelen's (1999) argument.

Lastly, *sectoral specialisation* captures the concentration of exports in key sectors. It is operationalised as the combined share of each country's top three SITC one-digit export categories in total exports to Japan and South Korea. This indicator is useful for assessing whether countries are broadly diversified or concentrated in specific sectors. It is especially relevant to the argument that dominance in specialised sectors can reinforce asymmetric trade relationships (Hirschman 1945; Pierson 2000).

Explanatory Indicators	**Trade, Power, and Interdependence**	**Persistence and Institutional Dynamics**
Export Composition	**Yes**	**Yes**
Value Chain Position	**Yes**	No
Trade Dependence	**Yes**	No
Stability of Export Shares	No	**Yes**
Upgrading of Export Composition	No	**Yes**
Sectoral Specialisation	**Yes**	**Yes**

Table 3. Theoretical relevance of explanatory indicators

Outcome Indicator. Coherently with the thesis' aim and the research question, the outcome indicator will be the *export competitiveness*, operationalised as the share of exports held by each country relative to total European exports in Japan and South Korea. This measures the relative position of Germany, France, and Italy within these markets and allows for direct comparison across cases. This type of operationalisation aligns with the arguments of asymmetry and relative advantage in trade relations (Hirschman 1945, 30-31).

The outcome indicator is measured over time using IMF IMTS data from 1955 to 2024, allowing for the analysis of both cross-sectional differences and temporal dynamics. This is particularly important given the theoretical emphasis on persistence (Pierson 2000) and gradual change (Thelen 1999). By focusing on export share, the analysis captures not only which country performs better at a given moment, but also whether this advantage is maintained and reinforced over time.

The Use of Artificial Intelligence (AI) in This Paper

The only AI tool used in the preparation of this thesis is ChatGPT, developed by the company OpenAI. It was selected due to its accessibility, reliability, and the familiarity developed through prior use. Having a clear understanding of its capabilities and limitations allows for a more controlled and critical application compared to other available and emerging tools (e.g. Claude).

ChatGPT will be primarily used as a support tool during the research and writing process. In particular, it will function as an advanced search engine and assistant, helping to identify relevant literature and guide the initial exploration of unfamiliar topics quicker than with a normal web search engine. This will be especially useful in the early stages of the project, when mapping the theoretical framework and locating key academic sources.

In addition, ChatGPT will be employed to refine and improve the clarity of the writing. Its main use, in this sense, will be to review phrasing, simplify overly complex sentences, and enhance the overall readability of the text. However, it is important to emphasise that it will not be used to generate original academic content. All arguments, interpretations, and contributions presented in this thesis are the result of

the author's own work. The role of AI will be limited only to assisting in structuring and polishing the content and the expression of the ideas.

Finally, the use of ChatGPT will be accompanied by a critical approach. Given that large language models may produce inaccurate or imprecise information – not only due to program's malfunctioning, but also to other human-error factors like, for example, an imperfect prompting – all outputs will be carefully verified against academic sources. This ensures that the reliability and academic integrity of the research will be kept intact throughout the whole thesis.

Analysis

This section presents the empirical analysis of the thesis, aiming to explain why Germany developed and maintained a stronger export position in Japan and South Korea compared to France and Italy. Building on the research design outlined in the previous chapter, the analysis combines a MSSD with process tracing to examine both cross-country differences and the mechanisms underlying them.

The section is structured in two main steps. It begins with a descriptive overview based on the MSSD framework, presenting the contextual and explanatory indicators together with the outcome variable. This first step identifies the main similarities and differences across the three cases. The analysis then moves to the phase-based process tracing, which examines whether the observed patterns are consistent with the theoretical mechanism developed in the previous chapter. In particular, the following sections assess how Germany's export advantage emerged, how it persisted, and how it was later consolidated over time.

MSSD Table and Descriptive Stats

This section presents a descriptive overview of the cases based on the MSSD introduced in the previous chapter. Its purpose is to establish the empirical basis for the analysis by comparing Germany, France, and Italy across the set of contextual and explanatory indicators, together with the outcome variable. The aim is not yet to provide the full causal explanation, but to identify the main empirical patterns that require further analysis.

It proceeds in three steps. It first examines the contextual indicators, which are used to assess the structural comparability of the cases. It then turns to the explanatory indicators, where more substantial variation across countries is expected to emerge. Finally, it presents the outcome indicator, focusing on the evolution of export shares over time. This descriptive overview provides the foundation for the phase-based analysis that follows.

Contextual Indicators

Indicator	Germany	France	Italy	Sources
Population (avg. 1955-2024)	79 million	58 million	56 million	Macrotrends
GDP (avg. 1960-2024)	1,93 trillion	1,36 trillion	1,08 trillion	Macrotrends
Trade Openness (avg. 1970-2024)	55,96%	51,52%	46,25%	World Bank
ECI Trade (avg. 1998-2024)	1,86	1,44	1,28	OEC
Alliance Alignment	Western bloc (NATO)	Western bloc (NATO)	Western bloc (NATO)	Historical sources
Institutional Trade Environment	GATT/WTO & EU	GATT/WTO & EU	GATT/WTO & EU	Historical sources

Table 4. Descriptive overview of contextual indicators

Table 4 presents the contextual indicators used to assess the comparability of Germany, France, and Italy. These indicators are designed to establish whether the selected cases share sufficiently similar structural, economic, and institutional characteristics to support the logic of the MSSD. Unlike the previous version of the table, the quantitative indicators are reported as historical averages rather than only as current values. This provides a more appropriate basis for comparison, given that the thesis examines long-term developments in export competitiveness.

The indicators show that Germany, France, and Italy are broadly comparable in terms of demographic and economic scale. Germany is larger in both population and GDP, with an average population of 79 million and average GDP of 1,93 trillion, compared to 58 million and 1,36 trillion for France, and 56 million and 1,08 trillion for Italy. This indicates that Germany has a larger structural base. However, the difference does not place the cases in fundamentally distinct categories. All three countries are large Western European economies with substantial domestic markets and advanced industrial capacities. Therefore, the comparison is not between a large economy and small peripheral economies, but between three major European industrial economies.

A similar pattern emerges when considering trade openness and productive complexity. Germany records the highest average trade openness, at 55,96%, followed by France at 51,52% and Italy at 46,25%. This suggests that Germany has historically been somewhat more integrated into global trade, but the differences remain moderate as all three are fairly above the global average. All three economies show significant exposure to international markets. The ECI Trade indicator also points to a similar conclusion. Germany has the highest average value, at 1,86, while France and Italy record 1,44 and 1,28 respectively. Although Germany possesses somewhat stronger productive complexity, the similarity of the three countries is proven by the fact that they are all constantly in the top 20 globally. These indicators therefore support comparability while also showing that Germany's larger scale and stronger trade orientation should not be ignored.

The contextual similarities are clearer when considering alliance alignment and institutional trade environment. Germany, France, and Italy all operated within the Western geopolitical bloc during the Cold War and shared a broadly similar political alignment. They also participated in the same international and regional trade frameworks, including the GATT/WTO system and the European trade framework. These shared conditions are important because they reduce the likelihood that Germany's export performance can be explained simply by access to different political or institutional environments.

Taken together, the contextual indicators support the use of a MSSD, while also introducing a degree of nuance. Germany is not identical to France and Italy: it is larger, somewhat more open, and more complex in productive terms. However, the three cases remain sufficiently similar to justify comparison. The main analytical task is therefore to examine whether the stronger variation appears not in these broad contextual factors, but in the explanatory indicators linked to the theoretical framework.

Explanatory Indicators

Indicator	Germany	France	Italy	Sources
Export Composition	Machinery & transport (SITC 7): **56,10%** Chemicals (SITC 5): **20,29%** Misc. manufactures (SITC 8): **11,01%**	Machinery & transport (SITC 7): **31,50%** Chemicals (SITC 5): **22,52%** Misc. manufactures (SITC 8): **19,98%**	Misc. manufactures (SITC 8): **34,17%** Machinery & transport (SITC 7): **27,13%** Chemicals (SITC 5): **13,34%**	UN Comtrade
Value Chain Position	Intermediate / production-related goods: **83,32%**	Intermediate / production-related goods: **63,17%**	Intermediate / production-related goods: **53,47%**	UN Comtrade
Trade Dependence	Japan: **1,70%** South Korea: **0,71%**	Japan: **1,56%** South Korea: **0,54%**	Japan: **1,54%** South Korea: **0,58%**	IMF IMTS
Stability of Export Shares	Avg. coefficient of variation: **0,18**	Avg. coefficient of variation: **0,34**	Avg. coefficient of variation: **0,35**	IMF IMTS
Upgrading of Export Composition	Advanced industrial goods share from phase 1 to 3: **78,49% → 65,05% → 43,89%**	Advanced industrial goods share from phase 1 to 3: **48,24% → 41,95% → 29,63%**	Advanced industrial goods share from phase 1 to 3: **65,61% → 37,26% → 30,36%**	UN Comtrade
Sectoral Specialisation	Top 3 sectors: **87,40%**	Top 3 sectors: **74,00%**	Top 3 sectors: **74,63%**	UN Comtrade

Table 5. Descriptive overview of explanatory indicators

Table 5 presents the explanatory indicators used to capture the mechanisms through which differences in export competitiveness may emerge, persist, and consolidate across the selected cases. Unlike the contextual indicators, these variables are expected to vary more clearly across Germany, France, and Italy. They are therefore used to identify the dimensions of trade structure and temporal stability that are most relevant for the phase-based analysis.

A first group of indicators concerns the structure of exports. Export composition toward Japan and South Korea shows a clear difference across the cases. Germany's exports are strongly concentrated in machinery and transport equipment, which represents 56,10% of its exports to these markets. Chemicals account for 20,29%, while miscellaneous manufactures represent 11,01%. France also has machinery and transport as its largest category, but at a considerably lower level of 31,50%, followed by chemicals at 22,52% and miscellaneous manufactures at 19,98%. Italy presents a different profile, with miscellaneous manufactures as its largest category at 34,17%, followed by machinery and transport at 27,13% and chemicals at 13,34%.

These differences are relevant because the theoretical framework expects the type of goods exported to shape the structure of dependence between trading partners. Goods such as machinery, transport equipment, and chemicals are more closely connected to industrial production than many final consumer goods. In Hirschman's terms, the nature of the goods exchanged can affect the difficulty of substitution and therefore the distribution of dependence within trade relations (Hirschman 1945, 28-29). At this descriptive stage, the data therefore suggests that Germany's export profile may be more strongly oriented toward industrial sectors than those of France and Italy.

The value chain position indicator points in a similar direction. Germany's share of intermediate or production-related exports is 83,32%, compared to 63,17% for France and 53,47% for Italy. This indicator is based on SITC 5 + 6 + 7 and should be interpreted as a proxy rather than as a direct measure of all intermediate goods. Nevertheless, the difference is substantial. Germany appears to export a higher share

of goods that are likely to be connected to production processes, which may imply deeper embeddedness in industrial value chains. This is relevant to Keohane and Nye's distinction between interdependence and vulnerability, since trade relations involving less easily replaceable inputs may generate higher adjustment costs for importing partners (Keohane & Nye 1977, 10-11).

Sectoral specialisation also reveals important differences. Germany's top three sectors account for 87,40% of its exports to Japan and South Korea, compared to 74,00% for France and 74,63% for Italy. This suggests that Germany's export profile is more concentrated. However, the interpretation of this indicator requires caution. Italy's top three concentration is close to France's, and concentration alone does not necessarily indicate stronger competitiveness. What matters is the type of sectors in which concentration occurs. Germany's concentration is more heavily centred on machinery, transport, and chemicals, whereas Italy's profile gives greater weight to miscellaneous manufactures. The indicator is therefore most useful when read together with export composition and value-chain position.

A second group of indicators concerns temporal dynamics. Stability of export shares is measured through the average coefficient of variation of each country's export shares to Japan and South Korea. Germany records the lowest value, at 0,18, compared to 0,34 for France and 0,35 for Italy. Since a lower coefficient of variation indicates greater stability, this suggests that Germany's relative export position fluctuates less over time. This pattern is relevant to Pierson's argument on path dependence and increasing returns, where early advantages may become self-reinforcing and more difficult to displace (Pierson 2000, 251-252). However, the phase-based analysis is needed to assess how this stability developed over time and whether it reflects the persistence mechanism expected by the theory.

The upgrading of export composition provides a more mixed descriptive picture. The share of selected advanced industrial goods declines across the three phases for all three countries. Germany moves from 78,49% in Phase 1 to 65,05% in Phase 2 and 43,89% in Phase 3. France declines from 48,24% to 41,95% and then 29,63%, while Italy moves from 65,61% to 37,26% and then 30,36%. These figures do not indicate a simple linear process of upgrading if upgrading is understood as a rising share of advanced industrial goods. Instead, they suggest that Germany begins from a very high industrial share and remains ahead of France and Italy in the long-term phase, even though the share declines over time. This indicator therefore requires careful interpretation in the discussion section, especially in relation to Thelen's argument on gradual institutional change and adaptation (Thelen 1999, 384-385).

Trade dependence also presents a more ambiguous pattern. Germany's average dependence is 1,70% toward Japan and 0,71% toward South Korea, while France records 1,56% and 0,54%, and Italy 1,54% and 0,58%. These values show that Germany has slightly higher dependence on average, but the differences are limited. In addition, the phase-specific averages in Table 6 show that France and Italy sometimes record similar or higher dependence, particularly in later phases toward Japan. This means that trade dependence alone cannot explain Germany's export position. In line with Hirschman and Keohane and Nye, the indicator becomes more meaningful when interpreted together with the structure of exports, substitutability, and vulnerability (Hirschman 1945, 10; Keohane & Nye 1977, 9-10).

Country	JP Phase 1 (1958-1965)	JP Phase 2 (1967-1978)	JP Phase 3 (1987-Present)	SK Phase 1 (1958-1965)	SK Phase 2 (1967-1978)	SK Phase 3 (1987-Present)
Germany	**1,33%**	**1,51%**	1,95%	0,19%	0,22%	**1,11%**
France	0,58%	1,04%	**2,10%**	0,03%	**0,24%**	0,83%
Italy	0,57%	1,00%	2,07%	**0,22%**	0,12%	0,92%

Table 6. Averages of trade dependence with Japan and South Korea for each phase

Overall, the explanatory indicators provide varying degrees of support for the theoretical framework. The strongest evidence is found in variables capturing the structure of trade – export composition, value chain position, and sectoral specialisation – which directly reflect mechanisms of asymmetric interdependence and low substitutability. Indicators related to persistence and upgrading also contribute to explaining how these advantages are maintained over time. Trade dependence, while weaker in isolation, reinforces the argument when interpreted in relative terms. Taken together, the results suggest that Germany's export advantage is not driven by the scale of its trade relations, but by their structure and persistence, which are examined in greater detail in the following phase-based analysis.

Outcome Indicator

The outcome indicator of this thesis is export competitiveness, operationalised as the share of exports held by each country in Japan and South Korea relative to total European exports to these markets. This measure captures the relative position of Germany, France, and Italy within the same external context, allowing for a direct comparison of their performance over time. By focusing on relative export shares rather than absolute trade volumes, the indicator reflects the extent to which each country is able to maintain or expand its presence in highly competitive markets.

The descriptive analysis of this indicator reveals that Germany holds a leading position across most of the period under consideration. Based on IMF IMTS data, Germany is the largest exporter among the three cases in both Japan and South Korea over the long period from 1955 to 2024 (International Monetary Fund 2026). The figures show that Germany's lead is especially pronounced in the early decades, while France and Italy narrow the gap in some later periods. This means that the evidence should not be interpreted as a simple absence of convergence. Rather, it suggests a more nuanced pattern: partial convergence occurs in some phases, but it does not fully eliminate Germany's relative advantage or reverse the hierarchy among the three cases.

This pattern provides the empirical basis for the phase-based analysis that follows. In line with the theoretical framework, the outcome is not treated as a static result, but as a process unfolding over time. The evolution of export shares suggests three analytically relevant phases: an initial period in which Germany's lead becomes visible, a middle period in which the gap becomes more stable despite some convergence, and a long-term period in which Germany's position remains significant under changing international conditions. The following sections examine these phases through process tracing, assessing whether the observed patterns correspond to the mechanisms of emergence, persistence, and consolidation developed in the theoretical framework.

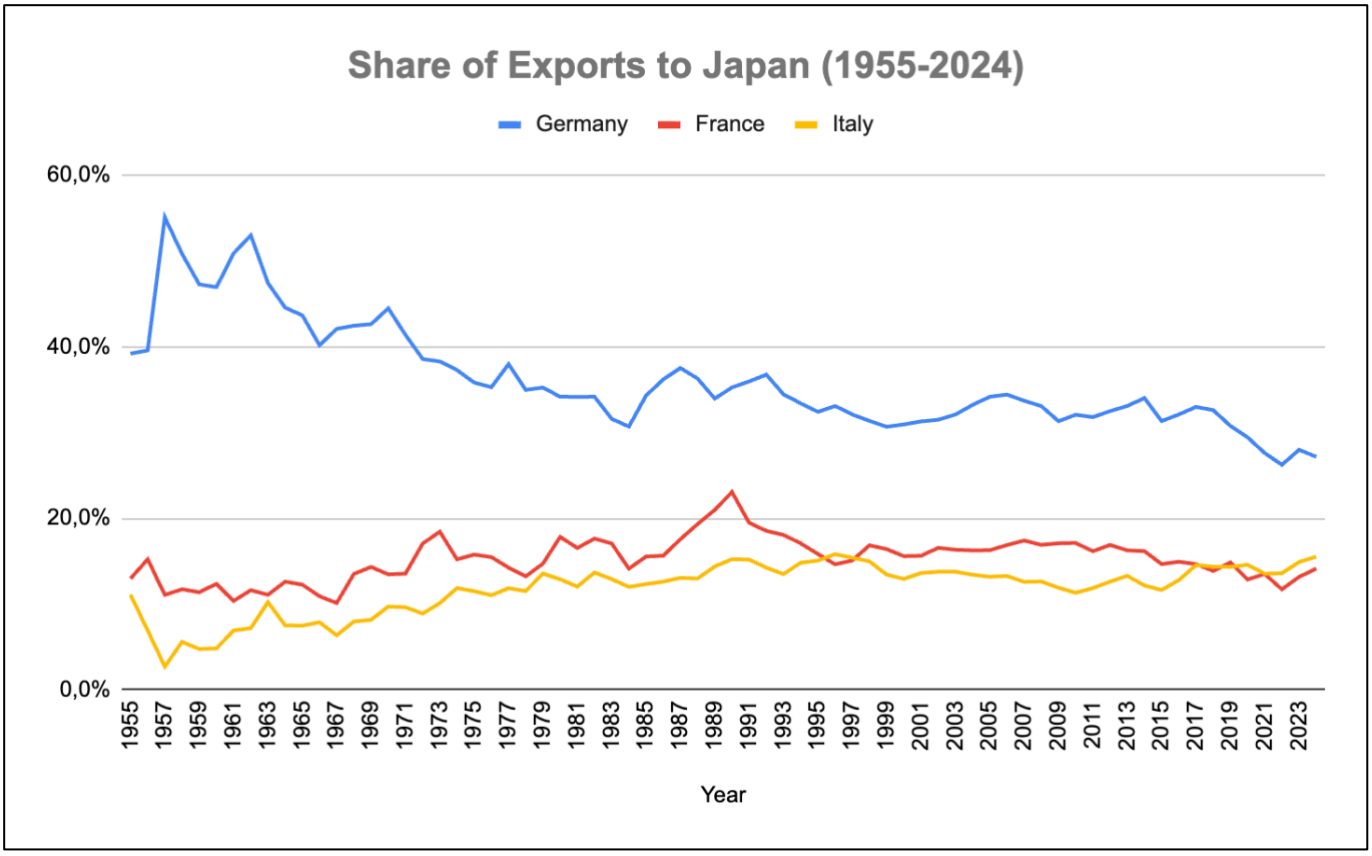

Figure 1. Share of exports to Japan from 1955 to 2024 relative to European countries

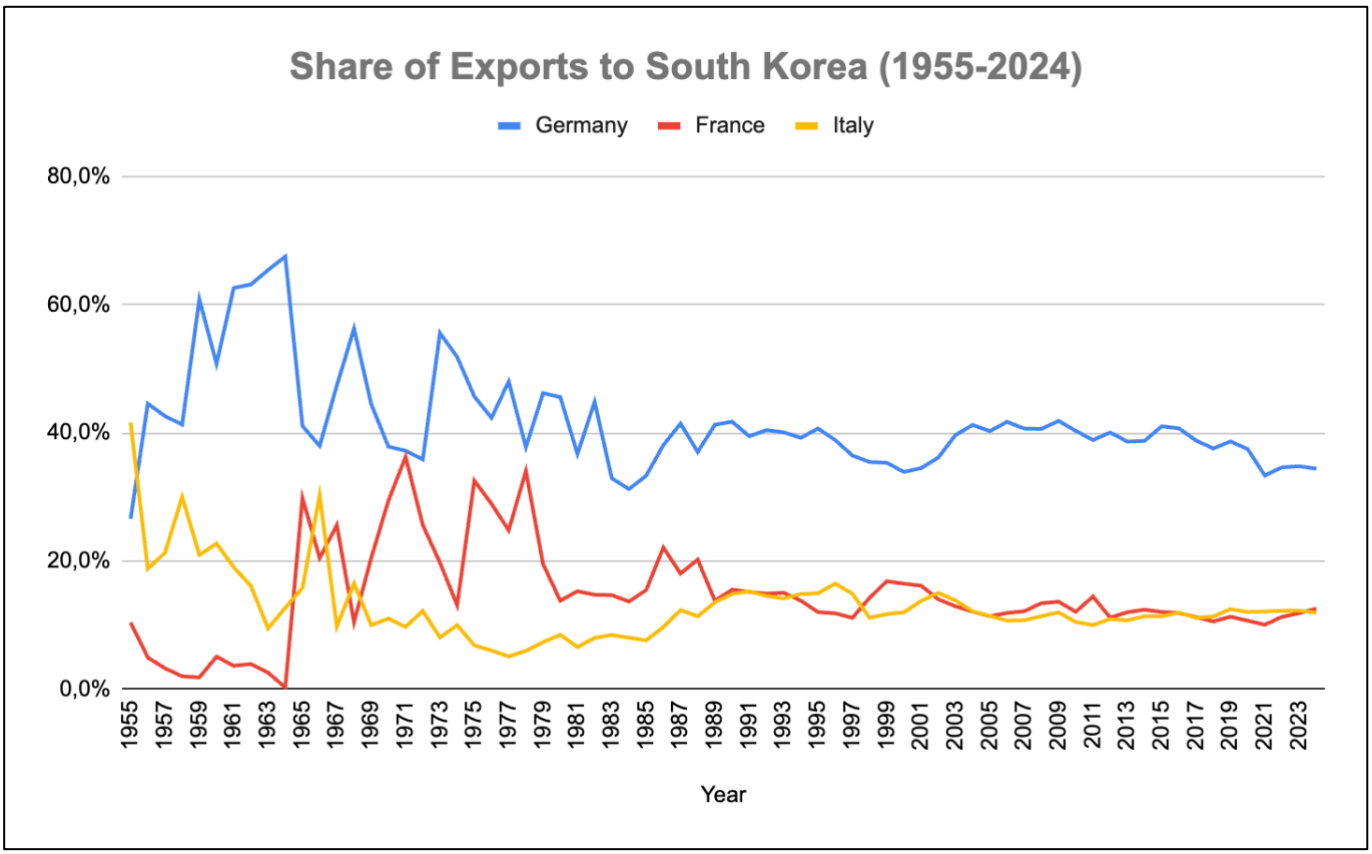

Figure 2. Share of exports to South Korea from 1955 to 2024 relative to European countries

Phase 1: Early Post-War Rise (1958-1965)

The first phase of the analysis examines the emergence of Germany's initial export advantage between 1958 and 1965. This period is important because it marks the first visible divergence between Germany, France, and Italy in their export position in Japan and South Korea. At this stage, the objective is not to assume that Germany's later dominance was already fully established, but to examine whether the early patterns in the data are consistent with the mechanisms outlined in the theoretical framework. In particular, the phase makes it possible to assess whether political alignment, export composition, and value-chain position can help explain why Germany began to move ahead of the other two cases.

The post-war context is particularly relevant here. Germany and Italy had both lost the Second World War and were therefore both involved in processes of reconstruction, reintegration into the international economy, and reorientation within the Western bloc. Japan had also been defeated and was undergoing its own post-war recovery and industrial transformation, while South Korea was emerging from colonial rule, division, and the Korean War. These conditions matter because they show that Germany's early advantage did not emerge in a neutral historical setting. At the same time, the comparison with Italy is useful precisely because both Germany and Italy were defeated powers that became Western-aligned after the war. This makes it less convincing to explain Germany's later advantage simply through defeat, reconstruction, or Western reintegration alone. The more relevant question is why West Germany's reconstruction translated into a stronger industrial export position in Japan and South Korea than Italy's or France's ones.

As shown in the descriptive overview, Germany, France, and Italy shared broadly similar contextual conditions. All three were advanced Western European economies, all became integrated into the Western geopolitical bloc, and all operated within the same broader institutional trade framework. Germany was larger and somewhat more trade-oriented, but the three cases were not fundamentally different types of economies. For this reason, Germany's early lead is unlikely to be explained by alliance alignment, trade openness, or general economic development alone. The descriptive indicators suggest that the structure of trade relations needs to be examined more closely, particularly export composition, value-chain position, and sectoral specialisation.

Political alignment remains an important starting point. Mansfield and Bronson argue that alliances and shared security goals can increase trade by reducing uncertainty and encouraging economic exchange among politically aligned states (Mansfield & Bronson 1997, 94-95). This helps explain why trade relations between Western Europe, Japan, and South Korea could expand in the post-war period. However, since France and Italy shared the same broad Western alignment as Germany, political alignment alone cannot explain why Germany developed a stronger export position. At this stage, alignment appears more as an enabling condition than as a sufficient explanation. It created a favourable environment for trade, but the distribution of export advantage depended on the structure of the goods exchanged.

The explanatory indicators point in this direction. Germany's exports to Japan and South Korea were more heavily concentrated in machinery and transport equipment than those of France and Italy. In the UN Comtrade SITC data, machinery and transport equipment accounted for 56,10% of Germany's exports to these markets, compared to 31,50% for France and 27,13% for Italy. Chemicals represented a further 20,29% of Germany's exports, while miscellaneous manufactures accounted for 11,01%. France had a more balanced profile, with machinery and transport at 31,50%, chemicals at 22,52%, and miscellaneous manufactures at 19,98%. Italy's largest category was miscellaneous manufactures, at 34,17%, followed by machinery and transport at 27,13% and chemicals at 13,34%. These figures suggest that Germany's export profile was more strongly centred on industrial and capital-goods categories.

There is one data limitation to acknowledge. The sectoral data from UN Comtrade SITC LTS begins in 1962, meaning that it does not cover the entire first phase from 1958 onwards. Therefore, the sectoral evidence should be treated as an indication of the latter part of the first phase rather than as a complete measurement of the whole period. Still, the available data are useful because they show that by the early 1960s Germany's exports were already more concentrated in industrial categories than those of France and Italy. This pattern is relevant to Hirschman's argument that the political and economic effects of trade depend not simply on volume, but on the distribution of mutual dependence between partners (Hirschman 1945, 10-11). Dependence increases when trade partners face high adjustment costs, limited alternatives, or difficulty replacing specific goods (Ibid., 17-18).

The value-chain position indicator reinforces this interpretation. Germany's share of intermediate or production-related exports was 83,32%, compared to 63,17% for France and 53,47% for Italy. Since this measure is based on SITC 5 + 6 + 7, it should be interpreted as a proxy for production-related embeddedness rather than as a perfect measure of intermediate goods. Nevertheless, the difference is substantial. It suggests that Germany was exporting a higher share of goods connected to industrial production processes, such as chemicals, manufactured goods by material, machinery, and transport equipment. Such goods are generally less easily substitutable than final consumer goods, especially when they become linked to production routines, technical standards, and supplier relationships.

This logic is consistent with Hirschman's argument that dependence is shaped by the cost of replacing a given trade relationship (Hirschman 1945, 17-18). Where substitutes are easily available, dependence remains limited. Where goods are specialised and costly to replace, trade can create a more asymmetric relationship (Ibid., 28-29). The early evidence does not prove this mechanism on its own, but it is consistent with it. Germany's stronger concentration in machinery, transport equipment, and chemicals suggests that its exports may have been more difficult to replace than the more diversified or consumer-oriented exports of France and Italy. In this sense, the early divergence appears not only quantitative, but also related to the composition of exports.

The institutional foundations of this export structure are also relevant. Hall and Soskice's account of coordinated market economies helps explain why Germany was particularly well placed to compete in specialised industrial sectors. They argue that firms' strategies are shaped by institutional arrangements concerning finance, labour relations, skill formation, and inter-firm coordination (Hall & Soskice 2001, 6-7). In coordinated market economies such as Germany, these institutions support long-term investment, specialised training, and cooperation between firms, which are especially favourable for high-quality industrial production (Ibid., 21-22). This helps explain why Germany possessed capabilities in machinery, chemicals, and complex manufacturing sectors.

This does not mean that institutions automatically produced export success. Rather, the institutional literature helps interpret why Germany's export profile differed from those of France and Italy. Hall and Soskice argue that different institutional arrangements generate different comparative advantages, with coordinated market economies being especially suited to forms of production based on incremental innovation and high levels of technical competence (Ibid., 36-39). Germany therefore entered trade relations with Japan and South Korea with a production structure that was well suited to supplying industrial goods. This is relevant because the export composition and value-chain indicators suggest that Germany's exports were more connected to production systems than those of the comparison cases.

The demand side also needs to be considered. Germany's early position was not only shaped by what German firms could supply, but also by what Japan and South Korea increasingly needed. Japan was already undergoing rapid industrial upgrading by the late 1950s and early 1960s, creating demand for

machinery, chemicals, and industrial technologies. South Korea's industrialisation was less advanced at this stage, but its later trajectory also depended increasingly on capital goods, intermediate inputs, machinery, and technology-intensive products. Lane's study of South Korea's industrialisation shows that industrial policy promoted the expansion of heavy and chemical sectors and contributed to the development of dynamic comparative advantage in more advanced manufacturing (Lane 2025, 1683-1687). Although Lane focuses mainly on the later heavy-chemical industry drive, the broader implication is relevant here: South Korea's industrial transformation created demand for industrial inputs and upstream capabilities. Lane also shows that these policies generated effects through input-output linkages and downstream users of targeted intermediates (Ibid., 1684-1686), reinforcing the importance of suppliers of capital and intermediate goods.

Against this background, Germany's export structure appears to have matched the industrial needs of Japan and South Korea more closely than the export profiles of France and Italy. Germany did not simply export more; it exported a higher share of goods that were more directly connected to industrial production. This supply-demand complementarity helps explain why Germany's early export position may have become more embedded and strategically relevant. France and Italy were also advanced exporters, but their sectoral profiles suggest a weaker concentration in the categories most closely associated with industrial production.

Keohane and Nye's distinction between interdependence and vulnerability clarifies the significance of this point. They define interdependence as a relationship involving reciprocal costly effects, but stress that interdependence does not imply equality (Keohane & Nye 1977, 8-10). What matters is vulnerability: the extent to which actors remain exposed to costs even after attempting to adjust to external changes (Ibid., 10-11). Applied to this case, Japan and South Korea may have traded with several European exporters, but dependence would be stronger where imported goods were more difficult to substitute. German machinery, chemicals, and production-related goods are therefore relevant because they were more likely to create adjustment costs for importing partners.

The trade dependence indicator provides a useful but more cautious picture. As shown in Table 6, Germany's average export dependence toward Japan in Phase 1 was 1,33%, compared to 0,58% for France and 0,57% for Italy. Toward South Korea, dependence remained very limited for all three countries. This suggests that Germany's early advantage did not derive from overwhelming dependence on Japan or South Korea. Rather, the indicator becomes meaningful only when read together with export composition, value-chain position, and sectoral specialisation. In Hirschman's terms, what matters is the distribution of mutual dependence and the cost of substitution (Hirschman 1945, 10-11). In Keohane and Nye's terms, the central issue is relative vulnerability, not simple exposure (Keohane and Nye 1977, 10-11).

The first phase therefore provides evidence consistent with the emergence stage of the proposed mechanism. Shared Western alignment facilitated the expansion of trade relations, but the observed variation across the cases appears more closely connected to the structure of exports. Germany's stronger concentration in machinery, transport equipment, chemicals, and production-related goods suggests a greater potential for asymmetric interdependence. This does not yet demonstrate full long-term dominance, but it identifies the conditions through which an initial advantage could form.

France and Italy are important in this interpretation because they show what Germany's early advantage was not. It was not simply the result of being Western-aligned, European, or integrated into the liberal trade order, since all three cases shared these features. Nor can it be explained only by post-war reconstruction, since Italy also experienced defeat and reintegration after the war. The difference appears instead in the way Germany's industrial structure connected with the developmental needs of Japan and

South Korea. France's more diversified profile and Italy's stronger orientation toward miscellaneous manufactures did not create the same degree of production-related embeddedness.

Overall, the evidence from 1958 to 1965 suggests that Germany's initial export advantage was linked to the interaction between geopolitical conditions, post-war reconstruction, and export structure. Political alignment made trade expansion possible, but the available sectoral data indicate that Germany's exports were more concentrated in industrial and production-related categories. In theoretical terms, this pattern is consistent with the emergence of asymmetric interdependence: German exports were potentially harder to substitute, while Germany's own dependence on these markets remained limited (Hirschman 1945, 32-33; Keohane and Nye 1977, 10-11). In process-tracing terms, this phase provides evidence for the first step of the causal mechanism: the formation of trade relations under shared alignment, followed by the emergence of a structurally distinctive German export position.

The next section examines whether this early position became self-reinforcing. In Pierson's terms, early steps along a particular path can increase the probability of further movement along the same path by generating increasing returns (Pierson 2000, 251-252). The question for the second phase is therefore not only whether Germany remained ahead, but whether the early patterns identified here became more stable over time.

Phase 2: Mid-Period Consolidation (1967-1978)

The second phase of the analysis examines the persistence of Germany's export advantage between 1967 and 1978. Whereas the previous section focused on the emergence of Germany's initial position, this section examines whether that position became more stable over time. The key question is not simply whether Germany remained ahead, but whether the early divergence began to generate self-reinforcing dynamics. This is important because, in principle, France and Italy could have narrowed the gap as their own trade relations with Japan and South Korea expanded.

This phase is best understood through the logic of path dependence and increasing returns. Pierson argues that, under conditions of increasing returns, the benefits of continuing along an established path grow over time, while the costs of switching to an alternative path increase (Pierson 2000, 251-252). Applied to this case, Germany's early position in specialised industrial exports may have created conditions under which existing trade relations became progressively harder to displace. Once German firms had established themselves as suppliers of machinery, chemicals, industrial equipment, and production-related goods, their position could generate further advantages through learning effects, coordination effects, and adaptive expectations.

The outcome indicator provides initial support for this interpretation, although it also requires nuance. Germany continued to hold a strong relative export position in Japan and South Korea during this phase. However, the evidence should not be read as a complete absence of convergence. France and Italy did narrow the gap in some years and markets, particularly as their own exports expanded. The relevant point is therefore not that convergence was entirely absent, but that it remained partial and did not eliminate Germany's more stable position. This is consistent with Pierson's claim that early steps in a sequence can raise the probability of further movement along the same path (Ibid., 252).

The stability of export shares offers a clearer way to assess this mechanism. Germany records an average coefficient of variation of 0,18, compared to 0,34 for France and 0,35 for Italy. Since a lower coefficient of variation indicates greater stability, this suggests that Germany's export position fluctuated less over time than those of France and Italy. This does not prove path dependence by itself, but it is

consistent with the expectation that an early advantage becomes more durable when repeated interactions reinforce existing relationships.

Country	Advanced Industrial Goods Share (Phase 2)
Germany	65,05%
France	41,95%
Italy	37,26%

Table 7. Advanced industrial goods share per country in phase 2 (1967-1978)

Learning effects are particularly important in this context. Pierson identifies learning as one mechanism through which path-dependent processes are reinforced, since repeated activity generates accumulated knowledge and improves performance over time (Ibid., 254-255). For German firms, continued engagement with Japan and South Korea may have allowed them to deepen market knowledge, adapt products to customer needs, and strengthen their reputation as reliable suppliers. This mattered especially in sectors where technical precision and product quality were central. In markets for machinery and industrial equipment, competitiveness depends not only on price, but also on reliability, after-sales support, technical standards, and long-term trust.

Coordination effects also help explain why Germany's position may have become more stable. Pierson argues that existing arrangements become more attractive when actors coordinate their behaviour around them (Ibid., 254). In trade relations, this means that firms, buyers, suppliers, and industrial users adapt to existing patterns of exchange. Once Japanese and South Korean firms incorporated German machinery or production-related goods into their production systems, switching to alternative suppliers could involve technical adjustment, new supplier evaluation, changes in production routines, and potential risks to quality or reliability. These costs help explain why early relationships may have become more persistent.

Adaptive expectations reinforce the same process. When buyers expect a supplier to remain reliable, they are more likely to continue investing in that relationship. Pierson notes that expectations can become self-reinforcing when actors make decisions based on the belief that an existing arrangement will continue to be beneficial (Ibid.). In the context of Germany's exports to Japan and South Korea, this means that the reputation of German firms in specialised industrial sectors may have strengthened their future competitiveness. The longer German firms remained present in these markets, the more credible and attractive they became as partners.

The persistence of Germany's advantage was also supported by the domestic institutional foundations of its export model. Hall and Soskice argue that Germany's coordinated market economy provides institutional support for long-term investment, specialised skill formation, cooperation between firms, and incremental innovation (Hall & Soskice 2001, 21-26). These features are relevant for explaining why Germany's industrial specialisation could be reproduced over time. Germany's advantage was not based on a single export opportunity, but on a production system capable of continuously supplying complex and high-quality industrial goods.

This point is reinforced by Hall and Soskice's broader claim that institutional arrangements shape comparative advantage by supporting different forms of firm strategy and production (Ibid., 36-39). In Germany's case, coordination among firms, workers, suppliers, and financial institutions supported a pattern of competitiveness based on specialised manufacturing rather than short-term price competition. This connects directly to the sectoral specialisation indicator. Germany's top three SITC sectors account for 87,40% of exports to Japan and South Korea, compared to 74,00% for France and 74,63% for Italy. The

difference suggests that Germany's export profile was more concentrated, particularly in industrial categories.

Bathelt and Gertler provide additional support for this interpretation by emphasising the evolutionary character of the German variety of capitalism. Their argument is useful because it avoids treating the German model as static. Instead, they present it as a system marked by both continuity and adaptation, in which existing institutional arrangements continue to shape economic outcomes while adjusting to changing competitive pressures (Bathelt & Gertler 2005, 1-3). This is important for the second phase because persistence does not mean that Germany's export position remained unchanged in a mechanical sense. Rather, existing strengths were reproduced through adjustment and continued coordination.

The trade dependence indicator again requires caution. As shown in Table 6, Germany's average export dependence toward Japan in Phase 2 was 1,51%, compared with 1,04% for France and 1,00% for Italy. Toward South Korea, the figures are lower and relatively close: Germany at 0,22%, France at 0,24%, and Italy at 0,12%. These numbers show that dependence on Japan and South Korea remained limited in aggregate terms. Therefore, Germany's persistent advantage cannot be explained simply by greater dependence on these markets. Instead, the key point remains structural: Germany maintained a strong position while avoiding excessive vulnerability. This aligns with Keohane and Nye's argument that power in interdependent relations depends less on the existence of mutual exchange and more on the distribution of vulnerability (Keohane & Nye 1977, 10-11).

This also helps interpret partial convergence. France and Italy were capable advanced economies and operated under the same broad political and institutional trade environment. In some periods, they narrowed the gap. However, their export structures did not appear to generate the same self-reinforcing mechanisms. France's more diversified export profile meant that it was less concentrated in the specific industrial sectors where Germany built its advantage. Italy's stronger orientation toward miscellaneous manufactures and consumer-oriented goods limited the degree to which its exports became embedded in production networks. Their weaker stability of export shares, as identified in the MSSD section, is consistent with this lower degree of embeddedness.

The second phase therefore provides evidence for the self-reinforcing stage of the mechanism, but without implying that the outcome was predetermined. Germany's advantage persisted because early trade relationships appear to have generated learning effects, coordination effects, and adaptive expectations. At the same time, France and Italy did not disappear from these markets, and some convergence did occur. The point is that this convergence remained limited and did not displace Germany's more stable export position.

This distinction matters because path dependence is sometimes misunderstood as complete lock-in. That is not the argument here. Germany's advantage persisted not because markets stopped changing, but because Germany was able to reproduce its specialised position within changing markets. Pierson's theory does not imply that alternatives become impossible; rather, it suggests that the costs of moving away from an established trajectory increase over time (Pierson 2000, 251-252). In this case, France and Italy could still compete, but they faced the accumulated effects of Germany's earlier presence, stronger supplier relationships, and sectoral specialisation.

Overall, the evidence from 1967 to 1978 suggests that Germany's early advantage became more stable through repeated exchange and institutional support for specialised production. The stability indicator, continued sectoral concentration, and value-chain embeddedness are consistent with the expectation that early advantages can become self-reinforcing. In process-tracing terms, this phase provides evidence for

the second step of the causal mechanism: the transformation of an initial structural position into a more persistent pattern of export competitiveness. The next phase examines whether this persistence was further consolidated under changing international conditions.

Phase 3: Long-Term Consolidation (1987-Present)

The third phase examines the long-term consolidation of Germany's export advantage from 1987 onwards. While the previous section examined the persistence of Germany's position during the reinforcement phase, this section considers whether and how that position remained relevant under changing international conditions. The period from the late 1980s onwards is marked by intensified globalisation, European integration, the rise of global value chains, German reunification, and increasing technological complexity in production. The question is therefore not simply whether Germany remained ahead, but whether its advantage continued to be reproduced and adapted over time.

This section builds primarily on Thelen's understanding of gradual institutional change. Thelen argues that institutions are not static structures, but are continuously reproduced and adapted through ongoing interactions among actors (Thelen 1999, 388-389). This is important because Germany's export advantage after the late 1980s should not be interpreted as simple inertia. If the advantage remained relevant, it had to be sustained in a changing international environment. The evidence therefore needs to be assessed in terms of both continuity and adaptation.

The explanatory indicators provide a mixed but useful picture. Germany's export composition remains strongly industrial. Machinery and transport equipment account for 56,10% of Germany's exports to Japan and South Korea over the available sectoral period, compared with 31,50% for France and 27,13% for Italy. Germany also records the highest share of intermediate or production-related exports, at 83,32%, compared with 63,17% for France and 53,47% for Italy. These indicators suggest that Germany's export position continued to be strongly linked to industrial production and value-chain embeddedness.

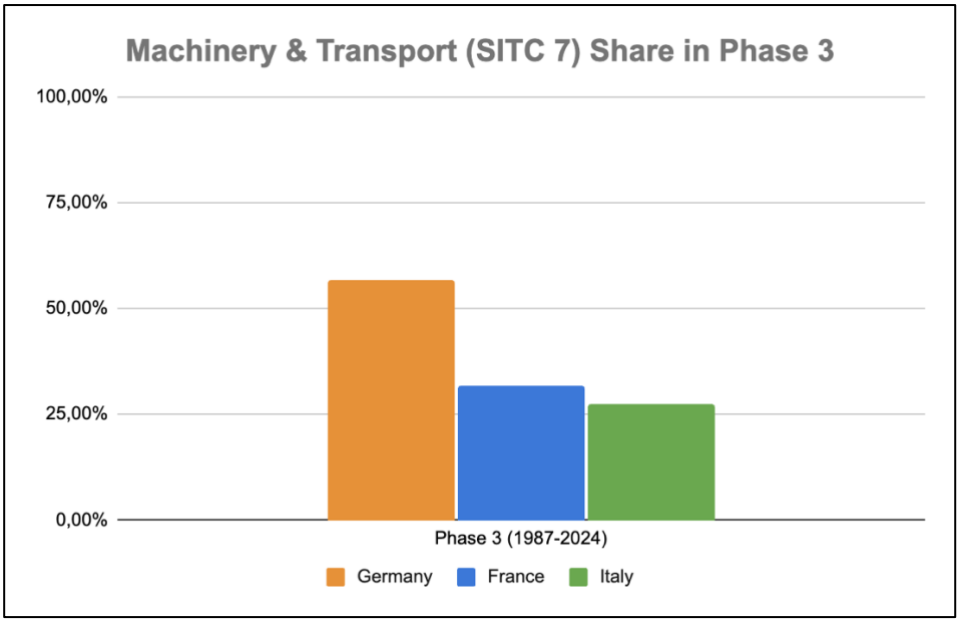

Figure 3. Share of Machinery & Transports goods in phase 3

However, the upgrading indicator requires a more careful interpretation than a simple story of linear upgrading. The selected advanced industrial goods share declines across the three phases for all countries. Germany moves from 78,49% in Phase 1 to 65,05% in Phase 2 and 43,89% in Phase 3. France declines from 48,24% to 41,95% and then 29,63%, while Italy moves from 65,61% to 37,26% and then 30,36%.

These figures do not support a straightforward claim that Germany's advanced industrial share increased over time. Instead, they show that Germany started from a very high advanced-industrial share and still retained the highest share in the long-term phase.

This means that consolidation should not be understood simply as a rising share of advanced industrial goods. Rather, the indicator suggests continued advanced industrial strength despite diversification and changes in the export basket. Germany's advantage appears to have been consolidated not by a simple increase in the selected advanced categories, but by the continued centrality of industrial exports, value-chain embeddedness, and institutional adaptation. This interpretation is more consistent with Thelen's argument that institutional development often involves both continuity and change, as actors reproduce existing arrangements while adapting them to new circumstances (Ibid., 384-385, 388-389).

Hall and Soskice's framework helps explain why Germany was particularly capable of this kind of continuity through adaptation. Their account of coordinated market economies highlights the role of long-term coordination, specialised skill formation, patient capital, and cooperation between firms and workers (Hall & Soskice 2001, 21-26). These institutional features are especially relevant for sectors based on incremental innovation, technical precision, and high-quality production. Germany's continued strength in machinery, transport equipment, chemicals, and other production-related goods reflects this institutional capacity. The sectoral specialisation indicator is relevant here: Germany's top three sectors account for 87,40% of exports to Japan and South Korea, indicating a high level of concentration in key sectors.

This point is reinforced by Hall and Soskice's broader claim that national institutional configurations generate different types of comparative advantage (Ibid., 36-39). In Germany's case, the coordinated market economy supports forms of competitiveness based less on radical shifts and more on continuous improvement. This fits the pattern observed in the third phase. Germany's export model does not appear to transform into an entirely new model; rather, it continues to rely on a strong industrial base while adapting to new conditions. France and Italy also possess advanced industrial sectors, but their export profiles remain less centred on the specific production-related categories that generate strong value-chain embeddedness in Japan and South Korea.

Bathelt and Gertler further support this interpretation by describing the German variety of capitalism as a system of evolutionary change rather than static continuity. Their analysis emphasises that the German model has faced pressures and transformations, but has also retained core institutional features that support specialised industrial production (Bathelt & Gertler 2005, 1-3). This is useful for understanding the third phase because Germany's export consolidation does not mean that its political economy remained unchanged. Rather, its institutions adapted while continuing to sustain industrial strengths that were already visible in earlier phases.

Streeck's work on institutional change in the German political economy also helps clarify this process. He argues that German capitalism experienced significant transformation under the pressures of globalisation, European integration, and domestic institutional change, but not in the form of a complete break with its previous trajectory (Streeck 2009, 1-15). This is relevant because the post-1987 period includes major external changes. Germany's continued export strength in Japan and South Korea therefore cannot be interpreted simply as the survival of an old pattern. It reflects a capacity to adapt within an existing institutional framework. This supports Thelen's claim that institutional change often occurs gradually, through incremental adjustments that accumulate over time (Thelen 1999, 396-397).

The value-chain position indicator provides additional evidence of consolidation. Germany's high share of intermediate or production-related goods suggests that its exports remained connected to production systems rather than being mainly final consumer goods. In earlier phases, this embeddedness

helped generate asymmetric interdependence and persistence. In the third phase, it remains relevant because production becomes more technologically complex and suppliers of specialised inputs and capital goods remain important. Germany's role is therefore not limited to exporting final products; it remains connected to the productive capacities of Japan and South Korea. In theoretical terms, this reflects a feedback effect: existing trade relationships create incentives for further coordination and continued reliance on established suppliers (Ibid., 392-395).

The trade dependence indicator again complicates a simple interpretation. In Phase 3, Germany's average export dependence toward Japan is 1,95%, while France and Italy show slightly higher values, at 2,10% and 2,07% respectively. Toward South Korea, Germany's dependence is 1,11%, compared with 0,83% for France and 0,92% for Italy. These figures show that dependence alone does not explain export competitiveness. In the Japanese case, France and Italy are slightly more dependent on the market, yet Germany remains stronger in relative export position. This supports the argument that what matters is not only the absolute level of dependence, but the structure of interdependence and the distribution of vulnerability. Keohane and Nye's distinction between sensitivity and vulnerability remains relevant here, since power within interdependence depends on the costs of adjustment rather than simple exposure (Keohane & Nye 1977, 10-11).

Germany's position in the third phase therefore appears to rest on a combination of continued industrial specialisation, production-related embeddedness, and institutional adaptation. Hirschman's argument remains useful because dependence is shaped by the difficulty of substitution and by the availability of alternative partners (Hirschman 1945, 17-18, 28-29). German exports in this phase continue to be concentrated in goods that are more closely linked to industrial production than many of the exports of France and Italy. Even where France and Italy increase their export dependence on Japan or South Korea, their trade structures do not produce the same level of production-related embeddedness.

The consolidation phase also shows the limits of a purely market-size explanation. Germany's larger economy and stronger export orientation certainly matter, but they are insufficient to explain the durability of its position. The MSSD logic established that France and Italy are also large, advanced, trade-integrated economies operating under the same European trade regime. The key difference lies in the capacity to sustain a specialised industrial export structure over time. Germany's coordinated institutions support this process by reinforcing skill formation, inter-firm cooperation, and incremental innovation (Hall & Soskice 2001, 25-26). These factors allow German firms to remain competitive in sectors where long-term relationships, quality, and technical reliability matter.

This is where consolidation differs from persistence. In the second phase, Germany's advantage endured because early relationships generated learning effects, coordination effects, and adaptive expectations. In the third phase, those mechanisms remain relevant, but they are joined by gradual adaptation. The upgrading indicator does not show a simple upward movement, so consolidation should not be equated with linear upgrading. Instead, Germany's advantage appears to become resilient because its industrial export model adapts without losing its core structure. This process reflects Thelen's argument that institutional development often involves both reproduction and change, as actors adapt existing arrangements to new circumstances (Thelen 1999, 388-389).

France and Italy again serve as important comparison cases. Both countries remain advanced exporters and maintain important industrial strengths. However, the indicators suggest that they do not consolidate their positions in Japan and South Korea in the same way. France's export profile remains more diversified, with an important role for chemicals and machinery, but less concentration in machinery and transport than Germany. Italy remains more strongly associated with miscellaneous manufactures and

consumer-oriented sectors. These sectors are not irrelevant, but they do not create the same degree of embeddedness in industrial production networks. As a result, France and Italy appear less able to generate the same feedback effects between export structure, value-chain position, and long-term stability.

The evidence from this phase therefore supports the consolidation argument, but with an important caveat. It does not show a simple process in which Germany continuously increases the share of advanced industrial goods. Instead, it shows that Germany maintains the strongest advanced industrial profile in the long-term phase, while also retaining a higher share of production-related exports and stronger sectoral concentration. This suggests consolidation through continued industrial strength and institutional adaptation, rather than through linear upgrading alone.

Overall, the long-term consolidation of Germany's export advantage from 1987 onwards can be interpreted as the outcome of continuity and adaptation. Germany's early advantage had already emerged through asymmetric interdependence and persisted through path-dependent mechanisms. In the third phase, the evidence suggests that this advantage remained resilient because German firms and institutions continued to operate within a strong industrial trajectory while adapting to changing external conditions. Thelen's framework explains how institutional arrangements can change gradually while continuing to reproduce existing advantages (Thelen 1999, 392-397). Hall and Soskice explain why Germany's coordinated market economy supports the capabilities required for advanced industrial specialisation (Hall & Soskice 2001, 36-39). Bathelt and Gertler, together with Streeck, show that the German model should be understood as evolving rather than static, adapting under external pressure while retaining important institutional foundations (Bathelt & Gertler 2005, 1-9; Streeck 2009, 1-15).

In process-tracing terms, this phase provides evidence for the final step of the proposed mechanism, although not in the form of simple linear upgrading. Germany's advantage first emerged through the interaction of political alignment and asymmetric interdependence. It then persisted because early trade relationships became self-reinforcing through learning, coordination, and adaptive expectations. Finally, it was consolidated through continued industrial embeddedness and gradual institutional adaptation. The result is a durable form of export competitiveness that cannot be explained by market size, trade openness, or political alignment alone. Germany's stronger position in Japan and South Korea reflects the long-term interaction between trade structure, institutional capacity, and temporal reinforcement.

Discussion

This discussion interprets the findings of the analysis in relation to the research question of the thesis: why Germany developed and maintained a stronger export competitiveness in Japan and South Korea compared to France and Italy. The analysis does not point to a single cause. Instead, it suggests that Germany's advantage is best understood as the result of a sequential process in which political alignment enabled trade relations, export structure generated asymmetric interdependence, early advantages became self-reinforcing, and institutional adaptation helped preserve Germany's position over time.

At the same time, the evidence is not fully uniform. Some indicators strongly support the theoretical framework, while others are more ambiguous. Export composition, value-chain position, sectoral specialisation, and stability of export shares provide the clearest support for the argument. Trade dependence and upgrading of export composition require more careful interpretation. The purpose of this discussion is therefore to assess where the explanation is strongest, where it is weaker, and what this implies for the comparison with France and Italy.

Explaining Germany's Competitive Advantage

The analysis suggests that Germany's stronger export competitiveness in Japan and South Korea cannot be explained by one factor alone. The contextual indicators show that Germany, France, and Italy are comparable cases, although not identical ones. Germany is larger in terms of population and GDP, and it also records higher average trade openness and ECI Trade values. These factors indicate a stronger structural base. However, they do not fully explain why Germany performed more strongly specifically in Japan and South Korea, since France and Italy were also large, advanced, trade-integrated Western European economies operating under the same broad geopolitical and institutional conditions.

Political alignment is therefore best understood as an enabling condition. In the post-war period, Germany, France, Italy, Japan, and South Korea were located within the Western-aligned political and security order. This facilitated trade by reducing uncertainty and encouraging exchange among politically aligned states, in line with Mansfield and Bronson's argument that alliances and shared security goals can support trade relations (Mansfield & Bronson 1997, 94–95). However, because France and Italy shared the same broad Western alignment as Germany, political alignment cannot explain the unequal distribution of export advantage. It explains why trade could develop, but not why Germany became the strongest performer.

The more decisive factor is export structure. Germany's exports to Japan and South Korea were more concentrated in machinery, transport equipment, chemicals, and production-related goods. Machinery and transport equipment accounted for 56,10% of Germany's exports to these markets, compared with 31,50% for France and 27,13% for Italy. Germany also recorded a much higher share of intermediate or production-related exports, at 83,32%, compared with 63,17% for France and 53,47% for Italy. These differences are central because they indicate that Germany did not simply export more; it exported goods that were more closely linked to industrial production.

This finding supports the theoretical logic of asymmetric interdependence. Hirschman argues that the effects of trade depend not only on volume, but on the distribution of dependence and on the difficulty of replacing a trade relationship (Hirschman 1945, 10–11; 17–18). German exports in machinery, chemicals, transport equipment, and production-related categories were more likely to become embedded in production systems. Such goods are harder to replace than final consumer goods because they are connected

to technical standards, production routines, supplier relationships, and after-sales services. Germany's advantage therefore lay in lower substitutability rather than simple export scale.

Keohane and Nye's distinction between sensitivity and vulnerability reinforces this interpretation. Interdependence does not imply equality; what matters is the ability of actors to adjust when relationships change (Keohane & Nye 1977, 8–11). Japan and South Korea could trade with several European countries, but replacing specialised German industrial goods would likely involve higher adjustment costs. Germany's export structure therefore placed it in a relatively favourable position because its goods were more embedded in production processes. This is why value-chain position is one of the strongest indicators in the thesis.

The second major part of the explanation is persistence. Germany's advantage did not remain only an early divergence. The stability of export shares shows that Germany's position was less volatile over time than those of France and Italy. Germany recorded an average coefficient of variation of 0,18, compared with 0,34 for France and 0,35 for Italy. Since a lower coefficient of variation indicates greater stability, this supports Pierson's argument that early advantages can become self-reinforcing under conditions of increasing returns (Pierson 2000, 251–252). Once German firms had established themselves as suppliers of industrial goods, repeated exchange could generate learning effects, coordination effects, and adaptive expectations.

The third part of the explanation concerns institutional adaptation. Germany's coordinated market economy supported the reproduction of specialised industrial capabilities. Hall and Soskice argue that coordinated market economies are particularly suited to long-term investment, specialised skill formation, inter-firm cooperation, and incremental innovation (Hall & Soskice 2001, 21–26). These features are relevant because Germany's advantage was concentrated in sectors where quality, technical reliability, and long-term coordination matter. Bathelt and Gertler also show that the German model should be understood as evolutionary rather than static, combining continuity with adaptation (Bathelt & Gertler 2005, 1–3). Streeck similarly emphasises that German capitalism changed under external pressures without fully breaking with its previous institutional trajectory (Streeck 2009, 1–15). This helps explain why Germany's export position remained resilient over time.

Germany's competitive advantage was therefore structural, relational, and temporal. It was structural because it depended on the type of goods exported. It was relational because those goods created different levels of substitutability and vulnerability in trade relations with Japan and South Korea. It was temporal because the advantage developed over time through emergence, persistence, and consolidation. Germany's stronger export competitiveness was not simply the result of size, openness, or political alignment, but of a specialised and production-embedded export structure that became self-reinforcing.

Interpreting Inconsistent or Ambiguous Indicators

Although the findings broadly support the theoretical framework, not all indicators point in the same direction with the same strength. The strongest indicators are export composition, value-chain position, sectoral specialisation, and stability of export shares. These directly capture the mechanisms at the centre of the thesis: industrial structure, embeddedness, concentration, and persistence. By contrast, trade dependence and upgrading of export composition are more ambiguous and require more cautious interpretation.

Trade dependence is the clearest example. Germany records slightly higher average dependence on Japan and South Korea overall, but the differences are limited. Germany's average dependence is 1,70%

towards Japan and 0,71% towards South Korea; France records 1,56% and 0,54%, while Italy records 1,54% and 0,58%. In phase-specific terms, the picture is even more mixed. In Phase 3, France and Italy show slightly higher dependence on Japan than Germany, while Germany shows higher dependence on South Korea. This means that trade dependence alone cannot explain Germany's stronger export competitiveness.

This ambiguity does not undermine the argument, but it clarifies what kind of dependence matters. If dependence is measured only as the share of exports directed towards Japan and South Korea, the indicator captures exposure, but not necessarily vulnerability. Keohane and Nye argue that vulnerability depends on the costs of adjustment after an actor attempts to adapt to change (Keohane & Nye 1977, 10–11). Hirschman also emphasises that dependence is shaped by the availability of alternatives and the cost of replacing trade relations (Hirschman 1945, 17–18). Therefore, a country can have relatively low aggregate dependence but still occupy a strong position if its exports are difficult to replace.

For this reason, trade dependence becomes meaningful only when interpreted together with export composition and value-chain position. Germany's advantage was not that it depended much more heavily on Japan and South Korea. Rather, its exports were more production-related and less easily substitutable. The trade dependence indicator therefore provides limited support in isolation, but it complements the structural indicators. This is one of the central findings of the thesis: vulnerability cannot be reduced to the share of exports directed towards a market.

The upgrading indicator is also mixed. The theoretical expectation was that Germany's advantage would be consolidated through upgrading and movement into more advanced export segments. However, the measured indicator does not show a simple upward trend. The share of selected advanced industrial goods declines across the three phases for all countries. Germany moves from 78,49% in Phase 1 to 65,05% in Phase 2 and 43,89% in Phase 3. France declines from 48,24% to 41,95% and then 29,63%, while Italy declines from 65,61% to 37,26% and then 30,36%.

This means that the indicator does not support a simple interpretation of upgrading as a rising share of selected advanced industrial goods. However, it still provides useful information. Germany starts from an exceptionally high advanced-industrial share and remains ahead of France and Italy in the long-term phase. The decline may reflect diversification of export baskets, changes in the structure of trade, or the limits of measuring upgrading through broad SITC categories. Therefore, the indicator should be interpreted as evidence of continued advanced industrial strength rather than straightforward evidence of linear upgrading.

This finding also refines the role of Thelen's theory in the thesis. Thelen's argument on gradual institutional change does not require every indicator to move upwards in a linear way. Her framework emphasises continuity, adaptation, and the gradual reproduction of institutions through ongoing actor interactions (Thelen 1999, 384–385; 388–389). Germany's consolidation can therefore be understood less as a constant increase in advanced industrial shares and more as the sustained capacity to adapt within an industrial trajectory.

Finally, the outcome indicator also requires nuance. Germany remains the strongest exporter over the long run, but the evidence should not be described as complete non-convergence. France and Italy narrow the gap in certain periods, especially in Japan. The better interpretation is that convergence remains partial. It does not eliminate Germany's advantage or reverse the hierarchy, but it prevents a simplistic story of permanent divergence. Germany's advantage was strong and persistent, but it was not immune to competition.

Limits of the Explanation

The explanation developed in this thesis is theoretically grounded and empirically supported, but it has limits. The first limitation concerns measurement. Several mechanisms central to the theoretical framework cannot be observed directly through aggregate trade data. Concepts such as substitutability, vulnerability, switching costs, supplier trust, technical standards, and buyer expectations are difficult to measure directly over a long historical period. As a result, the thesis relies on proxies such as export composition, value-chain position, sectoral specialisation, trade dependence, stability of export shares, and upgrading of export composition.

This limitation is especially relevant for value-chain position. The indicator is operationalised through the share of intermediate or production-related exports, measured as SITC 5 + 6 + 7. This is reasonable because it includes chemicals, manufactured goods by material, and machinery and transport equipment. However, it is not a perfect classification of intermediate goods. Some goods within these categories may be final goods, while some intermediate goods may fall outside them. The indicator should therefore be read as a broad measure of production-related embeddedness rather than a precise measure of value-chain integration.

A similar limitation applies to upgrading. The selected advanced industrial SITC two-digit categories capture important industrial goods, including chemical inputs, machinery, industrial equipment, and electrical machinery. However, they do not perfectly measure technological sophistication. Upgrading can occur within categories, for example through higher quality, more advanced components, or more complex engineering. These changes may not appear clearly in one- or two-digit trade classifications. This partly explains why the upgrading indicator is mixed.

The second limitation concerns data availability. IMF IMTS provides long-run bilateral trade data from 1955 to 2024, which is useful for the outcome indicator, trade dependence, and stability of export shares. However, sectoral UN Comtrade SITC data begins in 1962, meaning that sectoral evidence does not cover the full first phase. The analysis therefore treats the 1962–1965 sectoral evidence as indicative of the latter part of Phase 1 rather than as full evidence for the whole period.

There is also a historical limitation connected to Germany. For the pre-reunification period, Germany is treated as the Federal Republic of Germany, while the German Democratic Republic is excluded. This is appropriate because the thesis focuses on Western-aligned capitalist economies integrated into the GATT/EEC trade framework. However, the meaning of "Germany" changes after reunification. The analysis assumes enough continuity between West Germany and reunified Germany to examine long-term export competitiveness, but reunification may have affected economic structures in ways that are not fully explored here.

A third limitation concerns the level of analysis. The thesis focuses mainly on country-level trade patterns. This is appropriate for the research question, but it limits the ability to explain firm-level strategies. Germany's advantage may also have depended on specific firms, corporate networks, export promotion policies, technology strategies, and brand reputation. These factors are partly captured indirectly through sectoral specialisation and export stability, but they are not directly tested. A fuller explanation would require firm-level or industry-level case studies.

A final limitation concerns the treatment of Japan and South Korea. The thesis analyses them together as East Asian markets where Germany developed a strong export position. This is useful for identifying a broader pattern, but Japan and South Korea followed different trajectories. Japan was already an advanced industrialising economy in the early post-war decades, while South Korea's industrial

transformation accelerated later. The same German export structure may therefore have operated differently in the two markets. The thesis partly addresses this by distinguishing Japan and South Korea in the data, but the explanation remains more focused on the common mechanism than on market-specific differences.

The causal claim should therefore be understood as process-based rather than deterministic. The analysis reconstructs a plausible mechanism linking political alignment, export structure, asymmetric interdependence, path dependence, and institutional adaptation. It does not claim that no other factors mattered. Exchange rates, firm strategy, Japanese and South Korean industrial policy, EU trade relations, technological change, and global competition may also have contributed to the observed outcomes. The strength of the thesis lies in showing that the proposed mechanism is coherent with the evidence, not in excluding every alternative explanation.

Implications for France and Italy

The findings also have implications for how France and Italy should be understood in the comparison. The argument is not that France and Italy were weak economies or unsuccessful exporters. Both were large, advanced, and internationally integrated economies. Both also maintained important strengths in specific sectors. The difference is not between German competitiveness and French or Italian non-competitiveness. Rather, it concerns the type of competitiveness each country developed in relation to Japan and South Korea.

France appears as a diversified advanced exporter. Its export composition shows a significant role for machinery and transport equipment, at 31,50%, and chemicals, at 22,52%. This indicates substantial industrial capabilities. However, its export profile was less concentrated in machinery and transport than Germany's and more balanced across categories. This may have reduced the extent to which French exports became embedded in the production systems of Japan and South Korea. France's competitiveness was real, but it did not generate the same level of production-related embeddedness shown by Germany's higher value-chain position indicator.

Italy presents a different pattern. Its largest category is miscellaneous manufactures, at 34,17%, while machinery and transport equipment account for 27,13% and chemicals for 13,34%. This supports the interpretation that Italy's export profile was more oriented towards miscellaneous manufactures and consumer-related sectors. These sectors can be highly competitive, especially in areas such as fashion, design, specialised consumer goods, and high-quality manufacturing. However, they are less likely to generate the same kind of asymmetric industrial dependence as machinery, transport equipment, chemicals, and production-related goods.

The comparison with Italy is especially useful because Italy, like Germany, was a defeated power after the Second World War and had to rebuild its economy and international position. The different outcomes therefore cannot be explained simply by post-war defeat or reintegration into the Western bloc. Both countries were reconstructed and reintegrated, but Germany's post-war model generated a stronger position in production-related industrial exports. Italy developed a different form of competitiveness, one more strongly associated with consumer goods and miscellaneous manufactures.

France and Italy also help clarify the meaning of convergence. The data do not show that Germany was unchallenged. France and Italy narrowed the gap in some periods and markets. However, this convergence was partial and did not produce the same stability or production embeddedness. Germany's lower coefficient of variation indicates that its export position was more stable over time. Therefore, the issue is not whether France and Italy exported successfully to Japan and South Korea. They did. The issue

is whether their export profiles generated the same self-reinforcing mechanisms. The evidence suggests that they did not.

This has broader implications for the concept of export competitiveness. Competitiveness should not be understood only as the ability to increase export volumes. It also concerns the capacity to occupy strategic positions within trade relationships. Germany's advantage lay in sectors that were more closely connected to industrial production, technical standards, and long-term supplier relationships. France and Italy had different strengths, but these strengths produced less value-chain embeddedness in the specific markets examined.

Overall, the discussion confirms that the thesis' explanation is strongest when export competitiveness is understood structurally and temporally. The strongest evidence comes from indicators that capture the type, embeddedness, concentration, and stability of exports. The more ambiguous indicators, especially trade dependence and upgrading, do not overturn the argument, but they refine it. Germany's advantage was not simply based on greater dependence or linear upgrading. It was based on a more specialised industrial export structure that became embedded, reproduced, and adapted over time.

Conclusion

This thesis set out to answer why Germany developed and maintained stronger export competitiveness in Japan and South Korea compared to France and Italy. The central finding is that Germany's advantage cannot be explained by a single factor such as market size, trade openness, or political alignment. Instead, the evidence supports a sequential explanation in which Germany's export advantage emerged from a specific combination of political conditions, export structure, asymmetric interdependence, path dependence, and institutional adaptation.

The starting point of the thesis was the observation that Germany, France, and Italy are broadly comparable cases. All three are large advanced Western European economies, all are integrated into the European trade framework, and all share a similar geopolitical alignment. The contextual indicators confirm this comparability, while also showing that Germany has historically been somewhat larger, more trade-oriented, and more complex in productive terms. These differences matter, but they are not sufficient to explain the specific pattern of export competitiveness in Japan and South Korea. The explanation therefore lies primarily in the explanatory indicators, especially export composition, value-chain position, sectoral specialisation, and stability of export shares.

The first part of the argument concerns the emergence of Germany's advantage. Political alignment within the Western bloc facilitated the expansion of trade relations, as expected by Mansfield and Bronson's argument on alliances and trade (Mansfield & Bronson 1997, 94-95). However, because France and Italy shared the same geopolitical alignment, this condition cannot explain Germany's stronger position by itself. The decisive difference was Germany's export structure. Germany's exports to Japan and South Korea were more concentrated in machinery, transport equipment, chemicals, and production-related goods. This made them more closely connected to industrial production and less easily substitutable than many of the exports of France and Italy.

This finding supports the theoretical logic developed from Hirschman and Keohane and Nye. Hirschman argues that dependence in trade relations depends not simply on trade volume, but on the difficulty of replacing trade relationships and the distribution of mutual dependence (Hirschman 1945, 10-11; 17-18). Keohane and Nye similarly argue that vulnerability depends on the costs of adjustment after a disruption (Keohane & Nye 1977, 10-11). Germany's advantage therefore did not derive from greater aggregate dependence on Japan and South Korea. Rather, it derived from the fact that its exports were more production-related, more specialised, and more likely to generate adjustment costs for importing partners.

The second part of the argument concerns persistence. The stability indicator shows that Germany's export position was less volatile than those of France and Italy. Germany's average coefficient of variation was 0,18, compared with 0,34 for France and 0,35 for Italy. This supports the expectation derived from Pierson that early advantages can become self-reinforcing through increasing returns (Pierson 2000, 251-252). Once German firms had established themselves as suppliers of industrial goods, repeated exchange could generate learning effects, coordination effects, and adaptive expectations. These mechanisms helped transform an early position into a more stable pattern of export competitiveness.

The third part of the argument concerns long-term consolidation. The evidence here is more nuanced. The upgrading indicator does not show a simple linear increase in the share of selected advanced industrial goods. Instead, Germany's advanced-industrial share declines across the three phases, although it remains higher than that of France and Italy in the long-term phase. This means that Germany's consolidation should not be understood as straightforward upgrading in a narrow quantitative sense. Rather, it should be interpreted as continued advanced industrial strength, production-related embeddedness, and gradual

institutional adaptation. This is consistent with Thelen's argument that institutions can change gradually while continuing to reproduce existing advantages (Thelen 1999, 384-385; 388-389).

The thesis therefore finds that the strongest evidence comes from the indicators that capture export structure and temporal stability. Export composition, value-chain position, sectoral specialisation, and stability of export shares provide the clearest support for the theoretical framework. Trade dependence and upgrading are more ambiguous. Trade dependence does not explain the outcome in isolation, because aggregate exposure to Japan and South Korea remains relatively low and sometimes similar across cases. Upgrading also requires caution, because the selected proxy does not show a simple upward trend. These indicators do not overturn the argument, but they refine it. They show that Germany's advantage was not based on greater dependence or linear upgrading, but on a specialised industrial export structure that became embedded and reproduced over time.

The comparison with France and Italy is central to this conclusion. France was not an unsuccessful exporter; it had important strengths in machinery, transport equipment, chemicals, and other advanced sectors. However, its export profile was more diversified and less strongly concentrated in production-related categories than Germany's. Italy also had real export strengths, particularly in miscellaneous manufactures and consumer-oriented sectors. Yet these sectors were less likely to generate the same kind of value-chain embeddedness and asymmetric industrial dependence. The difference, therefore, is not between German success and French or Italian failure, but between different forms of export competitiveness.

The thesis also has limitations. It relies on aggregate trade data and proxy indicators, which cannot fully capture firm-level mechanisms such as supplier trust, technical standards, switching costs, and buyer expectations. Sectoral data are only available from 1962, meaning that the earliest phase cannot be fully measured through product-level indicators. Moreover, Japan and South Korea are analysed together as advanced East Asian markets, although their development trajectories differ. These limitations suggest that future research could extend the analysis through firm-level case studies, more detailed product-level data, or separate market-specific studies of Japan and South Korea.

Overall, the thesis shows that Germany's stronger export competitiveness in Japan and South Korea is best explained as a long-term process rather than as a static advantage. Political alignment created favourable conditions for trade, but the structure of Germany's exports shaped the distribution of advantage. Early industrial linkages then became more stable through path-dependent mechanisms, while Germany's institutional model helped reproduce specialised capabilities over time. The final answer to the research question is therefore that Germany developed and maintained a stronger export position because its specialised industrial export structure created deeper production embeddedness and lower substitutability, and because this initial advantage was reinforced through time by self-reinforcing trade relationships and gradual institutional adaptation.

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