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A framework for political risk management and its application to the German-West African green hydrogen activities

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ABSTRACT

The management of political risk is becoming an increasingly important topic for international businesses. Although the detrimental effects of political risk on international business have been the subject of studies for decades, strategies for mitigating such effects remain underresearched as well as specific tools to manage the relationships between firms and host governments. Methodologically this review article draws upon the combination of a semi-systematic literature review with a qualitative content analysis that examines 81 research papers. The synthesized findings provide an advanced framework for political risk management that includes the four key strategic directions: (i) improve the institutional framework, (ii) reduce transaction costs, (iii) manage external dependencies, and (iv) develop internal resources and capabilities. Under each key strategy, specific actor-based tools for firms and governments to manage and mitigate political risk were identified. Such tools and strategies are illustrated through the use case of German-West African green hydrogen activities as countries with a high renewable energy potential are exposed to higher levels of political risk. This review contributes a comprehensive, transferable, actor-based framework for political risk management that can serve as a guideline for firms and as hands-on guidance for policymakers.

1. Introduction

Firms expanding to foreign countries are exposed to political risk events in those countries. In an integrated global economy and with growing political tensions, the management of such events is becoming a critical topic for the international business community. Political risk events are determined by political instability, regulatory constraints, legal uncertainty, corruption, and internal or external conflicts. Unlike in other types of risk (e.g. economic or financial) these events are caused by an action or inaction in the political environment, which is external to a firm, and they are difficult to predict. The consequences can either affect all firms in a country or impact only a certain industry or sector [1–4]. These unique characteristics of political risk stress the fact that context-specific considerations are needed, as the political system is distinct to each country and, for instance, firms in the energy sector are more concerned about a breach of contract, whereas firms in the manufacturing industry are more likely to be worried about restrictions in trade policies.

Following the pioneering works in identification and assessment of political risk [5–10], several studies have contributed to the understanding of the detrimental effects of political risk on international business [11–15]. However, recent studies note that the mitigation of political risk effects remains largely unexplored [3]. Although risk assessment has been in the interest of international business literature for decades, mitigation strategies have received less attention [16]. Hence, specific tools to manage the relationship between firms and host governments are needed [17],

In their review of political risk research, Jiménez and Bjorvatn [18] identified responses to political risk as an emerging research field. A growing interest lies in the analysis of this field that has been overlooked so far. In their work, the authors emphasize an actor-centered research agenda to incorporate political risk into major research streams within international management and international business studies. Specifically, the authors call to investigate how different actors can effectively deal with political risk, whereby the authors propose adopting a qualitative approach to learn from antecedents of actors' capabilities to address political risk. This call is supported by Ullah et al. [19], who suggest that the analysis of political risk management should not only focus on the national or the industry level. A review of internationalization and risk identifies strategies to manage risk in the

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internationalization process as an important research gap [20]. In their review, the authors also criticize that previous studies on the internationalization-risk relationship are restricted to a limited number of contexts. Hence, the transferability of the findings of these studies to other contexts is missing.

One emerging context for the management of political risk constitutes the arising green hydrogen industry. Green hydrogen will play a key role in the transition of the global energy system. For many advanced economies, such as Germany, the domestic production of green hydrogen will not be sufficient to satisfy future demand. Hence, most of the hydrogen needs to be imported [21]. For this, Germany aims to draw on renewable energy-rich partners in the EU, such as Spain, but also to systematically develop production sites in non-EU countries in order to satisfy the import demand [22]. As potential non-EU partner, the renewable energy-rich West African region has the potential of generating 165,000 terawatt-hours of green hydrogen per year [23], which is approximately 1,500 times the expected German demand for green hydrogen by 2030 [22]. However, renewable energy-rich countries are positively correlated (+0,54[1]) with the level of political risk. This is particularly true for countries in West Africa, as this remains one of the world's most politically unstable regions. These risks have been identified to be detrimental to renewable energy investments [24]. The accurate management of political risks could mitigate possible impacts and facilitate the collaboration on government and firm level. Although the academic literature in the field of green hydrogen receives much attention at the techno-economic level [25–29], risks associated with green hydrogen value chains have been largely overlooked [30]. Azadnia et al. [31] highlight the importance of mitigating risk factors related to governments in order to enable green hydrogen production, consumption, and acceptance, and the authors call for research on the development of mitigation strategies for these risk factors.

Hence, to the current authors' knowledge, the academic literature in the field of green hydrogen does not yet take into account the political risk perspective. In particular, no tools or strategies to manage and mitigate political risk in the green hydrogen context have been found in that literature. Moreover, although several illustrative cases of firms dealing with political risk are available in the political literature, no framework of political risk management that can be transferred to the green hydrogen context has been found. Regarding these points, the research at hand develops an advanced framework for political risk management and illustrates its applicability by the use case of the German-West African green hydrogen activities. Therefore, this study aims to fill these gaps by asking the following research questions:

RQ1: What determines political risk in the international business environment?
RQ2: What tools and strategies can be adopted by firms and governments to manage and mitigate political risk?
RQ3: How can political risk be managed in the green hydrogen context?

To answer these questions, the review applies a qualitative approach by combining a semi-systematic literature review with a qualitative content analysis. The aim of the semi-systematic literature review is to identify and bundle extant knowledge of context-specific evidence in the field of political risk management. Furthermore, the aim of the qualitative content analysis is to synthesize these findings into an advanced framework with tools and strategies for political risk management. The final sample consists of 81 academic articles and reviews. Based on different theoretical lenses, four key strategic directions are elaborated, i.e. i) improve the institutional framework, ii) reduce transaction costs, iii) manage external dependencies, and iv) develop internal resources and capabilities. These key strategies are complemented with specific actor-based tools for firms and governments to manage and mitigate political risk.

The review contributes in several ways. First, numerous context-specific findings of political risk management are pooled into a transferable framework. In this vein, this study addresses the main limitation of previous research on political risk management, i.e. that context-specific findings cannot be generalized [32–34], and thereby answers the call of Eduardsen and Marinova [20] to broaden the contexts and contribute to the transferability of findings. Second, it is one of the first frameworks to offer tools and strategies for political risk management from both firm and government perspectives based on theoretical lenses and thereby answering the call of Jiménez and Bjorvatn [18] for more emphasis on different actors and their capabilities and responses to political risk, and for more attention to the analysis of political risk management on the project level [19]. Third, the study provides a discussion of the framework in the use case of German-West African green hydrogen value chains, and thereby demonstrates the applicability of the framework. This discussion seems particularly important in the light of green hydrogen demand in advanced economies and renewable energy potential in the Global South, i.e. in countries with relatively higher levels of political risk.

2. Theoretical lenses

Political risk is a well-established concept in the academic literature and is highly relevant for different contexts specifically in developing countries [35,36]. Based on Jiang et al. [36] and acknowledging that political risk is not limited to the host country's political environment, this study proposes the following definition of political risk:

> *The possibility that a specific action or inaction in the political environment will directly or indirectly, permanently or temporarily, cause unexpected negative or positive changes in the business environment.*

As political risk is a highly complex and multidimensional phenomenon [37,38], there are multiple paradigms and perspectives for managing and responding to political risk [39]. This study draws upon the major theoretical lenses found in the academic literature, through which political risk management can be viewed. Fig. 1 provides an overview of these lenses to provide the theoretical foundation for the framework developed in section five.

Based on a narrative literature review, John and Lawton [4] suggest three theoretical perspectives on political risk management: institutions, resource dependence, and resource and capability. The institutions perspective is located in the field of New Institutional Economics, which contributes to political risk management research by focusing on how the political environment shapes the decisions of firms [40]. Discussions drawing on resource-related theories evolve around how managers deal with political risk by managing external resource interdependencies between the firm and a host country agent, such as the government or a local partner firm [41]or by building and deploying internal political capabilities [42]. Furthermore, Buitrago R. and Camargo [43] emphasize the widespread use of institutional transaction cost as well as resource and capability perspectives in the literature, thereby confirming the suggested perspectives of John and Lawton [4]. Each theoretical lens is described in more detail in Appendix A.

3. Research methodology

To answer the research questions, this paper combines a semi-systematic literature review and a qualitative content analysis with the aim of designing a framework for political risk management. This approach is the most appropriate, as the semi-systematic literature review allows the identification and bundling of extant knowledge regarding context-specific anecdotical evidence in the field of political risk management. The qualitative content analysis is used to synthesize this knowledge into an advanced framework, which can then be applied

[1] Pearson correlation coefficient of average practical photovoltaic (PV) potential [167]and average political risk rating[165]per country.

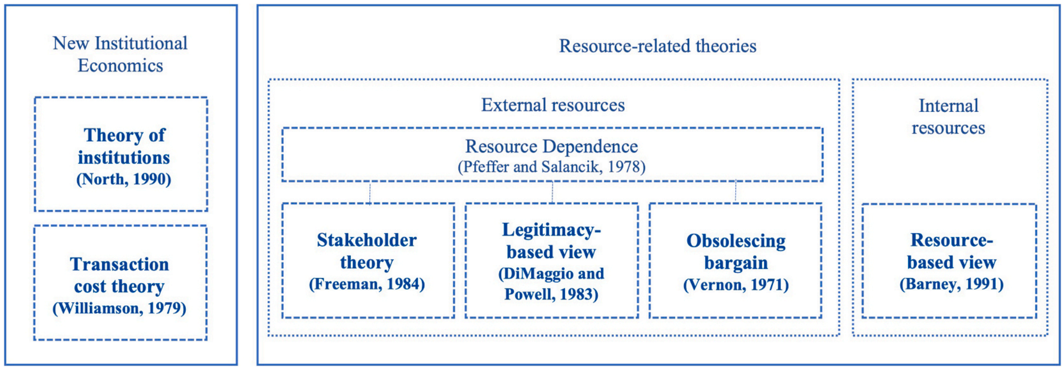

Fig. 1. Major theoretical lenses for political risk management.

to the green hydrogen context. Such an approach is being increasingly used in the field of management and international business literature to assess extant knowledge and to understand the underlying structures [44]. Examples that derive concepts or frameworks based on the combination of a literature review and content analysis include Debellis et al. [45] (integrative framework of family firm internationalization), Conz and Magnani [46] (conceptual framework that introduces a dynamic perspective on the resilience of firms), Moldavska and Welo [47] (concept of sustainable manufacturing), or Seuring and Müller [48] (conceptual framework for supply chain risk management).

3.1. Semi-systematic literature review

Literature reviews can be used to identify, evaluate, and interpret an existing body of knowledge in a systematic and reproducible way [49]. Such a body of knowledge can be further developed, and the results can serve practitioners and policymakers in their decision-making processes [50]. Literature reviews can be separated into systematic, semi-systematic, and integrative reviews. Systematic reviews aim to identify empirical evidence based on specific research questions. Semi-systematic reviews are defined to be based on broader research questions, which aim to identify qualitative or quantitative relevant research findings. These findings are then synthesized to build theoretical frameworks of conceptual models. Integrative reviews are closely related to semi-systematic reviews. However, there is no strict standard for critically analyzing and synthesizing the literature for new idea development. This leads to a situation in which superior conceptual thinking skills are required from the researcher [51]. According to Ward et al. [52], semi-systematic reviews can detect themes or common issues in order to find components for a theoretical framework. Different methods exist to analyze and synthesize the findings of a semi-systematic literature review. As opposed to meta-analysis, which is commonly used in systematic literature reviews, content analysis is used in semi-systematic reviews to qualitatively analyze texts and to synthesize passages relevant to the research question [51].

3.2. Qualitative content analysis

Mayring [53] defined the procedural rules of inductive category formation and summarizing to conduct a qualitative content analysis that is adopted in this review. Category formation is a central step in content analysis and is a sensitive process. In an inductive approach, categories are derived from the material itself and not – as would be the case with the deductive approach – prior from the literature. In this manner, the inductive approach aims for a true description of the material, reducing any potential bias from the researcher as a consequence of the pre-selection of categories [54]. The reason for choosing an inductive approach is that although there is a large body of political risk literature available, concepts for managing and mitigating such risks have rarely been a subject of these studies, and no comprehensive list has been found. In this research, based on the inductively formed categories, the rules of summarizing qualitative content analysis were applied to build a system of main categories that form the framework for political risk management.

3.3. Research process

The methodological procedure to develop the framework follows a three-step process (Fig. 2) to identify the determinants of, as well as tools and strategies for, managing and mitigating political risk in the international business environment. The process is built on Tranfield et al. [50] stages for conducting a review, Moher et al. [55] reporting guidelines for reviews, and Mayring [53] systematic approaches for inductive category formation and summarizing qualitative content. This process is the most appropriate methodological approach for analyzing the extant knowledge on political risk, as it goes beyond simply listing codes to classify the text but focuses rather on interpretation and arguments to answer the research questions.

3.3.1. Sample definition

The appropriate selection of the material to be analyzed is a key task in any review [56]. In the first step, the sample of the study needs to be defined. This step includes the identification of keywords for the structured search string [50]. The identification was performed through bilateral discussions and conversations with non-involved researchers from the fields of business administration and international business management from different countries including Germany, Senegal, the Gambia, Mali, Benin, Cabo Verde, Nepal, India, and Estonia. The exchange with non-involved researchers reduced the risk of personal biases possibly influencing the selection of keywords by the authors alone. To answer RQ1, the search string was set to include all material that dealt with political risk in a conceptual way. This was done by performing a Title-Abstract-Keywords search using the combination of the keywords **"political risk" AND "concept" OR "framework"**. The search string was held most open at this initial stage and does not include narrowing terms related to the international business context, global trade, or cross-border investment. The inclusion of such terms may have limited the results and would not have provided a full picture of the research field. A screening for the material to be relevant in an international business context was performed at abstract level as described below. In order to obtain all relevant material for RQ2, various precise combinations of political risk in the context of management/mitigation were identified. The combinations include **"political risk management" OR "management of political risk*" OR "manage political risk*" OR "political risk mitigation" OR "mitigation of political risk*" OR "mitigate political risk*"** and were performed as a Title-Abstract-Keywords search. Lastly, with the aim of complementing the identified material, the additional search string **"political risk*"**

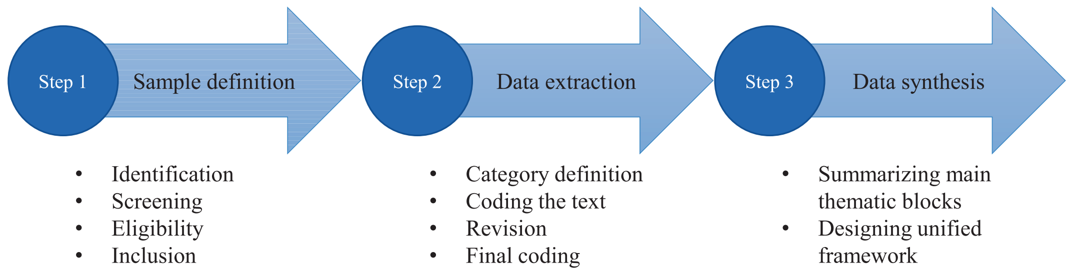

Fig. 2. Three-step research process [50,53,55].

AND "management" OR "mitigation" OR "strateg*" was identified. This search string was performed in a Title-only search since it would have been too broad for a Title-Abstract-Keywords search. In this manner, additional material that was not identified by the previous search strings but was relevant for the RQs was included in the sample. The structured search strings were applied to Web of Science and Scopus. These databases were chosen for the selection process as they were found to be the two main databases that cover most of the literature. Additionally, no time limitation was set to obtain a complete picture of the state of scientific knowledge.

Once the search string had been identified in accordance with Tranfield et al. [50], the guidelines of Moher et al. [55] were used to ensure consistency and accuracy of the material selection [57]. These guidelines are commonly applied to define a sample in reviews [58]. The different phases of the guidelines on selecting studies for a sample are: identification, screening, eligibility, and inclusion. Based on the structured search string, Web of Science revealed 252 and Scopus 473 results. As assessing the quality of the material constitutes a major challenge [50], the authors only included articles and reviews published in peer-reviewed academic journals, as suggested by Bailey et al. [59] or P. Deng [60]. After applying the filters for document type (i.e. "Article" OR "Review") and language (i.e. "English"), the Web of Science results were reduced to 202 and the Scopus results to 340. By removing the duplicates, the sample reduced to 388 documents was selected for the screening phase. Fig. 3 summarizes the sampling process.

The screening was performed at abstract level. All articles and

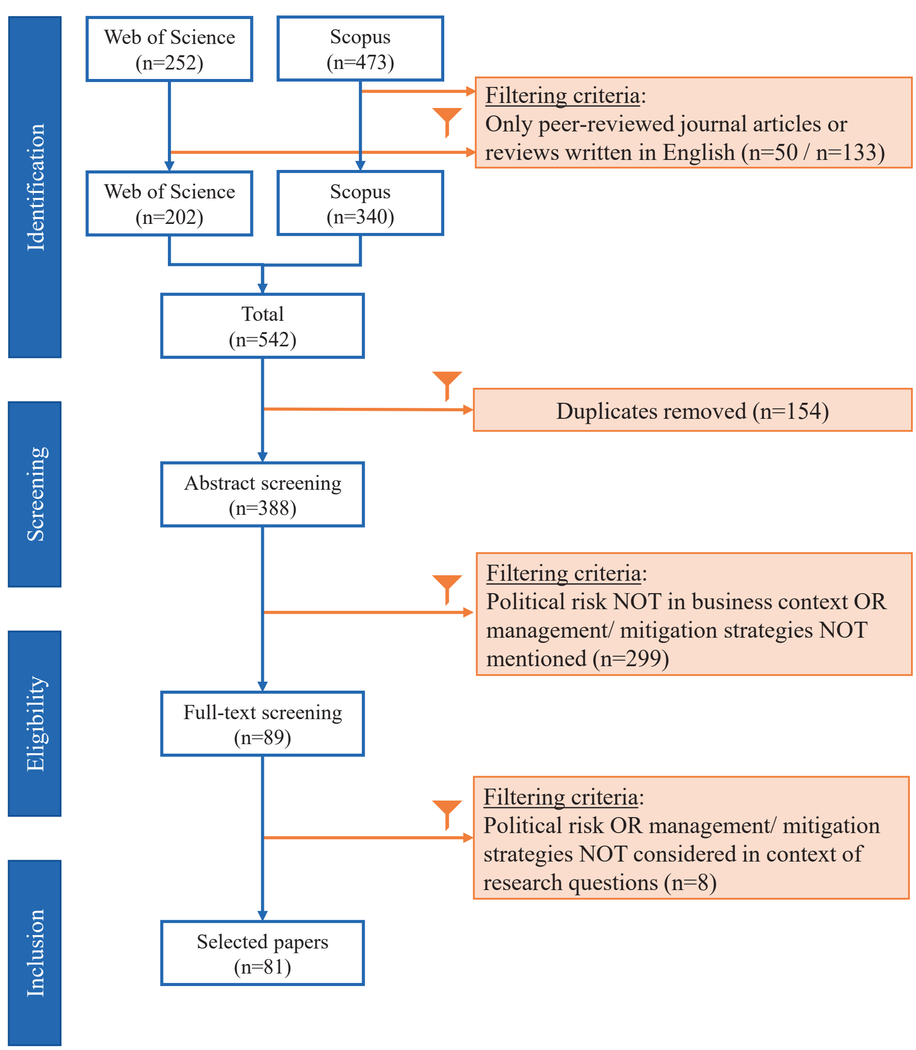

Fig. 3. Sample selection process.

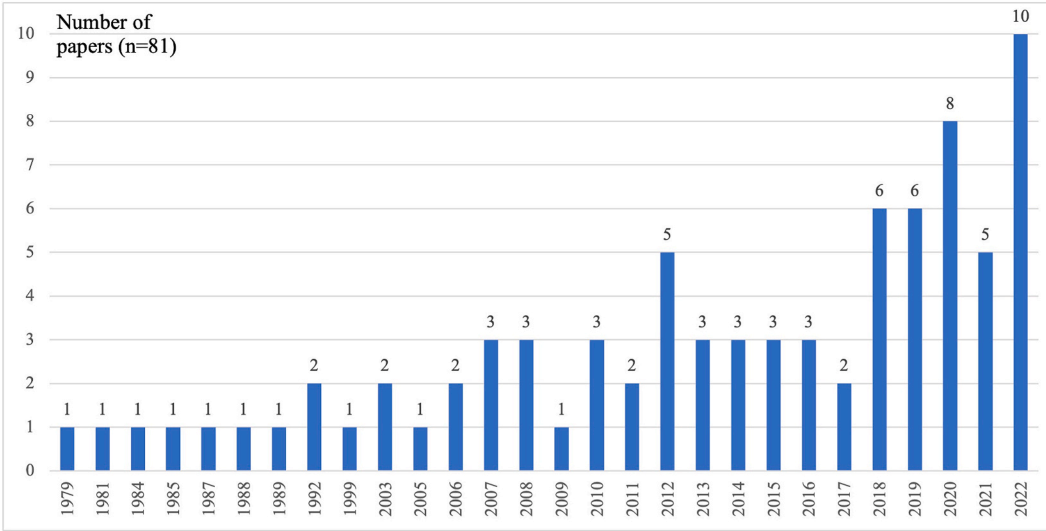

Fig. 4. Distribution of publications per year over the period studied.

reviews that neither consider political risk in a business context, e.g. medical or engineering, nor mention management/ mitigation strategies in the abstract were excluded. This reduced the sample to 89 documents that were selected for the eligibility phase. In this phase, the remaining documents were screened on a full-text basis to assess their eligibility. Documents that did not address political risk or management/ mitigation strategies in the context of the RQs, e.g. micro-political tensions between firms, country experience of firms, or general risk management, were excluded. As a result, 81 articles and reviews remained that were selected for the final sample.

3.3.2. Data extraction

The second step involves the extraction of relevant content. In this step, the authors' expertise from working several years on development-related projects and in the special operations department of a development financial institution (DFI), in which the main task was the analysis and the management of non-performing assets that were affected not only but also by political risk, provided a thorough understanding of the content. This understanding facilitated a sound judgment on the relevance and fit of the contents regarding the RQs.

A critical aspect in the extraction of relevant content is the development of a coding scheme and the coding process [44,56,61]. The category definition serves as a selection criterion to determine relevant parts in the material [53]. Two category definitions were set based on the RQs, i.e. i) determinants of political risk and ii) tools and strategies for political risk management. During the initial coding, any part of the material that fit to one of the two definitions was extracted into separate spreadsheets for further analysis. Once all relevant parts had been extracted, the content of each excerpt was analyzed and an appropriate category assigned. After coding approximately 25% of the extracted parts, no new categories were found, and a revision of the categories and rules as suggested by Mayring [53] was applied before the final coding took place. The entire coding scheme and examples of the material for each category are provided in the Supplementary Material (1).

3.3.3. Data synthesis

The third step constitutes the synthesis of the material and the design of the framework. Main thematic blocks have been built following the rules for summarizing a content analysis as proposed by Mayring [53]. The rules are a suitable technique for grouping the individual categories and form a system of thematic blocks. In the first step, the categories were paraphrased to a uniform stylistic level and then generalized to a certain level of abstraction. Paraphrases that were either semantically identical or did not appear to add significantly to the content at the level of abstraction were then removed. Next, different paraphrases with similar meaning or content were combined into one paraphrase with the aim of further reducing the number of thematic blocks. To test for the stability of the results, intra-coder checks were performed on the material [54] without producing significantly different results. The sample for the intra-coder checks was randomly chosen and included 8 papers (ca. 10% of the material). Percentages of agreement between the original coding and the reliability check were calculated, which is commonly used to assess the intra-coder reliability [62]. The results are in the range of between 87.0% and 93.8%. Details on the intra-coder reliability check are provided in Appendix B. In the final phase of the synthesis, the thematic blocks were incorporated into the emerging framework [63], which constitutes the findings of the qualitative content analysis [53] and is presented in the fifth section. An overview for the references of the different categories is provided in the Supplementary Material (2) for a full picture of all thematic blocks found in the individual 81 papers of the sample.

4. Descriptive analysis

4.1. Distribution over time period and main journals

The basic body of literature comprises 81 papers. Since no time limitation was set to obtain a complete picture of the state of scientific knowledge, the time period ranges from 1979 until 2022 (Fig. 4). The distribution across publication years shows that from 2005 onwards at least one paper was published each year with a positive linear trend and that the majority (two-thirds) of the sample were published between 2012 and 2022. Similarly, the number of worldwide ongoing conflicts more than doubled from 84 to 182 (+117%) during the period of 2010 to 2022, with the African region almost tripling from 33 to 98 (+197%). Hence, conflicts in Africa accounted for more than half (ca. 54%) of the ongoing conflicts worldwide in 2022.[2] The distribution across publications also shows a sharp increase from the year 2017 onwards, with a dip in 2021 and the highest number of 10 publications in 2022. Possible explanations could be diverse political risk events since 2017, including e.g. the election of Donald Trump as President of the United States and the subsequent trade war with China, the United Kingdom's triggering of

[2] According to data from Uppsala University [166] Conflict Data Program and Peace Research Institute.

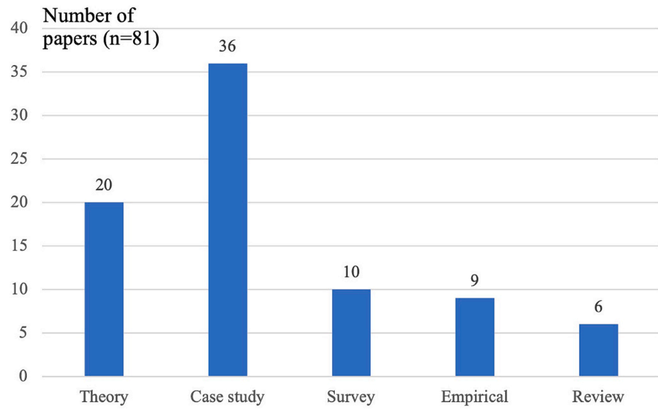

Fig. 5. Research methodologies applied.

Article 50 to leave the European Union, diverse coups d'état (e.g. Sudan, Myanmar), or Russia's war of aggression against Ukraine. These global tightening political conditions may have led to an increased interest of scholars in the field of political risk management.

The 81 papers were scattered across various journals. Most of the papers were published in the Journal of International Business Studies (5), followed by the Journal of World Business (4), Enterprise and Society (3), Management International Review (3), Thunderbird International Business Review (3), Energy (2), European Journal of International Management (2), International Marketing Review (2), Journal of Construction Engineering and Management (2), Journal of Management Studies (2), Journal of Professional Issues in Engineering Education and Practice (2), and Strategy Beyond Markets (2). The remaining papers (49) were published in different individual journals.

In terms of scientific fields, the majority of the 81 papers were published in journals related to the field of business and management (47), followed by construction (9), energy (7), finance (4), risk (4), marketing (3), politics (3), economics (2), defense (1), and sustainability (1). The distribution over different journals and scientific fields shows the high degree of multidisciplinarity regarding the research objective of this article. In the context of scientific fields, there seems to be a strong focus on business and management. However, although not specifically included in the search string, there is an indication of an interest in the topic in the fields of construction and energy as well.

4.2. Research methodologies applied

Five different methodologies were identified among the 81 papers: theoretical and conceptual papers, case studies, surveys, empirical papers, and reviews (Fig. 5).

The majority (46) were case studies or surveys. To a large part, these papers contribute illustrative cases of international investors (multinational companies (MNCs) and multinational enterprises (MNEs), etc.) based in advanced economies that are expanding into developing countries. Among the case studies and surveys, the three most analyzed sectors were energy (11), followed by construction (9) and financial services (6). From a regional perspective, the case studies and surveys were conducted in Asia (19), Europe/Middle East (8), Africa (3), Latin America (2), and cross-regional (14). These case studies provide valuable insights into and illuminating evidence from a specific field [64]. Several papers provide illustrative examples of the political risk experiences of MNCs or MNEs that are pursuing a foreign expansion strategy, and thus provide valuable information for designing a framework that is transferable to different contexts. Since the majority of the 81 papers provide real-world experiences in form of case studies or surveys, the information obtained from these studies provides the basis for the development of the framework. The inclusion of these real-world literature cases strengthens the creditability of the framework and provides evidence for its high practical relevance.

Twenty papers were of a theoretical or a conceptual nature. The majority (15) of these papers contribute to the literature with specific models or frameworks that are to some extent illustrated by cases. For example, Blake et al. [65] propose a framework of risk management in the context of populism illustrated with several cases (e.g. Venezuela/Chavez, Turkey/Erdogan, USA/Trump, Brazil/Bolsonaro) and Hemphill and Kelley [66] introduce artificial intelligence to the field of political risk management and illustrate the theory with a Russian-British joint venture in the oil and gas industry. Three papers follow a game-theoretical approach and two papers analyze existing conceptual models. Moreover, the sample includes nine empirical models, seven of which employ different types of regression models, such as logistic regressions [67,68] or vector autoregressive regressions [35], one employs a structural equation model [34], and one an ANP approach [69]. Of the six reviews found in the sample, two follow a systematic, two a bibliometric, and two a narrative approach.

4.3. Content analysis

Based on category definition i) determinants of political risk, Table 1 presents the thematic blocks built on the individual categories found in the 81 papers that address RQ1 (determinants of political risk). The most frequently identified determinant was legal uncertainty (61), followed by internal conflicts (58) and regulatory constraints (58), political instability (55), external conflicts (48), and corruption (37). In most cases, one paper addressed more than one determinant. However, the frequencies of the determinants across the 81 papers indicate the importance of each determinant in the literature. For example, an average firm going abroad might be more concerned about legal uncertainty (e.g. the enforceability of contracts) than about corruption issues in the host country.

Similarly, based on category definition ii) tools and strategies for political risk management, Table 2 presents the thematic blocks built on individual categories that address RQ2 (tools and strategies for political risk management). The most frequently identified strategies aim to reduce transaction costs (71), followed by managing external dependencies (67), developing internal resources and capabilities (36), and improving the institutional framework (23). The respective tools to implement these strategies are discussed in the next section. Again, in most cases one paper addresses more than one tool or strategy. However, the frequencies of the key strategies across the 81 papers indicate evidence of the application of different tools by firms and governments in the literature. For example, there seems to be more evidence of firms aiming to reduce transaction costs than of governments aiming to improve the institutional framework.

A full overview of the assigned research methodologies, categories of the determinants, and categories of the tools and strategies are provided in the Supplementary Material (2) to make the classifications and assignments transparent.

5. Towards a framework for political risk management

The result of the content analysis forms the framework for political risk management which is summarized in Fig. 6. The risk determinants

Table 1
Determinants of political risk addressed in the papers.

Determinants of political risk	Number of papers (n = 81)
Legal uncertainty	61 (75%)
Internal conflicts	58 (72%)
Regulatory constraints	58 (72%)
Political instability	55 (68%)
External conflicts	48 (59%)
Corruption	37 (46%)

Table 2
Key strategies for political risk management addressed in the papers.

Key strategies for political risk management	Number of papers (n = 81)
Reduce transaction costs	71 (88%)
Manage external dependencies	67 (83%)
Develop internal resources and capabilities	36 (44%)
Improve institutional framework	23 (28%)

address RQ1, and the key strategies and specific tools based on the theoretical lenses address RQ2. In line with RQ2, firms and governments were found to play a significant role in mitigating political risk by applying certain tools and strategies. The identified determinants of political risk are influenced by state institutions (host, foreign) and non-state actors (society, organized interest groups). A detailed analysis of the framework is provided subsequently. Please note that the following section citations can only cover the most relevant sources. A full overview of all references per determinant or strategy is provided in the Supplementary Material (2).

5.1. Determinants of political risk

The main categories of the political risk determinants are: political instability, legal uncertainty, regulatory constraints, corruption, and internal and external conflicts. The first four determinants tend to be influenced by state actors, such as the host government, the opposition, or governmental agencies, whereas internal conflicts are mainly influenced by non-state actors, such as society, and external conflicts are influenced by both state and non-state actors, such as a foreign government or a terrorist group.

5.1.1. Political instability

The stability of a political regime is a major determinant of political risk for foreign investors [6,15]. The determinant can be categorized into government change and concentration of power. Government change can take different forms. On the one hand, the opposition may become the ruling party and induce a regime change in the form of peaceful elections [2,69]. On the other hand, a change of government may be of a revolutionary nature [70,71] or be forcefully brought about by the military in the form of a coup d'état [72,73]. In any case, a change in the ruling party poses a risk to a foreign firm, because the new government may invalidate previously agreed contractual arrangements or perceive the foreign firm as hostile due to its relations with the old government. Political ties with the old government may not only lose their value but can also become a liability for foreign firms.

Concentration of power is a determinant of political risk, because the lack of checks and balances can lead to a situation where the individuals in power can make unconstrained decisions. Such a situation exists, for instance, in a military government [68,74], where the military controls the institutions of a country. Foreign firms are vulnerable to decisions made by the military in its own, often nationalistic, interest. These decisions can have a negative impact on the business practices and profitability of foreign investments. Nevertheless, a concentration of power can also materialize in an autocratic system [65,75], where one political party or a few individuals are in power. In an autocratic system, other branches of the government, such as the legislative or parliament, are perceived as weak. Hence, the ruling party may not be held legally accountable for its decisions. However, a system where power is concentrated can also be perceived to bring stability and planning certainty if the foreign firm maintains a good relationship with the ruling

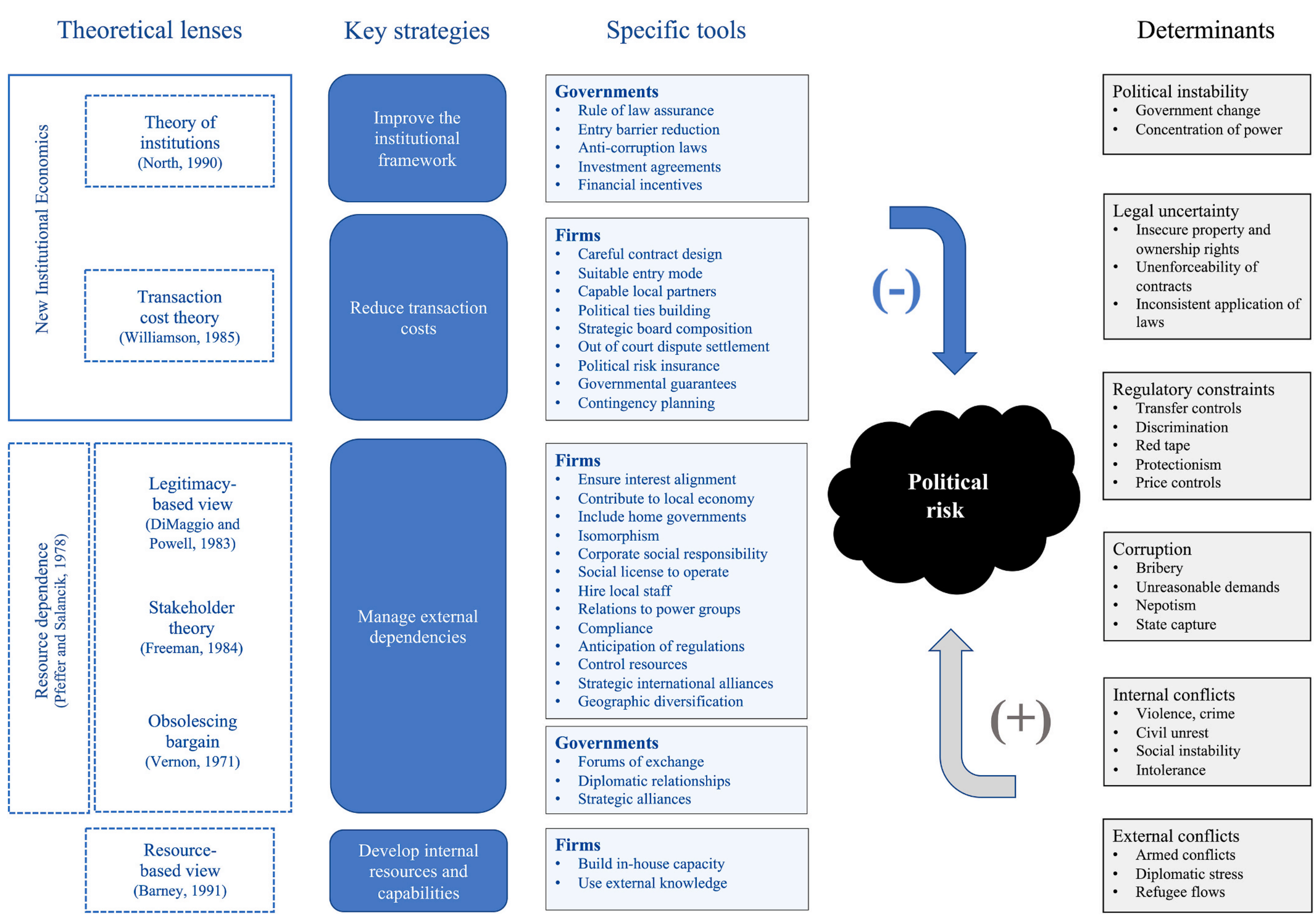

Fig. 6. Framework for political risk management.

elite [76].

5.1.2. Legal uncertainty

Legal uncertainty comprises insecure property and ownership rights, unenforceability of contracts, and inconsistent application of laws. The foremost mentioned determinant of political risk is expropriation [77,78] or nationalization [15,79], in which the government takes control over privately owned assets, ownership of specific firms, or even of entire industries, for public purpose. Another example is the confiscation [73,80] or seizure [81] of certain assets without compensation, whereas expropriated or nationalized firms might receive compensation for their losses to a certain extent.

A breach of contract [4,82] by local partner firms or the host government, and the inability of disadvantaged or discriminated firms to enforce their rights, is another common determinant in which one party fails to honor its obligation under a legally binding document. For instance, host governments revoke permits [66], cancel concessions [83], or renegotiate agreed contract clauses after signing them [84]. It is difficult for firms to hold the host government liable for such breaches. Even if an arbitration award is granted by the International Court of Arbitration (ICC), there is ample evidence that such an award is difficult to enforce due to deficient local jurisdictions in the host countries [85]. Another problem is ambiguity in laws and regulations that are inconsistently applied [76]. Government agencies at national or regional level may have different policies for an identical issue, or rules and regulations are enforced differently subject to the personal interpretation of government officials.

5.1.3. Regulatory constraints

Regulatory constraints are restrictions that are imposed on firms by regulatory bodies of government agencies and include transfer controls, discrimination, red tape practices such as excessive bureaucratic requirement or lengthy bureaucratic processes, protectionism, and price controls. The most common form, transfer controls, comprises restrictions on the movement of capital, goods, or personnel across national borders, or the inconvertibility of local currency. Firms may be restricted from repatriating profits or dividends, forcing them to spend these funds in the host country. This can become a serious threat if loan or interest payments to international banks are affected by these restrictions. Nevertheless, restrictions on the transfer of equity capital, such as ownership, can deteriorate the ability to sell a firm and, in an extreme case, impair the equity value to zero [4,6]. Convertibility restriction is a related concept, in which firms are unable to convert local currency into a hard currency, such as the United States Dollar (USD) or Euro (EUR), due to limited foreign exchange reserves in the host country's central bank. Such a restriction, again, prevents firms from moving funds out of the country [36,86]. The withdrawal or restriction of visas for expatriates is another determinant of political risk and can be detrimental to the firm's operations if non-substitutable professionals are affected [84]. Trade restrictions [15,71] can relate to limitations on importing or exporting certain products, either forcing firms to look for alternative supplies in the local market or preventing them from selling to international markets.

Firms can be exposed to discriminatory actions by host government agencies when doing business in a foreign country. Such actions can include selective taxation or royalties, which is referred to as "creeping expropriation" [87,88]. In the case of creeping expropriation, a special levy is introduced for certain firms or sectors only. Consequently, the value of the affected firms gradually diminishes over time. Other actions include selective licensing or permits [16,32], in which the allocation process is not structured on a fair and equal basis, placing foreign firms at a disadvantage compared to local competitors. A softer form of discrimination is that of red tape and delays in approval processes for foreign firms [73,89], which may encourage managers to engage in corrupt practices to speed up these processes.

Next to classical trade policy measures such as tariffs or quotas [90], firms may face restrictions on the entry mode [79]. Such restrictions can force foreign firms to engage with a local equity partner, thus forfaiting full ownership or requiring local content in terms of products or labor for the operations [91]. Price controls are a direct form of government intervention in markets, thus they determine political risk. The firm's ability to operate may diminish as a result [78].

5.1.4. Corruption

Corruption is the abuse of power for personal gain and is especially apparent at the intersection between the public and the private sector, i.e. representatives abuse their discretionary power over access to and distribution of resources to the private sector [78,92]. The abuse of power takes place either on the political or the bureaucratic level and can, for instance, take the form of bribery [93], unreasonable demands [94], nepotism [95], or state capture [91]. Causes of corruption lie in monopolies, excessive discretionary power, or a lack of accountability [96]. The presence of corruption disadvantages foreign firms in various dimensions, e.g. on the operational level when facing delays in permissions or on the legal level when court decisions are bought [73].

5.1.5. Internal conflicts

Internal conflicts are mainly caused by non-state actors, i.e. society or organized interest groups, such as labor unions [74], terrorist groups [95], or organized crime [78]. The most severe forms of internal conflicts result in violence, crime [97,98], or civil war [99]. Firms operating in a foreign country may experience damage to property [69] or to personnel [70], e.g. through kidnapping [100] or through guerrilla warfare [18]. Another, less severe type of internal conflict is that of civil unrest [82]. It can take the form of riots [101], strikes [102], protests [103], or demonstrations [97]. Foreign firms can also become exposed to boycotts of their products because of the foreign origin of the products [73].

Internal conflicts are often the result of social instability [69], which can be caused by ethnic or religious tensions [68,102] between different groups within a society. These tensions can become problematic for a foreign firm when hiring local employees from different tribes or with different beliefs. Intolerance against foreigners on the societal level, in the form of public hostility [104,105] or due to nationalism [106], racism, or xenophobia [70], is also considered to be a consequence of internal conflicts that determines political risk and can negatively affect a foreign firm's operations.

5.1.6. External conflicts

External conflicts involve state and non-state actors across borders. The most extreme form of external conflict is a war between countries [15,107], which can be detrimental for the operations of a foreign firm. Another, often regional type of external conflict, is that of cross-border terrorism [79,108], in which parts of a country are attacked or controlled by terrorist groups. Non-armed conflicts involve diplomatic stress in the form of embargoes, sanctions [109], or even trade wars [90], which can eliminate the ability of a foreign firm to operate. Refugee flows [97] are another form of external conflict that determines political risk by being a source of internal conflict. Ethnic or religious tensions between refugees and local communities can emerge, which can result in discrimination and violence. In this regard the security level can deteriorate further if extremists infiltrate the refugee groups.

5.2. Tools and strategies for political risk management

From a firm's perspective, the management of political risk is a non-market strategy that reduces the likelihood or the impact of a political risk event [84]. As defined by Baron [110], non-market components include dealing with the government, interest groups, or the general public. Approaches for political risk management are acceptance, avoidance, reduction, and transfer [15]. On the one extreme, risk avoidance refers to a situation in which a firm simply does not enter into any cross-border transaction to avoid possible political risk attached to such a transaction, thus reducing the likelihood of a political risk event to zero. On the other extreme, a firm can accept the risk without taking any further action if the firm considers the consequence of the likelihood and the impact of a political risk event to be within the range of the firm's risk tolerance. The identified tools and strategies, however, mainly relate to the reduction and transfer approach. The former reduces the likelihood or the impact of a political risk event to a tolerable level. The latter transfers the risk and hence the impact, i.e. potential damage, to a third party, such as an insurance company. Political risk management from a government's perspective aims to reduce the likelihood or the impact of political risk events affecting firms operating within its borders, leading to a situation where a country or region becomes more attractive for foreign investors. Subsequently, the identified key strategies and actor-specific tools are analyzed in more detail.

5.2.1. Improve the institutional framework

To improve the institutional framework, several strategies can be adopted by a host government. The main objective is to improve the credibility of the host government and the reliability of the enforcement of rules and regulations, e.g. through robust intellectual property rights, creditor rights, or dispute resolution mechanisms [68,85]. Domestically, host governments can reform existing rules and regulations [82], e.g. through a legislative reform [18]. In addition, reducing entry barriers [98], e.g. by easing local equity partner requirements, can facilitate foreign direct investment and thus attract foreign firms. Uncertainty about existing policies can be reduced by improving checks and balances that make policy changes more difficult [88]. To reduce corruption, less bureaucracy [35] or anti-corruption laws [71] can be helpful. The introduction of domestic industry standards [111] increases the transparency for firms planning to expand abroad and thereby also improves the institutional framework.

Strategies for host governments that go beyond national borders include primarily building strategic alliances with foreign countries, based on international treaties. International investment agreements, for instance, provide decentralized legal protection for foreign firms, such as an investor-state dispute settlement [112]. A special form is a bilateral investment treaty that establishes terms and conditions to promote and protect mutual investments, such as fair and equal treatment, protection against expropriation and political violence, or free transfer of currency [80]. Next to the improvement of the rights of foreign firms, host governments can establish regional trade blocs or free trade zones to provide incentives for foreign firms to enter the country [90].

Financial strategies available to the host government include subsidies or tax-based incentive structures [77,111] to promote certain sectors or industries. The host government could also provide guarantees to foreign firms [86]. The former would reduce political risk by covering (part of) the potential cost caused by a possible political risk event, the latter would transfer (part of) the political risk to the host government. However, such incentive structures or guarantees still remain subject to enforceability under the local jurisdiction.

5.2.2. Reduce transaction costs

To reduce transaction costs, firms can pursue legal, relationship, or financial strategies. Legal strategies include the rigorous design of contracts [85] that align the interests between the signing parties [33], assign the risks through carefully detailed clauses [71], and clearly define responsibilities [111] at arm's length [84]. It is also recommended to appoint a capable local lawyer and actively chose the place of jurisdiction [109], to include international arbitration [80], as well as to insist on hard currency transactions, offshore accounts [68], and trustee structures [81]. The selection of a suitable entry mode [91] is another legal strategy and is based on the decision about the size of a subsidiary and the degree of local ownership [18]. Joint ventures are the most mentioned form of political risk management through entry mode selection [15,16]. Potential partners are the host government [77] or other local partners [76], including contactors [108] or investors [36] that are politically well connected [95]. Local ownership transfers part of the risk of possible government interference to local individuals [89], which reduces the cost of enforcement and provides access to local know-how and social networks [109], thus reducing the cost of information. Alliances [78] and licensing [33] are two other legal strategies for managing political risk by reducing the initial capital investment, and hence potential enforcement costs.

Relationship strategies for reducing transaction costs rely partly on the creation of local social capital and include collaboration with capable local partners [4,20] who provide stability and support, such as the reduction of uncertainties created by potential corruption issues [78] or being of assistance in obtaining approvals or dealing with inconsistent policies [71]. The idea is to build up trust and mutual understanding [98] in a trust-based informal network [84] and to rely more on personal relationships than on legally enforceable contracts [76]. Such local social capital can reduce information asymmetries between a foreign investor and the local business environment, thus reducing information, coordination, and adaption costs. Non-state local partners can include, for instance, domestic firms [65,113], other foreign firms [77], suppliers [79], financial institutions [114], technical experts [83], or the press [97]. When partners are well connected to the host government, building political ties [67,77] can be seen as one of the best forms of political risk mitigation. Building ties includes engaging or lobbying with government officials [93,115] or the opposition [38], making financial contributions to political parties [78], involving politicians as direct beneficiaries of the firm [116], or connecting them to the headquarters in the home country [94]. The selection of politicians [65], influential tribal leaders [102], or the local business elite [15] as board members can be seen as a mitigation strategy due to their influence and connections. However, potential ethical and legal concerns with regard to compliance or corruption issues are at the backdrop of this kind of strategy. Moreover, some evidence is provided that transaction costs as a result of disputes, such as enforcement cost, are more effectively reduced through (re-)negotiation between parties than by means of legal routes such as litigation [71]. Foreign investors are often perceived to be at a disadvantage compared to local parties in court proceedings [85].

A financial strategy to reduce transaction costs as a result of a political risk event is the (partial) transfer of the risk to a third party in exchange for an insurance premium. Firms can purchase a political risk insurance to cover losses resulting from certain political risk events, such as expropriation, war, breach of contract, etc., from international agencies such as the Multilateral Investments Guarantee Agency (MIGA) or the Overseas Private Corporation for Trade Insurances (OPCT) [80,101]. Obtaining a guarantee from the host or the home government [6,98] similarly transfers (part of) the risk, and beyond that indicates political support from the respective government. Another financial strategy that addresses the uncertainties about the probability and magnitude of the impact caused by a political risk event is to plan for contingencies. Contingency planning entails a proactive development of emergency plans for unlikely events that can have severe consequences. To this end, firms may allocate additional resources to contingency budgets, prepare responsive actions to political risk events, or keep financial reserves in politically stable regions [2,117]. In the case of enforcement, an appropriate financial structure [118], for example a project finance loan's contractual framework [68], can significantly reduce transaction costs attached to the litigation process, which are particularly high when institutions are weak.

5.2.3. Manage external dependencies

Firms operating in a foreign country need to consider the interests and concerns of political or societal stakeholders to manage political risk arising from state and non-state actors. The strategies that can be adopted to mitigate such risk aim to increase the bargaining power or the legitimacy of the firm vis-à-vis these stakeholders. One strategy is to align the interests of the firm with the interests of the host government [77,79]. For instance, public–private partnership structures include the host government as a project partner, hence transferring part of the project risk to the host government itself [111]. As a consequence, the host government has a greater interest in the success of the project, which can, for instance, become beneficial in approval or commencement processes, because it will bear part of any potential losses if approval or commencement is denied. A more general way to align the interests is to contribute to the local economy [71,79], for example by means of increased employment and tax payments [19], higher exports [119], technology transfer [106], or the reinvestment of profits [71]. Interest alignment between the firm and the host government not only increases the firm's legitimacy in the eyes of the government, i.e. that the firm's actions are desirable, but also increases the firm's bargaining power, e.g. due to a loss of workplaces in the case of governmental intervention. Nevertheless, it can be beneficial to have well developed connections to the home government, which could exert political pressure on the host government through diplomatic channels in the case of conflict between the firm and the host government [4,93] and thereby play a mediating role. Isomorphism is a passive strategy in which foreign firms imitate practices of local firms with the aim of increasing their own legitimacy [79]. In this respect, local equity partners can provide local legitimacy to a joint project and thereby reduce potential pressure for corruption [78].

A tool closely related to the stakeholder lens and the legitimacy lens is that of Corporate Social Responsibility (CSR) activities [70,102] that target societal stakeholders. Firms can invest in projects related to infrastructure, public health, or education [16,95]; they can involve local communities in their projects [79], ensure environmental protection [117], or provide their employees with transport, food [73], or housing [114] to increase the firm's legitimacy in the eyes of society. A narrower strategy is to gain a social license to operate (SLO) [69,103] in order to gain acceptance at the local community level, e.g. through participatory approaches that improve livelihoods and living standards [116] in mutually beneficial projects [102]. Firms need to show respect for the local culture [83] and to build trust [120] in order to gain ongoing acceptance or approval from the local community [16]. Transforming community members from external to internal stakeholders, e.g. through employment, can significantly increase legitimacy [2,72]. Such transformation seems particularly valuable for senior or management positions [20], because it increases the identification with the firm as a national entity and the commitment to the country's development [38]. Firms that hire local staff for critical departments (e.g. accounting or legal) also reduce the risk of non-compliance with local standards or of poorly drafted contract clauses [92].

Other stakeholders include power groups [16,65] such as NGOs [70], unions [73,104], community leaders [102], or police forces [115]. Firms should identify and maintain good relationships with influential groups to mitigate potential risks due to strikes or protests, for example. Engaging in public relations on a broad level [2,68] can create public awareness of a firm's activities and can also improve its bargaining power [119] or reduce the risk of government intervention.

Moreover, ethically and morally good behavior strongly influences a firm's legitimacy in the eyes of all stakeholders. Ways to increase legitimacy are, on the firm level, by establishing a code of conduct [16], and on the domestic level, by complying with local requirements [76] such as environmental or regulatory standards [109], or, at the international level, by adhering to international ethical standards [70] such as the Global Compact or the Caux Principles [121]. Such adherence can be seen to provide legitimacy as a good corporate citizen and to validate the existence of a firm's operations as not being harmful to society or to the environment. Furthermore, to avoid becoming a target of the host government, firms should anticipate upcoming policies or regulations in advance [98], which improves their image in the eyes of the host government [79].

In order to maintain bargaining power vis-à-vis the host government or local partners, firms should aim to control their resources (tangible and intangible) [97,107]. Control can be achieved by limiting asset-intensive research and development activities in the host country's jurisdiction [108], reducing the initial investment amount for starting a new business [91], e.g. by renting [92] or buying second-hand [122] instead of purchasing a new business infrastructure, or contributing information and managerial expertise rather than money [123], and keeping mobile assets under control [107]. Firms should also take physical security measures [2], such as guards and fences [95]. In addition, security specialists from different areas, such as the police, army, foreign offices, or private forces, can be recruited [72].

On the international level, firms can build strategic alliances with international partners [15,113], such as financial institutions [124] including multilateral banks [82]. Such international alliances aim to increase the bargaining power of a foreign investor vis-à-vis the host government. On the one hand, multilateral banks can exert pressure through their political connections in both the host and the home country. On the other hand, these banks often have a greater leverage due to being a financing source for some host governments, particularly in the Global South. Other potential partners include industry associations [77]. Furthermore, firms can diversify geographically [97] and thereby not only distribute political risk across countries [108] but also reduce potentially one-sided resource dependencies. The latter would lead to an increase in bargaining power by providing alternative options for the location of the firm's operations.

Next to firms, host governments have specific tools at their disposal to manage external dependencies. On the project level, host governments can endorse support letters [86] that show the backing of the government for a project. These letters are used to comfort concerned stakeholders that regulatory approvals or access to resources will be facilitated. However, support letters lack legal assurance, which means that no claims can be made against the host government if the project fails. On the industry level, host governments can establish platforms to connect and exchange between the private and the public sector [69], such as business forums [116], or they can initiate business support programs to enhance knowledge sharing [125] as a type of political risk management mechanism [73]. At the inter-governmental level, host governments can improve their diplomatic relations [19] and form strategic alliances with foreign governments [75] for certain sectors or industries in order to build trust with foreign companies and reduce the probability of a political risk event.

5.2.4. *Develop internal resources and capabilities*

To develop internal resources and capabilities, firms can approach internal or external sources. Internal knowledge should be generated through experiential learning [20,115] such as personal experience [98]. Direct personal experience seems to be a significant factor in understanding the socio-political and the cultural environment in a foreign country that cannot be achieved through desk-research alone. To develop in-house capacity [66,97], firms can allocate internal resources to dedicated political risk management units [2] in order to actively monitor the socio-political situation on an ongoing basis [123] and to understand the influence of different actors such as politicians, tribal leaders, etc. [102]. Dedicated units can enable firms to detect early warning signals of political risk events and to initiate adequate actions to mitigate possible effects. Another important source is that of senior managers' views on the situation [79] or that of the political resources developed in the home country [91]. If firms are politically well-connected in their home country, they can draw upon the capabilities developed in building and maintaining relationships with home government officials. External knowledge can be sourced from specialized consultants [76] or political risk service providers [125]. Moreover, staff can be sent for political risk-focused training [71] to create awareness for political risk across the entire workforce.

5.2.5. Non-considered unethical strategies

Furthermore, some evidence of unethical strategies, such as cloaking [126] or concealment [65], was identified. Cloaking involves changes being made to the legal structure to camouflage ultimate ownership of the firm and to prevent hostile actions of host governments against foreign investors. However, cloaking can also mislead other stakeholders by hiding information or misrepresenting risks attached to the legal structure. This undermines creditability and can be considered unethical behavior. In the same vein, concealment strategies can reduce political risk by directly manipulating information on political activity. Such strategies are not only lacking in transparency, they also deliberately distort relevant information for stakeholders, which raises significant ethical concerns. Due to their unethical character, these strategies are excluded from further consideration here.

6. Discussion and application of the framework to the use case of the German-West African green hydrogen activities

The German-West African activities in the green hydrogen sector [127] are a prime example of resource dependency combined with institutional disparities, and thus highly suitable as use case for the framework to address RQ3. Germany's dependence on green hydrogen imports can be explained by the fact that self-sufficient production of green hydrogen in Germany is unrealistic due to the lack of sufficient domestic renewable energy potential [22]. To find suitable import partners, Germany has signed Memorandums of Understanding (MoUs) with diverse countries in sub-Saharan Africa (e.g. South Africa, Namibia), Latin America (e.g. Chile), or the MENA region (e.g. Morocco, Saudi Arabia, Egypt, and the United Arab Emirates). However, only one MoU has been signed with a West African country (Nigeria) [128]. In these partnerships, Germany provides resources in terms of knowledge, technology, and investments for an industry ramp-up along the green hydrogen value chain [127].

Despite the potential to produce 165,000 terawatt-hours of green hydrogen per year [23], none of the West African countries has yet developed a national hydrogen strategy [128]. To exploit this potential, the West African countries have to heavily depend on the import of technology, knowledge in terms of managerial expertise and skilled workforce, and investments for the industry ramp-up. However, West Africa remains one of the world's most politically unstable regions. In the last five years alone, there have been coups d'état in 4 of the 15 member countries of the Economic Community of West African States (ECOWAS): Mali (August 2020 and May 2021), Guinea (September 2021), Burkina Faso (January and September 2022), and Niger (July 2023) [129]. Moreover, the International Energy Agency database of new green hydrogen projects does not list any project for hydrogen infrastructure in any of the West African states [130] and only one project for hydrogen production at the conceptual stage in Niger [131].

On the institutional level, the German and the West-African governments could target supporting policy initiatives based on the phase of the hydrogen project implementation, e.g. early, mid-term, and late phase. In the early phase, which constitutes exploration at a pre-investment/ feasibility stage, some activities have already been initiated to manage and mitigate the political risk involved in a green hydrogen cooperation between Germany and West Africa. Knowledge-based strategic alliances between the German government and different institutions in West Africa are implemented on the capacity building level (e.g. the International Master Program in Energy and Green Hydrogen (IMP-EGH)) in order to transfer knowledge and to educate experts for a future green hydrogen industry or on the knowledge-transfer/sharing level (e.g. the H2 Atlas project) to assess the potential of generating hydrogen from renewable energy resources in the region [132]. This capacity building strategy also mitigates potential risk of localization pressure from West African countries against foreign investments by providing local experts that can be hired on management level positions.

For the mid-term phase, which includes financial closure and construction, the German government, e.g., announced at the G20 Compact with Africa summit in Berlin in November 2023 that it will invest 4 billion euros in green energy projects in Africa up to 2030 [133]. Part of the funds may be allocated to green hydrogen projects in West Africa. In this vein, innovative financing schemes such as blended finance mechanisms, for example public–private partnerships or guarantees provided by the German government, could serve as risk mitigating measures [134]. These guarantees can be used to transfer some of the political risk from German investors to the German government.

In the late phase, which encompasses operation and monitoring, the German and West African governments could extend activities such as the German-Nigerian Business Forum and the German-Nigerian Hydrogen Office, which was opened in Abuja in November 2021, to other ECOWAS countries. For oil rich countries, such as Nigeria, political, governance, and institutional challenges were identified as the most influential challenge for the energy transition [135]. Building upon activities such as business forums, hydrogen regulatory agencies or monitoring boards could be implemented. Moreover, pilot projects, such as HyIron, which aims to export green iron produced with green hydrogen from Namibia to Germany [136], could be initiated in West Africa. Such projects could contribute to reducing uncertainties faced by the German government regarding the local institutional framework conditions.

Further pro-active risk management strategies for West African countries as hosts include the provision of robust intellectual property rights, creditor rights, or dispute resolution mechanisms and the introduction of anti-corruption laws to attract private investments that will be needed for the ramp-up of a green hydrogen industry in the respective countries. Such ramp-ups have enormous economic and social development potential, e.g. by attracting related industries that produce intermediary green goods such as green ammonia or green steel. If these goods are used locally, e.g. green fertilizers in the agricultural sector, the ramp-up can also contribute to domestic decarbonisation [128]. Moreover, West African governments could provide tax or subsidy-based financial incentives for early movers of investments related to the green hydrogen industry as a risk reducing measure.

Nevertheless, weak formal institutions in West Africa may significantly increase transaction costs for foreign firms. Particularly, personal relationships and cultural values tend to be more relevant for doing business than formal institutions [137]. The Corruption Perception Index (CPI) shows, on a scale of 0 (highly corrupt) to 100 (no corruption), that 10[3] of 15 states score below the global average of 43 in 2023, which indicates that the West African region is particularly affected by corrupt practices [138]. This leads to increased costs for foreign investors related to collecting information, obtaining approvals, negotiations, and possible enforcements. As a mitigating strategy, a German investor could enter the market in the form of a joint venture with a local equity partner. This not only transfers part of the risk to the local partner but also provides access to relevant market information, an embedded network in the host country's political and business environment, and information about culture, norms, values, and business practices. In the same regard, senior staff and management positions in the joint venture should be filled with politically well-connected individuals. Moreover, to reduce possible enforcement costs, capable local partners for legal services should be hired or political risk insurance could be bought to transfer (part of) the political risk to insurance companies.

Another risk for a firm is that its activities abroad will not be perceived as legitimate by the host society or the host government. In the case of a German hydrogen firm expanding to West Africa, political legitimacy can be assumed to be relatively strong due to the mutual resource dependence (renewable energy potential vs. infrastructure

[3] Burkina Faso, Cote d'Ivoire, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Sierra Leone, Togo.

investments). However, the legitimacy by society can deteriorate if, e.g., water resources are used for the hydrogen production in arid regions. Such water resource competition can lead to social instability and civil unrest [139,140]. As a mitigation strategy, a German firm could adopt a participatory approach and involve local communities, which might be affected by the operations, at an early of the project planning and decision-making, thereby gaining a social license to operate. Benefit/risk-sharing mechanisms could provide local communities with access to electricity, and integrate the community as owner to the project structure. Furthermore, corporate social responsibility projects based on local needs, such as investments in education or health care infrastructure, should be initiated, and strong public relations to inform the broader society about the activities can help reduce societal risk.

Security issues in the West African region are another major concern for foreign firms. In the years from 2020 to 2022, 6[4] out of the 15 ECOWAS countries suffered from armed conflicts between state and non-state armed groups, such as rebel groups, criminal organizations, or ethnic groups [141]. Moreover, 11[5] out the 15 ECOWAS states suffered from terrorist attacks during the period from 2017 to 2021 [142]. Hence, foreign and domestic investors need to implement physical security measures, such as guards, fences, and more sophisticated technologies. The security personnel should be recruited from local security firms and constitute former police or army forces. The inside knowledge held by such personnel helps to identify weak spots and to develop and implement an appropriate security strategy.

Due to the strategic interest in green hydrogen imports (Germany) and investments in green hydrogen infrastructure (West Africa), the home and the host government can be seen as critical stakeholders. A possible risk is that the host government will become hostile to the project, for instance due to political change. On government level, strategic alliances can be formed, such as activities of the German-Nigerian energy partnership, which has been expanded by the Hydrogen Office in Abuja. At the project level, a public–private partnerships can serve as a risk-mitigating strategy. In such a structure, the government becomes a party to the project, thereby assuming some of the project risk and aligning with the objectives of the project. Such a structure might even reduce the overall political risk, as any hostile action would result in conflicts with governmental institutions. Another innovative strategy of the German government to become a project partner would be support in form of off-take guarantees. Such guarantees would on the one hand serve as de-risking mechanism on the project level by ensuring the income stream. On the other hand, they would provide supply security of green hydrogen to the German market.

The newly evolving hydrogen industry will be subject to regulatory frameworks, such as the European hydrogen policy framework [143]. Although technical standards can bring stability within an industry during the development stage of such regulations, risk for early movers of conflicting technical standards between regions can remain. For the hydrogen industry this could bear the risk of different definitions or conditions to be met for the hydrogen to be declared as “green”. Hence, hydrogen produced in West Africa would need to comply with the standards set by the policy framework of the import region. To mitigate such risks related to regulatory standards German firms could seek anticipation of regulations at an early stage. With an early participation in policy development through industry alliances and advisory roles risks related to differing standards can be mitigated. Moreover, the careful design of contracts can mitigate risks of sudden regulatory changes to some degree. For example, flexible policy clauses such as concession adjustment clauses and carbon credit indexation could cover these risks to a certain degree.

Similarly to the extractive industries, the hydrogen industry can be characterized by large amounts of fixed assets, such as infrastructure and machinery, that are invested at the beginning of the project (capital intensive). In this regard, the technology is transferred at the start of the project, which can be assumed to have a long-term horizon based on the lifetime of the technical components and strategic governmental interest. The risk for a German investor is that its bargaining power against the host government or local partners might erode over time and, as a consequence, the investor might lose control over the resources. Mitigating strategies for maintaining bargaining power include keeping control over the knowledge of operation or access to critical infrastructure (e.g. information technology). Building good relationships with influential stakeholders, such as government officials, businesspersons, or power groups, can maintain the bargaining position. Moreover, having a DFI in the financing consortium can be a risk-mitigating factor. DFIs are usually government-owned and hence politically well-connected.

Lastly, due to the high level of political risk in the West African region, foreign investors need to critically evaluate whether they possess the relevant political resources and political capabilities to endeavor such a project. In this regard, it is highly advisable not only to build upon internal capabilities but also to use external consultancies that are specialized in political risk services. Geopolitical diversification [97] can also help to reduce the overall risk of foreign investments for German hydrogen producers. By distributing political risk across countries [108] not only one-sided resource dependencies are reduced, but also bargaining power vis-à-vis the host government is increased by having alternative options for the location of the firm’s operations. Overall, it is crucial to understand and continuously evaluate the socio-political environment of the host country.

7. Implications and limitations

Previous studies examining political risk management were restricted to a limited number of contexts. This review article is one of the first to provide an advanced framework for managing political risk. The framework is theory-based and can be applied to diverse country/industry settings, thus contributing to the transferability of the findings. The design of the framework addresses the need to incorporate existing classical theories of business management and extend them to account for the context of political risk. Furthermore, it is one of the first frameworks to offer strategies for political risk management from both the firm and the government perspective. The usage of various theoretical lenses to consider different actors and their capabilities and responses to political risk constitutes a novelty in the political risk literature.

In line with Boddewyn's [144], p. 22) statement “in a world where asymmetry reigns between a fairly integrated global economy and a rather fragmented international political order’’ and his mandate for international business research to “focus on what MNE nonmarket strategies will fit these new circumstances’’, the current study provides foreign investors with best practices of strategies for political risk management. Although political risk differs between countries, these best practices can be applied to any industry or country context, an attribute which is particularly valuable in the current period of increasingly tense global political environments.

Furthermore, the framework provides a practical analysis and evaluation model for political risk in foreign investment and international projects. In this regard, this review shows the applicability of the framework to the emerging field of green hydrogen. Political risk has not been addressed in the green hydrogen literature before, but it seems especially important due to the demand for green hydrogen by advanced economies and the potential for renewable energy production in the Global South, i.e. countries with relatively higher levels of political risk. The study also provides hands-on guidance for policymakers regarding measures to mitigate political risk from the governmental perspective. In this context, the framework helps to identify policies that create a

[4] Benin, Burkina Faso, Mali, Niger, Nigeria, Togo.

[5] Benin, Burkina Faso, Cote d'Ivoire, Ghana, Guinea, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone.

favorable institutional environment and attract foreign investments. Specific tools are provided to implement the policies and their related strategies. Such tools appear to be valuable for the West African region, since the lack of institutional quality may be one of the most inhibiting factors for the development of a green hydrogen industry.

The results of the review article are limited in several ways. First, the framework may suffer from selection bias, i.e. the selection of the studies for the literature review might be biased towards the search string selected by the authors. Second, the sample consists only of academic journal articles and reviews. No gray literature, such as specialized reports from international organizations and financial institutions such as the World Bank or the International Monetary Fund, have been included in the analysis. Such reports might provide a clearer picture due to practical and local expertise than scientific publications alone. Third, the results might be biased towards personal perception due to the lack of inter-coder checks. However, due to the discussion of the search string in diverse research groups that include several researchers from West African countries, the high level of practical experience in the field of political risk in the international business environment of the authors, and the performance of intra-coder checks without producing significantly different results, the listed limitations seem to be mitigated to a certain extent. Future studies could enhance the framework by field work such as expert interviews, surveys, and project data to validate the synthetized findings obtained by the secondary data of the review.

Valuation approaches to political risk in the sample include subjective assessments or quantitative indicators [6,36,82] insurance premiums [100], adjustment of discount rates [33,122], scenario planning, value at risk, and Monte Carlo Simulation [145]. On the firm level, further research should look at the monetization of political risk as a crucial cost factor and at how the strategies can reduce such costs for foreign investors.

The empirical studies in the sample use different regression models of the impact of political risk on: choice of entry mode [67], investment transparency [93], financial performance [35], choice of project finance [68], banking syndicates' political leverage [113], new ventures' innovation [125], project success [34], and the amount of announced project investments [124]. Others use the analytic network process method [69]. At the country level, an investigation of the impact of political risk on trade seems interesting, as it has not been the focus of previous research. With regard to the context considered, green hydrogen is assumed to become a globally traded commodity in the future. Hence, political risk might impact the potential to become part of a future global hydrogen market through the trade channel.

Lastly, the application of the framework has provided insights into the West African green hydrogen context. Future studies that consider political risk in different industries and countries can adapt the framework to include context-specific management and mitigation strategies. In summary, the framework is relevant for any firm-country context in which the political environment might impair the business environment for a foreign investor.

CRediT authorship contribution statement

Marcel Kottrup: Writing – original draft, Visualization, Methodology, Conceptualization. **Peter Letmathe:** Writing – review & editing, Funding acquisition, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix

Appendix A

Theory of institutions

Institutions were originally defined by North [146], p. 3) as "the rules of the game in a society" and later on as "humanly devised constraints that structure political, economic and social interaction […] that consist of informal constraints and formal rules" [147], p. 97). Formal institutions refer to constraints, such as constitutions, laws, and property rights, whereas informal institutions refer to constraints such as sanctions, taboos, customs, traditions, and codes of conduct [147]. As Dang et al. [76] point out, when institutions are mature, formal institutions can provide a certain degree of security about the implementation of agreements and contracts. However, when institutions are weak, more reliance should be focused on informal institutions, such as networks and personal relationships, to secure the implementation of rules and enforcement of contracts. Governments that shape the formal institutional framework are therefore seen to play an important role in managing political risk under the institutional-lens.

Transaction cost theory

Transaction cost theory can be traced back to Coase [148], who argued that the neoclassical result of efficient markets can only be achieved in the absence of transaction costs. The theoretical concept was then further developed by [149–152], who defined transaction costs as search and information costs, bargaining and decision costs, enforcement costs, and coordination and adaptation costs. North [153] links transaction cost theory to the theory of institutions, since institutions shape the economic and political boundaries within which transaction costs occur. Political risk arising from weak formal institutions will therefore translate to higher transaction costs for firms. These costs may be particularly high if the firm is of foreign origin and subject to information constraints.

Stakeholder theory

Stakeholder theory, originally developed by Freeman [154], suggests that an organization should consider the interests of all stakeholders that are affected by the decisions and actions of that organization. Olsen [155] proposes a political stakeholder theory, according to which firms should actively manage the relationship with host governments when investing abroad. Such a relationship is referred to as the "international business-government relation" (IBGR) in the political risk literature [77,144]. Likewise, Jiang et al. [36] emphasize the stakeholder perspective for political risk management strategies. Since firms and governments can be stakeholders of each other, both are assumed to play an active role for political risk management under the stakeholder lens. Other stakeholders under this lens are, for instance, financial institutions, local communities, or non-governmental organizations (NGOs).

Legitimacy-based view

The legitimacy-based view complements stakeholder theory with the perspective that an organization should maintain legitimacy in the eyes of its stakeholders [156]. Drawing on earlier works of the legitimacy-based view [157–159], Suchman [159] p. 574) defines organizational legitimacy as "[…] a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions". Stevens et al. [160] further developed the legitimacy-based view towards political risk by including – in addition to the host government – the host society and the home government in the discussion. In this discussion the focus is on the government's motivation rather than its ability to intervene in a foreign firm's operations. In this context, the firm's legitimacy depends on its assessment by a broad set of social groups and stakeholders that goes beyond the government. Such stakeholders can include the media, trade or labor unions, business coalitions, industry associations, consumer associations, and environmental protection groups [108]. Under the legitimacy lens, firms are assumed to employ tools and strategies to gain legitimacy in the eyes of their stakeholders. A lack of legitimacy can have severe consequences for the operating ability of firms, such as restrictive measures by the government, loss in demand from local consumers or suppliers, or becoming a target during any riots.

Obsolescing bargain

This concept refers to a situation in which any agreement between a firm and a government is an obsolescing bargain, because "almost from the moment that the signatures have dried on the document, powerful forces go to work that quickly render the agreements obsolete in the eyes of the government" [161], p. 47). The shift in bargaining power after an agreement has been reached [93] represents a potential risk, because it affects key determinants of a firm's decision to go abroad, e.g. those related to the reliability of contracts or the strength of ownership rights. More precisely, political risk can be seen as the host government gaining leverage and the foreign firm losing leverage over time [77]. Under the bargain lens, firms are assumed to employ tools and strategies to maintain their bargaining power against the host government.

Resource-based view

The resource- and capability-based view was originally developed by Barney [42], who defined a firm's resources to include all assets, organizational processes, information, knowledge, etc. whereas a firm's capabilities can be understood as the capacity to deploy these resources in order to achieve a competitive advantage. In this sense, a firm may have political resources, such as experience in dealing with government officials, the relationship between managers and policymakers, or nationality, as a proxy of protection by home governments [162]. Political capabilities can be understood as the capacity to use such resources to initiate or maintain certain business practices and policies [163]. Under the resource lens, firms are assumed to employ tools and strategies to develop political resources and political capabilities in order to actively shape the political environment in which they operate.

Appendix B

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Table 3
Sample details of intra-coder reliability test.

Reference papers	Number of units in original coding		Agreements in intra-coder coding		Percentage of agreement
	Coding scheme RQ1	Coding scheme RQ2	Coding scheme RQ1	Coding scheme RQ2	
Bucheli and Kim [74]	3	5	2	5	87.5%
Dang et al. [76]	2	14	2	13	93.8%
Daniels et al. [107]	6	4	6	3	90.0%
Getz and Oetzel [70]	4	9	4	8	92.3%
Iankova and Katz [73]	7	16	7	13	87.0%
Jones and Lubinski [81]	4	7	4	6	90.9%
Shotts [88]	7	27	7	23	88.2%
Xu et al. [164]	13	7	11	7	90.0%

Appendix C. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.ecmx.2026.101636.

Data availability

No data was used for the research described in the article.

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