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AUDIENCE HETEROGENEITY AND THE EFFECTIVENESS OF MARKET SIGNALS: HOW TO OVERCOME LIABILITIES OF FOREIGNNESS IN FILM EXPORTS?

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This study extends research on the importance of market signals in international markets for cultural products by examining not only when market signals are important but also what types of market signals are most important to which audiences. Specifically, we argue that audience heterogeneity influences the effectiveness of commercial performance and artistic acclaim as market signals in international film markets. Audience heterogeneity refers to the differences in the cultural knowledge and preferences of domestic and foreign consumers (end audiences) and product specialization of domestic and foreign distributors (intermediary audiences). Our empirical setting is the European film industry. We use a large sample of films produced and distributed domestically and internationally in Europe between 2004 and 2009. We find that domestic commercial performance and film festival participation increase international film success, but also that their effects depend on the cultural distance between countries and the use of major or independent distribution in the domestic and foreign markets.

The importance of market signals as a mechanism to reduce uncertainty about quality in economic and social exchange is well established. Following Spence (1974: 1), who defined market signals as "activities or attributes of individuals [producers] in a market which, by design or accident, alter the beliefs of, or convey information to, other individuals [audiences] in the market," scholars have explored how and when market signals reduce uncertainty about product quality (see Connelly, Certo, Ireland, & Reutzel, 2011, and Riley, 2001, for comprehensive reviews). Whether market signals are defined in terms of product attributes, such as price (Bagwell & Riordan, 1991; Milgrom & Roberts, 1986) and brand (Dawar & Parker, 1994; Rao, Qu, & Ruekert, 1999), or organizational attributes, such as status (Jensen, Kim, & Kim, 2011; Podolny, 1993) and reputation (Jensen, Kim, & Kim, 2012; Rindova, Williamson, Petkova, & Sever, 2005), most research focuses on producers and the specific actions they take to communicate unobservable quality to audiences (Connelly et al., 2011; Pollock & Gulati, 2007). The focus on producers and their actions is not surprising, given Spence's (1973: 357) original emphasis on attributes that are subject to producer "manipulation." It does, however, neglect the potentially important role of external audiences and how they use market signals as screening devices in determining the effectiveness of market signals, defined here as the extent to which market signals influence exchange decisions.[1]

The effectiveness of market signals depends on audiences in two different ways. First, market signal effectiveness depends on the extent to which

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[1] The terms "signal" and "screen" refer to two different aspects of market signaling. Signaling is an act taken by a producer (or other market participants, such as intermediaries, certifiers, and critics) to send information, whereas screening is an act taken by an audience to process the received information regardless of the origin of the information (Riley, 2001; Spence, 1974).

audiences pay attention to a market signal. As noted by Pollock and Gulati (2007: 340), "to serve as uncertainty reducing signals, these characteristics [market signals] must first attract the attention of those who use them." To address this issue, Pollock and Gulati (2007) examined how different market signals (IPO market reaction, investment bank and venture capitalist affiliations, and coverage by security analysts) differentially increase the visibility of entrepreneurial firms, and, therefore, their ability to form strategic alliances. Second, market signal effectiveness depends also on how audiences interpret market signals (Heil & Robertson, 1991). Most research assumes that signal interpretation is unproblematic as audiences are assumed to be homogeneous and therefore agree on the relationship between observed signals and unobservable quality (Connelly et al., 2011). We challenge these assumptions and focus on the consequences of audience heterogeneity for signal effectiveness, defining a heterogeneous audience as one comprised of subgroups with different levels of knowledge, preferences, and specialization in a particular product. In other words, we seek to understand not only *when* market signals are important, as has been the focus of other research (Jensen & Roy, 2008; Podolny, 1994; Pollock, Rindova, & Maggitti, 2008), but also *what types* of market signals are most effective with *which audiences*.

We study the importance of audience heterogeneity for market signal effectiveness in international markets for cultural products. "Audience heterogeneity" refers, in this context, to differences in the cultural preferences of domestic and foreign consumers and product specialization of domestic and foreign distributors. Markets for cultural products are typically characterized by a high degree of uncertainty about audience preferences. It is hard for producers to predict frequently changing audience preferences, and hard for audiences to evaluate cultural products before purchase: cultural products are experience products and many audiences first discover their actual preferences for them during consumption (De Vany, 2004: 7; Hirsch, 1972). The uncertainty of cultural products is exacerbated in foreign markets because most producers are less familiar with foreign audiences than with domestic audiences, and most audiences are less familiar with foreign products than with domestic products. Foreignness is therefore often a liability (Caves, 1982; Hymer, 1960; Zaheer, 1995) in markets for cultural products. The liability of foreignness for cultural products is particularly challenging because the foreignness of cultural products typically is an integral part of the cultural products themselves. The embeddedness of cultural products in specific cultural contexts (language, history, and customs) makes it hard to remove their foreignness outside their domestic market without questioning the authenticity (Peterson, 1997) of the cultural products.

The uncertainty of cultural products is reflected in the important role of market signals in their markets. Commercial performance and artistic acclaim are two important, and, therefore, commonly used, indicators of quality in markets for cultural products, including film markets (Holbrook & Addis, 2008; Baumann, 2002; Faulkner & Anderson, 1987). Commercial success implies that a cultural product is popular with mainstream audiences and therefore in high demand, whereas artistic acclaim implies artistic approval by expert audiences such as critics and industry peers. Commercial performance and artistic acclaim are mostly outside the control of producers of cultural products, but they are often used in product promotions, and are typically easily observable through broadly communicated sales rankings and cultural awards. The importance of commercial performance and artistic acclaim as market signals is particularly well established in the film industry in which early commercial performance and artistic acclaim tend to increase later commercial performance in domestic markets (Sawhney & Eliashberg, 1996). Commercial performance and artistic acclaim also help reduce the liability of foreignness and increase commercial performance when films are released in foreign markets (Elberse & Eliashberg, 2003; Lee, 2009), thus providing a strong foundation in existing research for examining the importance of audience heterogeneity for the effectiveness of these market signals in the context of the film industry.

We ask specifically how audience heterogeneity moderates the effect of domestic commercial performance and artistic acclaim on the export likelihood and foreign commercial performance in the European film market. The cultural diversity of European countries and their distinct styles of film making provide an appropriate context in which to study how audience heterogeneity, operationalized both by the cultural distance between film consumers and the product specialization of major and independent film distributors in domestic and foreign markets, influences

the effectiveness of commercial performance and artistic acclaim as market signals.[2] By focusing on the film industry, we can use existing film research on audience heterogeneity, which, together with existing film research on market signals, allows us to theorize how audience heterogeneity shapes market signal effectiveness. In sum, our theoretical framework and empirical analyses provide a nuanced and rigorous account of how audience heterogeneity, a neglected aspect of market signal theory, affects the ways in which market signals shape the perception of cultural products in international markets.

MARKET SIGNALS AND AUDIENCE HETEROGENEITY IN FILM MARKETS

The main function of market signals is to reduce information asymmetry between the producer sending the signal and the audiences receiving the signal. The standard market signal model focuses on heterogeneous producers who generate and send signals to homogeneous audiences who receive and interpret the signals before making exchange decisions (Spence, 1974). International markets for cultural products pose a particular challenge to the standard market signal model because the production and consumption of cultural products take place in different cultural contexts, thus ensuring considerable heterogeneity between domestic and foreign audiences in their knowledge of and preferences for cultural products.

Most audiences prefer cultural products from their own country not because of inherent national tastes but simply because they have had greater exposure to these cultural products (Stigler & Becker, 1977), and have come to know the basic artistic conventions behind domestic cultural products (Becker, 1982: 46). Knowing domestic artistic conventions allows audiences to appreciate domestic cultural products more easily without having to make the additional investments necessary to understand and fully appreciate foreign cultural products. Audience heterogeneity and perceived foreignness are therefore inseparable in international markets for cultural products: embeddedness in a national cultural context tends to make cultural products from other cultural contexts appear foreign and therefore less attractive.[3]

International film markets are no exception: market signals are important for both film distributors, making decisions about what films to import, and for film audiences, making decisions about what films to watch. Domestic commercial performance and artistic acclaim help foreign distributors to estimate the market potential of foreign films in their own markets, and to counter negative country-of-origin effects (Magnusson, Westjohn, & Zdravkovic, 2011) among foreign audiences. Another approach to counter negative country-of-origin effects would be to localize foreign films by remaking them for foreign markets, a common approach to noncultural foreign products (Zaheer, 1995). Although foreign films are occasionally remade for the U.S. market, this approach is costly and hardly ever used in other markets (Horton & McDougal, 1998). Domestic commercial performance functions, first and foremost, as a readily available quality screen that allows foreign distributors to select and market popular and, therefore, seemingly promising films for distribution in their own countries. Not surprising, research supports using domestic commercial performance to predict foreign commercial performance by showing that domestic commercial performance is associated with higher foreign commercial performance. Elberse and Eliashberg (2003), for example, found that domestic commercial performance increased foreign commercial performance in a sample of Hollywood films exported to foreign markets (see also Craig, Greene, & Douglas, 2005; Fu & Lee, 2008).

[2] Film distributors and film consumers are the key audiences for films: distributors are intermediary audiences and film consumers are end audiences. By convention, we use "film audiences" to refer to film consumers henceforth.

[3] Foreignness is not always is a liability, especially when audiences are familiar with foreign products (Knight, Holdsworth, & Mather, 2007), and it can even be an asset (Nachum, 2003, 2010; Newburry, Gardberg, & Belkin, 2006). When a product category has strong roots in a particular region or country, being from that region or country can be a valuable asset that increases perceived product quality (Veale & Quester, 2009). Specifically, some products have, over time, become commonly identified with a particular region or country, such as sparkling wine from Champagne, France, or Parmesan cheese from Parma (Emilia-Romagna), Italy, which makes it difficult for producers not located in these regions to be accepted as authentic producers, regardless of quality (see Lampert & Jaffe (1996) and Roth & Diamantopoulos (2009) for comprehensive reviews of country-of-origin research).

Artistic acclaim achieved through film awards and festival participation is a different type of market signal that allows screening on artistic quality rather than popularity alone (Holbrook, 1999; Holbrook & Addis, 2008). It is well established that film awards such as the Academy Awards have a positive impact on domestic and foreign commercial performance (Dodds & Holbrook, 1988; Lee, 2009; Nelson, Donihue, Waldman, & Wheaton, 2001). International film festivals have received less attention, but have also been an integral part of the film industry—in particular, in Europe—since the establishment of the first festival in Venice in 1932. The most prestigious international festivals—notably, the festivals in Cannes, Berlin, and Venice—have a "professed commitment to artistic excellence and nothing else" (Elsaesser, 2005: 96) and provide "another way of transcending the national for European films" (Elsaesser, 2005: 83). These film festivals are organized around competitions in which films that have not been publicly screened compete for different film awards. Both the few films entering the competition and the films eventually winning awards are selected by committees and juries of film experts such as prominent directors, actors, film scholars, and critics (Gemser, Leenders, & Wijnberg, 2008; Wijnberg, 1995). Opening in competition at Cannes, Berlin, and Venice is an important form of artistic acclaim that, unlike many film awards (including the Academy Awards), is not affected by commercial performance because the selected films have yet to open to the wider public.

We argue that domestic commercial performance and artistic acclaim are important market signals for intermediary film distributors and final film audiences. Film distributors provide a bridge between film producers and their domestic (domestic distributors) and foreign (foreign distributors) audiences; "they select the films they believe will appeal to audiences, convince theater owners to exhibit them, copy and distribute reels to the theaters, and promote films prior to and after their release" (Sorenson & Waguespack, 2006: 566). Most (European) films enter international markets in a staged manner: they are first distributed domestically by a domestic distributor, and then distributed internationally by foreign distributors. Distribution is typically handled by different distributors in domestic and foreign markets because most distributors, even the large international subsidiaries of Hollywood film studios, operate and have the rights to distribute films on a market-by-market basis only (Finney, 2010). Domestic distributors are mostly restricted to product-based market signals controlled by film producers, such as choice of cast and crew, because domestic distribution is decided during the film production stage. Foreign distributors can, however, also use market-based signals not controlled by film producers, including domestic commercial performance and artistic acclaim, because foreign distribution is decided after domestic distribution.[4]

Most film audiences view foreign films as art films, even if the foreign films were seen as mainstream films in their own domestic markets. As a result, foreign films are commonly defined as "art films," together with "independent films," "classic re-releases," and "documentaries" (Austin, 1984; Chuu, Chang, & Zaichkowsky, 2009). The art film audiences open to foreign films are different from the audiences interested in mainstream films only: they are better educated, plan ahead to see films, are interested in learning about films, actively seek information about films, and are more positive about foreign films, although they also favor domestic films (Austin, 1984; Chuu et al., 2009). Reflecting the tendency of art film audiences to be broadly informed about films and to share film preferences with film experts, film experts influence the demand for narrowly released art films more than the demand for broadly released mainstream films (Gemser, van Oostrum, & Leenders, 2007; Reinstein & Snyder, 2005). Given their interest in films, art film audiences are typically aware of film festival participation, domestic commercial performance, and the type of distribution of the foreign films released in their own market. Festival participation and domestic commercial performance are often used to promote foreign films, and film writers tend to echo this information in different film commentaries. And the type of distribution (i.e., major or independent, as discussed below) is visible by the width of distribution and multiplex or art-house theater exhibition (Gemser et al., 2007), even if individual distributors are not known.[5]

[4] For simplicity and consistency, we use "domestic" and "foreign" with respect to the country of origin of a film. For example, when we talk about foreign audiences observing foreign distributors, we use "foreign" in reference to a film's country of origin, even if foreign audiences and distributors are domestic audiences and distributors in their own countries.

[5] Introducing the 2009 Swedish film *Män Som Hatar Kvinnor* (*The Girl with the Dragon Tattoo*) to the U.S.

In sum, building on prior research, we assume that domestic commercial performance and film festival participation are positive market signals in international film markets that are known to foreign distributors and foreign audiences. However, our focus is not the direct effects of commercial performance and artistic acclaim on international success—defined both by a film being exported and its subsequent foreign commercial performance—but, instead, how audience heterogeneity in the form of cultural distance between domestic and foreign film audiences and product specialization of domestic and foreign film distributors influence the effectiveness of market signals.

CULTURAL DISTANCE AND MARKET SIGNAL EFFECTIVENESS

We begin our analyses of the effects of audience heterogeneity on market signal effectiveness by focusing on the cultural distance between domestic and foreign film audiences—thus assuming, initially, that foreign and domestic distributors have no independent influence on market signal effectiveness.

The perceived foreignness of a film depends on the "cultural distance" between film audiences in domestic and foreign markets, defined broadly as the extent to which audiences in different countries are culturally similar or different (Hofstede, 1980). Culture refers to "the publicly available symbolic forms through which people experience and express meaning," and consists of symbolic vehicles such as beliefs, rituals, art, and ceremonies as well as informal practices such as language, gossip, stories, and daily routines (Swidler, 1986: 273). Although culture obviously is complex, multifaceted, and varies within nations (Shenkar, 2001), national culture still accounts for important differences in cultural production and consumption (Akdeniz & Talay, 2013).

International film markets are no exception. Foreign film and television products are subject to cultural discounts outside of their domestic markets because most audiences lack familiarity with foreign languages, cast and crew, cultural contexts, and cinematic styles, which makes such audiences gravitate toward film and television products that reflect their own cultural background more closely (Hoskins & Mirus, 1988; Jayakar & Waterman, 2000; Wildman & Siwek, 1988). In other words, the greater the cultural distance between two countries, the greater the liability of foreignness or cultural discount—a liability that, unlike liabilities of foreignness in noncultural markets (Kostova & Zaheer, 1999; Zaheer, 1995), is difficult to remove through product alterations.

It is therefore not surprising that the main effect of cultural distance on international film success tends to be negative: the higher the cultural distance between two countries, the more foreign the films from one country appear to audiences in the other country, and the less trade of films between these two countries. Craig et al. (2005), for example, found that Hollywood films were more successfully exported to foreign countries that are culturally similar to the United States (see also Fu & Govindaraju, 2010; Fu & Sim, 2010; Lee, 2006).

Alternatively, "variety seeking" (Kahn, 1995; Ratner, Kahn, & Kahneman, 1999) could induce audiences to seek out different cinematic experiences from different countries. Variety seeking is surely a motivation for some audiences to experiment with unfamiliar foreign films, but the majority of audiences are typically more inclined to select familiar films most of the time (domestic films first and foreign films from culturally distant countries last). Watching a film in a movie theater is a relatively high involvement activity, in terms of time commitment, and variety seeking is more prevalent in low-involvement decisions (van Trijp, Hoyer, & Inman, 1996), such as the choice of classical rock songs, candy, and appetizers (Ratner & Kahn, 2002; Ratner et al., 1999). Consequently, we assume that the main effect of cultural distance on international success is negative, and focus on the effectiveness of markets signals depending on the degree of cultural distance.

Domestic commercial performance is likely to be a more (less) effective market signal when the cultural distance between home country and market country is relatively short (long). The commercial performance of a film depends partly on the match between film attributes and audience preferences. The more closely film attributes match audience preferences, the more audiences tend to like a film, and the more likely it is to become a commercial success. When the cultural distance between a home country and a market country is relatively short, the preferences of domestic audiences and

market in the *New York Times*, for example, Anderson (2010) and Dargis (2010) mentioned both its domestic commercial performance and the limited distribution the film received in the United States.

foreign audiences are more closely aligned—foreign films such as German films in Austria might not really be seen as foreign. In other words, the alignment of preferences between culturally similar audiences ensures that the match between audience preferences and film attributes that accounts for domestic commercial performance is preserved in culturally similar foreign markets. By preserving the match between audience preferences and film attributes in foreign markets, the perceived correlation between domestic commercial performance and unobservable quality is also preserved. The effectiveness of domestic commercial performance as a market signal is therefore higher in culturally similar, as compared to culturally dissimilar, foreign markets. Specifically, the commercial performance of a film in its domestic market makes international success more likely when foreign markets are culturally similar than when they are culturally dissimilar.

In sum, we argue that cultural distance reduces (moderates negatively) the effect of domestic commercial performance on international success.

Hypothesis 1. The greater the cultural distance, the weaker the effect of domestic commercial performance on (a) the likelihood of export and (b) foreign commercial performance.

When the cultural distance between home country and market country is relatively long (short), however, artistic acclaim is likely to be a more (less) effective market signal. While culturally dissimilar film-going audiences cannot be assumed to share cultural preferences, industry experts are more likely to share universal conventions and standards. Whether the film experts granting artistic acclaim are industry insiders, such as actors and directors, or outsiders, such as film scholars and critics, they typically have extensive industry experience and, often, formal education in film production and theory. Exposure to a diverse set of films gives them a broader vantage point from which to evaluate films and a universally shared, professional language with which to communicate across cultural boundaries. Film scholars and film critics, for example, like members of other professions, share universal institutional norms and typifications (Meyer & Rowan, 1977; Scott, 2008: 100) that distinguish their "intellectualizing discourse" about films (Baumann, 2001). Indeed, juries at international film festival competitions are mostly composed of renowned experts from different countries in order to provide a broad variety of viewpoints and transcend national idiosyncratic cinematic preferences (De Valck & Soeteman, 2010).[6] Because audiences—even relatively informed art film audiences open to foreign films—generally are less familiar with films from culturally distant countries, they are more likely to rely on experts to screen films from these countries, which implies that artistic acclaim is a more effective market signal when countries are culturally distant, and, therefore, is more likely to increase international film success.

In sum, we argue that cultural distance increases (moderates positively) the effect of artistic acclaim on international success.

Hypothesis 2. The greater the cultural distance, the stronger the effect of artistic acclaim on (a) the likelihood of export and (b) foreign commercial performance.

DISTRIBUTION TYPE AND MARKET SIGNAL EFFECTIVENESS

We continue our analysis of audience heterogeneity and market signal effectiveness by arguing that distributors add a different source of audience heterogeneity based on product specialization.

The distinction between major and independent distribution captures an important source of heterogeneity for both domestic and foreign distributors based on product specialization rather than cultural distance. "Major distribution" referred originally to widely distributed films with a broad appeal and originating inside the Hollywood studio system, whereas "independent distribution" referred to narrowly distributed films with a narrow appeal originating outside the Hollywood studio system (Levy, 1999; Zuckerman & Kim, 2003; Finney, 2010). The major Hollywood studios (and their distribution companies) include Metro–Goldwyn–Mayer, Sony/Columbia Pictures, Paramount Pictures, 20th Century Fox, Universal Studios, Dis-

[6] The main juries at the Cannes, Berlin, and Venice film festivals between 2000 and 2010, for example, were represented by jurors from between five and nine different countries (the average number of jurors was eight; the average number of countries was seven). The average Herfindahl index for the diversity of jurors is 0.17, with Berlin in 2001 being the most diverse (0.11), having nine members from nine countries, and Cannes in 2004 the least diverse (0.26), having four American members out of nine.

ney/Buena Vista, and Warner Brothers. The distinction between major and independent is also used to describe the content and style of films: "[M]ajor and independent films are quite different products, the former appealing to a mass audience with high-concept marketing . . . the latter to a more specialized one with different tastes" (Zuckerman & Kim, 2003: 38). Independent distributors do not focus on art films only, however, but distribute all types of films not targeting mass audiences or not being picked up by major distributors, regardless of the reasons (too artsy, too low quality, and so on). Major distributors tend, in other words, to focus on large-budget films expected to attract a broad audience, whereas independent distributors focus on small-budget films expected to attract a narrow audience only.

Market signal effectiveness varies with distribution type because market signals provide information that either confirms or disconfirms expectations implicit in distribution type. When foreign distributors make decisions about importing a foreign film, it is useful to know if a film uses major or independent domestic distribution as it reveals the expected type of audience for the film. Specifically, if a film uses a major domestic distributor, at least one distributor believed that the film, regardless of artistic quality, is of sufficient commercial quality to appeal to enough audiences to warrant broader distribution. If a film uses independent domestic distribution, however, it could be because the film deliberately targets a narrower audience interested in more artistic films. It could also be because the major distributors found it to be of too low a quality, commercially and artistically, to attract a wider audience. Independent distribution is, thus, associated with more ambiguity about film quality than major distribution. Specifically, independently distributed films could be targeting a narrow specialist audience, or simply be too low quality for all but the least discerning film audiences. Domestic commercial performance and artistic acclaim of independently distributed films help subsequent audiences decide which films to import (foreign distributors) and watch (foreign audiences) by providing independent film-specific information that allows them to choose between the "narrow audience" and "low quality" interpretations of independent distribution.

For foreign distributors making decisions to import foreign films, the domestic commercial performance of an independently distributed film reduces some of the uncertainty about the commercial appeal of the film, and shifts attention to the more specific uncertainty about the extent to which its commercial appeal is transferable to foreign audiences. A commercially successful, independently distributed film is a "surprise" or "sleeper" hit that, despite initial, modest expectations, in fact appealed to a broad audience (Finney, 2010). Unexpected commercial success attracts the attention of foreign distributors, who will carefully analyze the film's potential appeal in their own markets. Similarly, the artistic acclaim of an independently distributed film reduces some uncertainty about the cinematic quality of the film, and suggests that the film at least may appeal to an art film audience seeking alternatives to mainstream films (Elsaesser, 2005). In contrast, the commercial performance and artistic acclaim of films with major domestic distribution is less informative because films with major distribution are already expected, whether for commercial or artistic reasons, to appeal to a broader audience. That is, confirming category-based expectations about distribution type and audience appeal is less informative because it does not question that major domestic distribution implies greater exportability than independent domestic distribution or requires diagnostic attribute-based information about individual films before making import decisions (Fiske, Neuberg, Beattie, & Milberg, 1987).

In sum, we argue that independent domestic distribution increases (moderates positively) the effects of commercial performance and artistic acclaim on the likelihood of film export, as compared to major distribution.

Hypothesis 3. The effects on export likelihood of (a) domestic commercial performance and (b) artistic acclaim are stronger with independent than with major domestic distribution.

Next, we shift focus from foreign distributors observing if films use major or independent domestic distribution to foreign audiences observing if foreign films use major or independent foreign distribution (i.e., use major or independent distribution in their own markets). For foreign audiences, seeing that foreign films use independent distribution creates an expectation that their artistic quality dominates their commercial quality, which could further reduce the narrow audience for these foreign films by appealing to the most dedicated foreign film enthusiasts only. The expectations for foreign films with major foreign distribution are, in contrast, that the commercial qualities of these

films dominate their artistic qualities, and that they, therefore, appeal to broader, perhaps even mainstream audiences in the foreign market. For a foreign film with major distribution to also be artistically acclaimed, however, could create confusion about its target audience by providing a contradictory signal, which could cause some mainstream audiences to decide against seeing the film. Fearing a diminished popular appeal of films targeted at mainstream audiences is, indeed, one reason Hollywood is "wary" about film festivals as a mechanism to reach their target audiences (Elsaesser, 2005: 103): "As Hollywood aimed to reach a mass audience, film festival competitions were shunned because of fears that the film would be considered too artsy and turn off mainstream audiences" (De Valck, 2007: 99).

Foreign audiences may also interpret domestic commercial performance differently depending on the type of foreign distribution. Knowing that a film was a commercial success in its domestic market provides some assurance about its quality and appeal to a wider audience, but it does not necessarily imply that the appeal is transferable. When films with domestic commercial success receive major foreign distribution, however, foreign audiences can interpret this as an indication that foreign distributors think that the domestic commercial success is transferable between film markets, which increases the perceived appeal of the film to foreign audiences. In contrast, when films with domestic commercial success receives independent distribution only, foreign audiences are more likely to interpret this as an indication that foreign distributors think that the domestic commercial success is not as transferable between film markets, which, in turn, reduces the perceived appeal of the film. The type of foreign distribution, in other words, makes information about domestic commercial performance interpretable for foreign film audiences.

In sum, we argue that major foreign distribution increases (moderate positively) the effects of domestic commercial performance and reduces (moderate negatively) the effects of artistic acclaim on foreign commercial performance, compared to the effects of independent foreign distribution.

Hypothesis 4. The effect on foreign market performance of (a) domestic commercial performance is stronger with major than with independent foreign distribution, whereas the effect of (b) artistic acclaim is weaker with major than with independent foreign distribution.

METHODS

European Film Sample

We tested our hypotheses using a sample of films produced and traded in Europe, thus focusing specifically on the liabilities of foreignness that European films face when entering another European country. We deliberately excluded films produced in the United States from the empirical analyses for several reasons. First, American films have gained popularity worldwide and become a *de facto* standard for audiences as American culture in general has penetrated foreign markets. American films already make up the majority of films screened in most European countries (Lange & Newman-Baudais, 2007), which means that they are unlikely to face the same liabilities of foreignness as would films produced in other countries. Second, due to the widespread popularity of American films and the increased fear of piracy immediately after their release, many American films are released simultaneously in multiple countries, which makes exporting American films different from the sequential export process typically used in other countries. Third, despite the geographic proximity between European countries, most have different languages, histories, cultures, and political economies, all of which has resulted in the development of different film industries and national cinemas: "[E]ach country has its own national cinema, increasingly defended as a valuable treasure and part of an inalienable national patrimony" (Elsaesser, 2005: 13). The European film industry is, in other words, an appropriate setting in which to test our theoretical arguments about market signals and audience heterogeneity.

Our sample comprises films produced from 2004 to 2006 in the following 19 European countries: Czech Republic, Denmark, Estonia, Finland, France, Germany, Great Britain, Hungary, Iceland, Italy, the Netherlands, Norway, Poland, Portugal, Romania, Spain, Sweden, Switzerland, and Turkey. See Table 1 for basic descriptive information about these countries and their film industries. We focus on these 19 countries because the European Audiovisual Observatory's LUMIERE database provides near-complete information about their film production. Approximately 2,600 films were produced in these countries between 2004 and 2006; information was available at the Internet Movie Database (IMDb) for 1,669 of these films (most films with missing information are low-budget niche productions and experimental films). Each of these

TABLE 1
Film-Producing Countries and their Film Industries

	Population (million)	Film Production (2004–2006)	Exported Films (2004–2009)	Percentage of Films Exported	Average Number of Export Countries	Mean Foreign Admissions	Median Foreign Admissions	Main Market Country	Film Awards
Czech Republic	10.5	68	44	0.65	2.84	13,938	7136	Slovakia	Czech Lion Awards
Denmark	5.6	107	46	0.43	5.70	16,681	4854	Norway	Bodil Awards
Estonia	1.3	31	4	0.13	3.50	9899	7407	Finland	Grand Prix, Tallinn Black Nights Film Festival
Finland	5.4	51	18	0.35	2.89	10,808	2646	Sweden	Jussi Awards
France	65.8	570	339	0.59	5.82	33,442	6506	Belgium	César Awards
Germany	81.8	264	133	0.50	4.50	54,915	8713	Austria	German Film Awards
Great Britain	62.0	216	96	0.44	9.64	180,839	21,713	Spain	British Academy Film Awards
Hungary	10.0	69	15	0.22	3.60	4758	1839	Romania	Grand Prize, Hungarian Film Week
Iceland	0.3	13	5	0.38	3.60	3687	1367	Norway	Edda Awards
Italy	60.6	252	77	0.31	3.83	18,702	4223	Switzerland	David di Donatello Awards
Netherlands	16.7	95	28	0.29	3.00	17,179	4288	Belgium	Golden Calves Awards
Norway	4.9	67	22	0.33	4.23	9419	3504	Sweden	Amanda Awards
Poland	38.1	58	8	0.14	1.50	1306	458	Czech Republic	Eagle Awards
Portugal	10.6	48	11	0.23	1.18	4249	2720	France	Golden Globes, Portugal
Romania	21.5	34	5	0.15	2.16	7166	2807	France	Romanian Union of Filmmakers Awards
Spain	46.1	332	68	0.20	5.38	51,484	9407	France	Goya Awards
Sweden	9.4	133	49	0.37	2.98	34,043	6245	Norway	Guldbagge Awards
Switzerland	7.9	111	21	0.19	2.29	23,176	3833	France	Swiss Film Prize
Turkey	73.7	76	32	0.42	3.59	30,015	6964	Germany	Golden Orange Awards

1,669 films could then be exported to the 18 other film-producing countries, plus Austria, Belgium, Bulgaria, Croatia, Cyprus, Greece, Ireland, Latvia, Liechtenstein, Lithuania, Luxembourg, Russia, Slovakia, and Slovenia for a total of 32 market countries (we track all films until 2009).

For each film, LUMIERE provides the yearly number of domestic admissions as well as the number of admissions in each foreign country to which the film was exported. When films were co-produced by more than one country, we followed LUMIERE in assigning them to the main production country, based on the amount of financial investment at the production stage. LUMIERE also provides a link to each film listed on IMDb.com, which allowed us to collect additional information, including award nominations and wins, genres, the birth country of the director and the actors, and the language(s) of the film.

Dependent Variables

Our dependent variables are the unobserved likelihood of export and the subsequent, observed commercial performance (box office) in foreign markets. We focus on both the likelihood that a film will be exported and its subsequent foreign commercial performance, measured in terms of the logged (due to the skewed distribution of commercial performance) number of admissions in the foreign country, because these variables represent different aspects of export success. Export likelihood captures the expectations of foreign distributors about the potential demand from film audiences in foreign markets, whereas foreign commercial performance measures the actual demand for the film by foreign film audiences.

Independent Variables

We focus on two market signals—commercial performance and artistic acclaim—and two dimensions of audience heterogeneity—cultural distance and distributor type—and how they affect the effectiveness of market signals on the likelihood of export and foreign box office success. Domestic commercial performance was measured by the logged (due to the skewed distribution of commercial performance) number of admissions in the domestic country (*Domestic Commercial Performance*).[7]

We measured artistic acclaim by a binary variable that indicates whether or not a film was selected to open in (main) competition at Cannes, Berlin, or Venice (*Cannes, Berlin, or Venice*). Cannes, Berlin, and Venice are the most prestigious and important film festivals worldwide, with Cannes arguably the pinnacle of the film festival circuit (Elsaesser, 2005). We focused on the most prestigious international film festivals because they are most likely to be highlighted on film posters and other marketing materials used to promote films, and, thus, most visible to regular audiences. Because we have data on all film awards listed on IMDb, we experimented with other measures of artistic acclaim as well, and found the results are similar regardless of measure.[8]

We measured cultural distance between the film-producing country and the market country using Hofstede's (1980) widely accepted measure of cultural distance (Craig et al., 2005). We followed Kogut and Singh (1988) and used the variance-adjusted differences in individualism, power distance, uncertainty avoidance, and masculinity—the key cultural dimensions identified by Hofstede (1980) in his research on national cultures (*Cultural Distance*).[9] The Hofstede measure of cultural distance could be problematic in our study as it assumes that the cultural distance from country A to country B is the same as from country B to country

[7] We include film-producing country fixed effects to adjust for a producing country's population. Unreported robustness checks confirmed that our results are robust to adjusting for population by either controlling for population or dividing number of admission with population size. Because a film-producing country's population is not significant (and does not affect estimated coefficients), we report the simpler fixed effects approach.

[8] Most importantly, we also measured artistic acclaim by nominations in the major award categories (best film, director, actor, actress, and screenplay) for the most prestigious domestic film awards such as the César in France, the Donatello in Italy, and the Goya in Spain, and found our results to be robust (see Table 1 for an overview of the national awards).

[9] Kogut and Singh (1988) measured cultural distance by, first, taking the difference between the two countries' scores on the four key cultural dimensions in Hofstede's (1980) research, then correcting for the variance differences of each dimension by dividing the squared difference in the scores by the variance of each dimension, and, finally, arithmetically averaging the four numbers.

A (see Shenkar, 2001, for other limitations). The cultural distance symmetry assumption could be problematic, for example, if more cultural products flow from country A to country B than from country B to country A. To ensure that our results are robust to the cultural distance symmetry assumption, we used the asymmetric voting patterns in the Eurovision Song Contest—a televised international competition in which singers representing different European countries compete and the viewing audience votes to select a winner—as an alternative measure of cultural distance (Fenn, Suleman, Efstathiou, & Johnson, 2006). We only report the Hofstede results because the Eurovision Song Contest results are basically the same.

We used a binary variable to distinguish between major and independent distributors. For *each* market country, we identified, first, all the major distributors, using Lange and Newman-Baudais' (2007) comprehensive description of film distribution companies in Europe. We defined subsidiaries of U.S. distributors, such as United International Pictures, 20th Century Fox, and Warner Brothers, and large European distributors distributing films for the major U.S. studios as major distributors. For example, we coded the U.S. United International Pictures (distributing 42 films in Denmark between 2000 and 2005, of which 38 were from the United States) and Danish Nordisk Film (distributing 44 films, of which 23 were from the United States and 19 from Denmark) as major distributors (Lange & Newman-Baudais, 2007: 67). In a separate analysis, we distinguished between U.S. and European major distributors and found no difference in results. Having identified the major distributors in each market, we followed industry convention (Finney, 2010) and simply define independent distributors as all the non-major distributors (a comprehensive Internet search of the more than 1,100 distributors in our sample confirmed this approach).

Control Variables

We controlled for a number of different film attributes that represent alternative indicators of unobservable film quality to isolate the effects of our focal market signals, commercial performance and artistic acclaim (see Hadida, 2009).

First, we focused on Cannes, Berlin, and Venice film festivals for our measure of artistic acclaim as films open in these festivals before opening to the general public, ensuring that commercial performance does not impact our artistic acclaim measure. Other awards, however, may impact the export success of films. We included a binary variable coded "1" for the films that were nominated in the major categories (best film, director, actor, actress, and screenplay) in top domestic film awards, such as the César in France, the Donatello in Italy, and the Goya in Spain (see Table 1 for overview of the national awards), or nominated for the Academy Awards (Oscar) (*Top National Award or Oscar Nomination*). We combined the awards because relatively few European films are nominated for Oscars.

Second, the director of a film and its lead actors are uniquely positioned to affect the actual and the perceived quality of a film (De Vany, 2004; Hsu, 2006; Sorenson & Waguespack, 2006). Films by award-winning directors and actors are more likely to be higher-quality films, and more visible, than films with lesser acclaimed directors and actors (Schwab & Miner, 2008), and they are therefore more likely to be commercially successful, artistically acclaimed, and successfully exported to foreign markets. We measured the cumulative awards of the director and the sum of the cumulative awards for the top five leading actors for the focal film. We counted all the awards listed on IMDb for director and actor roles, respectively, but excluded ones received for the categories "Worst Director" or "Worst Actor" (*Director Awards; Actor Awards*).

Third, although we distinguish between major and independent distributors, distributor market share may itself influence the accessibility and visibility of films. The larger the distributor, the more screens available for the film, the higher the marketing budget for the film, and the more likely the film is to be viewed as a mainstream film—all of which may affect the perceived quality of a film and contribute to its commercial performance (Gemser et al., 2007; Hsu, 2006; Zuckerman & Kim, 2003). We measured the size of distributors by the domestic market share of the distributor in analyses of export likelihood, and the market share in each foreign market in analyses of foreign box office success (*Distributor Market Share*).

Fourth, we controlled for the "cultural specificity" of a film. Cultural specificity refers to the extent to which a film typifies a specific culture, and, therefore, a specific audience; the higher the cultural specificity of films, the more foreign they appear to foreign audiences, and the less likely they are to succeed in international markets (Lee, 2006). To measure cultural specificity, we created a domesticity index using the language of the film, the

birth country of the director, the birth country of the top five actors credited in IMDb, and number of co-producing countries (*Cultural Specificity*). A film is high on cultural specificity if it is in the domestic language, uses a domestic director, at least one of the top five actors is domestic (results the same if weighted for number of domestic actors), and incorporates no co-producing countries.

Fifth, following prior research showing that film genres have significant impact on export success (Lee, 2006), we included four (non-exclusive) binary variables that indicate if a film has been categorized in the action, comedy, documentary, and/or drama genres by IMDb (*Genre: Action*; *Comedy*; *Documentary*; *Drama*).

Sixth, the foreignness of a film from a producing country may be reduced if the audiences of the market country are exposed to many films from that producing country. Therefore, we include a measure that indicates the logged number of films imported in the last two years from the same producing country as the film (*Number Films from Producing Country*).

Seventh, because audiences, in general, tend to avoid foreign films due to the language barrier, we control for whether the languages of the film matches one of the official languages of the market country (*Language Match*). For other market country characteristics, we controlled for yearly cinema attendance per capita *(Cinema Frequency of Market Country*), and the logged population of the market country (*Market Country Population*). An alternative to cinema frequency and market country population would be to use market country fixed effects. We also estimated all models with market country fixed effects, and report that the models with market country characteristic variables as the main results are the same.

Eighth, some films are the product of international co-productions, which means that being exported to the home countries of co-producers likely has been part of the production and distribution plans from the initial film production stages. International co-productions may therefore be particularly likely to bridge the expectations and preferences of audiences from the different co-producing countries, thus suggesting that we included a binary variable to indicate if the market country is home to a co-producer (*Co-producing Country*).

Ninth, regarding our measure of the cultural specificity of a film, the birth country of the director and the top five leading actors is unknown in some instances. In these cases, we assumed that the director and leading actors are from the film-producing country. The country-specific names of most directors and actors suggest this is a reasonable assumption, but we still included a binary variable to control for missing information (*Missing Director Birth Country*, *Missing Actor Birth Country*).

Tenth, due to the cross-sectional nature of the models with foreign box office performance as the dependent variable, we also included binary variables to capture the sequential aspect of film exports and controlled for other types of awards that might have acted as alternative market signals prior to the export. More specifically, we controlled for films that were exported in the opening year (*Exported in Opening Year*), if a country was the first country to import the focal film (*First Export*), and those that were exported before being nominated in a top national film festival (*Exported Before Top National Award Nomination*) or in the Academy Awards (*Exported Before Academy Award Nomination*).

Finally, all models include film-producing country fixed effects to account for any unobservable differences that might affect export success across different countries (to keep our tables manageable, we do not report the country fixed effects herein; France is the comparison country). Our fixed effects approach allowed us to control for the historical differences in the prominence of the film industry in different film-producing countries, such as, for example, the greater visibility of French cinema compared to Romanian cinema. Table 2 contains bivariate correlations and descriptive statistics.[10]

[10] Multicollinearity is not a problem. In models without interaction effects, the average variance inflation factor (VIF) is below 1.60 (max VIF is 2.33) and conditioning indices are below 6.03 (Jaccard & Turrisi, 2003; Belsley, Kuh, & Welsh, 1980). In models with all the interaction effects, the average VIF is below 1.98 (max VIFs are for the two market signal main variables used in three interactions, each at 4.35 and 5.51) and conditioning indices are below 6.33. The relatively higher VIF for market signal variables used in interaction variables is "nonessential ill-conditioning" (Aiken & West, 1991: 36) that disappears when the interaction effects are removed or mean-centered (drops to 1.03 and 1.08). In addition, as robustness checks, we, first, removed all insignificant variables and then removed all control variables, and found the results robust to both alternative specifications.

TABLE 2
Descriptive Statistics and Pearson Correlation Coefficients

A: Cox Models	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. Domestic Commercial Success	3.59	4.74																			
2. Cannes, Berlin, Venice	0.04	0.19	0.06																		
3. Cultural Distance	2.06	1.70	−0.01	−0.01																	
4. Independent Distributor	0.34	0.47	−0.09	0.00	−0.08																
5. Top National Award or Oscar Nomination	0.13	0.34	−0.02	0.16	0.04	−0.11															
6. Director Awards	0.71	0.92	0.07	0.32	0.01	−0.09	0.33														
7. Actor Awards	1.44	1.32	0.04	0.16	−0.01	−0.14	0.26	0.34													
8. Distributor Market Share	0.07	0.10	0.09	−0.01	0.07	−0.68	0.13	0.06	0.06												
9. Cultural Specificity	2.21	0.85	0.06	0.05	0.01	−0.20	0.16	0.25	0.32	0.18											
10. Genre: Action	0.09	0.29	0.04	−0.02	0.03	−0.07	−0.05	0.03	0.02	0.06	0.03										
11. Genre: Comedy	0.38	0.49	0.04	−0.01	−0.02	−0.17	0.03	0.02	0.15	0.13	0.24	0.04									
12. Genre: Documentary	0.17	0.38	−0.07	−0.08	−0.02	0.19	−0.17	−0.22	−0.40	−0.16	−0.48	−0.14	−0.33								
13. Genre: Drama	0.50	0.50	0.02	0.17	0.04	0.00	0.24	0.27	0.25	0.02	0.19	−0.08	−0.20	−0.43							
14. Number Film from Producing Country	1.93	1.36	−0.03	0.07	−0.18	0.16	−0.10	0.04	0.17	−0.30	−0.08	0.00	−0.01	0.00	0.00						
15. Language Match	0.07	0.25	0.02	0.03	−0.15	0.05	−0.01	0.02	0.01	−0.07	−0.04	0.00	−0.01	0.03	0.00	0.14					
16. Cinema Frequency of Market Country	1.71	1.11	0.01	−0.02	−0.18	−0.01	−0.01	−0.01	−0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.05	0.24				
17. Market Country Population	16.36	1.31	0.00	−0.01	0.05	−0.01	0.00	−0.01	−0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.01	−0.14	−0.18			
18. Co-producing Country	0.01	0.09	0.03	0.02	−0.04	−0.01	0.01	0.04	0.03	0.01	−0.01	0.01	−0.03	−0.01	0.02	0.05	0.11	0.05	0.04		
19. Missing Director Birth Country	0.38	0.49	−0.05	−0.12	0.00	0.07	−0.12	−0.36	−0.19	−0.07	−0.58	−0.01	−0.08	0.19	−0.15	0.06	−0.01	0.00	0.00	−0.01	
20. Missing Actor Birth Country	0.71	0.45	−0.05	−0.04	0.04	0.05	−0.06	−0.11	−0.36	−0.04	−0.20	−0.01	−0.12	0.03	0.02	−0.04	0.00	0.00	0.00	−0.02	0.10

TABLE 2
(Continued)

B: OLS Models	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1. Box Office in Exported Country	9.08	2.02																									
2. Domestic Commercial Success	12.50	1.89	0.46																								
3. Cannes, Berlin, Venice	0.20	0.40	0.00	0.01																							
4. Cultural Distance	1.76	1.51	−0.07	−0.03	0.00																						
5. Major Distributor	0.26	0.44	0.27	0.27	−0.15	0.09																					
6. Top National Award or Oscar Nomination	0.42	0.49	0.15	0.20	0.33	0.05	−0.01																				
7. Director Awards	1.45	1.27	0.14	0.13	0.37	0.08	0.03	0.32																			
8. Actor Awards	2.27	1.44	0.27	0.39	0.14	0.07	0.19	0.20	0.28																		
9. Distributor Market Share	0.06	0.11	0.13	0.23	−0.08	0.13	0.63	0.02	0.04	0.18																	
10. Cultural Specificity	2.27	0.84	0.06	0.26	0.03	0.00	−0.02	0.21	0.17	0.17	0.01																
11. Genre: Action	0.19	0.39	0.21	0.26	−0.11	0.03	0.26	−0.16	−0.07	0.15	0.23	−0.06															
12. Genre: Comedy	0.46	0.50	0.09	0.17	−0.04	0.01	0.06	−0.02	0.00	0.13	0.05	0.14	0.01														
13. Genre: Documentary	0.06	0.25	−0.12	−0.23	−0.06	−0.04	−0.11	−0.11	−0.22	−0.31	−0.09	−0.27	−0.10	−0.22													
14. Genre: Drama	0.65	0.48	−0.08	−0.10	0.33	0.05	−0.10	0.38	0.36	0.10	−0.08	0.13	−0.26	−0.11	−0.32												
15. Number Film from Producing Country	3.14	1.18	0.14	0.21	−0.05	−0.27	−0.02	−0.19	−0.13	0.12	−0.01	−0.03	0.07	0.05	0.05	−0.12											
16. Language Match	0.22	0.42	−0.03	0.02	−0.04	−0.30	−0.13	−0.13	−0.13	−0.10	−0.09	0.05	−0.06	0.04	0.04	−0.11	0.41										
17. Cinema Frequency of Market Country	1.89	0.89	0.03	−0.09	0.01	−0.23	−0.16	−0.04	−0.06	−0.09	−0.22	0.00	−0.07	−0.03	0.05	0.00	0.18	0.27									
18. Market Country Population	16.41	1.16	0.37	−0.05	0.01	0.01	−0.06	0.01	0.03	−0.03	−0.17	−0.02	−0.02	−0.02	0.02	0.03	−0.06	−0.24	−0.02								
19. Co-producing Country	0.06	0.25	0.10	−0.08	0.02	−0.13	−0.01	0.01	0.01	−0.04	−0.04	−0.03	0.00	−0.04	0.02	0.00	0.02	0.11	0.11	0.13							
20. Missing Director Birth Country	0.25	0.43	−0.05	−0.11	−0.17	−0.02	−0.01	−0.21	−0.45	−0.15	−0.01	−0.39	0.09	0.05	0.13	−0.26	0.13	0.05	0.03	0.00	−0.02						
21. Missing Actor Birth Country	0.56	0.50	−0.18	−0.29	−0.05	−0.02	−0.17	−0.09	−0.14	−0.49	−0.13	−0.17	−0.11	−0.10	0.06	0.00	−0.05	0.05	0.08	0.01	0.04	0.08					
22. Exported in Opening Year	0.48	0.50	0.21	0.15	−0.03	−0.12	0.10	−0.10	−0.06	−0.01	0.11	−0.06	0.17	0.06	0.01	−0.11	0.30	0.28	0.09	−0.14	0.06	0.09	−0.05				
23. First Export	0.15	0.36	−0.14	−0.27	−0.11	−0.03	−0.05	0.02	−0.09	−0.07	−0.07	0.06	−0.10	−0.05	0.01	0.04	−0.16	−0.06	0.05	0.04	0.04	0.01	0.03	−0.40			
24. Exported Before Top National Award Nomination	0.06	0.23	0.23	0.23	0.11	0.02	0.11	0.22	0.09	0.10	0.09	0.01	0.02	−0.06	0.07	0.03	0.01	−0.03	−0.01	−0.03	0.00	−0.03	−0.11	0.25	−0.10		
25. Exported Before Oscar Nomination	0.13	0.34	0.19	0.23	−0.06	−0.06	0.10	0.23	0.01	0.09	0.12	0.08	0.06	0.01	0.00	−0.02	0.16	0.13	0.02	−0.08	0.07	−0.05	−0.05	0.36	−0.13	0.30	
26. Inverse Mills' Ratio	0.00	0.01	−0.06	−0.09	−0.04	0.02	−0.04	−0.06	−0.07	−0.08	−0.03	−0.03	−0.03	0.01	0.10	−0.07	−0.15	−0.04	−0.03	0.01	−0.02	0.06	0.03	−0.07	0.05	−0.02	−0.03

Statistical Analysis

A common approach in empirical research is to treat film exports as a cross-sectional phenomenon, and assume that all events, including domestic opening, foreign opening, and award nominations, occur simultaneously. We adopted a different but more accurate approach for the European film industry by treating film exports as a sequential process in which films first open in their domestic market and then may or may not be exported. Specifically, once produced, a film can be exported to each of the 32 other market countries in our study, which creates 32 film-market country dyads per film. Most films are never exported to another country (64% of all produced films were not exported to another country during our observation period); of the films that are exported, most (about 97%) are exported within three years after opening domestically. It is nevertheless important to explicitly model the sequential nature of film exports in order to also account for the differences in being exported in the first year, third year, and even later years. A film should therefore only leave the foreign country-specific risk set once it is exported to a given foreign country, even if the likelihood of being exported to that country is low after three years. The Danish film *Arven* (*The Inheritance*), for example, opened in Denmark in 2003; was exported to Norway and Sweden in 2003; Belgium, Great Britain, Hungary, Ireland, Italy, Spain, and Switzerland in 2004; and France and Germany in 2005, but had not been exported to the 21 other European countries in our sample by the end of our observation period in 2009.

We used a standard Cox proportional hazards model to estimate the likelihood that a film will be exported, which makes it possible to include differences in export timing (e.g., *Arven* was exported to Sweden in 2003, Spain in 2004, and France in 2005) and right censoring when films that have not been exported still could be exported after the end of the observation period (e.g., Greece) in our estimations. Observations are at the film/market country/year level, and observed until exported to the focal market country or until 2009 if not exported within our timeframe. This approach results in a total of 177,498 time spells.

To analyze foreign commercial performance, we used an ordinary least squares (OLS) regression approach in which we only take into account the events that occurred prior to the film being exported to a specific market country, and include the inverse Mills' ratio (*Inverse Mills' Ratio*) for each film estimated by the Cox proportional hazards model to account for selection bias (Heckman, 1979). Only the exported film/market country dyads are included in these models, resulting in 3,900 observations.

RESULTS

Export Likelihood

Table 3 presents the results of the Cox proportional hazards analyses of export likelihood. Model 1 is a baseline model with control variables only, and it shows, as expected, that film awards, artistically acclaimed directors and actors, distributor market share, action, history of imported films from producing country, sharing a language, and being a co-producing country increase the likelihood of export—whereas, cultural specificity decreases the likelihood of export.

Model 2 includes the main effect variables, and it shows, as expected, that commercial performance (0.12; $p < 0.001$) and artistic acclaim (0.24; $p < 0.001$) increase the likelihood of export, thus confirming prior research on the importance of domestic commercial performance and providing the first systematic evidence of film festivals as positive market signals. Model 2 shows also that independent distribution (-0.16; $p < 0.001$) decreases the likelihood of export, whereas, contrary to expectations, there is no main effect of cultural distance (0.01; $p > 0.10$) on the likelihood of export.

Our main focus in this study is the interaction variables introduced in Models 3–6. Models 3 and 4 support Hypotheses 1a and 2a by showing that cultural distance decreases the effect of domestic commercial performance (-0.01; $p < 0.001$), but increases the effect of artistic acclaim (0.06; $p < 0.05$) on the likelihood of export. Models 5 and 6 support Hypotheses 3a and 3b by showing that domestic commercial performance (0.02; $p < 0.01$) and artistic acclaim (0.26; $p < 0.01$) increase the likelihood of export more for independent distributors than for major distributors. All the results are confirmed in Model 7, which includes all the interaction variables.

The hypothesized export likelihood results are not only statistically significant but substantively significant as well. Figure 1 uses the predicted multipliers of the unobserved base rates of export from our Cox models (see Hannan & Free-

TABLE 3
Cox Proportional Hazards Models on Export Likelihood[a]

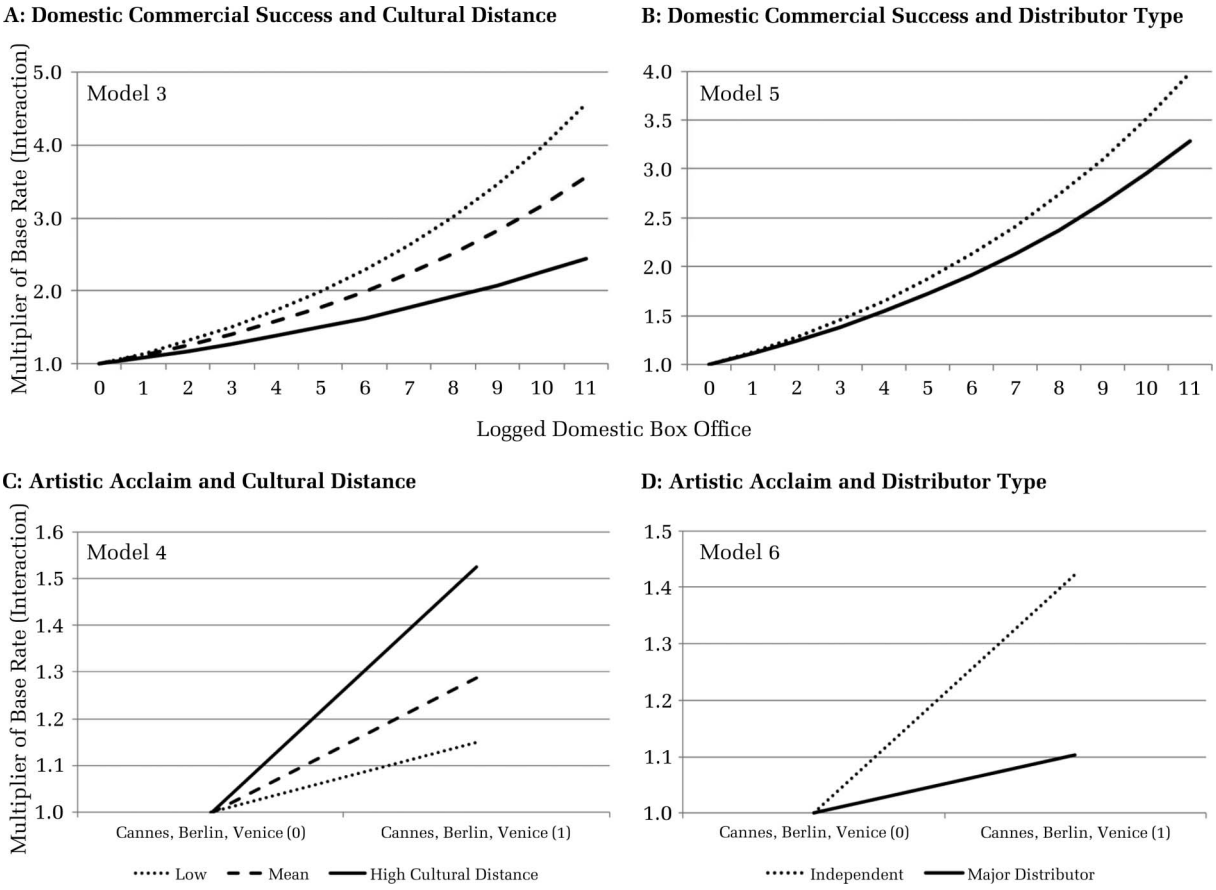
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Cannes, Berlin, Venice by Independent Distributor						0.26**	0.25**
						(0.08)	(0.08)
Domestic Commercial Success by Independent Distributor					0.02**		0.01*
					(0.01)		(0.01)
Cannes, Berlin, Venice by Cultural Distance				0.06*			0.09***
				(0.03)			(0.03)
Domestic Commercial Success by Cultural Distance			−0.01***				−0.01***
			(0.00)				(0.00)
Domestic Commercial Success		0.12***	0.14***	0.12***	0.11***	0.12***	0.13***
		(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Cannes, Berlin, Venice		0.24***	0.23***	0.14*	0.24***	0.10	−0.05
		(0.05)	(0.05)	(0.07)	(0.05)	(0.07)	(0.08)
Cultural Distance		0.01	0.10***	0.00	0.01	0.01	0.09***
		(0.01)	(0.02)	(0.01)	(0.01)	(0.01)	(0.02)
Independent Distributor		−0.16***	−0.15***	−0.16***	−0.32***	−0.21***	−0.32***
		(0.05)	(0.05)	(0.05)	(0.07)	(0.05)	(0.07)
Top National Award or Oscar Nomination	1.06***	0.83***	0.83***	0.83***	0.83***	0.85***	0.84***
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Director Awards	0.44***	0.38***	0.38***	0.38***	0.38***	0.38***	0.38***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Actor Awards	0.21***	0.15***	0.15***	0.15***	0.15***	0.15***	0.15***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Distributor Market Share	3.90***	2.50***	2.54***	2.46***	2.50***	2.50***	2.50***
	(0.23)	(0.28)	(0.28)	(0.28)	(0.28)	(0.28)	(0.28)
Cultural Specificity	-0.25***	-0.25***	-0.25***	-0.25***	-0.24***	-0.24***	-0.25***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Genre: Action	0.69***	0.59***	0.59***	0.59***	0.59***	0.60***	0.61***
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Genre: Comedy	0.05	0.03	0.03	0.04	0.03	0.04	0.04
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Genre: Documentary	−0.07	−0.05	−0.05	−0.05	−0.04	−0.03	−0.02
	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)
Genre: Drama	−0.07	−0.03	−0.03	−0.03	−0.02	−0.02	−0.02
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Number Film from Producing Country	0.99***	1.00***	0.99***	1.00***	1.00***	1.00***	0.99***
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Language Match	0.44***	0.38***	0.36***	0.38***	0.38***	0.39***	0.38***
	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
Cinema Frequency of Market Country	0.00	0.01	0.01	0.01	0.01	0.00	0.01
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Market Country Population	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Co-producing Country	0.67***	0.61***	0.59***	0.61***	0.61***	0.60***	0.60***
	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)
Missing Director Birth Country	−0.17***	−0.09	−0.09	−0.09*	−0.09*	−0.08	−0.08
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Missing Actor Birth Country	−0.15***	−0.11**	−0.11**	−0.12**	−0.11**	−0.10**	−0.10**
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Producing Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
χ^2	8920***	9693***	9727***	9697***	9701***	9703***	9752***
χ^2-test of joint significance		639.16***	35.29***	4.86*	8.14**	10.23**	60.42***

Note: Standard errors in parentheses.
[a] Time spells = 177,498.
*** $p < 0.001$.
** $p < 0.01$.
* $p < 0.05$ (two-tailed tests).

man, 1989: 186) to illustrate their substantive significance (for France). Figure 1 shows specifically how the interactions between market signals and audience heterogeneity change the overall market signal effect (main effect plus interaction effect) at different levels of audience heterogeneity. To make the changes in the market signal effects caused by the interaction effects directly comparable, we rescaled the market signal effects for each level of audience heterogeneity to have the same starting point. We rescaled by dividing the overall market signal effect with the main effect of audience heterogeneity for each level of audience heterogeneity, thus effectively removing the audience heterogeneity main effect from the comparisons and focusing attention on the interaction effects (slope differences) only.

Figures 1A and 1B illustrate how the effect of domestic commercial performance (ranging from for lowest observed domestic box office to two standard deviations above the mean) on export likeli-

FIGURE 1
Market Signal and Audience Heterogeneity Interaction Effects on Export Likelihood



hood is affected by audience heterogeneity. Figure 1A shows that increasing domestic box office from zero to two standard deviations above the mean increases the domestic box office multiplier more than 4.5 times when cultural distance is low, but less than 2.5 times when cultural distance is high—an 80% difference. Figure 1B shows that increasing domestic box office from zero to two standard deviations above mean increases the domestic box office multiplier almost 4 times for independent distributors, but just above 3 times for major distributors—a 33% difference. Figure 1C and 1D illustrate, similarly, how the effect of artistic acclaim (opening at the Cannes, Berlin, or Venice film festivals) on export likelihood is affected by audience heterogeneity. Figure 1C shows that the artistic acclaim multiplier increases more than 1.5 times when opening at Cannes, Berlin, or Venice when cultural distance is high, but less than 1.2 times when cultural distance is low—a 25% difference. Finally, Figure 1D shows that the artistic acclaim multiplier increases more than 1.4 times when opening at Cannes, Berlin, or Venice when a film uses an independent distributor, but increases only 1.1 times when it uses a major distributor—a 27% difference.

Foreign Commercial Performance

Table 4 shows the results of OLS regression on foreign commercial performance for exported films. Model 8 is a baseline model with control variables only, and they behave generally as expected. Model 9 includes the main effect variables, and it shows that domestic commercial performance (0.43; $p < 0.001$) and major distribution (0.39; $p < 0.001$) increases foreign commercial performance, whereas cultural distance (−0.07; $p < 0.001$) decreases foreign commercial performance. Artistic acclaim through opening at Cannes, Berlin, or Venice (0.02; $p > 0.05$), however, does not affect foreign commercial performance.

TABLE 4
OLS Regression Models On Foreign Box Office Performance (n = 3,900)

	Model 8	Model 9	Model 10	Model 11	Model 12	Model 13	Model 14
Cannes, Berlin, Venice by Major Distributor						−0.40*	−0.40*
						(0.17)	(0.17)
Domestic Commercial Success by Major Distributor					0.08*		0.09**
					(0.03)		(0.03)
Cannes, Berlin, Venice by Cultural Distance				0.09*			0.08*
				(0.03)			(0.03)
Domestic Commercial Success by Cultural Distance			−0.04***				−0.04***
			(0.01)				(0.01)
Domestic Commercial Success		0.43***	0.50***	0.43***	0.41***	0.42***	0.48***
		(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Cannes, Berlin, Venice		0.02	0.02	−0.13	0.03	0.07	−0.05
		(0.07)	(0.07)	(0.09)	(0.07)	(0.07)	(0.09)
Cultural Distance		−0.07***	0.41***	−0.09***	−0.07***	−0.07***	0.41***
		(0.02)	(0.09)	(0.02)	(0.02)	(0.02)	(0.10)
Major Distributor		0.39***	0.39***	0.38***	−0.61	0.45***	−0.69
		(0.07)	(0.07)	(0.07)	(0.40)	(0.08)	(0.40)
Top National Award or Oscar Nomination	0.60***	0.29***	0.28***	0.28***	0.29***	0.29***	0.29***
	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)
Director Awards	0.16***	0.15***	0.15***	0.15***	0.15***	0.15***	0.15***
	(0.03)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Actor Awards	0.21***	0.11***	0.11***	0.11***	0.11***	0.11***	0.11***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Distributor Market Share	1.51***	−0.08	0.00	−0.06	−0.11	−0.10	−0.03
	(0.26)	(0.29)	(0.29)	(0.29)	(0.29)	(0.29)	(0.29)
Cultural Specificity	−0.03	−0.17***	−0.17***	−0.18***	−0.18***	−0.17***	−0.18***
	(0.04)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Genre: Action	0.69***	0.35***	0.36***	0.35***	0.34***	0.34***	0.33***
	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)
Genre: Comedy	0.11*	0.04	0.03	0.05	0.04	0.04	0.04
	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
Genre: Documentary	−0.67***	−0.13	−0.14	−0.13	−0.13	−0.12	−0.13
	(0.12)	(0.11)	(0.11)	(0.11)	(0.11)	(0.11)	(0.11)
Genre: Drama	−0.56***	−0.19**	−0.20**	−0.18**	−0.18**	−0.19**	−0.18**
	(0.07)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)
Number Film from Producing Country	0.27***	0.26***	0.26***	0.26***	0.26***	0.26***	0.27***
	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
Language Match	0.13	0.12	0.11	0.12	0.12	0.13	0.11
	(0.08)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)
Cinema Frequency of Market Country	0.16***	0.16***	0.16***	0.16***	0.16***	0.16***	0.16***
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Market Country Population	0.75***	0.73***	0.73***	0.73***	0.73***	0.73***	0.73***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Co-producing Country	0.32**	0.37***	0.39***	0.37***	0.37***	0.37***	0.39***
	(0.10)	(0.10)	(0.10)	(0.10)	(0.10)	(0.10)	(0.10)
Missing Director Birth Country	−0.09	0.00	0.00	0.00	0.00	0.00	0.00
	(0.07)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)
Missing Actor Birth Country	−0.03	0.10	0.10	0.10	0.10	0.10	0.10
	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)
Exported in Opening Year	0.43***	0.51***	0.50***	0.51***	0.51***	0.51***	0.50***
	(0.07)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)
First Export	−0.25**	0.14	0.16*	0.14	0.13	0.14	0.14
	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)
Exported Before Top National Award Nomination	1.12***	0.63***	0.63***	0.62***	0.61***	0.64***	0.63***
	(0.12)	(0.11)	(0.11)	(0.11)	(0.11)	(0.11)	(0.11)
Exported Before Oscar Nomination	0.31***	0.08	0.09	0.08	0.06	0.07	0.06
	(0.09)	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)
Inverse Mills' Ratio	3.26	6.11	5.57	6.17	5.85	6.18	5.39
	(3.44)	(3.16)	(3.15)	(3.16)	(3.16)	(3.16)	(3.15)
Constant	−5.79***	−10.51***	−11.33***	−10.47***	−10.27***	−10.51***	−11.05***
	(0.43)	(0.46)	(0.48)	(0.46)	(0.47)	(0.46)	(0.49)
Producing Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.4293	0.5192	0.5224	0.5199	0.5199	0.5198	0.5245
F-test of joint significance		181.55***	26.79***	6.49*	6.38*	5.88*	11.72***

Note: Standard errors in parentheses.
*** $p < 0.001$.
** $p < 0.01$.
* $p < 0.05$ (two-tailed tests).

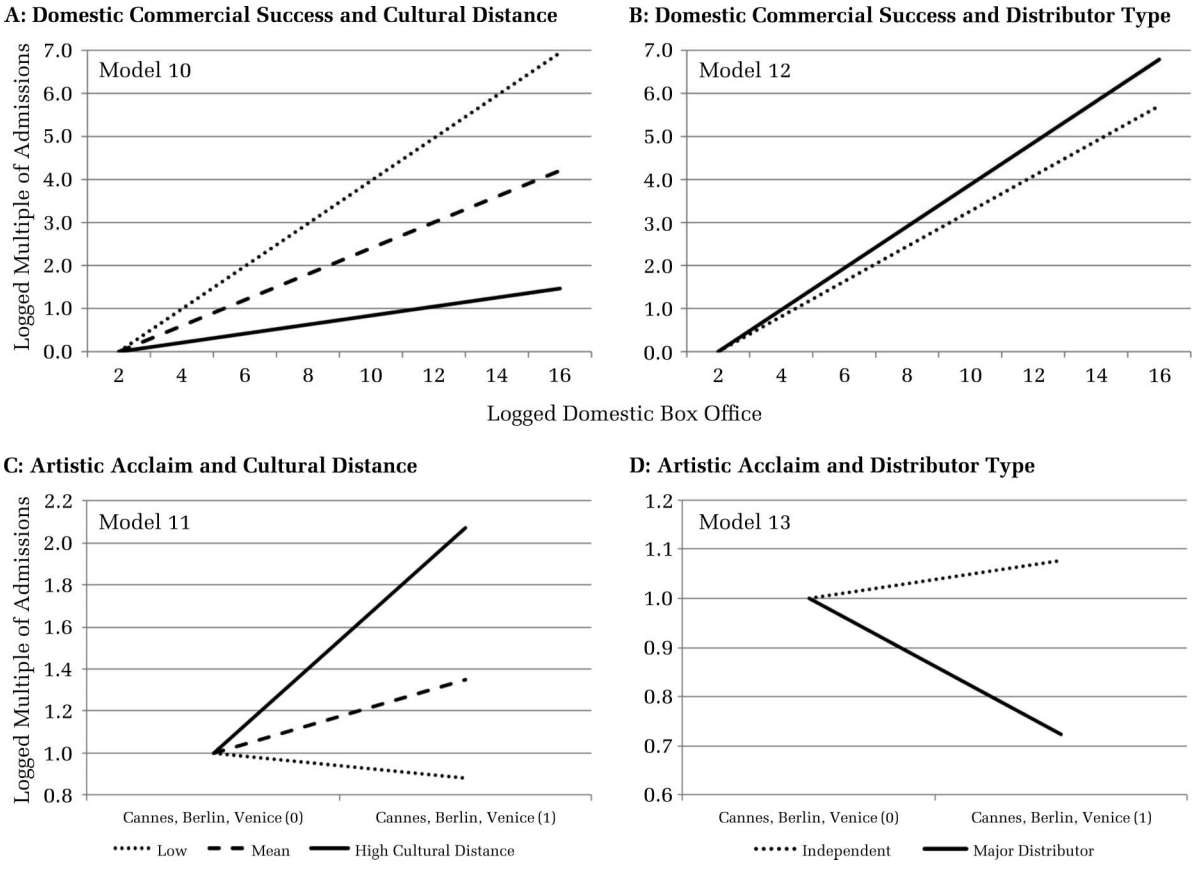
Our main focus is, again, the interaction variables introduced in Models 10–13. Models 10 and 11 support Hypotheses 1b and 2b by showing that cultural distance decreases the effect of domestic commercial performance (−0.04; $p < 0.001$), but increases the effect of artistic acclaim

on foreign commercial performance (0.09; $p < 0.05$). Models 12 and 13 support Hypotheses 4a and 4b. Domestic commercial performance increases foreign commercial performance more for major distributors than for independent distributors (0.08; $p < 0.05$), but artistic acclaim increases foreign commercial performance less for major distributions than for independent distributors (-0.40; $p < 0.05$). The results are confirmed in Model 14, which includes all the interaction variables.

Figure 2 uses the predicted number of foreign admissions to illustrate the substantive significance of our foreign commercial performance results (with the domestic, French, box office sample plotted from minimum observed domestic box office to two standard deviations above mean domestic box office, all non-graphed continuous covariates set at their mean, and binary variables set at zero). To emphasize how the interactions between market signals and audience heterogeneity change the overall market signal effects at different levels of audience heterogeneity, we used the same approach as with Figure 1 and rescaled the overall market signal effects (main plus interaction effect) to have the same starting point (and took the natural logarithm of the rescaled market signal effects to make it possible to compare the effects for all values of domestic box office).

Figures 2A and 2B show how the effectiveness of domestic commercial performance as a market signal on foreign commercial performance is affected by audience heterogeneity. Figure 2A shows that increasing domestic box office from the minimum observed domestic box office to two standard deviations above the mean increases the effect of domestic commercial performance more than 1,000 times (exp(7)) when cultural distance is low, but only 4.3 times (exp(1.47)) when cultural distance is high. Using predicted admissions instead, domestic commercial performance increases the number of predicted admissions from less than 20 to more than

FIGURE 2
Market Signal and Audience Heterogeneity Interaction Effects on Foreign Box Office



18,000 when cultural distance is low, and from almost 500 to less than 2,100 when cultural distance is high (by comparison, the observed median foreign admissions for French films in Table 1 is 6,506). Figure 2B shows that increasing domestic box office from the minimum observed domestic box office to two standard deviations above the mean increases the effect of domestic commercial performance almost 900 times (exp(6.8)) for major distributors, but only 300 times (exp(5.7)) for independent distributors. Using predicted admissions instead, domestic commercial performance increases predicted admissions from less than 40 to more than 11,000 for independent distributors, and from less than 25 to more than 21,000 for major distributors.

Figures 2C and 2D show, similarly, how the effectiveness of artistic acclaim as a market signal on foreign commercial performance is affected by audience heterogeneity. Figure 2C shows that opening at Cannes, Berlin, or Venice increases predicted admissions more than 2 times when cultural distance is high, but decreases predicted admission more than 0.9 times when cultural distance is low. Expressed in predicted admissions, opening at Cannes, Berlin, or Venice increases predicted admissions from less than 1,400 to more than 2,800 when cultural distance is high, but decreases predicted admissions from more than 3,200 to around 2,800 when cultural distance is low. Finally, Figure 2D shows that opening at Cannes, Berlin, or Venice increases predicted admissions a modest 1.1 times for independent distributors, but decreases predicted admission almost 0.7 times for major distributors. Expressed in predicted admissions, opening at Cannes, Berlin, or Venice increases predicted admissions from more than 2,700 to more than 2,900 for independent distributors, but decreases predicted admissions from almost 4,300 to less than 3,100 for major distributors. The relatively small positive effect of artistic acclaim for independent distributors suggests that audiences already expect independently distributed films to be artistic films, whereas the relatively large negative effect for major distributors confirms the fear that artistic acclaim scares their core audience away.

In sum, the results provide overall support for the argument that audience heterogeneity affects, statistically and substantively, the effectiveness of market signals on the likelihood of export and foreign commercial performance.[11] Comparing the relative effectiveness of commercial performance and artistic acclaim as market signals shows also that commercial performance overall is a more effective market signal, as judged by the stronger effects on multipliers of base rates (Figure 1) and predicted admissions (Figure 2). We are not surprised: this result probably reflects the broader audience for commercially successful foreign films, even among art film audiences, compared to the audience for artistically acclaimed foreign films.

DISCUSSION AND CONCLUSION

This study focused on the role of audience heterogeneity in determining the effectiveness of market signals. Market signal effectiveness depends, in general, on the perceived correlation between the observable market signal and unobservable product quality, which, in turn, depends on how audiences interpret the signal and what they understand by quality. Focusing specifically on the effectiveness of commercial performance and artistic acclaim as market signals in international film markets, we argued that the perceived correlation between market signals and product quality depends on audience heterogeneity, defined both in terms of differences between domestic and foreign film audiences (end audiences) and film distributors (intermediary audiences). We tested our arguments in the European film industry (2004–2009) and found strong support for our hypothesized moderating effects of cultural distance and distributor type on market signal effectiveness. Based on these results, we conclude that commercial performance and artistic acclaim are important market signals that help overcome liabilities of foreignness, but also that these signals are interpreted in different ways depending on the audiences involved in film exporting, thus providing evidence that audience heterogeneity shapes market signal effectiveness.

We contribute to research on market signals by shifting attention from producers and their use of

[11] Documenting the substantive significance of our interactions is particularly important given the small statistical effect sizes (Prentice & Miller, 1992; Cortina & Landis, 2009). Small effect sizes are not unusual in moderated multiple regressions with unequal sample sizes across moderator-based subgroups (relatively few films open at Cannes, Berlin, and Venice) and predictor variable range restriction (in cultural distance) (Aguinis, 1995).

market signals to how audiences use market signals and how that affects their effectiveness, a neglected area of research (Connelly et al., 2011; Riley, 2001). By focusing on audience heterogeneity, we move beyond the dominant focus on homogeneous audiences in classical signaling theory (Spence, 1974) and extend market signal theory to situations in which producers engage heterogeneous audiences (Jensen & Kim, 2014). Shifting focus from producers to audiences suggests, more broadly, that it is important to focus not only on when market signals are important but also on which market signals are most effective with which audiences.

Regarding when market signals are important, prior research shows that market signals are most important when it is difficult to evaluate the quality of a product before the product is exchanged (Jensen, 2003; Stuart, Hoang, & Hybels, 1999). Although cultural distance and distributor type could be interpreted simply as reflecting different levels of uncertainty about quality, this interpretation fails to account for why commercial performance and artistic acclaim work in opposite directions depending on cultural distance, thus suggesting that our results cannot be explained by uncertainty reduction only. We emphasize, instead, the contingent nature of market signals, and theorize how seemingly similar market signals work differently in different contexts with different audiences.

Although our main theoretical contributions are to market signal research, our study also makes important contributions to research on international film markets. First, the importance of commercial performance and artistic acclaim as market signals is well established, but our study is the first to show that film festivals increase the likelihood of export but decrease foreign commercial performance if the artistically acclaimed film is distributed by a major distributor focused on commercial films. Second, our study is the first study to emphasize the multistage nature of film exports and theorize the role of domestic and foreign distributors as intermediary audiences in this process, thus complementing prior research emphasizing the importance of domestic distribution (Sorenson & Waguespack, 2006; Zuckerman & Kim, 2003). Third, while most research on film exports focus on Hollywood films exported to foreign markets (Elberse & Eliashberg, 2003; Lee, 2009), our study examines European films, which are relatively less researched but face higher levels of liabilities of foreignness, due to the general lack of exposure to European films in most international markets. Fourth, we use a comprehensive sample of films—successful and unsuccessful—produced in 19 European countries, and we differentiate between the likelihood of export and the subsequent commercial performance in foreign markets. This approach addresses some limitations, including sample selection bias, in prior empirical work that focuses only on the most popular Hollywood films (Craig et al., 2005; Lee, 2008).

Our focus on how audience heterogeneity influences market signal effectiveness has important managerial implications as well. By showing how audience heterogeneity influences market signal effectiveness, our study warns not only decision makers in the film industry about using artistic acclaim and commercial performance as market signals indiscriminately, but also decision makers in other cultural and non-cultural industries using commercial performance and artistic acclaim as market signals. Commercial performance is obviously an important market signal in most industries and various industry experts, including security analysts and quality experts, provide independent product ratings and consumer reports that function analogously to artistic acclaim as market signals. When evaluating a foreign auto manufacturer, for example, consumers may use its market share in its home country as an indicator of quality, or rely on quality certifications provided by third-party auto experts (Rao, 1994; Rhee & Haunschild, 2006). By emphasizing that the effectiveness of these signals may vary depending on the specific countries and products involved, we suggest that it is important for managers to carefully match market signals to individual markets and audiences.

Our study is not without limitations. We use yearly data to examine the export process, which could mask more fine-grained temporal differences in home market release, film festival awards, and foreign market release. Unfortunately, weekly or monthly data are not available for the European countries in our sample. Unlike research on the extent to which commercial performance and artistic acclaim are intertwined and influence one another (Eliashberg & Shugan, 1997), however, weekly or monthly data is less important in our study. First, we are more concerned with how the effectiveness of commercial performance and artistic acclaim as market signals vary depending on cultural distance and distributor type, and not the relationship between them. Second, we agree that domestic artistic acclaim could be a predictor of commercial performance in that market because

film experts within a particular market may be attuned to the tastes of their audiences and therefore require fine-grained data to tease out the separate effects. We find it unlikely, however, that the film festivals we study can be meaningfully said to be aware of the tastes of audiences in 33 different countries and allocate awards based on such awareness. Despite these limitations, we have established that audience heterogeneity matters for market signal effectiveness in contexts in which producers can simultaneously leverage multiple signals and audiences therefore have to interpret different signals.

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