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Georgallis, P.; Albino Pimentel, Joao; Kondratenko, Nina

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Jurisdiction shopping and foreign location choice: The role of market and nonmarket experience in the European solar energy industry

Panikos Georgallis¹,
João Albino-Pimentel² and
Nina Kondratenko³

¹Amsterdam Business School, University of Amsterdam, M.217 Plantage Muidersgracht 12, 1018 TV Amsterdam, The Netherlands;

²Copenhagen Business School, Kilevej 14a, 2000 Frederiksberg, Denmark; ³Darla Moore School of Business, University of South Carolina, 1014 Greene Street, Columbia, SC 29208, USA

Correspondence:

J Albino-Pimentel, Copenhagen Business School, Kilevej 14a, 2000 Frederiksberg, Denmark
e-mail: ja.si@cbs.dk

Abstract

Several countries provide policy support to specific sectors in order to facilitate industry transitions. While industry-support policies stimulate the growth of their target sectors, little is known about how such policies engender heterogeneous international strategies. In this article, we investigate how industry-support policies influence foreign location choices. We argue that firms engage in jurisdiction shopping, choosing to invest in countries with more generous policy support, but that this tendency varies markedly across firms. Specifically, we suggest that firms' nonmarket experience exacerbates the effect of policy support on location choice, whereas market experience has less of an impact. Further, we propose that some firms view generous policies more skeptically than others, depending on the nature of their nonmarket experience. We test and find support for our predictions using a longitudinal dataset of foreign investments of firms entering the solar energy industry in the European Union. Our findings indicate that supportive policies stimulate the energy transition, attracting in particular foreign entrants diversifying into renewables or having more policy experience. At the same time, they suggest that adverse policy changes in one country affect how firms assess policies in other countries, highlighting the need for policy coordination at a supranational level.

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INTRODUCTION

International business research has traditionally considered the institutional context as a prominent factor influencing firms' international strategy (Aguilera & Grøgaard, 2019; Henisz, 2000; North, 1990). In this stream of research, particular attention has been paid to the role of formal institutions, and notably to government policies enacted to control or constrain business conduct, including the regulation of property rights, trade, labor



practices, taxation, and pollution, among others (Blomström, Kokko, & Mucchielli, 2003; Blonigen, 2005; Li & Zhou, 2017; Maggioni, Santangelo, & Koymen-Ozer, 2019). Policy conditions have been found to affect a number of factors central to international business, including firms' global strategies (Bonardi, 2004), knowledge flows from multinational enterprises (Jandhyala & Phene, 2015), the sequence of firms' international expansion (Delios & Henisz, 2003b), and firm location choices (Henisz, 2000; Maggioni et al., 2019).

Although this body of research has generated impressive insights into the behavior and performance of international businesses, it has given less attention to two important features of the relationship between institutions and international business. First, the literature on institutions within international business research has often viewed formal institutions as having a homogenous impact on firms' international strategies, either because of researchers' explicit emphasis on isomorphism (Kostova, Roth, & Dacin, 2008) or because of a focus on more aggregate levels of analysis such as the country (Aguilera & Grøgaard, 2019). Second, as policies typically place constraints on the potential of firms to extract rents from their operations, much of this research has focused on examining whether firms tend to avoid institutional constraints by investing and locating their operations in countries with lax regulatory standards (Cole, 2004; Kellenberg, 2009; Rezza, 2015; Rugman & Verbeke, 1998). However warranted, these two tendencies limit our potential to fully explain how policies supporting specific economic sectors can engender heterogeneous international strategies.

Our study aims to fill this gap by leveraging the growing importance of institutional *support* for industries in the form of supportive policies targeted at specific industries, a trend that exposes firms to opportunities and challenges related to international expansion. Countries across the globe have recently provided substantial policy support to sectors such as green buildings, clean energy, and electric vehicles in order to facilitate industry transitions (Bohnsack, Kolk, Pinkse, & Bidmon, 2020; Georgallis, Dowell & Durand, 2019; Jones, York, Vedula, Conger, & Lenox, 2019). However, while evidence of how industry-support policies stimulate the growth of their target sectors continues to accumulate (Cimoli, Dosi, & Stiglitz, 2009), we lack a good understanding of whether such policies affect firms' foreign investment decisions,

and of why some firms are more or less attracted to policy-supported industries in foreign markets.

To shed light on these questions, we examine how industry-support policies affect firms' foreign investment location choices. Conceptualizing policy support as a country-specific advantage (CSA) (Clarke, Tamaschke, & Liesch, 2013; Rugman, Verbeke, & Nguyen, 2011), we argue that firms will engage in "jurisdiction shopping", whereby they search for and choose to invest in countries with the most-supportive policy frameworks. However, heterogeneity in firm-specific advantages (FSAs), notably market and nonmarket experience, will lead to markedly different responses to industry-support policies. We argue in particular that because learning in unfamiliar environments tends to be domain-specific (Kim, Delios, & Xu, 2010; Oh & Oetzel, 2017), the nonmarket experience of firms, conceptualized here as prior experience with similar policies, will positively moderate their tendency to engage in jurisdiction shopping whereas their market experience will have a less pronounced effect. Further, although nonmarket experience should generally enhance firms' attraction to foreign countries' policies, we expect that the nature of that experience – in particular, whether nonmarket experience is adverse – may lead some firms to prefer locations with a less generous policy support. We test and find support for our predictions by analyzing foreign location choices in a setting where policy support was paramount: the solar energy industry in European Union (EU) countries over the period 2004–2013.

We contribute to international business research by examining why firms differ in the degree to which they engage in jurisdiction shopping when selecting between potential locations for foreign investments. Specifically, we add to research on institutions in international business by showing how supportive formal institutions heterogeneously affect firms' international strategies. We also contribute to research on the FSA/CSA framework by highlighting not only that country-specific advantages are viewed differently by firms depending on their firm-specific experience (Chen, Li, & Shapiro, 2015; Clarke et al., 2013), but also that some firms may view the same host country's supportive policies as a disadvantage rather than an advantage. Moreover, we add to the strategy and international business literature by disaggregating experience into component parts, addressing recent calls for a more nuanced understanding of how context interacts with firm attributes,



including firm experience, in shaping international strategy (Fremeth & Shaver, 2014; Liu & Vrontis, 2017; Oh & Oetzel, 2017). Finally, our findings regarding jurisdiction shopping and firm experience provide insights relevant for practitioners in the renewable energy sector and inform current debates on the role of industry-support policies in fostering the energy transition. We elaborate on these contributions and on the implications for the energy transition in the Discussion section.

THEORETICAL BACKGROUND AND HYPOTHESES DEVELOPMENT

A firm's decision about where to locate international investments is one of the most central strategic choices in international business, as this choice affects most other cross-border economic transactions (Banalieva & Dhanaraj, 2013; Belderbos, Olffen, & Zou, 2011; Nachum, Zaheer, & Gross, 2008). Prior research has identified the institutional context as a critical determinant of international business activity in general and location choices in particular (Albino-Pimentel, Dussauge, & Shaver, 2018; Banalieva & Dhanaraj, 2013; Henisz, 2000; Maggioni et al., 2019; Kourula, Pisani, & Kolk, 2017). For example, prior literature has shown that the imprinting effect of the home-country institutional environment of a firm can affect its ability to adjust operating knowledge strategies across borders (Kriauciunas & Kale, 2006). Furthermore, in the case of international expansion, prior work has revealed that the sensitivity of a firm to host-country regulations depends on its home country's institutional setting (Albino-Pimentel et al., 2018; Cuervo-Cazurra & Genc, 2008; Holburn & Zelner, 2010). More generally, the internationalization literature has discussed how home- and host-country institutional environments allow a firm to develop knowledge and experience, or more generally, resources and capabilities, that it can later translate into firm-specific advantages (FSAs) when making subsequent foreign market entry decisions (Delios & Henisz, 2003a, b; Dunning & Lundan, 2008; Rugman et al., 2011). Overall, this research has established that the institutional environment, in both local and international markets, has a major impact on a firm's international location choices.

Institutional contexts have been analyzed using a variety of perspectives, including institutional economics (North, 1990), sociological institutionalism (Scott, 2013), and comparative institutionalism

(Hall & Soskice, 2001), among others (see Aguilera & Grøgaard, 2019, for a review). In referring to institutional context, this study relies on North's perspective on institutions, for two reasons. First, as possibly the "most widely adopted strand of institutional theory in IB" (Aguilera & Grøgaard, 2019: 28), this perspective allows us to position our study within – and contribute to – the broader literature on internationalization and location choice strategies, which has examined the role of institutions as determinants of foreign investment. Second, the strong emphasis that the new institutional economics has placed on formal institutions (Aguilera & Grøgaard, 2019; Albino-Pimentel et al., 2018; Coeurderoy & Murray, 2008; Hotho & Pedersen, 2012), and on the policy environment in particular (Dorobantu, Kaul, & Zelner, 2017; García-Canal & Guillén, 2008; Henisz, 2000), is consistent with our primary interest in how firms react to public policy.

Following North's conceptualization, we view institutions as the "rules of the game" that organizations must abide by and that provide order and the incentive structure for an economy. Although institutions can be informal, derived from customs, norms, or cultural values, the regulatory dimension of institutions is of utmost importance because policies clearly define choice sets that determine "the profitability and feasibility of engaging in economic activity" (North, 1991: 97). As a result, policy frameworks have been central not only to economic institutionalists interested in the economic performance of states (North, 1991) but also to international business scholars interested in cross-border business activity (Albino-Pimentel et al., 2018; Delios & Henisz, 2003a, b; Henisz, 2000).

However, two features of this research have so far inhibited its potential to fully explain why firms react differently to the same formal institutions, and its applicability to the context of industry-support policies, such as policies enacted to facilitate industry transitions. First, most research in international business that uses institutional theory assumes that firms are homogeneously affected by institutions (Aguilera & Grøgaard, 2019; Hung, 2005). Despite the many useful insights on how institutions affect international business, research in this area has largely focused on the country or industry as the primary level of analysis (Aguilera & Grøgaard, 2019; Hotho & Pedersen, 2012) and has thus been insufficient to address how the same institutional environment elicits heterogeneous responses by firms making international business



decisions. This is unfortunate, as recent evidence suggests that firms do react differently to the same formal institutions (Bu & Wagner, 2016) and to industry-support policies specifically (Georgallis & Durand, 2017).

Second, much research on the regulatory aspect of institutions views government policy as a constraint on firm behavior. As a result, these studies view firms as making their location choices in a way that allows them to avoid such constraints. Prior research has found, for example, that polluting firms prefer to avoid countries with stringent environmental regulations, and that multinationals often avoid countries with strong employment protection legislation (Dowell et al., 2000; Olney, 2013). Building on North's neo-institutional economics approach, Ahuja and Yayavaram (2011) suggest that this is a result of firms engaging in *jurisdiction shopping*, a process whereby each firm assesses the institutional conditions at different geographic locations and chooses to avoid those having the most stringent regulation. Accordingly, the idea of jurisdiction shopping has been recently used in the international business literature to explain patterns of location choice across countries (Brunetta, Giustiniano, & Boccardelli, 2017; Findlay, 2014; Tallman, Luo, & Buckley, 2018). However, the emphasis of this research on regulation as a constraint and on jurisdiction shopping as an avoidance strategy may be too narrow. Even though policies and formal institutions are generally restrictive, policymakers can also manipulate the institutional context to stimulate firms' investment decisions (Lazzarini, 2015), by using policy incentives to induce entrepreneurship, attract technologically advanced businesses, or enable industry transitions (Georgallis et al., 2019; Mesquita & Lazzarini, 2008; Jones et al., 2019).

Below we take a step toward addressing these oversights by examining how formal institutions, notably industry-support policies for specific industries, differentially affect firms' foreign location choices. Our theory relies on two fundamental assumptions. First, jurisdiction shopping is not merely an avoidance strategy as implied or explicitly stated in some prior research (Ahuja & Yayavaram, 2011; Brunetta et al., 2017; Findlay, 2014; Tallman et al., 2018) but is a more general process by which firms select from alternative foreign locations. Second, not all firms engage in jurisdiction shopping to the same extent. Rather, they are heterogeneous in their ability to scan and understand the policy environment of foreign

countries, and some firms may even view the same policies differently depending on their prior experience.

To develop our theory, we draw from the international business literature on country-specific advantages and firm-specific advantages, namely the CSA/FSA framework (Hillemann & Gestrin, 2016; Rugman & Verbeke, 1998; Rugman et al., 2011; Verbeke & Kano, 2012), and from studies on the influence of experience on international strategy (Chen et al., 2015; Clarke et al., 2013). According to the CSA/FSA framework, internationalization decisions are largely based on firm-specific advantages (FSAs) and country-specific advantages (CSAs). CSAs refer to advantages presented by the foreign countries where the firm plans to operate, such as better access to resources, industrial clusters, or a growing market. FSAs refer to firm-specific own assets or competences such as innovation capacity, brand name, knowledge, and experience. We argue that institutional support can be conceptualized as a CSA that is, however, viewed differently by firms due to their own FSAs stemming from their firm-specific experience. To more clearly ground our conceptualization, we briefly introduce our empirical context, the European solar energy industry, before developing specific hypotheses.

Policy Support and the Solar Energy Industry

The development of the solar energy industry is a prominent example of how institutional support in the form of favorable policies can stimulate investment in new economic sectors. Over the last two decades, governments have intensified their efforts to address climate change, in part by promoting alternative energy. For instance, as early as in the mid-1990s, the German and Japanese governments embarked on demonstration projects that disseminated information on solar energy technology, aiming to establish the German and Japanese industries, respectively, as global market leaders (Hoffmann, Pietruszko, & Viaud, 2004). The centerpiece of these policy frameworks was the introduction of feed-in-tariff policies, economic instruments through which governments guarantee the purchase of clean power that is fed into the electricity grid at a price (tariff) that is above the actual price of electricity. Soon after, Italy and Spain also introduced feed-in tariffs for solar energy in order to contribute to "environmental protection, industrial policy, and employment creation" (del Rio & Mir-Artigues, 2014: 6). Feed-in tariffs quickly spread across the world in the first decade



of this century, making it the most popular policy measure for spearheading the energy transition, and leading to an unprecedented policy-induced growth of the solar power industry, especially in Europe (Georgallis et al., 2019; Hoppmann, Peters, Schneider, & Hoffmann, 2013). It was not long before firms began to enter foreign countries in order to reap the benefits of feed-in-tariff policies, making the solar power industry an ideal setting to understand how industry-support policies shape foreign investment, and what types of firms they tend to attract.

Industrial Policies and International Location Choice

Extensive research examines how industrial policies stimulate the development of new industries, create powerful companies, or promote innovation and local employment (Lazzarini, 2015; Spencer, Murtha, & Lenway, 2005). However, unless a policy is strictly defined to benefit local firms, such benefits can spill over outside the country's borders. Policies that favor a specific sector of economic activity are likely to attract foreign firms that operate or that consider operating in that sector. In other words, such policies become CSAs for firms considering different locations for international investments. For example, feed-in-tariff policies have led to increased interest in and remarkable growth of several EU countries' markets (Georgallis et al., 2019; Hoppmann et al., 2013), but who would be serving those markets was "up for grabs". Foreign firms could step in and take advantage of the favorable regulatory environment. Some critics of European countries' renewable energy policies have even argued that public money is being spent inefficiently, as deployment policies sometimes benefit foreign firms instead of the local economy (Peters, Schneider, Griesshaber, & Hoffmann, 2012).

For a firm considering international investment, policy support adds a novel problem to a familiar question: what is the best possible location to invest in? International market selection requires a screening and comparative assessment of different locations and the opportunities that each offers (Maitland & Sammartino, 2015a; Papadopoulos & Martín, 2011). Firms may be attracted to a certain location for a variety of reasons. In particular, a rich body of international business literature has identified a set of country attributes that can be conceived of by firms as CSAs, such as market size, availability of key resources, investments by

competitors, or country similarities that facilitate business interactions (Basuil & Datta, 2019; Blonigen, 2005; Hillemann & Gestrin, 2016; Verbeke & Kano, 2012; Yaprak, Yosun, & Cetindamar, 2018).

In addition to these factors, policy tends to be a prominent feature of the foreign environment that firms assess in order to select the best possible location. For example, prior research has found that heavily polluting firms attempt to save on costs of cleanup or fines by locating their operations in countries with lax environmental regulation (Dowell et al., 2000) and that multinationals often evade public policy controls by investing in countries with weak safety or employment protection legislation (Ahuja & Yayavaram, 2011; Olney, 2013). Some have argued that this can lead to a "race to the bottom" as countries competitively undercut their ethical or environmental standards to attract foreign investment (Olney, 2013). According to Ahuja and Yayavaram (2011), this is the result of firms engaging in jurisdiction shopping, whereby managers of each firm scan the institutional conditions at different geographic locations, assess the constraints that they pose for the firm, and then make their international location choices so as to avoid countries with the most stringent regulations.

Extending their argument, we suggest that jurisdiction shopping is not merely an avoidance strategy but a more general process by which firms choose between foreign locations. Thus, regulation does not always induce a race to the bottom; it can also induce a "race to the top" (Bu & Wagner, 2016) when stimulating policy instruments offer rent-generating opportunities for foreign firms. In line with this idea, we argue that supportive policies constitute CSAs, as they render investment in a specific country a more attractive proposition for foreign entrants. *Ceteris paribus*, the more generous the policy incentive, the more attractive it will be to do business in that country. Thus, if firms do engage in jurisdiction shopping, we should expect them to survey the policy conditions in different countries and choose to invest in the country with the most generous policy support. For example, electronics companies are lured to Southeast-Asian countries such as China and India that offer preferential loans and grants to attract investment (Bloomberg, 2015; Capital Trade Incorporated, 2009). Also, countries compete for investment in e-mobility by offering subsidies for electric vehicles (Zgut, Zbytnewska, Hosnedlová, & Szalai, 2019), and, in the solar energy setting, firms are motivated



to invest in countries with more generous feed-in-tariff policies (Georgallis & Durand, 2017). More generally, conditional on the choice to invest in a foreign market, firms should exhibit a preference to locate in countries with more generous industry-support policies. Formally, we expect the following:

Hypothesis 1: The more generous the industry-support policy in a country, the greater the likelihood that a firm will choose to invest in that country.

The Moderating Role of Firm Experience

As discussed above, international business research using institutional theory has often focused on cross-country institutional differences (Aguilera & Grøgaard, 2019; Hotho & Pedersen, 2012) at the expense of examining how individual firm characteristics condition firms' strategies regarding country-level formal institutions (Bu & Wagner, 2016). Similarly, most research on the effectiveness of industrial policy has investigated aggregate levels of analysis rather than firm-specific characteristics (Georgallis & Durand, 2017; Hoppmann et al., 2013). However, firms are heterogeneous in their ability to conceive or capture the benefits associated with a specific institutional environment (Ghemawat, 2001; Nachum et al., 2008). In particular, different types of FSAs not only may make firms more or less able to address certain institutional environments but may even shape how a country characteristic is conceived of, as either a CSA or a country disadvantage that may render international operations difficult or too risky (Basuil & Datta, 2019). One such FSA that is likely to be a source of variation in firm strategies and to moderate the responses of firms to industrial policy is the level and the nature of their prior experience (Clarke et al., 2013).

Firm experience, defined as the practical knowledge that firms derive from participating in a particular activity, market, or country (cf. Chang & Rosenzweig, 2001; Oh & Oetzel, 2017), has frequently been shown to affect international investment strategies (Belderbos et al., 2011; Delios & Henisz, 2003a, b; Maitland & Sammartino, 2015b; Oh & Oetzel, 2017). Experience is an important FSA because it implies learning, or the acquisition of knowledge, which can later be leveraged as the firm encounters the choice of whether to invest in other locations, or the choice of where to invest (Buckley & Casson, 1985; Johanson & Vahlne, 2009; Oh & Oetzel, 2017). Furthermore, acquired experience allows firms to apply their

knowledge in new contexts and thus affects the expected benefits of entering a particular location.

The significance of experience stems from managers' bounded rationality regarding strategic choices, including international investment location choices. Under a rational actor model, decision-makers have full information availability and unrestricted capacity to assess the costs and benefits of international expansion. However, under the assumption of bounded rationality, which has been identified as a more realistic basis for interpreting international business decisions (Kano & Verbeke, 2019), there are cognitive constraints on the ability of managers to scan the environment and identify all information relevant to the decision, as well as on their capacity to make sense of that information in order to assess whether entry in a given location is warranted (Maitland & Sammartino, 2015a; Papadopoulos & Martín Martín, 2011). This can lead to significant interfirm differences because not all firms have faced similar situations in the past. Firms with substantial experience are better able to identify "what information to look for, how to analyze it, and its implications for the firm's expansion" (Maitland & Sammartino, 2015b: 738), whereas inexperienced firms do not hold this type of FSA when expanding abroad and have limited ability to assess target countries.

Prior research has shown that firm experience is an important determinant of international location choices (Delios & Henisz, 2003a; Hernandez, 2014; Oh & Oetzel, 2017). For instance, experience acquired in their home country has been shown to influence how firms assess political uncertainty in candidate foreign locations (Cuervo-Cazurra & Genc, 2008; García-Canal & Guillén, 2008; Holburn & Zelner, 2010), and experience acquired from investments made in other host countries has influenced firms' subsequent location choices (Delios & Henisz, 2003a, b). Overall, international experience is critical for firms' international investment location choices.

However, whereas most prior research has used experience as a general property of the firm that applies broadly to international expansion, recent findings suggest that the learning associated with experience tends to be domain-specific rather than general. For instance, Kim et al. (2010) suggest that learning is most effective when prior experience is specific to the product market or industry, but not in other domains. Similarly, Oh and Oetzel (2017) show that the potential of a firm to leverage its experience with political risk across borders is



specific to the type of risk involved. Thus, it is important to consider in which domain experience has been accumulated because that may affect the specific benefits firms gain from that experience. Below, we argue that market and nonmarket experience can be conceived of as FSAs, which differentially affect firms' propensity to select countries with more generous policies, that is, countries with a greater level of the CSA that is the focus of this study. In other words, we expect firms' market and nonmarket experience to moderate the effect of industry-support policies on location choice.

Market and nonmarket experience

To assess whether conditions favor expansion, firms need to survey both the market and nonmarket environments of potential host countries. The market environment of business activity refers to interactions between firms and market stakeholders such as suppliers, buyers, and competitors (Baron, 2003). *Market experience* – experience gained through interactions with market stakeholders – increases with both the length of a firm's stay in a particular country and the breadth of the firm's operations (i.e., the number of countries in which it operates) (Maitland & Sammartino, 2015a). The underlying knowledge acquired through market experience can include, for example, a better understanding of consumer preferences, greater knowledge of the market dynamics, or the ability to draft more-favorable contracts with suppliers. As prior research shows, market experience is relevant for foreign-expansion decisions when it is specific to the market or industry for which a firm is considering foreign expansion because of the similarity of activities that the firm needs to perform across different countries (Kim et al., 2010). Thus, market experience within the solar industry should moderate the influence of market attraction features on a firm's likelihood to invest in a particular country in the same industry. Specifically, having experience investing in the solar industry is an FSA that should influence how sensitive a firm is to industry-support policies when deciding whether to invest in a foreign location, because firms with more market experience are better able to appreciate the relevance of the policy environment for their performance compared with competitors in the same industry.

Nevertheless, we do not expect market experience to have the strongest moderating impact on the relationship between policy support in a potential host country and the firm's location choice.

Market experience does not necessarily imply the specific ability to scan and understand elements of the nonmarket environment (such as public policy), as these capabilities may rest on other types of FSAs, such as nonmarket experience. The nonmarket environment includes interactions with nonmarket stakeholders such as governments, regulators, and civil society (Baron, 2003); accordingly, *nonmarket experience* reflects the firm's experience with nonmarket stakeholders.¹ Just as firms can develop market experience through exposure to business interactions in their home country or in other host countries, they can develop nonmarket experience from exposure to policies across their domestic and international operations. For example, Conergy used its experience in the German and French markets to invest subsequently in markets such as Italy, Czech Republic, and Greece – countries that had, at the time, some of the most attractive feed-in tariffs in Europe. Conergy's nonmarket experience was likely critical in triggering these location choices, as it offers domain-specific knowledge that allows the company to navigate the policy environment (e.g., routines to swiftly secure installation approvals, grid connection licenses, or environmental permits), and the necessary know-how to assess the potential benefits of the policy. Along these lines, prior work has shown that firms in regulated industries enter countries characterized by similar types of firm–regulator interactions because the experience with governments that their home business entails and the specific knowledge they acquire as a result improve their ability to do business in similar foreign countries (Cuervo-Cazurra & Genc, 2008; García-Canal & Guillén, 2008). Prior studies also suggest that firms can gain nonmarket experience not only from their home country's operations but also from their foreign operations (Albino-Pimentel et al., 2018; Delios & Henisz, 2003a).

In sum, the influence of experience on firm decisions tends to be domain-specific in that it depends on the type of experience gained (Maitland & Sammartino, 2015a, b; Oh & Oetzel, 2017). This is important for our purposes because market and nonmarket experience are FSAs associated with fundamentally different types of knowledge. A firm's ability to assess supportive policies in potential host countries is likely to stem not from general experience with the market but rather from domain-specific experience with the nonmarket environment. Specifically, firms that have gained experience with similar policies (in their home

country or in other host countries where they operate) develop knowledge that increases their ability to evaluate the implications of such policies for their business and that, in turn, renders them more responsive to similar policies in foreign countries. Thus, nonmarket experience should positively moderate the impact of industry-support policies on location choice. Having gained a better understanding of supportive policy from prior experience, a firm is likely to incorporate the policy environment more centrally in its evaluations of different locations. Moreover, firms with relevant nonmarket experience may also have developed better routines to apply for and obtain the benefits from industrial policies in a timely manner, which increases the perceived rent-generating capacity the firm can expect from investing in a location with such a CSA. Thus, firms' propensity to engage in jurisdiction shopping may rely more on nonmarket, rather than market experience. Formally, we put forth the following:

Hypothesis 2: Nonmarket experience positively moderates the impact of industry-support policy on the likelihood that a firm will choose to invest in a particular country.

Hypothesis 3: The moderating impact of nonmarket experience on the relationship between industry-support policy and location choice is stronger than the moderating impact of market experience.

Adverse experience

While the previous section established the importance of domain-specific experience, it is also important to consider the nature of that experience. In addition to the existence of a supportive policy environment in the host country, changes in policy conditions may also trigger a search for opportunities to invest abroad and influence location choice. Despite the opportunities afforded by supportive policies, dependence on such policies also creates uncertainty for prospective entrants (Dutt & Joseph, 2019; Georgallis & Durand, 2017). The case of solar energy policies illustrates this point. While policies such as feed-in tariffs were highly successful in bringing solar technology to the market, in some cases they were "too successful" in attracting investment: the number of investments escalated the costs of keeping the policies in place (del Rio & Mir-Artigues, 2014). This trend, along with the decreased costs of solar technology,

led some European governments to lessen or even abolish their support for the industry. Such changes inevitably created an adverse experience for some firms, potentially affecting whether they engage in jurisdiction shopping for future investment locations. Adverse experience is particularly relevant for firms considering investments in countries with similar policy incentive schemes.

Prior work would suggest that firms facing a more adverse nonmarket environment are likely to seek opportunities in other countries. For example, firms are more likely to enter another geographic region when they face extreme rivalry in the places where they operate (Fuentelsaz, Gomez, & Polo, 2002) or when they need to "escape" adverse institutional constraints (Witt & Lewin, 2007). Anecdotal evidence from the solar energy industry supports this idea; for instance, feed-in-tariff cuts in Spain were characterized by industry insiders as "chaotic" (García-Castrillón, 2016), and several companies that had experienced them – such as the Spanish solar company FPV and the Italian OPDE group – began to turn their attention to neighboring countries (Price, 2011). Generally, firms that have recently experienced policy adversity, such as a repeal or substantial reduction in the level of policy support offered in their home or host countries, are likely to seek opportunities elsewhere.

Yet, we expect the pattern of location choice that these firms exhibit to be quite different from that of other firms. In general, firms prefer to invest in locations where the government is committed to the policies and rules it initiates (Henisz, 2000; Holburn & Zelner, 2010; Murtha & Lenway, 1994; Spencer et al., 2005). Exposure to detrimental policy changes may affect the perspective of firms on the stability and credibility of the policies, and, in turn, their future investments. Just as individuals avoid risky situations in the aftermath of negative experience (Sitkin & Weingart, 1995), firms can develop a disbelief in and even avoidance of policies that they associate with adverse conditions, even if those policies are generally supportive. We posit that as firms experience adversity due to discontinuous changes in the nonmarket (policy) environment, they become less attracted to those same policies in other foreign markets. They may become especially skeptical of those countries that offer very generous policy support, considering those institutional conditions unsustainable and therefore risky. In other words, we argue that firms with greater adverse experience may conceive of



industry-supportive policies not as a CSA but as a country-specific disadvantage that deters them from investing in countries with more generous policies. We thus expect that, contrary to the general pattern predicted above, firms with greater adverse nonmarket experience will be less attracted to the countries with the most generous policy support when making their international location choices. Therefore, we propose the following moderating effect:

Hypothesis 4: Adverse nonmarket experience negatively moderates the impact of industry-support policy on the likelihood that a firm will choose to invest in a particular country.

DATA AND METHOD

We test our hypotheses on a sample of foreign greenfield investments in the solar energy industry made by firms originating from one of the current members of the EU and into other EU countries during the period 2004–2013. We chose to focus on investments within the EU for two reasons. The first is due to the availability of high-quality data on policies and on firm market, nonmarket, and adverse experience. Because most EU governments relied on the same type of policy to promote the solar energy industry, the feed-in tariff (FiT), this setting offers a “natural laboratory” with “comparable cross-country data” on FiT policies (Georgallis et al., 2019: 16), enabling us to measure and study the effects of the nonmarket experience of firms on their international strategies. Furthermore, several EU countries have long relied on FiT policies, which helps us ensure that firms accumulate different types of nonmarket experience, including adverse experience, associated with such policies. Finally, and importantly, even though most EU countries used FiT policies to support solar energy, these policies varied markedly in their generosity across both time and national contexts. Thus, the EU solar energy industry setting offers variation on our main independent variables, which capture the generosity of potential host countries’ policies and the experience firms have gained from their prior exposure to this aspect of the nonmarket environment.

Second, beyond the benefits for our research design, this setting allows us to test our theory in a context with substantial practical relevance. Our observation period, which marks the proliferation

of FiT policies across the EU (Georgallis et al., 2019), was characterized by exponential market growth. The size of the EU solar energy market grew by more than 4000 percent from 2004 to 2013, reflecting the well-documented importance of FiT policies for this setting (Georgallis & Durand, 2017; Hoppmann et al., 2013; Peters et al., 2012).² Moreover, the European market was the leading region for solar photovoltaic panels during this period in terms of cumulative installed capacity, and it accounted for more than half the world’s annual installations except for the last year, when other markets such as China began to emerge as key players (Lins, Williamson, Leitner, & Teske, 2014). In sum, largely driven by FiT policies, the EU was historically the main market for solar energy.³ Furthermore, this industry is key for mitigating climate change, one of the most urgent challenges of our times (Jones et al., 2019), and realizing the transition from brown to green energy has been one of the main motivations for the deployment of FiT policies (Gawel et al., 2014).

We use data on greenfield investments from the *Financial Times* (FT) fDiMarkets database, which includes information on greenfield projects by firms across all countries in the globe and has been used in a series of recent research papers in management and international business (e.g., Albino-Pimentel et al., 2018; Duanmu, 2014). Our sample includes 202 greenfield investments in the solar energy industry carried out by 89 firms and corresponding to 5,454 investment choices in EU countries over the 2004–2013 period. Unless otherwise stated, all predictor variables were measured one year prior to the focal investment year to avoid issues related to simultaneity or reverse causality.

Dependent Variable

Our dependent variable, *location choice*, is binary and equals 1 if a firm chooses a specific host country for an investment in the focal year, and 0 otherwise. We considered all 28 current members of the EU as potential targets for an investment. Accordingly, for each investment made, we created a set of 27 potential foreign locations (all EU member countries except the firm’s home country). That is, for each investment in our data, we built a choice set of all other EU countries in which the focal firm did not make an investment, and assigned a value of 0 for the dependent variable in these cases. Following this approach, each observation reflects a possible location choice based on the 202 investments in our dataset. After



accounting for missing data, our final sample includes 5,451 observations.

Independent Variables

To test H1, we created the variable host-country *FiT policy generosity*, a continuous variable that measures the average price (in €/KWh) of the FiT offered by a potential host country. This variable captures variation in the generosity of the policy across potential host countries; the higher the FiT price, the more attractive the policy (Georgallis & Durand, 2017). As discussed above, we focused on feed-in tariffs because prior research has documented that they were the key policy instrument used to generate a market in this setting (Georgallis & Durand, 2017; Hoppmann et al., 2013; Peters et al., 2012), and their prevalence offered the opportunity to use comparable and high-quality data across countries (Georgallis et al., 2019). Based on our prediction in H1, we expect that higher levels of host-country *FiT policy generosity* should positively affect a firm's choice of location for an investment. We collected data on FiT policies and then cross-referenced them from a variety of sources, including solar industry reports, industry trade press, the International Energy Agency's Policies and Measures database, and the RES LEGAL Europe website, which covers legislation on support schemes for renewable energy sources.

Moderating Variables

We created three variables to test the moderating hypotheses. First, to test H2, we created the variable *firm nonmarket experience*, a count variable measuring the number of years that a firm has been exposed to FiT policies across all its investments in the solar energy industry, including in its home country and in foreign countries. For each country where the firm had already invested in solar, we counted the number of years when there was a FiT. Then, we summed these across all countries to capture the firm's overall experience with the same type of policy (a FiT policy). We rely on the interaction between host-country *FiT policy generosity* and *firm nonmarket experience* to test the moderating role of nonmarket experience on the relationship between supportive policy and location choice (H2). We expect the effect of host-country *FiT policy generosity* to be higher for firms with greater *firm nonmarket experience*.

Second, to test H3, we created the variable *firm market experience*, a count variable measuring the number of years a firm has accumulated in solar

energy across all its investments. We first counted the number of years a firm has operated in each country where it was active in the solar energy industry, including its home country. Then, we summed these across all countries. We assume that by investing longer in a larger number of countries in a given industry, firms develop experience in addressing market stakeholders, including competitors, suppliers, and buyers, in that industry. Based on H3, we expect the interaction of *firm market experience* and host-country *FiT policy generosity* to have a weaker effect on location choice than the interaction of *firm nonmarket experience* and host-country *FiT policy generosity*.

Finally, to test H4, we created the variable *firm adverse experience*, a count variable measuring the number of times a firm has been exposed to a significant negative change in FiT, that is, either a repeal or a substantial reduction (Georgallis & Durand, 2017), across all countries in which the firm operated.⁴ We consider that such adverse experience should affect firms' sensitivity to policy support in a different way than simple nonmarket experience. Based on H4, we expect the effect of host-country *FiT policy generosity* to be negatively moderated for firms with greater *firm adverse experience*.

Control Variables

We controlled for several factors that could influence the choice of host country in our setting. We included the variable *peer investments*, the cumulative number of investments in the solar industry by firms other than the focal firm in the potential host country before the focal investment. This variable captures potential bandwagon or isomorphic effects on a firm's location choice (Vedula & Matusik, 2017), as well as the effects of competition (Hawk, Pacheco-De-Almeida, & Yeung, 2013). We used data from the FT fDiMarkets database to calculate this variable. The variable *inward FDI* (the ratio of inward FDI to the country's GDP in a given year) controls for the overall attractiveness of a potential host country. We used data from the World Bank World Development Indicators to compute this ratio.

Following prior research (Berry, Guillén, & Zhou, 2010; Nachum et al., 2008), we controlled for the variable *geographic distance*, the great circle distance in kilometers between the largest city in the home country and the largest city in the potential host country. Data for this variable were obtained from the Centre d'Etudes Prospectives et d'Informations



Internationales (CEPII). To account for the *institutional distance* between a firm's home country and a potential host country, we first classified each member country of the EU according to whether their economic system is highly liberal or highly coordinated, or neither (Jackson & Deeg, 2008; Vasudeva, 2009). We then created the variable *institutional distance*, equal to 1 when a firm's home country's type of economic system differs from that of a potential host country, and 0 otherwise. We also included a set of dummy variables identifying countries with specific institutional features that might affect their attractiveness as a location for investments in the solar energy industry. The dummy *PIGS* receives the value 1 when the potential host country is either Portugal, or Italy, or Greece, or Spain, countries whose institutions are considerably weaker than those of other EU countries (Kickert, 2011). The dummy variable *EE country* is equal to 1 when the potential host country is in Eastern Europe, a set of countries that are more likely to differ institutionally relative to the home countries of the major investors from the EU (Bevan, Estrin, & Meyer, 2004; Dikova & Van Witteloostuijn, 2007). Finally, we included the dummy variables *high corporatism* and *high liberalism*, equal to 1 when the potential host country is characterized by high corporatism or high liberalism, respectively, and 0 otherwise.

In addition, we controlled for several additional host-country features that can affect a firm's location choice. The variable *host country political uncertainty* captures how easy it is for top political authorities in a host country to arbitrarily change policies. We used a continuous variable, the reverse of the political constraints measure drawn from the POLCONV dataset, to compute this variable (Henisz, 2000). The variable *host country's ease of doing business* measures the lack of barriers to opening a new business in a given host country and year. Data for this variable were drawn from the Heritage Foundation Economic Freedom index.

Because countries differ in their available solar resources and in how developed their solar energy market is, we included three variables specific to this setting. First, as a firm's location choice might be driven by local market-seeking goals, we controlled for *solar energy growth* using the 4-year compound annual growth rate in demand for solar cells in a given host country (Durand & Georgallis, 2018; Henderson & Cool, 2003). Second, to control for the presence of a strong upstream production cluster that could affect a firm's location decision

(Grøgaard, Gioia, & Benito, 2013), we included *total solar cell production*, to capture the total combined production (in MW) of all solar photovoltaic cell producers in a potential host country in a given year. Third, to further capture potential *resource-seeking* drivers of a firm's location choice, we included the variable *potential solar energy*, the total potential solar energy that can be generated in a given host country per year (in MWh/year).

The variable *economic growth* captures the change in a given host country's gross domestic product (in billion USD) in a given year. Countries exhibiting higher economic growth are more attractive to foreign investors, as they show better prospects for business expansion (Blonigen, 2005). We used World Bank data to measure this variable. Moreover, the variable *environmental values* captures the extent to which citizens in a potential host country care about the environment and thus potential latent preferences for sustainable markets (Georgallis & Lee, 2020). This variable is based on a question from the World Values Survey, which asks citizens whether they agree with giving part of their income for the environment. We used the percentage of respondents answering "Agree" to obtain our measure (Jones, Malesios, & Botetzagias, 2009) and extrapolated missing values for the years when a survey was not conducted (York & Lenox, 2014).

Finally, we controlled for other policies that might also provide support for investments in the solar industry in a potential host country and that can act as partial substitutes for FiT policies. We measured *other solar energy regulations* as a combination of tax incentives, direct financial subsidies, quota obligations, and tender systems. Because there was little variation across each of these policy types, we followed recent research (Georgallis et al., 2019) and grouped them as a binary variable equal to 1 when at least one of these policies is in place at a given host country and year, and 0 otherwise.

Empirical Approach

Our empirical analysis is designed to assess how FiT policies and firm nonmarket, market, and adverse experience affect location choice. Our unit of analysis is thus the firm-investment-year, so that each investment made by a firm in a given year is compared with all EU country options the firm could have chosen as a location instead. We followed prior literature on firm international location choice and used the conditional logit approach to model this choice (Alcacer & Chung,

2007; McFadden, 1974; Nachum et al., 2008; Shaver & Flyer, 2000).

Since location choice depends on both the attributes of the candidate countries that a firm could choose to locate an investment and on firm-specific characteristics (such as FSAs that can be used abroad), the conditional logit approach is advantageous because it examines firms' choice between candidate locations conditional on the choice to make an investment abroad (Belderbos et al., 2011; Nachum et al., 2008). It is thus the preferred model in location choice research because conditioning on the investment choice offers two benefits. First, it allows the researcher to focus precisely on how host-country attributes, such as policy conditions in our case, affect the location decision. Second, the setup of the model is conceptually equivalent to a model that includes both firm and firm-year (investment) fixed effects, so it does not require controlling for firm attributes because those do not vary across potential locations in the same year (Belderbos et al., 2011). The model allows us to indirectly control for unobserved firm attributes and to focus on those firm-specific characteristics that we use in our theorizing through interactions between these firm characteristics and those of the potential location. Thus, consistent with prior research (e.g., Nachum et al., 2008), we used interactions between different types of firm experience and the host country's *FiT policy generosity* to test the moderating hypotheses regarding these firm-level variables.

RESULTS

Table 1 shows descriptive statistics and pairwise correlations between the variables included in our analysis. Several variables in our models exhibit substantial variance across the observations in our analysis. For instance, the variable host-country *FiT policy generosity* varies from 0 to 0.67 with an average of 0.21, suggesting that policy support for the solar energy industry is indeed a factor that differentiates countries in the EU as potential targets for investments during our period of analysis. We also observe substantial firm heterogeneity for nonmarket, market, and adverse experience. The level of correlation between these variables is not very high, which suggests that firms also differ in the type of experience they develop over time. Finally, with nearly all pairwise correlations below 0.4, the correlations between the variables in our analysis do not cause concern (Kennedy, 2003).

Firms appear to choose their investment locations across a large range of EU countries. As Fig. 1 shows, EU countries vary markedly in the number of foreign solar energy investments received during our period of analysis. In the map, countries that received more investments are represented in darker shading. That is, countries shaded in light gray received a small percentage of the investments in our setting, and those shaded in black received the highest percentage of investments. The map shows that countries with large solar resources, such as those located in Southern Europe and the Balkan Peninsula, received a large proportion of foreign investments; but so did France (9.6%) and the UK (11%), countries with average or low levels of solar radiation. Somewhat surprisingly, Germany – the largest solar market for most of our observation period – is not among the countries receiving the greatest proportion of international investments.⁵ Overall, the pattern of investments suggests that the choice of country for foreign investment in the solar energy industry is not straightforward; further investigation is needed to understand the underlying mechanisms driving firms' investment location decisions in this industry.

Anecdotal evidence from industry press offers preliminary support for the idea of jurisdiction shopping and the allure of feed-in tariffs in particular. Several countries were reportedly considered more attractive for investors following the introduction of such policies, and in one interview the Chief Technology Officer of the renewable energy company REC went so far as to say that “the solar market is getting so international that if any country pays a little more attractive feed-in tariff, it will get all the modules until demand is satisfied there” (Schmela, 2008: 53). The role of nonmarket experience also appears important. Following the announcement of a new feed-in tariff in the Czech Republic, an executive from Sharp predicted a “wave of investors from Western Europe that are familiar with the subsidy regulations of the feed-in law” (Köpke, 2006: 27). And, alluding to the role of adverse experience, investors and lenders began “asking more questions about the risks” in the aftermath of feed-in-tariff cuts in major markets such as Germany and Spain (Hering, 2009: 53). As we discuss next, similar dynamics are borne out by the data.

Table 2 reports results of the conditional logit models we ran to test H1 through H4. Model 1 includes only control variables. Model 2 adds the variable *FiT policy generosity* to test H1. Model 3

**Table 1** Descriptive statistics and pairwise correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) Location choice	1.00										
(2) FiT policy generosity	0.12	1.00									
(3) Firm nonmarket experience	0.00	-0.02	1.00								
(4) Firm market experience	0.00	0.01	0.50	1.00							
(5) Firm adverse experience	0.00	-0.02	0.39	0.66	1.00						
(6) Peer investments	0.32	0.06	0.01	0.00	0.00	1.00					
(7) Inward FDI	-0.06	-0.07	-0.02	-0.07	-0.11	-0.08	1.00				
(8) Geographic distance	-0.04	-0.08	-0.16	-0.06	-0.05	-0.03	-0.03	1.00			
(9) Institutional distance	0.02	-0.12	0.07	-0.01	-0.06	0.02	0.03	-0.22	1.00		
(10) Political uncertainty	0.01	0.02	0.01	0.02	0.04	-0.03	0.04	0.18	0.01	1.00	
(11) Easiness of doing business	-0.08	-0.30	0.01	0.06	0.11	-0.17	0.18	-0.17	0.25	-0.24	1.00
(12) PIGS	0.21	0.29	0.00	0.00	-0.00	0.34	-0.14	0.04	-0.10	-0.02	-0.21
(13) Eastern Europe	-0.07	0.03	0.00	0.00	-0.00	-0.14	0.00	0.12	-0.19	0.34	-0.36
(14) High corporatism	-0.05	0.05	0.00	0.00	-0.00	-0.12	-0.13	-0.15	0.04	-0.11	0.20
(15) High liberalism	0.00	-0.21	0.00	0.00	-0.00	0.07	0.07	-0.18	0.52	0.05	0.44
(16) Solar energy growth	0.13	0.30	-0.01	0.07	0.07	0.12	-0.13	-0.05	-0.07	0.17	-0.12
(17) Potential solar energy	0.20	0.03	0.00	-0.00	-0.00	0.37	-0.19	-0.08	-0.08	-0.28	-0.23
(18) Total solar cell production	0.00	0.11	0.00	0.03	0.03	0.00	-0.09	-0.14	0.01	-0.27	0.14
(19) Economic growth	0.06	0.14	-0.02	-0.23	-0.23	0.11	0.03	-0.03	0.02	-0.07	-0.03
(20) Environmental values	0.08	0.11	0.00	-0.03	-0.03	0.11	0.05	0.07	-0.12	0.35	-0.27
(21) Other solar energy regulations	0.04	-0.06	0.00	0.12	0.12	0.05	0.02	-0.13	0.08	0.04	-0.01
Mean	0.04	0.21	7.57	1.01	0.92	13.79	6.29	1341.61	0.05	0.24	74.38
Std. Dev.	0.19	0.18	5.86	2.16	1.28	31.87	12.01	740.48	0.22	0.07	12.62
Min.	0.00	0.00	0.00	0.00	0.00	0.00	-55.07	59.62	0.00	0.11	30.00
Max.	1.00	0.67	26.00	18.00	8.00	270.00	76.33	3766.31	1.00	0.66	95.00
Variables	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	
(1) Location choice											
(2) FiT policy generosity											
(3) Firm nonmarket experience											
(4) Firm market experience											
(5) Firm adverse experience											
(6) Peer investments											
(7) Inward FDI											
(8) Geographic distance											
(9) Institutional distance											
(10) Political uncertainty											
(11) Easiness of doing business											
(12) PIGS	1.00										
(13) Eastern Europe	-0.35	1.00									
(14) High corporatism	-0.15	-0.29	1.00								
(15) High liberalism	-0.15	-0.29	-0.13	1.00							
(16) Solar energy growth	0.08	0.15	-0.03	-0.07	1.00						
(17) Potential solar energy	0.42	-0.30	-0.04	-0.14	0.01	1.00					
(18) Total solar cell production	-0.02	-0.18	0.49	-0.06	-0.04	0.21	1.00				
(19) Economic growth	0.00	-0.06	0.07	0.00	0.00	0.12	0.02	1.00			
(20) Environmental values	0.20	0.09	-0.22	-0.20	0.10	-0.16	-0.32	-0.07	1.00		
(21) Other solar energy regulations	-0.17	-0.12	-0.29	0.23	0.11	0.19	-0.25	-0.01	0.05	1.00	
Mean	0.15	0.41	0.11	0.11	68.65	328.00	73.10	12.63	0.58	0.71	
Std. Dev.	0.36	0.49	0.31	0.31	131.95	348.00	329.76	95.40	0.13	0.46	

Table 1 (Continued)

Variables	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
Min.	0.00	0.00	0.00	0.00	- 100.00	4.48	0.00	- 465.07	0.32	0.00
Max.	1.00	1.00	1.00	1.00	1060.67	1380.00	2558.10	421.06	0.84	1.00

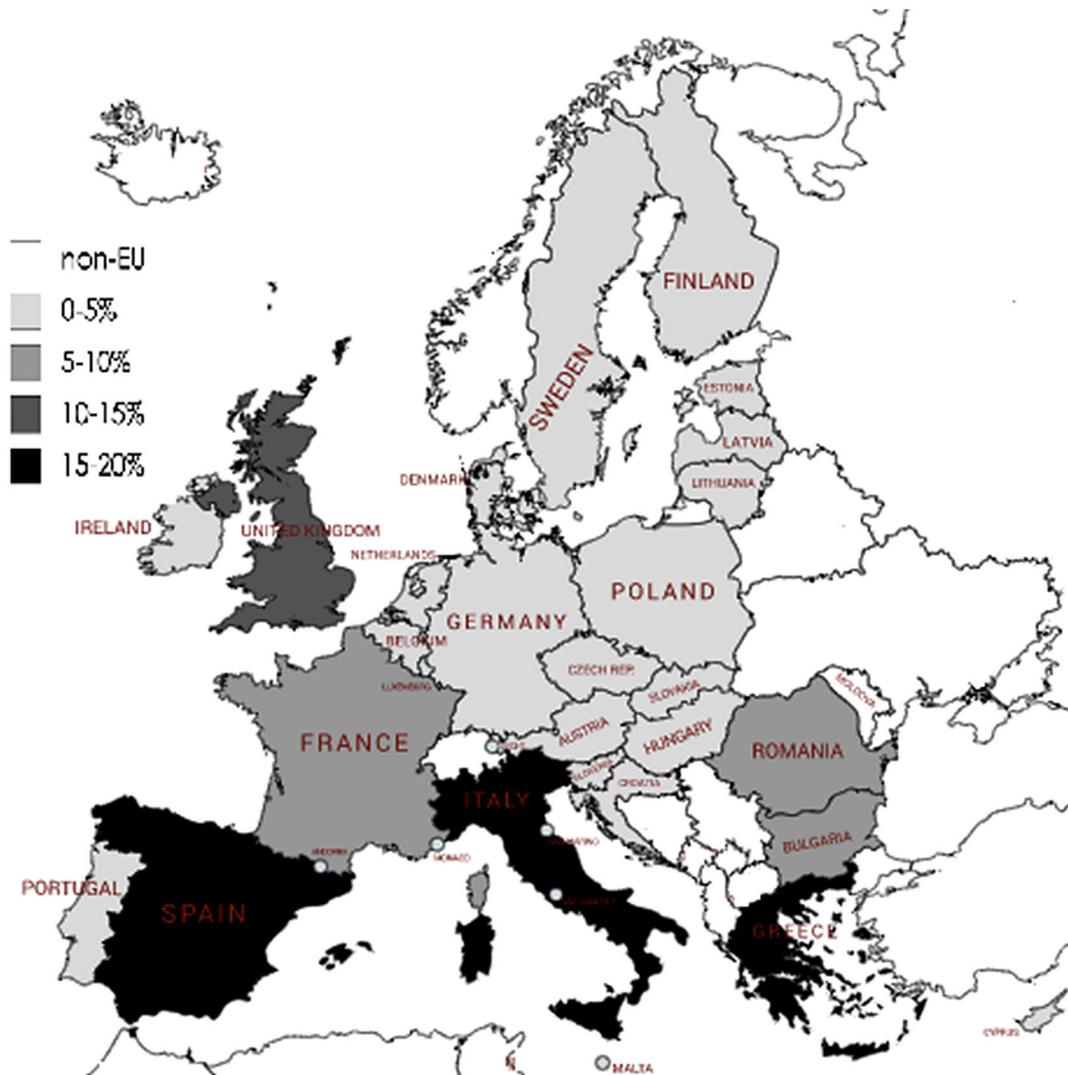


Fig. 1 Geographic distribution of foreign greenfield investments in solar energy in the EU

adds the interaction of *FiT policy generosity* and *firm nonmarket experience* to test H2. Model 4 adds the interaction of *FiT policy generosity* and *firm market experience* to provide the necessary estimates to test H3. Model 5 includes the interaction of *FiT policy*

generosity and *firm adverse experience* to test H4. Finally, model 6 includes all interactions.

The table reveals overall support for our predictions. Model 2 shows evidence of jurisdiction shopping (i.e., firms seem to prefer locations with higher levels of feed-in tariffs for solar energy when



Table 2 Main results

Variables	(1)	(2)	(3)	(4)	(5)	(6)
Peer investments	0.012 (0.000)	0.013 (0.000)	0.013 (0.000)	0.013 (0.000)	0.014 (0.000)	0.014 (0.001)
Inward FDI	- 0.052 (0.001)	- 0.056 (0.004)	- 0.057 (0.003)	- 0.055 (0.005)	- 0.055 (0.007)	- 0.057 (0.009)
Geographic distance	- 0.000 (0.116)	- 0.000 (0.391)	- 0.000 (0.353)	- 0.000 (0.405)	- 0.000 (0.455)	- 0.000 (0.507)
Institutional distance	0.839 (0.051)	1.050 (0.015)	1.179 (0.006)	1.051 (0.015)	1.120 (0.009)	1.414 (0.001)
Political uncertainty	3.474 (0.013)	4.573 (0.002)	4.661 (0.002)	4.522 (0.003)	4.479 (0.003)	4.439 (0.004)
Easiness of doing business	- 0.006 (0.565)	0.016 (0.215)	0.015 (0.255)	0.017 (0.210)	0.018 (0.179)	0.017 (0.205)
PIGS	0.609 (0.062)	0.109 (0.771)	0.118 (0.752)	0.098 (0.796)	0.060 (0.876)	0.043 (0.911)
Eastern Europe	0.653 (0.095)	0.901 (0.046)	0.859 (0.057)	0.891 (0.049)	0.894 (0.048)	0.844 (0.061)
High corporatism	0.487 (0.468)	0.350 (0.655)	0.354 (0.648)	0.290 (0.713)	0.104 (0.898)	- 0.084 (0.919)
High liberalism	1.825 (0.002)	2.025 (0.001)	2.002 (0.002)	2.011 (0.001)	1.957 (0.002)	1.891 (0.003)
Solar energy growth	0.004 (0.000)	0.003 (0.000)	0.003 (0.000)	0.003 (0.000)	0.002 (0.000)	0.002 (0.000)
Potential solar energy	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Total solar cell production	0.000 (0.247)	0.000 (0.445)	0.000 (0.423)	0.000 (0.417)	0.000 (0.376)	0.000 (0.287)
Economic growth	0.001 (0.211)	- 0.000 (0.703)	- 0.000 (0.769)	- 0.000 (0.726)	- 0.000 (0.784)	- 0.000 (0.960)
Environmental values	3.691 (0.004)	4.228 (0.003)	4.324 (0.002)	4.238 (0.003)	4.122 (0.004)	4.272 (0.004)
Other solar energy regulations	- 0.166 (0.615)	- 0.244 (0.453)	- 0.244 (0.455)	- 0.242 (0.458)	- 0.260 (0.431)	- 0.252 (0.453)
FiT policy generosity (FiT)		4.478 (0.000)	2.842 (0.007)	4.809 (0.000)	5.631 (0.000)	3.259 (0.004)
FiT × firm nonmarket experience			0.210 (0.028)			0.497 (0.000)
FiT × firm market experience				- 0.325 (0.259)		- 0.188 (0.669)
FiT × adverse experience					- 1.252 (0.030)	- 2.325 (0.006)
N	5451	5451	5451	5451	5451	5451
Pseudo-R ²	0.340	0.367	0.371	0.368	0.371	0.382

P values in parentheses

choosing a location for foreign investment), as the coefficient of *FiT policy generosity* is positive and significant ($\beta = 4.478$, $p = 0.000$), providing strong support for H1. Model 3 shows that the interaction of *FiT policy generosity* and *firm nonmarket experience* is positive and significant ($\beta = 0.210$, $p = 0.028$). This provides support for H2, which predicted that nonmarket experience would make firms more sensitive to host-country policies to support solar

energy industry investments. Further, model 4 shows that the interaction of *FiT policy generosity* and *firm market experience* is not significant ($\beta = - 0.325$, $p = 0.259$). This provides initial support for H3, which predicted that nonmarket experience should exacerbate the effect of *FiT policy generosity* more than market experience. To further assess this hypothesis, we re-ran models 2 and 3 using a seemingly unrelated estimation approach



that allows us to compare coefficients across equations. Results of this analysis confirm that the amplifying effect of nonmarket experience is statistically greater than the effect of market experience (p value = 0.039). This result also holds when both coefficients are included simultaneously in the same equation (model 6). We thus find support for H3.

Finally, model 5 shows that the interaction of *FiT policy generosity* and *firm adverse experience* is negative and significant ($\beta = -1.252$, $p = 0.030$), providing support for H4. It appears that, as we predicted, firms with more adverse experience with FiTs in their home country or in the foreign countries where they operated become less attracted to countries where policy support is more generous. Model 6, which includes all interactions together, confirms the above conclusions.

Additional Tests

We conducted a series of robustness tests to assess the sensitivity of our findings to different empirical approaches that address specific features of our setting.

First, as discussed earlier, it was relevant to focus on the EU as our empirical setting because the region pioneered and predominantly used feed-in-tariff policies and thus offered variation in the generosity of these policies and the accumulation of different types of experience by firms. Although our data are restricted to EU countries, we believe this is not a serious threat to the validity of our findings. A problem would arise only if the results were driven by (some) firms having acquired experience outside the EU, which is not captured in our data. To eliminate this possibility, we conducted a robustness test in which we excluded from our sample all investments made by firms that had prior experience outside the EU. Even though this reduced the sample to 119 investments by 70 firms, the results (see model 7 in Table 3) are consistent with our main findings. This suggests that considering only EU countries as investment options does not affect our conclusions.

Second, the largest solar market during our period of analysis was Germany, home to a large share of the investments in our dataset (69 of 202 investments), and the first country to implement a FiT policy to stimulate the industry. It is thus possible that our results are driven by specificities of the German setting and investments by firms from this particular country. To assess this, we conducted our analyses after excluding observations

associated with investments from German firms. Our results remain robust to this alternative approach (see model 8 in Table 3).

Third, it is possible that a firm's experience in a particular country may offset the effects of other types of experience, such as nonmarket and market experience. In particular, once a firm has invested in a country, it may be disinclined to reinvest in it and may instead seek other locations for diversification. Alternatively, prior investments in a country may make that country more attractive. To address this, we added to our models a variable equal to 1 when the focal firm had invested in the potential host country prior to the focal investment year, and 0 otherwise. The results remain robust to the inclusion of this variable (see model 9 in Table 3).

Fourth, the results regarding H4 indicate that firms with adverse nonmarket experience are deterred by generous FiT policies. One potential limitation here is that a host country's FiT policy generosity may be conflated with a history of sudden policy changes. If that were the case, our results might have been driven by firms being deterred not by the generous FiT policies but by the risk posed by the history of adverse changes in the FiT policy in that country. Thus, in two robustness tests we controlled for such regulatory uncertainty of the host country's FiT using either (1) the number of recent discontinuous negative changes in the FiT policy (those that occurred over the last year), or (2) the number of discontinuous negative changes over a longer period (those that occurred over the past 5 years). As shown in models 10 and 11, adding these variables does not affect our findings. Firms with adverse experience are still more likely to avoid countries with a generous FiT policy even after we account for the riskiness of the country's FiT policy as reflected in past behavior.

Finally, the investing firms in our sample include both firms that were already present in renewable energy and those not originating from the renewable energy sector. We thus decided to explore how these two types of firms are affected by policies and negative change in policies when making their location decisions. We classified firms into renewable energy specialists and non-renewable-energy firms based on their industry (NAICS) codes and ran our models in samples split for each category. We found that both renewable energy and non-renewable-energy firms are attracted by generous FiT policies; however, the effect of FiT policy is only moderated by nonmarket experience and adverse

**Table 3** Robustness tests

Variables	(7) Only invested in EU	(8) Excluding Germany	(9) Prior investment	(10) Regulatory uncertainty (short)	(11) Regulatory uncertainty (long)	(12) Not in renewables	(13) In renewables
Peer investments	0.011 (0.000)	0.015 (0.000)	0.013 (0.000)	0.016 (0.000)	0.014 (0.000)	0.008 (0.001)	0.018 (0.000)
Inward FDI	- 0.086 (0.000)	- 0.054 (0.014)	- 0.060 (0.005)	- 0.054 (0.019)	- 0.053 (0.022)	- 0.042 (0.139)	- 0.080 (0.048)
Geographic distance	0.000 (0.029)	- 0.000 (0.478)	0.000 (0.966)	- 0.000 (0.528)	- 0.000 (0.133)	0.000 (0.375)	- 0.000 (0.534)
Institutional distance	1.902 (0.002)	- 0.466 (0.670)	1.318 (0.003)	1.520 (0.001)	1.481 (0.001)	1.341 (0.011)	1.751 (0.068)
Political uncertainty	5.722 (0.004)	5.203 (0.003)	4.539 (0.004)	4.554 (0.004)	5.102 (0.001)	2.764 (0.183)	5.704 (0.022)
Easiness of doing business	0.032 (0.055)	0.40 (0.019)	0.018 (0.196)	0.011 (0.211)	0.016 (0.383)	0.018 (0.337)	- 0.042 (0.463)
PIGS	- 0.424 (0.369)	- 0.010 (0.985)	- 0.027 (0.945)	0.232 (0.566)	0.583 (0.132)	- 0.436 (0.367)	0.592 (0.380)
Eastern Europe	1.229 (0.026)	0.666 (0.215)	0.986 (0.030)	1.185 (0.015)	1.514 (0.001)	0.766 (0.163)	1.388 (0.099)
High corporatism	0.407 (0.679)	0.782 (0.346)	- 0.048 (0.955)	0.370 (0.670)	0.680 (0.418)	- 0.018 (0.987)	0.667 (0.623)
High liberalism	1.716 (0.043)	1.683 (0.018)	2.078 (0.001)	2.413 (0.000)	2.756 (0.000)	2.743 (0.000)	1.452 (0.244)
Solar energy growth	0.002 (0.018)	0.002 (0.002)	0.002 (0.000)	0.003 (0.000)	0.002 (0.000)	0.003 (0.001)	0.002 (0.013)
Potential solar energy	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Total solar cell production	0.001 (0.083)	0.000 (0.289)	0.000 (0.313)	0.000 (0.270)	0.001 (0.123)	0.001 (0.088)	- 0.000 (0.746)
Economic growth	- 0.000 (0.925)	0.000 (0.7393)	0.000 (0.738)	- 0.000 (0.620)	- 0.001 (0.545)	- 0.001 (0.365)	0.001 (0.517)
Environmental values	5.516 (0.008)	6.746 (0.003)	4.175 (0.002)	4.893 (0.003)	4.993 (0.004)	6.434 (0.004)	2.385 (0.275)
Other solar energy regulations	0.235 (0.620)	- 0.404 (0.314)	- 0.237 (0.485)	- 0.214 (0.523)	- 0.373 (0.269)	0.019 (0.968)	- 0.605 (0.220)
FiT policy generosity (FiT)	4.954 (0.000)	2.682 (0.058)	3.527 (0.002)	3.548 (0.002)	2.980 (0.009)	3.410 (0.013)	5.863 (0.044)
FiT × firm nonmarket experience	0.740 (0.002)	0.909 (0.002)	0.467 (0.000)	0.533 (0.000)	0.502 (0.000)	0.613 (0.000)	0.316 (0.393)
FiT × firm market experience	- 1.522 (0.430)	- 1.217 (0.103)	- 0.571 (0.219)	- 0.214 (0.622)	- 0.154 (0.717)	- 0.765 (0.221)	- 0.263 (0.726)
FiT × firm adverse experience	- 3.292 (0.007)	- 2.956 (0.023)	- 2.308 (0.009)	- 2.243 (0.010)	- 2.228 (0.008)	- 4.438 (0.001)	- 2.316 (0.129)
Prior investment in host-country			1.677				



Table 3 (Continued)

Variables	(7) Only invested in EU	(8) Excluding Germany	(9) Prior investment (0.000)	(10) Regulatory uncertainty (short) (0.002)	(11) Regulatory uncertainty (long) (0.000)	(12) Not in renewables 0.364	(13) In renewables 0.473
Regulatory uncertainty				– 0.746	– 0.781		
N	3212	3589	5451	5451	5451	3022	2429
Pseudo-R2	0.400	0.399	0.402	0.390	0.399	0.364	0.473

P values in parentheses

experience in the case of non-renewable-energy firms (see models 12 and 13 in Table 3). Specifically, non-renewable-energy firms are more attracted by generous FiTs when they have prior experience with FiTs, but are also less attracted by such policies when they have adverse experience. We elaborate on this result in the discussion section.

DISCUSSION

By analyzing foreign location choices in the context of the European solar energy sector, we offer new insights on how firms behave when faced with cross-country differences in terms of supportive policy. Conceptualizing feed-in-tariff policies as a CSA, we find that policy support leads firms to engage in jurisdiction shopping (Ahuja & Yayavaram, 2011), searching for and choosing to locate in countries with the most favorable policy frameworks. But not all firms engage in this behavior to the same extent. Firms' tendency to engage in jurisdiction shopping is exacerbated by firm-specific attributes, namely nonmarket experience, but not by market experience. Moreover, nonmarket experience has a complex impact on how firms respond to extra-jurisdictional policy, as the nature of this experience can reduce, rather than increase, some firms' tendency to engage in jurisdiction shopping. We discuss below the implications of our findings for research and practice.

Contributions to Research

The idea that institutions impose significant constraints on firm behavior has been a mainstay of the international business literature (Dorobantu et al., 2017; Henisz, 2000; North, 1990), and much of this

work has focused on how policies impose constraints on firms, leading them to engage in jurisdiction shopping to avoid countries with stringent regulatory frameworks. However, research on jurisdiction shopping has often depicted it merely as an avoidance strategy (e.g., Ahuja & Yayavaram, 2011; Brunetta et al., 2017; Findlay, 2014; Tallman et al., 2018). By focusing on how supportive policies affect firms' location choices, our findings challenge this assumption and show that jurisdiction shopping characterizes a broader set of phenomena whereby firms assess institutions – not just unfavorable but also supportive ones – in foreign locations. More importantly, by considering which firms are more likely to engage in jurisdiction shopping and which are less so, we help address a key limitation of much of the institutional research in international business: the tendency to assume that firms are homogeneously affected by institutions (see Aguilera & Grøgaard, 2019: 22, for a discussion). We thus contribute to the international business literature by theorizing and showing that institutional support by the state differentially affects firms' location choices depending on firm-specific experience.

We also contribute to research on the CSA/FSA framework (Hillemann & Gestrin, 2016; Rugman & Verbeke, 1998; Rugman et al., 2011; Verbeke & Kano, 2012). Our findings are aligned with the idea that FSAs (firm experience in our context) affect location strategies in conjunction with CSAs of the host country (supportive FiT policies in our context). Prior research using this framework has suggested that experience is a firm-specific advantage that increases the likelihood of a firm choosing to locate in countries with strong CSAs (Clarke et al., 2013). Similarly, by relying on the CSA/FSA



framework, we are able to demonstrate how firm experience matters in determining firms' response to institutions. We advance this research, however, as our results suggest that the impact of firm experience is less straightforward than previously considered. Experience with the solar market does not appear to influence firms' propensity to engage in jurisdiction shopping, not unless a firm has specific nonmarket experience – and, in particular, experience with the same type of policy as that of the target countries. Thus, differentiating between market and nonmarket experience is a nuanced but critical insight to consider when studying firms' location choices, and potentially other important strategic decisions in the international context. Further, the effects of nonmarket experience do not apply across the board. Firms that have adverse experience are less attracted to locations with very generous policies, potentially viewing these policies as a disadvantage rather than an advantage.

This last result is also consistent with recent research on how firms are affected by bounded reliability issues, which reflect “imperfect efforts to make good on open-ended promises” (Lumineau & Verbeke, 2016: 740), in their international business operations. One of the bounds on reliability discussed by Verbeke & Greidanus (2009) is the benevolent preference reversal manifested as a phasing out of prior (over)commitments. While this notion has been applied primarily to the context of multinational enterprises (Eden, 2009; Kano & Verbeke, 2015; Verbeke & Greidanus, 2009), it is also evident in the government policy context: even if policymakers had good intentions when creating supportive policies, overcommitments such as generous but costly policy support may lead them to policy repeals or reductions. Such adverse changes may, in turn, be seen as unfulfilled commitments and lead to perceptions of the government, or of similar policies, as unreliable. Interestingly, our results indicate that negative perceptions of policies can spill over to other countries indirectly through firms' adverse experience. The implications are thus not constrained to the specific country where adverse policy changes have occurred. Rather, such changes may alter the perceived reliability of policies beyond a given national context and potentially affect industry transition efforts by countries that did not modify or withdraw their policies, as we elaborate below. Overall, our results point to future opportunities to expand ideas concerning bounded reliability to the supranational level.

Moreover, by considering how the type and nature of firms' international experience condition firms' reaction to supportive policies, we respond to calls for a more nuanced examination of how firms interact with their context in international business research (Liu & Vrontis, 2017; Oh & Oetzel, 2017). Specifically, we contribute to the large body of research on how firm experience affects international business strategy. This work includes not only research using the CSA/FSA framework but also the broader global strategy literature on international experience and learning (e.g., Albino-Pimentel et al., 2018; Belderbos et al., 2011; Delios & Henisz, 2003a; Oh & Oetzel, 2017). Despite the substantial insights offered, much of this work either does not differentiate market from nonmarket experience or views experience as a general property of the firm at a given point. Our results indicate that both tendencies should be reconsidered. First, some research has inferred nonmarket experience by exploring firms' presence in a particular market (e.g., Cuervo-Cazurra & Genc, 2008; Holburn & Zelner, 2010). But market experience does not *necessarily* offer capabilities to address the nonmarket environment; those may become available to the firm only insofar as it also manages specific nonmarket requirements. We thus align with Oh and Oetzel (2017) in highlighting the need to unpack the effects of general market experience and domain-specific (e.g., policy-specific) nonmarket experience to better understand foreign entry strategies. Second, experience is not a general property of the firm but depends on the confluence of the firm's presence in a market and the institutional environment that governs that market. For instance, two firms with similar nonmarket experience (e.g., both having operated in countries with a feed-in-tariff scheme) may behave in markedly different ways depending on the nature of that experience (e.g., whether they have experienced sudden drops in feed-in-tariff policies). Overall, by exploring the conditions under which firms engage in jurisdiction shopping, we call attention to the broader need to unpack different types of experience and the nature of those experiences to arrive at a richer understanding of the reactions of firms to policy support outside their jurisdictions.

Finally, the focus on interfirm differences allows us to contribute to strategic management research. Although institutional support is ubiquitous in the global economic environment (Cimoli et al., 2009), strategy scholars have rarely addressed why firms



respond *differently* to formal institutions that favor their sector (Georgallis & Durand, 2017), particularly to policies that are set outside the firms' current jurisdiction (Fremeth & Shaver, 2014). Observing the "surprisingly scant integration" between strategic management and industrial policy research, Lazzarini (2015) noted the need for scholars to examine how industry-specific supportive policies differentially affect firm strategies. Relatedly, Fremeth and Shaver (2014) called for research on how extra-jurisdictional policy affects market entry strategies. Our study of heterogeneous location choices in response to policies in the European solar power sector directly heeds these calls.

Practical Implications: Industry-support Policies and the Energy Transition

Industrial policy has always been an important engine of economic development. A recent example of this trend has been the renewable energy sector. Driven by a variety of motivations – addressing climate change and pollution, reducing dependency on foreign resources, creating jobs (Davies & Allen, 2013; del Rio & Mir-Artigues, 2014; Flamos, Georgallis, Doukas, & Karakosta, 2011) – many countries across the globe have enacted policies supporting renewable energy, fostering efforts toward an energy transition. These policies may not only be attractive to local players but may also attract foreign entrants. This paper explores the conditions under which this is the case.

Consistent with the idea of jurisdiction shopping, we find evidence that firms are indeed attracted by industry-support policies. The implications of this result depend on the goals of policymakers. On the one hand, if the government simply wants to encourage the growth of the sector and to facilitate the energy transition, then it can be seen as a positive externality. On the other hand, if its goal is strictly to create national champions, these policies' consequences may be unintended (Davies & Allen, 2013; Peters et al., 2012). For instance, Peters et al. (2012) found that although industry-support policies encourage local innovation, they also lead to innovation spillovers; policies established by a focal country stimulate innovation in neighboring countries as well. Similarly, our results indicate that industrial policies that may be set up to advance the local industry simultaneously encourage the entry of foreign competitors.

A related and critical contingency that may advance this debate is the nature of foreign entrants that are attracted by supportive policies. Our findings indicate that jurisdiction shopping is moderated by firms' idiosyncratic experience. Specifically, supportive policies are not more likely to attract firms with greater market experience; instead, they tend to attract firms with more experience in dealing with similar policies. Moreover, in our robustness tests we find that both firms that specialize in renewable energy and those that have entered from other sectors are attracted to generous FiT policies, but that nonmarket experience appears to be more important for the latter group of firms. One possible explanation for the latter result is that non-renewable-energy specialists must rely more on their own experience to understand how to assess public policies, whereas firms more ingrained in the sector can gain information about policies through other means (e.g., because they are more embedded in industry networks and more exposed to trade groups or industry press), making experience with policies less important for them or even redundant. Of course, this argument is speculative, and future research is needed to identify the precise mechanism driving these differences. Regardless of the mechanism, however, the direct effect of FiT policies is positive and significant for both renewable energy specialists and firms coming from other industries. The finding that non-renewable specialists, in particular, are attracted to countries with generous FiT policies suggests that these policies motivate firms to transition to renewable energy, notably solar energy. While we are far from a full-scale systemic transition, viewing the energy transition as "a process that unfolds over time" requires individual firms to initiate such a transition (Delmas, Lyon, & Maxwell, 2019); our results confirm the intuition that supportive government policies can motivate foreign firms to do so.

For managers, this result suggests not only that supportive policies motivate renewable energy firms to invest in a particular country but that they also attract competition from non-specialists. It also appears that generalist firms rely more on their own experiences to choose a location, an insight that may help managers anticipate future competitor moves. For policymakers, our findings suggest that the energy transition can be facilitated by industry-supportive policies. At the same time, the results regarding the role of adverse experience indicate that, for policymakers interested in



attracting foreign investment, it is not enough to avoid sudden changes to policies domestically. Since the response of firms to supportive policies is affected by their adverse experiences in other countries as well, governments willing to use such policies to attract investments should invest resources in convincing other governments using similar policies to not arbitrarily change the rules of the game. This could, for instance, include relying on multilateral organizations as guarantors of stability, or lobbying supranational institutions (such as the EU) to regulate sudden policy changes, as these may render policies unreliable and deter foreign firms from transitioning into renewable energy. More broadly, this research signifies how the nature of firm experience speaks to the debate about foreign investment in response to industry-support policies, and the role of states in industry transitions.

Limitations and Future Research

This study's findings are constrained by the usual limitations of single-industry studies. Our data permit us to derive conclusions about a specific economic sector only, albeit an important one. EU countries exhibited variation in their propensity to enact supportive policies for solar energy, but there was substantial consistency in which policies they chose, with feed-in tariffs being the policy predominantly used across the EU. This was an advantage for our research design, as we were able to observe jurisdiction shopping more clearly by comparing how firms are attracted to the same type of policy. However, other countries have emerged as key markets in the solar industry since the end of our period of analysis, so it is important to consider whether our results are generalizable beyond this timeline and context.

We believe these results are generalizable to a number of countries beyond the EU that used FiT policies to support the industry. The proliferation of FiT policies over the past few years may have provided more opportunities for firms to acquire nonmarket experience in a variety of contexts, making our findings even more relevant. On the other hand, our conclusions should be translated with care to settings where the type of supportive policy differs across countries. For instance, US states mostly used Renewable Portfolio Standards to incentivize solar energy (Dutt & Joseph, 2019); since these were less common in other countries, it is unlikely that firms could gain sufficient experience that would translate into an FSA when

entering the US. Similar insights might apply to China and other South East Asian countries, which focused mainly on production-side subsidies. Finally, our theory is general in that it should apply beyond the context of feed-in tariffs and solar energy, as a variety of industries benefit from policy support such as subsidies, grants, or favorable loans (Cimoli et al., 2009). Indeed, many countries have offered policy support to industries such as automobiles, semiconductors, or chemicals (Brahm, 1995; Tyson, 1993), and more recently we have witnessed a growing trend of policy support for sustainable industries such as wind energy, green buildings, and electric cars (Bohnsack et al., 2020; Lins et al., 2014; Pacheco, York, & Hargrave, 2014). We expect our theory to generalize to industries where similar policies are enacted across countries, allowing for the acquisition of domain-specific experience that firms can benefit from when making subsequent foreign investment choices.

One of the main findings of this study is that the nature of firms' nonmarket experience has substantial implications for how firms react to foreign country policies. International business research can increase its explanatory power by incorporating adverse experience in models of international decision-making. But we have only scratched the surface of this rich topic. Future research is needed to identify different forms of experience and to confirm that merely having experience is not enough to predict how firms will cope with supportive or constraining institutional environments.

Overall, our research has made the case for a more detailed understanding of why firms respond differently to foreign countries' supportive policies, offering some initial answers to this important question. We hope future research will build on this study to explicate the full implications of supportive policies for foreign entry and offer additional insights to policymakers interested in stimulating industry transitions.

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NOTES

¹While nonmarket experience is not restricted to the policy environment, given our focus on formal institutions and policy in particular, we subsequently use nonmarket experience to refer specifically to policy experience. This is consistent with other research that delimits the nonmarket environment to the domain of government policy (Bonardi, 2004; Dorobantu et al., 2017).

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