

# Old World Trade Diasporas

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## **Abstract**

What explains worldwide, historical patterns of trade diaspora dispersal? In the premodern period, trade diasporas were among the most important communities facilitating cross-cultural exchange over long distances. We collect data on the locations of trade diaspora communities across Eurasia between 600 and 1600 CE, a time period that predates the rise of European economic, military, and colonial hegemony. Our results suggest two general patterns explaining the proliferation of premodern trade diasporas. First, diaspora merchants were drawn to wealthy societies to obtain access to high-value luxury goods with complex supply chains. Second, traders sought to establish diaspora communities in locations that exhibited bioclimatic complementarities to the merchant's home region, thereby assisting the procurement of relatively uncommon natural resources. We explore the individual-level mechanisms underlying the patterns we observe through the development of an agent-based model that specifies the agents' (i.e. traders') rule-based decisions operating in a wealth and resource-differentiated geographic space that represents premodern Eurasia.

While trade diasporas have existed since antiquity, during the medieval and early modern periods improved seafaring technologies provided opportunities for the rapid and widespread development of “communities of merchants living among aliens” (Curtin 1984: 3). Trade diaspora communities emerged as critical components of the premodern world economy. Given the fundamental challenges of long-distance trade — including difficulties associated with the movement of information, credit, and goods — trade diasporas helped to knit together diverse communities through commerce and connection, where shared ethnic, linguistic, or religious ties served as a way to bind distant populations. Importantly, merchant diasporas provided connections to trustworthy local agents, facilitating emergent forms of capitalism.

This paper seeks to explain worldwide, historical patterns of trade diaspora dispersal, some of which are puzzling. Muslim communities of Arabs and Persians created well-known diaspora settlements in South Asia, and even China. Europeans settled in major cities of the Middle East. But the absence of Middle Eastern trade diaspora communities in Europe, and the relative paucity of Chinese trading settlements outside of Southeast Asia, stand out as cases of “dogs that didn’t bark.” If there existed returns to the creation of merchant diaspora communities, how can we understand historical patterns in the presence — and absence — of merchant diasporas?

To understand these patterns, we employ two approaches. First, we collect data on the locations of trade diaspora communities across Eurasian cities between 600 and 1600 CE, a time period that spans late antiquity to the European “age of exploration.” Our analysis focuses on this period as we are interested in understanding the global economy before the rise of European economic, military, and colonial hegemony. The patterns we report suggest that diaspora communities tended to settle in the wealthy societies of Asia, especially South Asia and China. While most diaspora merchants were drawn to wealthy regions to obtain access to high-value luxury goods, traders also sought to establish diaspora communities in locations that exhibited bioclimatic complementarities to the merchant’s home region, a strategy that assisted in the procurement of rare or exotic natural resources. These results suggest the importance of factor endowments — proxied as bioclimatic difference — and technological progress — proxied with city size — as major drivers of dias-

pora formation in the global economy. The patterns that we observe are robust to the inclusion of variables to take into account host city political and cultural characteristics. To complement our empirical analysis, we also develop an agent-based model that posits a set of straightforward assumptions to guide patterns of diaspora dispersal. We compare the model’s predictions to what we know about actual historical outcomes. We find that a rules-based approach performs well with model assumptions chosen to resemble our reading of historical differences between world regions.

Our findings speak directly to a scholarly literature on the conditions that facilitate cross-cultural economic exchange — a topic of rich exploration in the field of global historical sociology (e.g., Wallerstein 1974; Abu-Lughod 1989; Bentley 1993; Frank 1998; Go and Lawson 2017). Scholars have suggested that contract enforcement is among the most important problems in international economic integration (Rodrik 2000) and a major empirical predictor of cross-national trade (Nunn 2007). Greif (1989, 2006) — using the case of the medieval “Maghrebi” merchants — demonstrates how ethnic networks facilitate contract enforcement by providing a punishment mechanism for traders who default on their agreements. Rauch and Trindade (2002) show how ethnic Chinese networks encourage forms of exchange in the contemporary period by matching buyers and sellers; sanctioning opportunistic behavior; and providing market information.<sup>1</sup> Diaspora networks and connections have also been shown to influence the international flow of investments (Leblang 2010). Our contribution offers a different focus in that we are seeking to understand where and why long-distance trade with diasporic agents occurred in the first place. Although scholars have identified a number of linkages between trade and migration (e.g., Peters 2015), we shed empirical and theoretical light on a particular instantiation — the historical trade diaspora.

Finally, our paper draws attention to a scholarly tradition that emphasizes the comparative economic development of world regions, including the importance of Eastern societies in the pre-modern world economy. Rather than assuming Europe’s preeminent role, we have sought to operationalize the “push” and “pull” factors leading people to move great distances to engage in politi-

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<sup>1</sup>Jha (2013) suggests how historical legacies of inter-ethnic complementarity in trade are related to ethnic violence.

cal, economic, and cultural encounters with others. The substantive results that we derive reinforce scholarship that emphasizes the importance of Asian societies in the premodern world economy (e.g., Abu-Lughod 1989; Frank 1998; Kang 2010; Sharman 2019; Blaydes and Paik 2020). In this sense, our work provides greater balance to the historical, empirical study of the global economy. Our arguments also emphasize the ways that merchants sought to acquire tradeable goods outside of their own climatic zone, encouraging them to travel to locations with different precipitation and temperature profiles. This often involved moving in a North-South direction, consistent with scholars who have suggested the relevance of “continental axes” in determining historical economic and cultural outcomes (i.e., Diamond 1997; Laitin, Moortgat, and Robinson 2012).

## **Theoretical Considerations**

Two ideas are core to the concept of a trade diaspora. The first is that maintaining links between members of a diasporic community and the “sending” community are relatively inexpensive as a result of religious, linguistic, or ethnic ties. The second is that the existence of a merchant diaspora reduces the cost of conducting long-distance trade due to the specialized knowledge and establishment of local relations that such communities can create. This section provides a definition of a trading diaspora and reviews existing related scholarship.

### **Defining Diaspora**

History has produced a diverse set of premodern travelers, many of whom traversed long distances. The medieval pilgrim visited shrines and holy places; the scholar traveled for knowledge or to pursue patronage for his work; the refugee relocated in search of safe haven; and the merchant moved to pursue opportunities to broker economic exchange. Curtin (1984) defines trading diasporas as permanent settlements of merchants on foreign soil who work to facilitate cross-cultural trade. Our

focus on trade diaspora places conceptual emphasis squarely on the occupational purpose of the group, while distinguishing the trade diaspora from other forms of economic migration.<sup>2</sup>

Core to the idea of the trade diaspora is that the group derives utility from being socially interdependent on its original community while simultaneously spatially dispersed from that community (Cohen 1971). This implies that the diaspora should be related to at least two locations — an actual (or imagined) homeland that forms the basis for the diaspora identity in addition to the target destination (Butler 2001).<sup>3</sup> It is also essential to distinguish between trade diaspora communities and other related diasporas, including victim diasporas, labor diasporas, and imperial diasporas.<sup>4</sup> While many of these diaspora communities create their own forms of cultural economy, the trade diaspora remains distinct in that it does not make use of military might (like the imperial diaspora), nor does it derive its origins from a catastrophic event (like the victim diaspora).

## **Brokerage and Minority Middlemen**

The existing literature on trade diasporas connects to influential streams of research within the social sciences. The first relates to the role of economic brokerage via middlemen. Bonacich (1973) develops a theory of “middleman minorities,” arguing that such groups tended to occupy an intermediate status position in society, typically concentrating on commerce. Seland (2012: 74) argues that these resident foreigners served as “intermediaries between host communities and visiting traders, overcoming cultural and linguistic barriers.” Curtin (1984: 174) focuses on the mediating role of trade diasporas, concluding that “cross-cultural brokerage was often best performed by a foreign merchant of long residence.” In this context, there exist both “boundaries (whether reli-

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<sup>2</sup>Peters (2015) reviews the scholarly literature on the relationship between trade and migration for the contemporary period. Many of the mechanisms that she identifies also relate to the historical experience including the relevance of migrant communities in providing information about arbitrage opportunities; facilitating exchange across cultural differences; and sharing information about business practices.

<sup>3</sup>Brubaker (2005) suggests that diaspora communities must be dispersed, oriented towards a homeland, and characterized by a distinctive identity relative to the host society.

<sup>4</sup>Trade diaspora communities are also distinct from itinerant merchants.

gious, ethnic, or linguistic) across which trade occurred but also...a shared understanding of the terms of the exchanges (notions of value and contractual obligations) that allowed for the crossing of those very boundaries” (Trivellato 2014: 13).

Middlemen minority communities are often characterized by a “close degree of kinship” and social ties that have the effect of encouraging forms of within-group trust across great distances and over long time periods (Cohen 2008).<sup>5</sup> These groups often share particular social characteristics, including a preference for within-group marriage, residential self-segregation, and maintenance of distinctive cultural traits (Bonacich 1973). By erecting physical and social barriers between the diaspora community and host society, forms of segregation helped to preserve the cultural integrity of the group so that they would not lose their ability to serve as a cross-cultural broker (Curtin 1984: 38).

Existing work on diaspora also considers the conditions under which assimilation occurs. Diasporic communities are sometimes met with repression and violence or the expropriation of financial assets. Given the challenges associated with being a member of a trade diaspora, why didn’t all foreign traders assimilate? Curtin (1984) writes that in some cases trade brokers work themselves out of business by becoming culturally integrated. Laitin (1995) looks at how diaspora communities resist assimilation, despite the fact that marginal groups are often consigned to a low status position within society; he finds that marginal groups frequently enjoy higher returns in the minority than they would be receive in an entry level job (should they assimilate). In this way, diaspora communities can maintain their identitarian integrity.

## **Argument**

Our argument rests on three foundational assumptions. The first is that long-distance, premodern trade placed a premium on luxury goods, and especially goods that were not locally available.

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<sup>5</sup>Chaney (2014) argues that because informational frictions have such a negative impact on trade, firms tend to export into markets where they have a contact given the importance of networks in facilitating trading partners.

Items transported over long distances were typically high-value, non-bulky goods including spices, gems, gold, and ivory; silk, porcelain, and luxury wares from China; and opium, rosewater, and pearls from the Middle East (Lewis 1973: 254-255).<sup>6</sup> While some of these goods were clearly intended for purchase by the wealthy, in many cases, the goods traded represented “everyday luxuries,” like black pepper and other spices, which were considered an indispensable component of daily life in the medieval and early modern periods (Goldberg 2012: 21). In addition, crafted products that reflected a high skill level were “universally desired by most societies” and enjoyed an “inner appeal” (Chaudhuri 1990: 304-305). Ornamental goods “from different cultures” fed the desires of the elites to distinguish themselves both within their own social class as well as from those in lower classes (Canepa 2010: 11-12). And even though luxury goods trade involved a relatively small number of individuals, the actors involved tended to be societally important since exotic commodities were valuable and served as symbols of power and authority (Bentley 1996).<sup>7</sup>

The second assumption is that wealthy locations were better at producing high-value crafted goods in the period that we examine. Why would this be the case? Less developed world regions did not witness investments in the types of human capital or complex supply chains necessary to manufacture many types of crafted luxury items.<sup>8</sup> Porcelain, for example, was a highly-valued commodity traded across Eurasia for almost a millennium. Obsession with porcelain could be so intense that “porcelain sickness” led some nobles to bankrupt themselves to acquire beautiful, white “china” (de Waal 2015). Porcelain was valued, at least in part, because it was so hard to produce. It could take decades for porcelain mounds to mature; producing clay vases and other objects also involved tremendous craftsmanship (de Waal 2015). For 500 years, no one in the “West” even knew how porcelain was made (though a number of unusual theories circulated). Scholars have further suggested that silk production represented one of the first supply chains in

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<sup>6</sup>On the other hand, bulk trade tended to take place within rather than across world regions (Lewis 1973: 256).

<sup>7</sup>Elite tastes for luxury items were often popularized as non-elite sought to acquire down-market versions of crafted imports or small quantities of exotic goods (Deng 1997).

<sup>8</sup>Supply chains refer to the resources, human capital, and activities involved with transforming raw materials and components into a finished product that is delivered to an end customer.



human history (Haksoz and Usar 2011). Highly labor intensive, silk production required a variety of complex skills (Haksoz and Usar 2011). This included sericulture — the rearing of silkworms — as well as reeling and throwing — competencies core to transforming of boiled cocoons into silk thread and skeins of silk. Beyond that, luxury fabrics required “a labor force composed of fine spinners, weavers, embroiderers, and finishers” (Chaudhuri 1990: 310).

For economic regions that already enjoyed the highest quality goods, what types of commodities might offer profits for merchants? Our third assumption is related to the returns from unique commodities and the relevance of “continental axes.” Trade in natural resources — including exotic woods, spices, and animal products — that derived from biomes that were distinct from the home region enjoyed economic returns. This is related to the ways in which the “taste for the exotic” permeated social classes in Asia (Schafer 1985: 28) and elsewhere (Freedman 2005). Part of the appeal of spices, involved their relative scarcity and their exotic provenance.<sup>9</sup> For example, nutmeg and clove were found only in Southeast Asia and became valued commodities for use in foods, as preservatives, and for medical purposes. Acquiring these goods required merchants to move beyond their own climatic zone, traveling to locations with different precipitation and temperature profiles. This often involved moving in a “North-South” direction. Diamond (1997: 182-183) argues that most of the crops across the “East-West” axis were cultivated varieties that share the same favorable mutations; in other words, they were not independently domesticated but, rather, spread from a common domestication experience. The North-South axis, however, is characterized by climatic differences that made the crops and products unique as merchants traveled across latitudes.

There are two empirical implications that arise from our underlying presumptions that form the core empirical predictions of this paper. The first is that, conditional on distance, trade diasporas will gravitate toward the world’s most wealthy areas, since the greatest gains might be enjoyed

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<sup>9</sup>Indeed, the Old English saying “he hath no pepper” was used to describe people who were “nobodies” in contrast to those who were able to consume pepper and enjoyed associated social status (Smith 2007: 237). In 16th century Germany, 4-8 percent of household expenditure was spent on spices (Smith 2007: 248).

from brokerage in high-quality, luxury goods. If historical urbanization rates are associated with high levels of economic development (e.g., De Long and Schleifer 1993; Acemoglu, Johnson, and Robinson 2002; Stasavage 2014), Asia stands out as the world’s wealthiest region during this time period and, as a result, we expect that trade diasporas should gravitate toward Asia. The second implication is that trade diasporas will skew to places with a distinct, geographical resource base relative to the home region. In the next section, we consider qualitative empirical evidence associated with these predictions.

## Qualitative Evidence

We focus our analysis on four diaspora communities (and associated world regions) — European, Middle Eastern, South Asian, and Chinese.<sup>10</sup> The descriptive material in this section assists our understanding of the causal mechanisms we are exploring.

### Europeans

European merchants were long active in Middle Eastern cities despite the fact that Middle Easterners did not establish diaspora communities in Europe. Abu Lughod (1989: 106) writes that the “east” and “west” were characterized by asymmetrical interest in that “Europeans eagerly sought out Muslim lands and their wealth.”<sup>11</sup> Europeans also appear frequently in the Geniza records. Goiten (1967: 211) points out, “as a rule...it was the Europeans who came to these [Middle East-

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<sup>10</sup>Findlay and O’Rourke (2007) acknowledge the challenges inherent with demarcating or classifying world regions but nonetheless argues that it is essential for studies related to long-distance trade. Findlay and O’Rourke (2007) designate the following regions for much of their analysis: Western Europe, Eastern Europe, North Africa and Southwest Asia, Central Asia, South Asia, Southeast Asia, and East Asia.

<sup>11</sup>For example, Thrupp (1977: 74) writes that French nobles of 12th and 13th centuries commented on the “cosmopolitanism of the world of Islam, its power and wealth, the splendor of its greatest cities, the cleverness of its people.”

ern] markets, not the Arabic-speaking traders who transported the goods to Europe.”<sup>12</sup> Travelers’ institutions — like the *fondaco* — in Mediterranean cities and ports supported the creation of these diaspora communities (Constable 2003). Providing a range of services, these institutions offered food and shelter as well as provision of space for commerce and storage for merchants working in Muslim regions (Constable 2013).

For example, Tunis was an important trading location for Genoese merchants who lived in city during the 13th century, taking advantage of stable rates of taxation, personal safety, and established *fondaco* for living space and cargo storage (Pattison 2020). Tunis is reported to have attracted 17 percent of all Genoese investment during this period; individual Genoese traders were local property owners and among the wealthiest Europeans living in Tunis during the 13th century (Pattison 2020). Alexandria also played a critical role in Mediterranean trade, cultivating a reputation for being a diverse and cosmopolitan international shipping locale (Abu-Lughod 1989: 239-240).<sup>13</sup>

The wealth associated with the Indian Ocean region had also attracted Europeans since antiquity (Clark 2006: 388). Indeed, it was unthinkable to Europeans that they would be able to produce finished products nearly as refined as those produced in Asia (Chaudhuri 1990: 298). Europeans did not always have the capability to directly access the Indian Ocean region given the high costs of long-distance travel, however. When Portuguese explorer Vasco da Gama disembarked in Calicut in 1498, he became the first European to have identified an all-sea route to India from Europe. The meager merchandise da Gama brought for trading failed to impress Indian intermediaries, leaving the Portuguese without a coveted commercial agreement. Successive Portuguese expeditions were

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<sup>12</sup>Goiten (1967: 45) observes that, “the Europeans were expected to be satisfied with second-rate merchandise” suggesting the relative lack of sophistication on the part of traders from Europe.

<sup>13</sup>One might think that Jewish merchants could serve as a link between the Middle East and Europe. Goiten (1967) points out, however, that Jewish, Arabic-speaking merchants were largely confined to the Islamic world and they did not enjoy business relations of significance in Europe. According to Goiten (1967: 211), “the European traders with whom the Geniza merchants dealt were exclusively Christian.”

notorious for their use of maritime violence in order to coerce their way into the Indian Ocean economic system.<sup>14</sup>

## **Middle Eastern**

Middle Eastern merchants were among the most intrepid of long-distance travelers, often establishing diaspora trading communities. Direct sailing between the Middle East and China began in pre-Islamic times (Hourani 1951: 46-47), with Persians dominating that trade during the period of the Sasanian Empire (Chaffee 2018). Hourani (1951: 61) describes the sea route between the Persian Gulf and southern China as “the longest in regular use by mankind before the European expansion in the sixteenth century.” Nizami (1994: 53) goes as far as to argue that the Arabs — armed with their superior understanding of navigation and oceanography — “discovered the Far East and acted as the commercial link between East and West.”

Why consider Persians and Arabs together, under a general heading of “Middle Eastern” traders? It was often difficult for host communities to distinguish between Arabs and Persians, especially for locations more distant from the Middle East (Chaffee 2018: 13). In addition, there may have been a co-mingling of these groups, as they often arrived by sea together and, frequently, shared the Islamic faith (Chaffee 2018: 19).<sup>15</sup> Muslim settlements typically saw the establishment of a mosque, market, and hospice (Chaffee 2018: 141). Members of these diaspora communities often lived separately from locals, rarely intermarrying with members of the host population (Harris 1993: 16). According to Chaffee (2018: 42), “these Arab-Persian merchants in China were not simply isolated individuals pursuing wealth on their own, but part of a diaspora creating

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<sup>14</sup>The Portuguese deployed violence because European traders were poorly positioned to bring goods to market that were desired by South Asian merchants. The arrival of European seafarers in the Indian Ocean disrupted what some scholars have characterized as a period of relatively peaceful and unrestricted trade in Asia. While this characterization likely exaggerates the favorability of commercial conditions in premodern Asia, Risso (1995: 50) argues that this conventional wisdom holds largely true.

<sup>15</sup>Abu Lughod (1989) also typically refers to Arabs and Persians together when discussing trading communities. Hourani (1951: 65) observes that there are a number of Persian-origin words in the nautical vocabulary of Arabs.

the most effective and integrated long-distance trade network that maritime Asia had ever seen.” These Muslim foreigners were “there to buy Chinese silk, ceramics, and porcelains...and to supply China’s growing demand for exotica” (Risso 1995: 25).

Foreign merchants could enjoy significant returns for their economic activities but needed to worry about excessive customs duties and demands to surrender cargo to the Chinese officials (Schafer 1985: 24). Diaspora communities also suffered from political insecurity. For example, during the rebel-led Guangzhou massacre in 878 CE, more than 120,000 foreign merchants were killed (Hourani 1951: 76-77), the majority of whom were Arabs and Persians. Some Middle Eastern merchants in China had grown to be wealthy. One envoy from Muscat living in Quanzhou generated a fortune of several million “strings of cash” as well as gold, pearls, and silk (Chaffee 2018: 101). During the Song period, an increase in agricultural productivity and economic prosperity was associated with extensive specialization, including as related to the export of porcelain, silk, and other manufactured goods (Findlay and O’Rourke 2007: 63-64). In this context, “port cities attracted large communities of foreign merchants, mainly Arabs and Persians, who enjoyed substantial legal protection under a form of extraterritoriality for their activities” (Findlay and O’Rourke 2007: 63). The Chinese government allowed merchants to live and govern themselves in cities like Guangzhou and Quanzhou, where Muslims were leading maritime agents; in this setting, a member of the diasporic community served as the headman who administered “the foreign quarter” (Chaffee 2018: 93). During the Ming period, however, anti-trade policies meant that merchant communities that had been active for centuries witnessed decline (Chaffee 2018: 162).

Arab and Persian traders also established diaspora communities in South Asia. According to Nizami (1994: 57), the first Muslim colonies appeared on trade routes of western India and Ceylon. Schafer (1985: 12) argues that “from the seventh to the ninth century, the Indian Ocean was a safe and rich ocean” with Persian as the *lingua franca*. Monsoon patterns made the establishment of port enclaves for Arabs and Persians on the west coast of India valuable for long-distance traders (Abu-Lughod 1989: 242). These traders brought Indian goods to European markets via

Egypt and Syria (Nizami 1994: 53). For example, Indian textile production was sophisticated and valued across Eurasia (Abu-Lughod 1989: 280-282). There was also interest in acquiring botanical products from South Asia, like pepper, cardamom and betel nuts, in addition to highly durable iron products (Lambourn 2018: 53). In places like the Maldives, the Malabar coast, and Gujarat, Arab merchant colonies persisted for generations, “undisturbed and unmolested” (Nizami 1994: 58).

Why didn’t Muslims establish trade diaspora communities in Europe? According to Constable (2003: 328), “there was apparently little to draw Muslim traders to Europe, and several factors — including disinclination and inconvenience — to keep them away.” In addition, “European cities were not well adapted to providing for the needs of non-Christian travelers...with few exceptions, a visiting Muslim in Mediterranean Europe would have had nowhere to stay that was acceptable both to himself and to the local population, nor any of the religious and dietary facilities necessary to make his life comfortable” (Constable 2003: 8). Trading diaspora communities around the world, then, moved as a function of the conditions set out by their host societies. This extended beyond forms of protection, taxation, and predation (Seland 2013) to also include the desirability of tradable goods in the world economy.

## **South Asians**

Historical texts have long made reference to South Asian settlers in Arab regions. For example, Arab chroniclers discussed Indian merchants living in cities on the Arabian peninsula, like Jeddah, and southern Iraqi cities, like Basra; in some cases the Jat people have been described as being responsible for protecting Middle Eastern trade routes (Nizami 1994: 57). According to Arab geographers, primary exports from India to the Arab world included fragrant woods (e.g., sandalwood), spices (e.g., clove, cinnamon), cloth (e.g., brocade), precious stones, and dyes; the main imports to India from the Arab world were rosewater, dates, silks, furs, hides, weapons, and horses (Nizami 1994).

What factors drove the expansion of the South Asian mercantile diaspora? Dale (2013) argues that South Asia’s highly productive and fertile agricultural land combined with a large and diverse

population to feed the growth of major urban centers and the luxury goods trade. Tamil merchants associated with the Chola Empire, for example, were engaged in commercial exchange in South-east Asia and China (Dale 2013). Gujarati traders were particularly broad in their geographic range and their scope of commercial activity, establishing communities in cities like Aden and Hormuz, along the East Africa coast, and in Southeast Asia where thousands took up residence in Malacca (Lewis 1973: 243-244). Overall, however, Indian merchants were much less represented in China than Arab and Persian merchants (Findlay and O'Rourke 2007: 70). Merchants from northern regions of South Asia, like the Punjab, developed economic engagements in Afghanistan, Central Asia, and Iran, serving as moneylenders and cloth dealers (Dale 2013).

## **Chinese**

Chinese have long traveled to South, Southeast, and West Asian regions in search of commercial opportunities, emerging as part of a “complex maritime system” between the 11th and 15th centuries (Lockard 2013: 766). Phillips and Sharman (2015: 61) argue that “the early centuries of the second millennium...saw increased direct Chinese participation in the Indian Ocean region.” At the same time, however, the extent of Chinese diaspora formation was limited. For example, Hourani (1951: 75) finds a dearth of description regarding Chinese ships coming to Western ports in Arab sources. One posited hypothesis for this relates to Confucian disapproval of immigration and Chinese fear of burial far from ancestors, norms that did not exist for Middle Eastern traders (Harris 1993: 16).

Beyond cultural constraints that likely evolved endogenously to economic incentives, why was there a reluctance on the part of Chinese traders to establish diaspora communities? An important stream within economic history has suggested that China was the wealthiest location in the world economy during the premodern period, a fact that may have dampened Chinese interest in developing diaspora communities abroad. According to Abu-Lughod (1989: 316), China was the most “populous and technologically advanced region of the medieval world.” Frank (1998:, 111) argues that China was “unrivaled” in its production of luxury consumer items. Rosenthal and Wong (2011:

72) write that “most Chinese merchants carried out the entirety of their business within the confines of their empire,” a space within which they could rely on the Chinese imperial administration to settle commercial disputes. When Chinese merchants did seek to establish diaspora communities to facilitate trade, they showed a particular interest in rare, foreign goods as depicted in Schafer’s classic study, *The Golden Peaches of Samarkand: A Study of Tang Exotics*. The argument that we put forward suggests that the Chinese relative disinclination to establish trade settlements was a function of the relative wealth of Chinese society rather than an inability to traverse distances.

One striking example of the Chinese ability to travel widely is exhibited in the Ming Dynasty “treasure voyage” expeditions, many of which were led by the eunuch Admiral Zheng He. Musgrave and Nexon (2018) describe the 15th century expeditions as economically unproductive but having high symbolic value. These voyages from China to the Indian Ocean began in 1405 and continued for thirty years, visiting Southeast Asia, South Asia, and eventually went as far as Aden and the East African coast. The Ming Dynasty used its naval prowess to seek influential kingdoms to come under the patronage of the Chinese emperor (Sen 2006: 445). These were not voyages of discovery or economically-motivated expeditions as Ming traders already enjoyed commercial contacts with these areas (Musgrave and Nexon 2018). The attention to overseas regions decreased over time, however. Phillips and Sharman (2015: 61) write that “the Ming court’s abrupt abandonment of interest in the Indian Ocean after 1433... marked an important departure from preceding centuries.”

Despite Ming era prohibitions on trade, a major wave of Chinese diasporic emigration began in the late 15th century with increased commercial exchange in Southeast Asia. Until the 15th century, the “straits” region was peripheral to the world economy because “industrial goods were not being produced and processed there, but in core regions such as India and China” (Abu-Lughod 1989: 303). In this context, Southeast Asian economies increasingly provided “agricultural produce and raw materials for Indian and Chinese industrial wares” (Abu-Lughod 1989: 303), including pepper, cloves, nutmeg, and camphor (Reid 1980) as well as drugs and aromatics (Wheatley 1959: 32; Findlay and O’Rourke 2007: 64). Chinese diaspora communities mainly developed



in Vietnam, Cambodia, the Philippines, the Malay Archipelago, and Thailand — locations from which Chinese merchants might procure items that were not items easily available in the climatic zones of the Chinese polity. Wheatley (1959: 19) argues that although the Chinese polity extended into regions with forested hills and varied vegetation, “there came a time when a developing desire for luxuries in a unified Chinese state could be satisfied only by the import of products alien to the soil of the country.”

While Chinese maritime merchants typically exported manufactured goods, they tended to import exotics (Deng 1997: 271-272). Wheatley (1959) provides extensive information about the types of commodities that were commonly imported as part of China’s maritime trade.<sup>16</sup> Chinese maritime imports were particularly concentrated on products that reflect bioclimatic complementarities, rather than just bulk goods, including spices, rare animal products, and exotic woods.<sup>17</sup> Evidence from a Song dynasty shipwreck in Quanzhou Bay, for example, suggested that the vessel was loaded with imported raw materials needed to make perfumes and medicines, some of them from as far away as Somalia (Deng 1997: 273). What did China export in exchange for these items? China’s main exports included “silks, brocades, chiffons, porcelains, and lacquerware” (Wheatley 1959: 37) — all items that reflected relatively sophisticated production processes. One Yuan dynasty shipwreck off the Korean coast included a cargo of 18,600 pieces of porcelain, as well as processed medicine, silver, tin, and copper coin (Deng 1997: 275). The wreck of a Chinese ship which sank in the 1640s while traveling from China to Southeast Asia included 60,000 pieces of the Ming dynasty era porcelain (Deng 1997: 275).

Our discussion about the relative dearth of Chinese overseas trade diasporas raises at least two potential objections. First, perhaps the Chinese tributary system substituted for trade in a way that obviated the need for long-distance merchant diasporas? Deng (1997: 259) argues, however, that

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<sup>16</sup>See Appendix Table 1 for more details.

<sup>17</sup>Kim, Liao, and Imai (2020) find that bilateral trade reflects complex relationships related to comparative advantage and global production networks and as a result, it is important to examine the product composition of trade rather than just the total volume, which is typical of the IR literature.

across Chinese dynasties, the most common types of tribute received by the Chinese empire tended to be livestock (especially horses) and ordinary consumption goods rather than the types of rare spices, animal products, and exotic woods that the Chinese tended to seek out through cross-cultural trade. Second, perhaps Chinese state prohibitions on overseas trade during the Ming and Qing dynasties explain why so few Chinese overseas diaspora communities? Again, Deng (1997: 261) suggests that private trade easily bypassed government bans and continued to be active during the Ming and Qing periods. Indeed, it is during the periods with the greatest restrictions on trade that we see the largest number of Chinese trade diaspora communities being established in Southeast Asia.

## Quantitative Evidence

This section moves beyond a qualitative description of the diaspora communities in order to systematically test the ideas that we have put forward for explaining diaspora dispersal. We create a dataset that includes all cities that were ever among the world's largest between 600 and 1600 CE.<sup>18</sup> We have compiled the mean population estimates for these 253 cities across Eurasia and Africa. To establish our universe of cases, we make use of city lists from Chandler and Fox (1974) and our dataset contains all cities that appear at least once on any of the lists for the world's largest cities across the time periods. We obtain both city population data as well as population intervals for where data is not available using the same procedures as Blaydes and Paik (2020; 2021). To determine a point estimate for each location, we take the interval mean as the city's population estimate for each time period where direct data is not available.

Why focus on large cities, or at least cities that had the potential to be large? And why this particular time period? There are clear links between historical urbanization and diaspora creation in the premodern period. Curtin (1984: 2) writes that “the most common institutional form after the coming of city life was the trade settlement...commercial specialists would remove themselves

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<sup>18</sup>More specifically, our data spans the following century intervals (622, 800, 900, 1000, 1100, 1200, 1300, 1400, 1500 and 1600).

physically from their home community and go to live as aliens in another town, usually not a fringe town, but a town important in the life of the host community.” We choose to examine the period before the rise of European colonialism in order to avoid conflation of economic settlements underpinned by military authority. In other words, our sample focuses on trade diaspora communities in major Eurasian cities from late antiquity to the rise of European colonialism.

## **Coding Trade Diaspora Communities**

For every city and time period, we code for whether there was a Chinese, Middle Eastern (i.e., Arab or Persian), European, or South Asian trade diaspora based on mention of these communities in historical sources.<sup>19</sup> We identify the general region of origin for each diaspora community as well as the “gravity” center for that region based on city population located within the natural geographic boundaries of the “homeland” region.<sup>20</sup> In our dataset, there are 30 cities in Europe, 46 in the Middle East, 74 in South Asia, 28 in China, and 75 in other parts of Eurasia and Africa.

The data that we present cannot speak to every diaspora community and certain regions are under-represented in our analysis.<sup>21</sup> For example, diaspora communities did exist in sub-Saharan Africa, but because relatively few cities ever become large world cities, they do not enter into the data set. In addition, because African merchants mostly traded locally — and less frequently to China or Europe (Abu-Lughod 1989: 36) — these actors are not coded as a major diaspora community in the dataset.

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<sup>19</sup>See the Appendix for a list of the historical texts used to code trading diasporas.

<sup>20</sup>Appendix Table 2 provides information on the list of cities classified by region. We group each city based on continent and assign its regional identity based on its geographic location, rather than its changing religious or political affiliation. For example, the Muslim conquest of the Iberian Peninsula in the 8th century suggests that cities in Spain were at one point ruled not by “Middle Easterners.” We do not, however, reclassify Spanish cities as Middle Eastern cities as a result.

<sup>21</sup>This means that some of the smaller towns that were diaspora hubs, such as Aden, Malacca, and Manila do not appear in our analysis as they do not appear in any of the largest cities lists between 622 and 1600.

Figure 1 shows cities grouped under the broadly-defined “homeland” regions of China, South Asia, the Middle East, and Europe. In assigning the location for each diaspora group’s origin, we calculate the urban center of gravity for each region marked as the group’s “homeland” in a given year, using the population estimates for cities in that region. That is, we take the average longitude and latitude for all the cities in the region, weighted by the city population estimate. Figure 1 also shows these gravity centers for 1600 marked as crosses. The downside of this sample is that we tend to underrepresent certain types of diasporas, particularly those that existed in small towns or cities.

[INSERT Fig 1 Regions of Origin and Destination Cities]

[INSERT Fig 2 Diaspora Community Locations, 622 to 1600 CE]

Each dyadic entry,  $Diaspora_{ijt}$ , in our compiled dataset gives information on whether diaspora group  $i$  is found in destination city  $j$  in time  $t$ . We exclude observations in which destination city  $j$  is located within group  $i$ ’s region of origin. That is, we focus on cross-regional diaspora communities only and omit observations in which migration occurs within the group’s homeland region. In total, we have 310 confirmed historical accounts of diaspora communities out of 8,330 observations; that is, about four percent of the observations are coded as “one” and the rest as “zero.”<sup>22</sup> Figure 2 shows the locations of cities where the four diaspora communities were found between the years 622 and 1600 CE.

We observe several broad trends in the data. First, Middle Eastern diaspora communities are found across cities in China, South Asia, and Southeast Asia. The absence of Arab and Persian trade diaspora settlements in Europe — despite Europe’s relative geographic proximity — is notable. Second, we find South Asian trade diaspora communities spanned cities to both the east and the west of the subcontinent. The fact that there were no South Asian trade communities found in Europe suggests either that European destinations were too far or that they lacked the types of commodities merchants valued, or both. Third, we find that European trade diaspora commu-

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<sup>22</sup>Appendix Figure 1 shows the total number of centuries of diaspora existence for each group.

nities emerged most prominently after 1100, around the start of the Holy Land Crusades.<sup>23</sup> The increasing presence of European trader communities after 1400 reflects breakthroughs in seafaring navigation technologies.<sup>24</sup> Finally, with the exception of diaspora communities in Samarkand and Kufa (Silk Road transportation hubs), all of the cities with a Chinese diaspora presence are in Southeast Asia and South Asia, and the majority are located in areas with a tropical ecological zone.<sup>25</sup> Importantly, the biomes of South and Southeast Asia differ markedly from that of the major cities in China and Europe, which are mostly situated in temperate and mixed woodlands.<sup>26</sup>

## **Empirical Results**

One way to operationalize our research question is to make use of a basic gravity model of the type commonly used in the literature on international trade. A “gravity law” of population predicts that the number of diasporic merchants will be a function of population in the destination city and origin areas, divided by the distance between the two locations. Our data is not precisely of this form, however. Our dependent variable is binary; we are able to identify whether there was a mention of a certain diaspora community in a given city for a particular year based on the work of historians, but not the exact number of merchants who moved to each locale. As in a gravity model that explores dyadic trade and migration patterns between two polities, we include the population of the destination city as a factor explaining the presence of a diaspora community, as well as the cost of travel between the region of origin and the destination city. Following the literature, city population is our proxy for level of economic development.

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<sup>23</sup>Blaydes and Paik (2016) describe the empirical political and economic impacts of the Holy Land Crusades.

<sup>24</sup>See Blaydes and Paik (2021) for more information about the diminished importance of overland trade over this time period.

<sup>25</sup>See Appendix Figure 2(a) for the location of “Tropical Woodlands” across Eurasia and Africa. The biome information is obtained from Ramankutty and Foley (1999). From the authors’ classification of potential biomes that would have existed under minimal human intervention, we combine “Tropical Deciduous Woodland” and “Tropical Evergreen Woodland” as “Tropical Woodlands.”

<sup>26</sup>Appendix Tables 3 to 6 provide summary statistics for each diaspora group.

In order to calculate the cost of travel to distant locations, we employ the least-cost path analysis in ArcGIS. This allows us to calculate the length of a simulated path between locations that accounts for the low cost of travel by water (relative to travel by land), as well as the cost of traveling on sloped terrain.<sup>27</sup> This distance measure is time-varying; in each period, the location of the urban gravity center changes based on the population of each city within the region.<sup>28</sup>

We are also interested in understanding the appeal of establishing a diaspora community in a location that offers complementarities in terms of biodiversity. We take into account two factors that determine the predominant forms of vegetation in an area — temperature and rainfall.<sup>29</sup> In particular, we seek to explore the incentives for creating a trade diaspora based on the idea of bioclimatic complementarity between the region of origin and the destination city. Our regression specifications, then, include variables representing the difference in annual mean temperature between the destination city and the region of origin, as well as the difference in annual precipitation between the two locations.<sup>30</sup> Positive values mean that the destination city is warmer and wetter than the merchant's home region. Finally, we present latitude and longitude differences between the urban gravity center of each region and the destination city as alternative measures of complementarities between the two locations. For each diaspora group, these differences are also informative in that they tell us the direction of diaspora group travel.

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<sup>27</sup>Appendix Figure 3 shows the paths from each region of origin to destination cities. We assume that travel by land is twice as costly as travel by water. We also avoid any travel path with a slope of over 9 degrees, a benchmark set by Raepsaet (2002).

<sup>28</sup>As an alternative measure to the least-cost path, we also use the straight-line distance between the urban gravity center of each region and the destination city. The results are presented in Appendix Table 7.

<sup>29</sup>Appendix Figures 2(b) and 2(c) show the global coverage of annual precipitation and mean temperature, respectively.

<sup>30</sup>We use bioclimatic data from Hijmans et al. (2005). The global temperature and precipitation data are from the years 1960 to 1990. While we are unable to find global coverage contemporaneous with our diaspora data, Hijmans et al. (2005) do provide potential climate conditions prior to any known trade diaspora, the mid-Holocene period (about 6,000 years ago). Using the variables calculated from this period instead, we find that our results remain substantively similar.

Given the region-to-city panel data setup that we employ, and the relatively small number of trade diaspora communities compared to the large number of potential dyads, we use a logistic regression that allows for rare-event corrections (i.e., `relogit` in STATA) as our baseline model (King and Zeng 2001). We run the regression analysis separately for each diaspora community. We do not include destination city fixed effects but do make use of time-period dummy variables (where feasible) to capture any temporal effects commonly affecting all of the diaspora communities at different points in time. We also cluster the standard errors at the diaspora group-destination city dyad level, as these observations may not be independent within the dyad-group across time periods.<sup>31</sup>

Column 1 in Table 1 provides information about European diaspora settlement patterns. Relatively few Europeans made their way to create diaspora communities until late in our sample. Because the rare-events logistic regression does not readily lend interpretable coefficient estimates, we report our results as predicted probabilities.<sup>32</sup> Based on the coefficient estimates with all variables at their means, we find that the probability of European diaspora in a city is 0.8 percent. Those that did migrate were likely to establish trade diaspora communities in large cities that were relatively close to Europe. Column 2 shows that Middle Eastern traders sought populous, wealthy cities in which to settle. Travel distance from the Middle East does not appear to have been a concern in creating trade diaspora communities abroad. Middle Eastern merchants also showed a strong interest in establishing diaspora communities in locations with a complementary natural habitat, including the tropical cities of South and Southeast Asia.

In terms of the substantive interpretation, suppose a destination city had a population of 20,000, which is about the 25th percentile in our population data. Under Column 2, the coefficient estimate for that city population suggests — holding other variables at their means — the probability of

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<sup>31</sup>As a robustness check, Appendix Table 8 presents logit model results, in which we find that the outcomes remain substantively similar.

<sup>32</sup>The primary variable of interest would be to figure out the probability  $P(Y = 1)$ , which can be calculated as  $\frac{\exp(\beta_0 + \beta_1 x_1 + \dots + \beta_k x_k)}{1 + \exp(\beta_0 + \beta_1 x_1 + \dots + \beta_k x_k)}$ .

finding a Middle Eastern trade diaspora community in that city is 3.4 percent. This probability increases to 6.4 percent when the population increases to the 75th percentile (i.e., population of 47,000). We can also calculate the *migration likelihood ratio* =  $Pr(Y = 1|x_1)/Pr(Y = 1|x_0)$  where  $Y$  is the binary indicator for whether a Middle Eastern trade diaspora occurs in a destination city. If we were to take  $x_1$  to be the 75th percentile and  $x_0$  the 25th percentile population, the ratio is  $0.064/0.034=1.87$ . This means that there is about an 87 percent increase in the likelihood of Middle Eastern diaspora with that level of population increase. In Column 2, we also observe that Middle Eastern traders were more likely to migrate to warmer cities. The probability of diaspora is 2.3 percent under the 25th percentile temperature difference (-7.54 degrees Celsius) and 11 percent under the 75th percentile temperature difference (6.19 degrees Celsius). The likelihood of finding a diaspora community thus increases by 367 percent ( $0.109/0.0234=4.67$ ).

Column 3 suggests that the likelihood of finding a South Asian diaspora in a city is generally much smaller relative to Middle Eastern traders. Taking the variables at their means and given the coefficient estimates, the probability of Middle Eastern diaspora under Column 2 is 4.9 percent, while the probability of South Asian diaspora under Column 3 is 1.3 percent. In the case of South Asian traders, larger cities close to South Asia were more attractive for establishing diaspora communities.

[INSERT Table 1: Trade Diaspora Communities — Difference in Mean Temperature and Annual Precipitation, Longitude and Latitude]

Very few Chinese traders established diaspora communities. For example, based on the coefficient estimates from Column 4 and with all variables at their means, the probability of a Chinese diaspora community developing in a city is only 0.1 percent. Like other diaspora communities, a large urban population was a clear draw for Chinese diaspora groups. Trader communities were likely to be found in cities that had higher levels of precipitation and (to a certain extent) temperatures, suggesting that the traders were drawn to nearby tropical zones, particularly those found in



Southeast Asia. A 25th to 75th percentile increase in the destination city precipitation leads to a 130 percent increase in the probability of a Chinese diaspora settling in that city.<sup>33</sup>

Columns 5 to 8 in Table 1 replicate the results from Columns 1 to 4, but replace the temperature and precipitation differences with longitude and latitude differences. These alternative complementarity measures capture the direction of diaspora dispersal for each group. Difference in longitude appears as statistically significant for Europeans and Middle Eastern traders who mainly travelled towards the east in the direction of the relative wealth of China and South Asia. Latitudinal difference, on the other hand, emerges as significant for all diaspora groups. Traders were, on average, heading south of their regions of origin.<sup>34</sup> The size and statistical significance on the coefficient for Chinese diaspora groups is particularly notable; as the wealthiest region in the world during our period of study, Chinese traders had the largest incentive to establish diaspora communities in locations with bioclimatic complementarities.<sup>35</sup>

How do our conclusions support or diverge from the principles of trade theory? While our goal in this paper is to put forward new ideas about trade-related migration (not trade itself), there are still some connections that can be drawn. First, our arguments about the role played by trade diasporas speak to the literature on transaction costs including how these cross cultural networks decrease search and information costs; bargaining and decision costs; and policing and enforcement costs (Dahlman 1979). Second, scholarship suggests that differences in factor endowments and technological progress can influence patterns of trade. Our arguments about the relevance of bioclimatic complementarities and complex supply chains and human capital investments speak

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<sup>33</sup>See Appendix Table 9 for more details on the predicted probabilities associated with various levels of population, temperature, and precipitation.

<sup>34</sup>In the case of European traders, the p-value is 0.15.

<sup>35</sup>Another way to conceptualize our outcome variable of interest is in terms of the duration of a diaspora group presence measured in centuries. In order to assess this, we sum up the number of centuries of diaspora group presence in each city between 622 and 1600, and regress the duration measure on the means of the same predictors as found in Tables 1 and 2. Appendix Table 10 reports results from an ordinary-least squares regressions. We find outcomes consistent with our main findings.

directly to these two dimensions which can attract trade-related investments. Third, trade can lead to gains by increasing the variety of products available (Krugman 1979). Our arguments about the importance of luxury goods and exotics supports this “love of variety” driver of international trade. Fourth, empirical studies of international exchange often make use of gravity models which suggest that bilateral trade flows tend to be increasing in the size of the economic market but decreasing in the distance between the two units. Our results suggest empirical support for a modified version of the traditional gravity model. Finally, trade and migration are viewed as being linked (Peters 2017). We argue that trade, and the desire to cultivate exchange, is driving people flows.

### **Taking State Characteristics into Account**

Taken together, the results presented in the previous section suggest that diaspora communities tended to gravitate to larger cities; closer cities; and cities that had higher temperatures and greater precipitation or were closer to the equator. While the empirical specifications that we have presented thus far focus on what we consider to be foundational incentives associated with the creation of trade diaspora communities, our analysis has not taken into account the extent to which trade diaspora communities settled in locations with favorable political institutions. In this section, we investigate if our main results persist after taking into account characteristics of the states in which potential diaspora-hosting cities might have been located.

There is considerable reason to believe that political conditions in the host city would influence the decision of a diaspora community to settle in a particular location.<sup>36</sup> Merchants would be concerned with a variety of factors including the safety of the host location, its relative stability, and the probability of expropriation given the great variety of institutional environments that existed in the premodern world economy.<sup>37</sup> While we are not able to empirically control for the full range

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<sup>36</sup>Political conditions have been found to be important in determining immigration decisions in the contemporary context (Fitzgerald, Leblang, and Teets 2014).

<sup>37</sup>Might “good” institutions substitute for merchant diaspora communities? Many of the benefits associated with reducing transaction costs in trade are independent of the local institutional environment. Indeed, relationships of

of relevant political factors, we can operationalize political institutions in two correlated ways. The first is the size of the state in which potential host city was located. The second is relative stability of rule as related to the state in which the host city was located. Each variable provides useful information for understanding the prevailing political context. While tribute-taking empires may have been more repressive than city states toward outsiders, imperial capitals of large states — like Chang’an and Constantinople — were important, longstanding locations of mercantile and cultural exchange. On the other hand, city states tended to be insular and composed of tight elite networks that may have been difficult for foreign traders to penetrate. The stability of rule also provides information about the existence of the potential for long-standing political institutions and regularized norms surrounding societal relations.

We construct state size and duration variables as alternative measures of state characteristics by utilizing a set of maps from GeaCron, a database that maps state boundaries around the globe for different time periods. For each city-period observation in our data we obtain the geographic area of the state in which the city was located in.<sup>38</sup> We also identify whether the same state ruled the city in the previous time period (one century before), and code our state duration variable as “one” if such is the case and “zero” otherwise. Table 2 follows the same specifications as in Table 1 with the temperature and precipitation differences, but add the state size and the duration variable as additional control variables.<sup>39</sup> We find that our main results remain robust and substantively similar to our original specifications.

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trust were always valued even in favorable institutional environments. Scholars have suggested that regardless of institutional quality in the host community, trust-based relationships were important in facilitating exchange (Forrest and Haour 2018).

<sup>38</sup>If a city in a given time period was not located inside any state boundary, we assume that the city in that period essentially functioned as a city state without being under the rule of an external polity, and assign an area value equal to the smallest state size that we have in our data.

<sup>39</sup>Appendix Tables 11 and 12 provide summary statistics of state size and duration by region. Appendix Table 13 replicates Table 2 in the main text but replaces the temperature and precipitation differences with the longitude and latitude differences. The results remain substantively similar to the main results in Table 1 Columns 5 to 8.

[INSERT Table 2: Trade Diaspora Communities — Difference in Mean Temperature and Annual Precipitation and State Characteristics]

[INSERT Table 3: Trade Diaspora Communities — Difference in Mean Temperature and Annual Precipitation and Cultural Characteristics]

## **Taking Cultural Characteristics into Account**

In addition to state characteristics, cities likely differ in their willingness to welcome diaspora communities as a result of cultural factors. Our preferred interpretation is that cultural attitudes toward outsiders are endogenous to the gains to be made as a result of economic exchange. At the same time, however, some locations may have very strong prior beliefs about the acceptability of foreigners as a result of their unique histories and geographies. One way to think about the cultural acceptability of outsiders connects to cosmopolitanism — the idea that all people are deserving of respect and consideration, regardless of their origin (e.g., Appiah 2006). There are deep historical roots to the idea of cosmopolitanism and associated ideas about the natural ties between all people.

While large cities, both past and present, are generally thought to be locations with high levels of cosmopolitan values, not all major cities are equally accepting of outsiders. Cartier (1999) draws linkages between maritime and trade-based economies and cosmopolitan values, arguing that such locations have historically been diverse and polyglot. We propose two empirical strategies to control for historical levels of cosmopolitan values. Our first measure seeks to control for historical trade routes as a proxy for cosmopolitanism. For a subset of city-year observations in our data — in particular, for years 1000, 1200, 1400 and 1600 — we identify the distance from each city to trade routes from the century prior. Kennedy (2002) provides trade route maps for the years 900, 1100, 1300 and 1500 that allow us to calculate each city’s distance to the nearest major overland or sea trade route.<sup>40</sup>

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<sup>40</sup>See Appendix Figure 4(a) for more details regarding historical trade routes.

Second, we exploit the fact that the world’s most important historical trade routes have sought to connect Eurasia’s most important land and sea chokepoints.<sup>41</sup> Because these natural chokepoints were so important to the history of global trade, we argue that such locations are more likely to cultivate cosmopolitanism values. We identify six natural geographic chokepoints for use in our analysis: the Strait of Hormuz, the Strait of Gibraltar, the Bab al-Mandab (i.e., the Mandab Strait connecting the Red Sea to the Gulf of Aden), the Bosphorus Strait, the Strait of Malacca, and the isthmus of Suez. These natural connecting points served as critical pathways for traders over centuries. For each city in our dataset, we identify the nearest chokepoint and calculate the distance to it. Table 3 replicates our main results from Table 1 (Columns 1 through 4), controlling for our two measures of cosmopolitanism.<sup>42</sup> Again, we find that after including proxy variables to control for trade route-based cosmopolitanism, the main findings remain similar to those in Table 1.

## **Exploring Theoretical Foundations with Agent-Based Modeling**

Our empirical findings are drawn from historical data and uncover trends in the establishment of trade diaspora communities. Given the relative scarcity of historical records, however, we are not able to track how many individual traders moved from one place to another. One way to understand the micro-mechanisms underlying a macro phenomenon like migration is through exploration of an agent-based model (ABM). In an overview on the use of ABM in sociology, Macy and Willer (2002) describe the approach as useful in understanding global patterns derived from dynamic processes of decisionmaking. De Marchi and Page (2014) argue that agent-based models provide a way to explore how complex systems of diverse and spatially situated actors operate. Hedstrom and Manzo (2015) further emphasize how agent-based models simulate the behavior of interdependent agents endowed with various attributes and behavioral rules.

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<sup>41</sup>See Blaydes and Paik (2021) for more details on this empirical approach.

<sup>42</sup>Appendix Figure 4(b) shows the natural chokepoint locations. Appendix Table 14 replicates Table 3 but replaces the temperature and precipitation differences with the longitude and latitude differences. The results remain substantively similar to the main results in Table 1, Columns 5 to 8.

Agent-based models are especially useful for deriving macro-outcomes from decisions made by individual agents at the micro-level; when anchored in theory and empirical evidence, construction of the micro-to-macro mapping helps to validate the results produced (Hedstrom and Manzo 2015; De Marchi and Page 2014; Bruch and Atwell 2015). We create an environment for agents — in our case, traders — with constraints and opportunities that are meant to represent a stylized version of what merchants faced in the historical context. International migration is in particular a multifaceted process with different stages and decision points (Helms and Leblang 2019), further suggesting the potential relevance of agent-based models for understanding these complex dynamics.

We characterize an ABM environment in which there exist varying degrees of natural resource availability and urbanization levels. Our goal is to look at trader migration patterns as a function of these factors. We use Netlogo, a programming language and modelling environment that offers a visual interface for simulating agent-based models.<sup>43</sup> In the model, we set up an environment that is made up of six regions, roughly representing Europe (1), Central Asia (2), China (3), Middle East (4), South Asia (5) and Southeast Asia (6).<sup>44</sup>

[INSERT Figure 3: Stylized Illustration of a Six-Region Agent-Based Model Environment;  
Maximum Values for  $R$  (Raw Materials) and  $P$  (Urbanization)]

Each grid-cell within a region is endowed with rare raw materials and goods,  $R$ , and urbanization that may foster production of manufactured goods,  $P$ .<sup>45</sup> In other words, the endowment of

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<sup>43</sup>The shareware package is available for download at [ccl.northwestern.edu/netlogo/](http://ccl.northwestern.edu/netlogo/).

<sup>44</sup>Since we are interested in the initial decision process of diaspora groups, we assume that individual traders primarily moved based on travel distance and resources offered in destination cities, rather than pre-existing diaspora communities or traders from the same region of origin. While extensions to the model are possible, we do not emphasize the interdependency of agents as a determinant factor in our model. Instead we assign parameter values for each spatially distinct destination region to reflect how the level of population and natural resources differed across the regions.

<sup>45</sup>There are 7 X 7 grid-cells, for 49 in total, in each region.

any grid-cell can be described by the vector  $(R, P)$ . These variables are randomly distributed and range in values between 0 and the assigned maximum value. For example, a grid-cell in Southeast Asia is randomly endowed natural resources between zero and 100. We set the environment such that, on average, grid-cells in Southeast Asia have the highest level of exotic natural resources, followed by South Asia, China, and the Middle East. Europe and Central Asia are endowed with an  $R$  level of zero. We choose to endow areas with “Tropical Woodlands” with the highest resource level because these areas are outside of the main population centers from a continental axis perspective (i.e., Diamond 1997) and, as a result, the resources in those areas are least common in the world economy. On average, grid-cells in China have the highest urbanization levels, followed by those in the Middle East and South Asia. Europe has some urbanization, while Central Asia and Southeast Asia have no urbanization. Naturally, this is only a rough approximation of the relative population levels across Eurasian regions.

[INSERT Figure 4: Initial six-region framework with individual traders (left); dispersal of individual traders after 100 time periods]

Figure 4 (left panel) illustrates this simplified world using the Netlogo interface, where there are initially 1,000 traders randomly distributed across the six regions.<sup>46</sup> Grid-cells in darker shades of blue represent those with higher endowments.<sup>47</sup> Blue figures represent traders from Europe, green from Central Asia, purple from China, black from the Middle East, brown from South Asia, and red from Southeast Asia. Each trader derives his utility from  $R$  and  $P$  of the grid-cell that he is in. The relative weights he puts on these two factors are randomly given as a vector  $(x, 1 - x)$ , where  $x \in [0, 1]$  is the weight given to  $R$  and  $1 - x$  is the weight given to  $P$ . Trader  $i$ 's utility can then be calculated as the product of the weight vector  $(x, 1 - x)$  and the endowment vector  $(R, P)$  of the grid-cell  $j$  he is in:

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<sup>46</sup>In our simulation there are 164 traders from Europe, 170 from Central Asia, 164 from China, 152 from Middle East, 182 from South Asia and 168 from Southeast Asia.

<sup>47</sup>The shade of color is based on a scalar value equal to the dot product of the endowment vector  $(R, P)$  with itself.

$$U_{ij} = x_i R_j + (1 - x_i) P_j \quad (1)$$

In each period the trader compares his utility at his location and the utility that he can get from moving to another grid-cell. Within a set mobility radius, he looks for the grid-cell that offers him the highest utility. But moving incurs a cost, and this cost is a function of the distance from his current location  $j$  and the potential destination  $k$  as well as the region that he is located in. In any given period the trader migrates when the following holds:

$$x_i R_j + (1 - x_i) P_j < x_i R_k + (1 - x_i) P_k - C E_j d_{jk} \quad (2)$$

Rearranging the terms we obtain:

$$x_i (R_k - R_j) + (1 - x_i) (P_k - P_j) > C E_j d_{jk} \quad (3)$$

This means that the trader's utility gain from bioclimatic complementarities ( $R_k - R_j$ ) and higher urbanization ( $P_k - P_j$ ) must be greater than the cost of traveling ( $C E_j d_{jk}$ ), where  $C$  is the universal cost-of-travel factor. In the first period  $C$  is set at 10 and in every subsequent period  $C$  decreases by the power of 0.9,<sup>48</sup> eventually reaching a value of 1.  $E_j$  is the region-specific cost of travel from region  $j$ .<sup>49</sup> This means, for example, that a merchant migrating from Europe would incur a higher

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<sup>48</sup> $C^{0.9}$ .

<sup>49</sup>The region-specific costs of travel are highest for Central Asia and Southeast Asia (10), middling for Europe and South Asia (7), lower for the Middle East (3), and lowest for China (1). This cost assignment is based on our observation that historically there had been a long tradition of cross-regional trade in the Middle East with associated navigation technology, and that highly urbanized regions such as China also enjoyed the types of technological advances associated with lower cost transportation and logistics.



cost for the same travel distance than one migrating from China, because China is more urbanized and, thus, advanced in transportation technology. Finally,  $d_{jk}$  is the Euclidean distance between the merchant's location,  $j$ , and the destination,  $k$ , that offers him the highest net utility, accounting for the cost of migration.<sup>50</sup>

Figure 4 (right panel) shows diaspora patterns of traders after 100 periods in the ABM world, when the cost factor has decreased to one from the initial value of 10.<sup>51</sup> Table 5 shows the concentration of different diaspora groups across the six regions after 100 periods. We find that Europeans migrate to China, the Middle East as well as South Asia with the largest number of traders moving to the Middle East. The majority of traders in Europe eventually migrate, while none of the traders from other regions migrate to Europe. Like the Europeans, the majority of Middle Eastern traders also migrate to the east. Of these migrants, the largest number is found in China, followed by South Asia and to a less extent in Southeast Asia. In contrast, the majority of Chinese and South Asian traders stay in their homelands. Chinese traders who do migrate only settle in Southeast Asia. Finally, among the modest number of South Asian traders who migrate, about half of them move to China and the rest migrate to the Middle East and Southeast Asia.

(INSERT Table 4: Long-Distance Traders (rows) and their Destinations (columns), Agent-based Model Outcomes)

These results from the agent-based model are generally in line with our empirical findings, and support the idea that natural resources and societal wealth, together, drive diaspora dispersal. While natural resource endowment ( $R$ ) serves as a driving factor for the Chinese diaspora, urbanization ( $P$ ) seems to matter more for other diaspora groups. For all groups, the cost of travel matters; European traders, in particular, migrate in the largest numbers as the cost of travel decreases. This

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<sup>50</sup>We assume that the endowments in each grid-cell are not influenced by trade diasporas and that these endowments do not change over time.

<sup>51</sup>The search mobility radius is set at 30. Since the longest possible distance between two location in the setup is 24.4, this means that each trader can consider all the grid-cells in the world and look for the best destination among them.

is roughly consistent with the idea that as seafaring technologies improved, Europeans had strong incentive to strike out overseas in search of luxury goods and exotic commodities around the world. None of the traders settle in Europe due to the low endowment levels in that region; we also see that Middle Eastern traders choose to settle in other regions despite Europe's proximity.

## Conclusions

Curtin (1984: 3) argues that during the time period between the Neolithic and Industrial Revolutions, trade diasporas were “one of the most widespread of all human institutions.” Yet little scholarly research has sought to explain when and where trade diasporas emerge despite their significance in world economic history. In this paper, we explain patterns of trade diaspora dispersal before the rise of European hegemony. Diaspora communities served an important economic role given the challenge of contract enforcement in long-distance trade. In this context, networks facilitated trade across space by building, or substituting for, relationships of trust (e.g., Forrest and Haour 2018) that were weak or non-existent between distant trading partners (e.g., Rauch 2001). Our research builds upon this work and suggests that trade diaspora communities served as vital intermediaries in premodern globalization. We consider the circumstances under which trade diasporas emerge — as well as the conditions that led them to be sustained.

We argue that patterns of trade diaspora formation exhibit distinctive patterns. The relative wealth of eastern societies, particularly as found in China and South Asia, attracted trade diasporas. Asian products exhibited “fine differentiation in technology” that made them valued across Eurasia (Chaudhuri 1990: 306). Indeed, India and China maintained a virtual monopoly over sophisticated industries until the eighteenth century (Chaudhuri 1990: 318). We find that, conditional on cost of travel, trade diasporas tended to be established wealthy cities. Trade diaspora communities were also more likely to exist in locations with bioclimatic complementarities to the merchants' home region. This insight helps us to understand Chinese patterns of diaspora formation. As the world's richest society, China had relatively little incentive to create trade diaspora communities as

the world's highest quality luxury goods were produced within the borders of the Chinese polity. As such, Chinese diaspora communities were most likely to be formed in locations that offered complementary natural resources that were difficult to acquire within the Chinese state.

The broad trends that we identify require an exploration of the micro-level underpinnings of the outcomes that we observe. Using a simple agent-based model, we characterize a six-region Eurasian “environment” where every region is assigned a level of natural resource endowment and wealth. Individual agents (i.e., traders) then migrate across this environment as a function of the payoffs that they expect to receive as well as the cost of travel. The results of our model are largely consistent with the empirical results that we observe and offer a way to think about the individual-level mechanisms undergirding complex processes of migration and cross-cultural exchange. We believe that, taken together with our core empirical findings, our model predictions provide additional support for the arguments that we have put forward regarding the establishment of trade diaspora communities in premodern Eurasia.

## References

- Acemoglu, Daron, Simon Johnson, and James A. Robinson. “Reversal of fortune: Geography and institutions in the making of the modern world income distribution.” *The Quarterly journal of economics*. 117.4 (2002): 1231-1294.
- Appiah, Kwame Anthony. 2006. *Cosmopolitanism: Ethics in a World of Strangers*. New York, NY: W.W. Norton.
- Bentley, Jerry. 1993. *Old World Encounters: Cross Cultural Contacts and Exchanges*. New York, NY: Oxford University Press.
- Bentley, Jerry. 1996. “Cross-Cultural Interaction and Periodization in World History.” *American Historical Review*. 101(3): 749-770.
- Blaydes, Lisa and Christopher Paik. 2016. “The Impact of Holy Land Crusades on State Formation: War Mobilization, Trade Integration and Political Development in Medieval Europe.” *International Organization*. 70(3): 551-586.
- Blaydes, Lisa and Christopher Paik. 2020. “Trade and Political Fragmentation on the Silk Roads: The Economic Effects of Historical Exchange between China and the Muslim East.” *American Journal of Political Science*.

- Blaydes, Lisa and Christopher Paik. 2021. "Muslim Trade and City Growth before the 19th Century: Comparative Urbanization in Europe, the Middle East and Central Asia." *British Journal of Political Science*. 51(2): 845-868.
- Bonacich, Edna. 1973. "A Theory of Middleman Minorities." *American Sociological Review*. 38(5): 583-594.
- Brubaker, Rogers. 2005. "The 'Diaspora' Diaspora." *Ethnic and Racial Studies*. 28(1): 1-19.
- Butler, Kim. 2001. "Defining Diaspora, Refining a Discourse." *Diaspora: A Journal of Transnational Studies*. 10(2): 189-219.
- Canepa, Matthew. 2010. "Theorizing Cross-Cultural Interaction among Ancient and Early Medieval Visual Cultures." *Ars Orientalis*. 38: 7-29.
- Cartier, Carolyn. 1999. "Cosmopolitics and the Maritime World City." *Geographical Review*. 89(2): 278-289.
- Chaffee, John. 2018. *The Muslim Merchants of Premodern China: The History of a Maritime Asian Trade Diaspora, 750-1400*. New York, NY: Cambridge University Press.
- Chattoe-Brown, Edmund. 2013. "Why Sociology Should Use Agent-Based Modelling." *Sociological Research Online*. 18(3), 31-41.
- Chaney, Thomas. 2014. "The Network Structure of International Trade." *American Economic Review*. 104(11): 3600-3634.
- Chaudhuri, K.N. 1990. *Asia before Europe: Economy and Civilization of the Indian Ocean from the Rise of Islam to 1750*. New York, NY: Cambridge University Press.
- Clark, Hugh. 2006. "Maritime Diasporas in Asia before Da Gama: An Introductory Commentary." *Journal of the Economic and Social History of the Orient*. 49(4): 385-394.
- Cohen, Abner. 1971. "Cultural Strategies in the Organization of Trading Diasporas." *The Development of Indigenous Trade and Markets in West Africa*. Editor, Claude Meillassoux. London: Oxford University Press.
- Cohen, Roger. 2008. *Global Diasporas: An Introduction, 2nd edition*. London: Routledge.
- Constable, Olivia. 2003. *Housing the Stranger in the Mediterranean World: Lodging, Trade, and Travel in Late Antiquity and the Middle Ages*. New York, NY: Cambridge University Press.
- Curtin, Philip. 1984. *Cross-Cultural Trade in World History*. New York, NY: Cambridge University Press.
- Dahlman, Carl. 1979. "The Problem of Externality." *Journal of Law and Economics*. 22(1): 141-162.
- Dale, Stephen. 2013. "The Geography, Economy and Society of Indian Diasporas." Slavic-Eurasian Research Center.
- Deng, Gang. 1997. "The Foreign Staple Trade of China in the Pre-Modern Era." *International History Review*. 19(2): 253-285.

- De Waal, Edmund. 2015. *The White Road: Journey Into an Obsession*. New York, NY: Farrar, Straus and Giroux.
- Diamond, Jared. 1997. *Guns, Germs and Steel: The Fates of Human Societies*. New York, NY: W.W. Norton & Company.
- Findlay, Ronald and Kevin O'Rourke. 2007. *Power and Plenty: Trade, War and the World Economy in the Second Millennium*. Princeton, NJ: Princeton University Press.
- Fitzgerald, Jennifer, David Leblang, and Jessica Teets. 2014. "Defying the Law of Gravity :The Political Economy of International Migration." *World Politics*. 66(3): 406-445.
- Forrest, Ian and Anne Haour. 2018. "Trust in Long-distance Relationships, 1000-1600 CE." *Past & Present*. 238(13): 190-213.
- Frank, Andre Gunder. 1998. *ReORIENT: Global Economy in the Asian Age*. Berkeley: University of California Press.
- Freedman, Paul. 2005. "Spices and Late-Medieval European Ideas of Scarcity and Value." *Speculum*. 80(4): 1209-1227.
- Go, Julian and George Lawson. 2017. *Global Historical Sociology*. New York, NY: Cambridge University Press.
- Goiten, Shelomo. 1967. *A Mediterranean Society: Economic Foundations, Volume 1*. Berkeley, CA: University of California Press.
- Goldberg, Jessica. 2012. *Trade and Institutions in the Medieval Mediterranean: The Geniza Merchants and their Business World*. New York, NY: Cambridge University Press.
- Greif, Avner. 1989. "Reputation and Coalitions in Medieval Trade: Evidence on the Maghribi Traders." *Journal of Economic History*. 49(4): 857-882.
- Greif, Avner. 2006. *Institutions and the Path to the Modern Economy: Lessons from Medieval Trade*. New York, NY: Cambridge University Press.
- Haksoz, Cagri and Damla Usar. 2011. "Silk Road Supply Chains: A Historical Perspective." *Managing Supply Chains on the Silk Road Strategy, Performance, and Risk*. Editors, Cagri Haksoz, Sridhar Seshadri, and Ananth Iyer. Boca Raton, FL: CRC Press.
- Harris, Lillian. 1993. *China Considers the Middle East*. New York, NY: I.B. Tauris.
- Hijmans, R., S. Cameron, J. Parra, P. Jones and A. Jarvis. 2005. "Very High Resolution Interpolated Climate Surfaces for Global Land Areas." *International Journal of Climatology* 25: 1965-1978.
- Hourani, George. 1951. *Arab Seafaring: In the Indian Ocean in Ancient and Early Medieval Times*. Princeton, NJ: Princeton University Press.
- Jha, Saumitra. 2013. "Trade, Institutions and Ethnic Tolerance: Evidence from South Asia." *American Political Science Review*. 107(4): 806-832.
- Kang, David. 2010. *East Asia Before the West: Five Centuries of Trade and Tribute*. New York, NY: Columbia University Press.

- Kim, In Song, Steven Liao, and Kosuke Imai. 2020. "Measuring Trade Profile with Granular Product-level Data." *American Journal of Political Science*. 64(1): 102-117.
- King, Gary and Langche Zeng. 2001. "Explaining Rare Events in International Relations." *International Organization*. 55: 693–715.
- Krugman, Paul. 1979. "Increasing Returns, Monopolistic Competition, and International Trade." *Journal of International Economics*. 9(4): 469-479.
- Laitin, David, Joachim Moortgat, and Amanda Robinson. 2012. "Geographic Axes and the Persistence of Cultural Diversity." *Proceedings of the National Academy of Sciences*. 109(26): 10,263-10,268.
- Lambourn, Elizabeth. 2018. *Abraham's Luggage: A Social Life of Things in the Medieval Indian Ocean World*. New York, NY: Cambridge University Press.
- Leblang, David. 2010. "Familiarity Breeds Investment: Diaspora Networks and International Investment." *American Political Science Review*. 104(3).
- Lewis, Archibald. 1973. "Maritime Skills in the Indian Ocean 1368-1500." *Journal of the Economic and Social History of the Orient*. 16(1): 238–264.
- Lockard, Craig. 2013. "Chinese Migration and Settlement in Southeast Asia before 1850: Making Fields From the Sea." *History Compass*. 11(9): 765–781.
- Macy, Michael W. and Robert Willer. 2002. "From Factors to Actors: Computational Sociology and Agent-Based Modeling." *Annual Review of Sociology*. 28,143-166.
- Musgrave, Paul and Daniel Nexon. 2018. "Defending Hierarchy from the Moon to the Indian Ocean: Symbolic Capital and Political Dominance in Early Modern China and the Cold War." *International Organization*. 72(3): 591-626.
- Nizami, Khaliq . 1994. "Early Arab Contact with South Asia." *Journal of Islamic Studies*. 5(1): 52-69.
- Nunn, Nathan. 2007. "Relationship-Specificity, Incomplete Contracts and the Pattern of Trade." *Quarterly Journal of Economics*. 122(2): 569-600.
- Pattison, Joel. 2020. "Trade and Immigration in Early Hafsid Tunis: Evidence from Genoa." *Journal of North African Studies*.
- Peters, Margaret. 2015. "Trade and Migration." *Oxford Handbook of the Political Economy of International Trade*. Editor, Lisa Martin.
- Peters, Margaret. 2017. *Trading Barriers. Immigration and the Remaking of Globalization*. Princeton, NJ: Princeton University Press.
- Phillips, Andrew and J.C. Sharman. 2015. *International Order in Diversity: War, Trade and Rule in the Indian Ocean*. New York, NY: Cambridge University Press.
- Raepsaet, Georges. 2002. *Attelages et Techniques de Transport dans le Monde Greco-romain*. Brussels: Le Livre Timperman.

- Rauch, James. 2001. "Business and Social Networks in International Trade." *Journal of Economic Literature*. 39(4): 1177- 1203.
- Rauch, James and Vitor Trindade. 2002. "Ethnic Chinese Networks in International Trade." *Review of Economics and Statistics*. 84 (1): 116–130.
- Reid, Anthony. 1980. "The Structure of Cities in Southeast Asia, Fifteenth to Seventeenth Centuries." *Journal of Southeast Asian Studies*. 11(2): 235-250.
- Risso, Patricia. 1995. *Merchants and Faith: Muslim Commerce and Culture in the Indian Ocean*. Boulder, CO: Westview Press.
- Rosenthal, Jean-Laurent and Roy Bin Wong. 2011. *Before and Beyond Divergence: The Politics of Economic Change in China and Europe*. Cambridge, MA: Harvard University Press.
- Rodrik, Dani. 2000. "How Far will International Economic Integration Go?" *Journal of Economic Perspectives*. 14: 177–186.
- Schafer, Edward. 1985. *The Golden Peaches of Samarkand: A Study of Tang Exotics*. Berkeley, CA: University of California Press.
- Seland, Eivind. 2012. "Trade and Christianity in the Indian Ocean during Late Antiquity." *Journal of Late Antiquity*. 5(1): 72-86.
- . 2013. "Networks and Social Cohesion in Ancient Indian Ocean Trade: Geography, Ethnicity and Religion." *Journal of Global History*. 8: 373–390.
- Sen, Tansen. 2006. "The Formation of Chinese Maritime Networks to Southern Asia, 1200-1450." *Journal of the Economic and Social History of the Orient*. 49(4): 421-453.
- Sharman, Jason. 2019. *Empires of the Weak: The Real Story of European Expansion and the Creation of the New World Order*. Princeton: Princeton University Press.
- Smith, Stefan. 2007. "Demystifying a Change in Taste: Spices, Space, and Social Hierarchy in Europe, 1380-1750." *International History Review*. 29(2): 237-257.
- Thrupp, Sylvia. 1977. "Comparison of Cultures in the Middle Ages: Western Standards as Applied to Muslim Civilization in the Twelfth and Thirteenth Centuries." *Society and History: Essays by Sylvia Thrupp*. Editors, Raymond Grew and Nicholas Steneck. Ann Arbor, MI: University of Michigan Press.
- Trivellato, Francesca. 2014. "The Historical and Comparative Study of Cross-Cultural Trade." *Religion and Trade: Cross-Cultural Exchanges in World History, 1000-1900*. New York, NY: Oxford University Press.
- Wallerstein, Immanuel. 1974. *The Modern World-System: Capitalist Agriculture and the Origins of the European World-Economy in the Sixteenth Century*. New York, NY: Academic Press.
- Wheatley, Paul. 1959. "Geographical Notes on Some Commodities Involved in Sung Maritime Trade." *Journal of the Malayan Branch of the Royal Asiatic Society*. 32(2): 5-139.

## Tables

Table 1: *Trade Diaspora Communities — Difference in Mean Temperature and Annual Precipitation, Longitude and Latitude*

	European	Middle Eastern	South Asian	Chinese	European	Middle Eastern	South Asian	Chinese
Destination city population	1.150*** (0.178)	0.768*** (0.216)	1.210*** (0.249)	0.938** (0.405)	1.120*** (0.188)	0.853*** (0.201)	1.265*** (0.264)	1.019** (0.436)
Least-cost path to destination city	-0.344*** (0.083)	0.099+ (0.066)	-0.431*** (0.140)	-0.360 (0.362)	-0.748** (0.325)	-0.296** (0.121)	-0.566*** (0.185)	-0.989 (0.843)
Difference in mean temperature	0.050* (0.029)	0.119*** (0.043)	0.152*** (0.051)	0.159+ (0.102)				
Difference in annual precipitation	0.511* (0.299)	0.289 (0.451)	-0.168 (0.544)	1.423*** (0.406)				
Longitudinal difference					0.046* (0.024)	0.046*** (0.012)	-0.006 (0.010)	-0.028 (0.053)
Latitudinal difference					-0.047+ (0.032)	-0.070*** (0.017)	-0.065*** (0.019)	-0.191** (0.080)
Observations	2,210	2,070	1,790	2,260	2,210	2,070	1,790	2,260
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Robust standard errors clustered at diaspora group-destination city dyad and reported in parentheses.

+  $p \leq 0.15$ , \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .



Table 2: *Trade Diaspora Communities — Difference in Mean Temperature and Annual Precipitation and State Characteristics*

	European	Middle Eastern	South Asian	Chinese	European	Middle Eastern	South Asian	Chinese
Destination city population	1.125*** (0.177)	0.722*** (0.212)	1.127*** (0.278)	1.005** (0.413)	1.141*** (0.181)	0.726*** (0.223)	1.321*** (0.268)	0.953** (0.410)
Least-cost path to destination city	-0.356*** (0.074)	0.055 (0.064)	-0.421*** (0.160)	-0.379 (0.341)	-0.342*** (0.081)	0.081 (0.067)	-0.408*** (0.138)	-0.350 (0.349)
Difference in mean temperature	0.059** (0.027)	0.142*** (0.048)	0.173*** (0.054)	0.170+ (0.108)	0.048* (0.028)	0.122*** (0.046)	0.161*** (0.053)	0.161+ (0.104)
Difference in annual precipitation	0.596** (0.279)	0.430 (0.426)	-0.082 (0.536)	1.477*** (0.410)	0.484+ (0.313)	0.320 (0.458)	-0.007 (0.471)	1.385*** (0.404)
State size	0.064 (0.066)	0.151*** (0.034)	0.109* (0.061)	0.167 (0.123)				
State duration					0.151 (0.375)	0.020 (0.171)	-1.081*** (0.333)	0.209 (0.394)
Observations	2,210	2,070	1,790	2,260	1,989	1,863	1,611	2,034
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Robust standard errors clustered at diaspora group-destination city dyad and reported in parentheses.

+  $p \leq 0.15$ , \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

Table 3: *Trade Diaspora Communities — Difference in Mean Temperature and Annual Precipitation and Cultural Characteristics*

	European	Middle Eastern	South Asian	Chinese	European	Middle Eastern	South Asian	Chinese
Destination city population	1.017*** (0.191)	0.576** (0.233)	1.439*** (0.288)	0.829 (0.649)	1.127*** (0.187)	0.794*** (0.206)	1.289*** (0.252)	1.234*** (0.438)
Least-cost path to destination city	-0.434*** (0.149)	0.147* (0.076)	-0.486*** (0.148)	-0.437 (0.480)	-0.320*** (0.111)	0.074 (0.088)	-0.450*** (0.147)	-0.443** (0.208)
Difference in mean temperature	0.113** (0.049)	0.122*** (0.047)	0.156*** (0.056)	0.209 (0.164)	0.053+ (0.033)	0.119*** (0.044)	0.130*** (0.048)	-0.021 (0.077)
Difference in annual precipitation	0.507+ (0.342)	0.304 (0.465)	-0.286 (0.549)	1.224*** (0.395)	0.536* (0.303)	0.328 (0.450)	0.025 (0.518)	1.461*** (0.504)
Distance to land route ( <i>t</i> -100)	0.371 (0.503)	-0.134 (0.256)	-0.082 (0.366)	0.284 (0.588)				
Distance to sea route ( <i>t</i> -100)	-0.677* (0.385)	-0.223** (0.109)	0.089 (0.175)	0.137 (0.300)				
Distance to nearest chokepoint					-0.122 (0.325)	0.126 (0.196)	-0.330 (0.307)	-1.282*** (0.425)
Observations	884	828	716	904	2,210	2,070	1,790	2,260
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Robust standard errors clustered at diaspora group-destination city dyad and reported in parentheses.

+  $p \leq 0.15$ , \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

Table 4: *Long-Distance Traders (rows) and their Destinations (columns), Agent-based Model Outcomes*

	Europe	Middle East	Central Asia	South Asia	Southeast Asia	China
European	—	52	0	41	0	11
Middle Eastern	0	—	0	30	14	37
South Asian	0	11	0	—	10	20
Chinese	0	0	0	0	44	—

# Figures

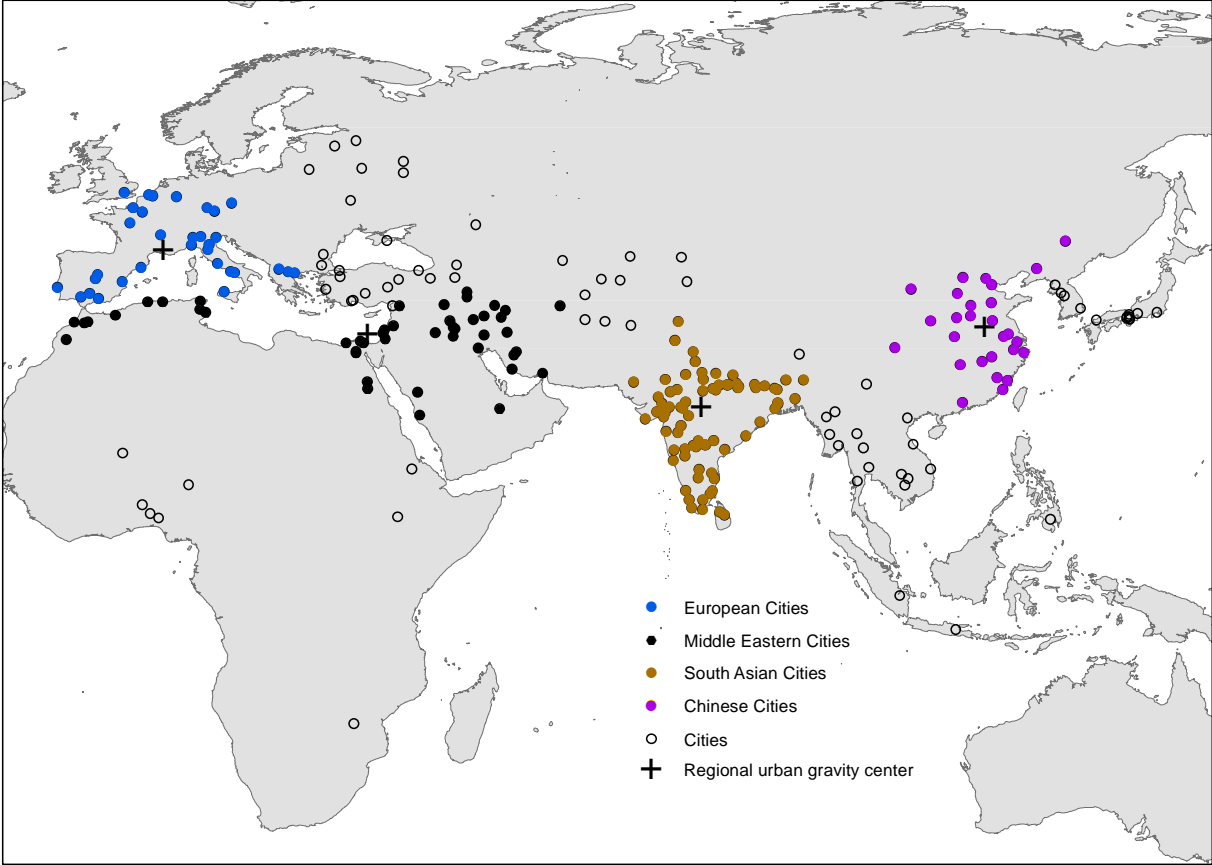


Figure 1: *Regions of Origin and Destination Cities*

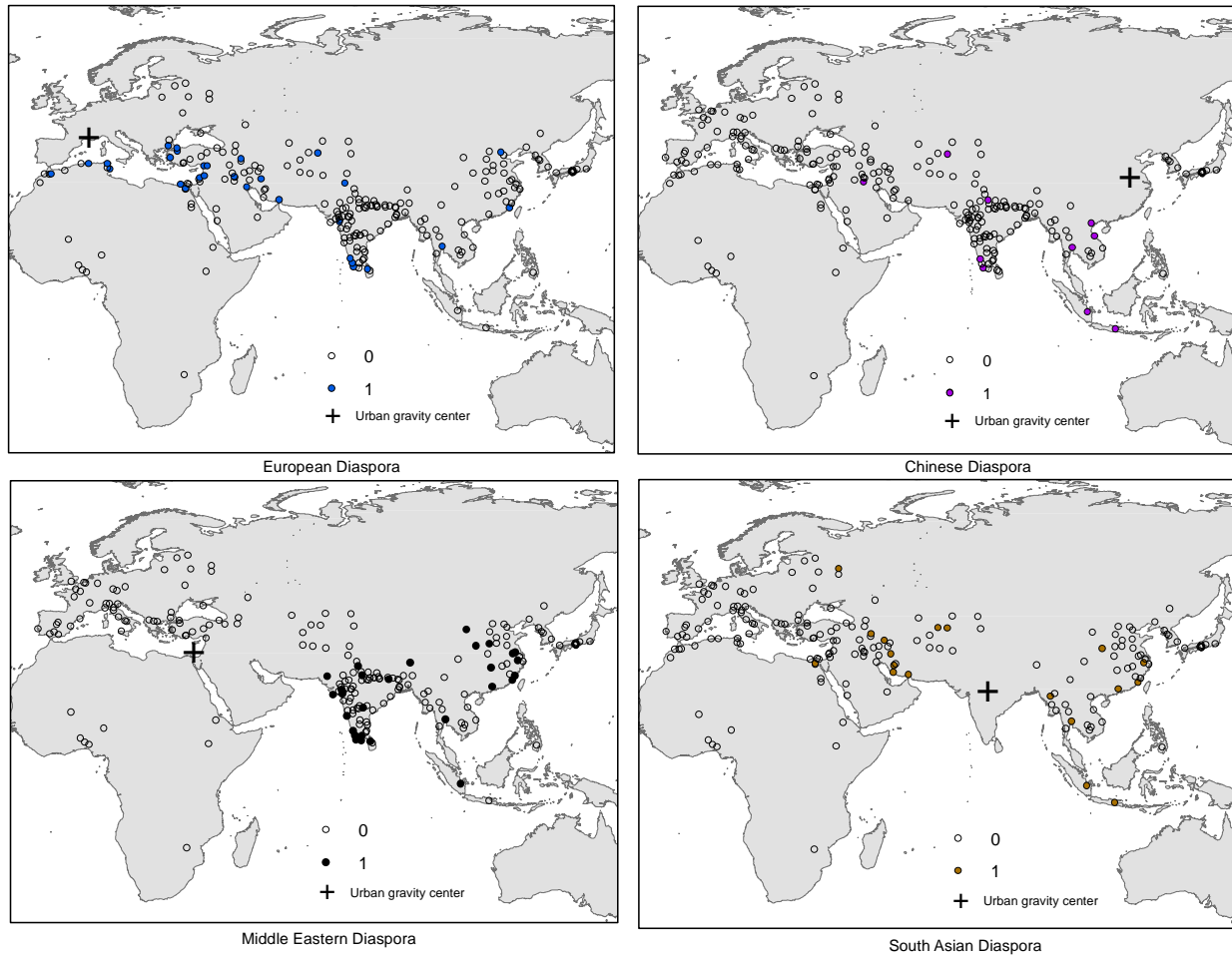


Figure 2: *Diaspora Community Locations, 622 to 1600 CE*

(1) Europe $R=0, P=25$	(2) Central Asia $R=0, P=0$	(3) China $R=50, P=100$
(4) Middle East $R=50, P=50$	(5) South Asia $R=75, P=50$	(6) Southeast Asia $R=100, P=0$

Figure 3: Stylized Illustration of a Six-Region Agent-Based Model Environment; Maximum Values for  $R$  (Raw Materials) and  $P$  (Urbanization)

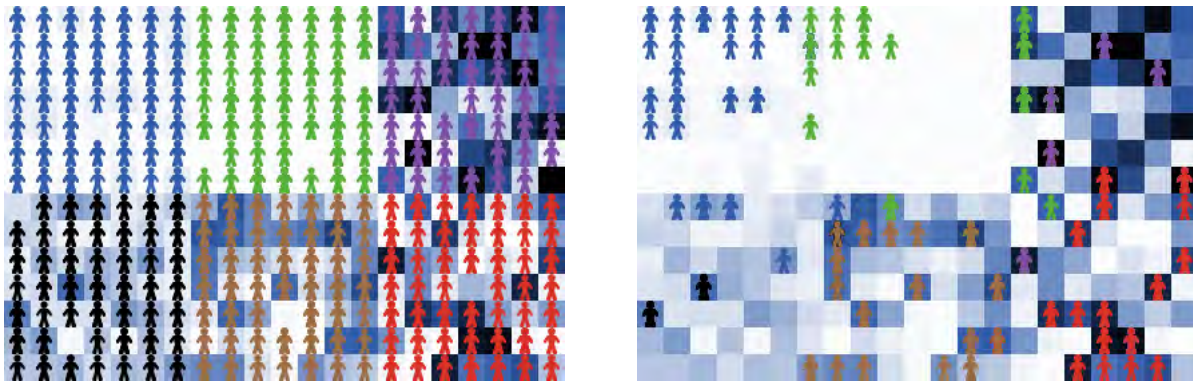


Figure 4: Initial six-region framework with individual traders (left); dispersal of individual traders after 100 time periods (right).

*Appendix*  
“Old World Trade Diasporas”

**Contents**

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# 1 Tables and Figures

Table A.1: *Selected Commodities Imported to China through Maritime Trade.*

Imported Commodity	Purported Use	Perceived Point of Origin
Cloves	spice, incense	Arab lands, Java
Frankincense	incense, stimulant, sedative, astringent	Arabia
Galingale	carminative, stomachic, aphrodisiac	Himalayas, Malaysia
Bottle gourd	water vessel, musical instruments	Africa, Iran, India
Date	food	Basra, Oman, India
Benzoin (gum benjamin)	incense, perfume	Middle East, Cambodia, Sumatra
Putchuck	aromatic, panacea	Arabia, Somali Coast, India
Margosa bark	medicine	Ceylon
Gardenia flowers	perfume	Isfahan, Khwarazm, Asia Minor
Coconut	food	Java, India, Coromandel
Pandanus	mats	South Borneo, Philippines,
Sandalwood	aromatic	Java, Timor, India
Betel nut palm	medicament, vermifuge	Southeast Asia, Coromandel
Gharuwood	aromatic, incense, medicine	Southeast Asia
Myrrh	perfume, incense, medicine	Arabia, Somali Coast
Ebony	decoration	Annam, Malay Peninsula
Rhinoceros horn	medicine	Southeast Asia, India, Africa
Coral	medicament, amulet, precious stone	Philippines, Arab lands
Amber	beads, ornaments	Coromandel, Middle East
Tortoise shell	decoration	Southeast Asia, India, Somalia Coast
Cardamom	spice, medicine	Southeast Asia Ceylon, Coromandel
Pearls	decoration	Arab lands, Southeast Asia
Safflower	dye	Java
Madder	tonic, astringent	India
Kingfisher feathers	ornamental	Cambodia
Nutmeg	spice	Java, New Guinea
Pepper	spice	Java
Civet	perfume	Oman, India, Brunei
Myrobalan	purgative, astringent	Gujarat
Aniseed	aromatic, carminative oil	Middle East, India
Borax	glass manufacture	Asia Minor, Persia, Tibet
Muskwood	furniture, toys	Annam, Cambodia
Ambergris	perfume, lamp oil, incense	Berbera
Camel-hair cloth	textile	Ghazni, Middle East
Abaca cloth	hats, bags, mats, sails	Philippines



Table A.2: *Cities by Region*

Region	Cities
Middle East	Acre Aleppo Alexandria Algiers Anbar Bagdad Basra Bougie Caesarea Cairo Coptos Ctesiphon Damascus Damietta Ecbatana Fez Gundishapur Hasa Hormuz Isfahan Jerusalem Kairwan Kermanshah Kufa Mahdia Maragheh Marrakesh Mecca Medina Meknes Memphis Mosul Nishapur Qazvin Qum Qus Rabat Rayy Samarra Shiraz Siraf Stakhr Tabriz Tinnis Tlemcen Tunis Tunis
South Asia	Agra Ahmedabad Ahmednagar Anhilvada Anuradhapura Ayodhya Benares Bidar Bihar Bijapur Broach Burhanpur Calicut Cambay Chanderi Chandragiri Chitor Chunar Cuttack Delhi Dhar Ellora Gangaikondapuram Gauhati Gaur Goa Golconda Gulbarga Gwalior Hugli Hyderabad Jaunpur Jayapuram Jodhpur Kalinjar Kalyan Kamatapur Kanauj Kanchi Kausambi Kayal Khajuraho Kolhapur Kolkai Lahore Madurai Mandu Mansura Manyakheta Mau-Sahanya Monghyr Mukhalingam Pandua Patna Penukonda Polonnaruwa Pundravardhana Quilon Rajmahal Somnath Sonargaon Srinagar Surat Tamralipti Tanjore Thaneswar Udaipur Ujjain Valabhi Vatapi Vengi Vijayanagar Virapura Warangal
Europe	Barcelona Bologna Brescia Bruges Cologne Cordova Edessa Florence Genoa Ghent Granada Lisbon London Lyon Madrid Milan Naples Nuremberg Ochrida Palermo Paris Prague Ratisbon Rome Rouen Salerno Seville Thessalonica Toledo Tours Valencia Venice
China	Canton Changan Changsha Chengtu Chuanchang Fuchow Hangchow Kaifeng Kingtehchen Liaoyang Loyang Nanchang Nanking Ninghsia Ningpo Peking Pingcheng Quanzhou Siangyang Soochow Taiyuan Tientsin Tsinan Wuchang Xuzhou Yangchow Yecheng

Table A.3: *Summary Statistics (Diasporas from Europe)*

	mean	sd	min	max	count
Equal to 1 if there was diaspora community in destination city	0.02	0.13	0	1	2,210
Destination city population	3.5	0.69	1	7	2,210
Distance to destination city	8.58	0.59	6	9	2,210
Least-cost path to destination city	8.21	4.33	1	17	2,210
Difference in mean temperature	7.94	7.76	-12	25	2,210
Difference in annual precipitation	0.07	0.65	-1	3	2,210
Longitudinal difference	65.76	35.13	-16	136	2,210
Latitudinal difference	-15.42	11.47	-65	17	2,210
State size	2.4	3.37	0	20	2,210
State duration	0.48	0.5	0	1	1,989
Distance to overland trade route (lagged)	1.13	1.1	0	5	884
Distance to sea trade route (lagged)	1.25	1.52	0	9	884
Distance to nearest chokepoint	2,136.60	1,252.35	24	5,441	2,210
Observations	2,210				

Table A.4: *Summary Statistics (Diaspora from Muddle East)*

	mean	sd	min	max	count
Equal to 1 if there was diaspora community in destination city	0.08	0.27	0	1	2,070
Destination city population	3.49	0.68	1	7	2,070
Distance to destination city	8.32	0.6	6	9	2,070
Least-cost path to destination city	6.35	3.69	1	15	2,070
Difference in mean temperature	-1.07	7.77	-18	11	2,070
Difference in annual precipitation	0.9	0.58	0	3	2,070
Longitudinal difference	35.93	39.93	-48	111	2,070
Latitudinal difference	-2.85	13.13	-53	27	2,070
State size	1.92	3.04	0	20	2,070
State duration	0.53	0.5	0	1	1,863
Distance to overland trade route (lagged)	1.28	1.04	0	5	828
Distance to sea trade route (lagged)	1.26	1.58	0	9	828
Distance to nearest chokepoint	2,300.39	1,171.73	24	5,441	2,070
Observations	2,070				

Table A.5: *Summary Statistics (Diaspora from South Asia)*

	mean	sd	min	max	count
Equal to 1 if there was diaspora community in destination city	0.04	0.20	0	1	1,790
Destination city population	3.55	0.73	1	7	1,790
Distance to destination city	8.41	0.40	7	9	1,790
Least-cost path to destination city	5.88	2.09	2	10	1,790
Difference in mean temperature	-11.19	6.39	-24	4	1,790
Difference in annual precipitation	-0.34	0.59	-1	2	1,790
Longitudinal difference	-21.65	45.20	-88	62	1,790
Latitudinal difference	12.96	11.84	-43	39	1,790
State size	2.79	3.59	0	20	1,790
State duration	0.50	0.50	0	1	1,611
Distance to overland trade route (lagged)	0.94	1.17	0	5	716
Distance to sea trade route (lagged)	1.20	1.66	0	9	716
Distance to nearest chokepoint	1,854.38	1,396.33	24	5441	1,790
Observations	1,790				

Table A.6: *Summary Statistics (Diaspora from China)*

	mean	sd	min	max	count
Equal to 1 if there was diaspora community in destination city	0.01	0.11	0	1	2,260
Destination city population	3.45	0.63	1	7	2,260
Distance to destination city	8.52	0.52	7	9	2,260
Least-cost path to destination city	8.45	4.40	1	16	2,260
Difference in mean temperature	4.01	7.34	-13	15	2,260
Difference in annual precipitation	0.02	0.62	-1	3	2,260
Longitudinal difference	-58.25	36.94	-126	26	2,260
Latitudinal difference	-3.46	12.56	-54	26	2,260
State size	1.79	2.74	0	20	2,260
State duration	0.48	0.50	0	1	2,034
Distance to overland trade route (lagged)	1.01	1.05	0	5	904
Distance to sea trade route (lagged)	1.00	1.26	0	9	904
Distance to nearest chokepoint	1,841.58	1,140.84	24	5,441	2,260
Observations	2,260				

Table A.7: *Trade Diaspora Communities (rare events logit, straight-line distance)*

VARIABLES	(1) European	(2) Middle Eastern	(3) South Asian	(4) Chinese	(5) European	(6) Middle Eastern	(7) South Asian	(8) Chinese
Destination city population	1.135*** (0.156)	0.767*** (0.222)	1.175*** (0.245)	0.933** (0.407)	1.125*** (0.156)	0.766*** (0.204)	1.209*** (0.259)	1.058*** (0.401)
Distance to destination city	-1.705*** (0.263)	0.995* (0.566)	-1.617** (0.643)	-1.199 (1.559)	-2.056*** (0.617)	-0.637 (0.405)	-2.122*** (0.714)	-3.419 (2.948)
Difference in mean temperature	0.082** (0.032)	0.102** (0.040)	0.166*** (0.050)	0.161* (0.088)				
Difference in annual precipitation	0.191 (0.376)	0.236 (0.471)	-0.177 (0.567)	1.446*** (0.372)				
Longitudinal difference					0.008 (0.010)	0.022*** (0.007)	-0.005 (0.009)	0.003 (0.035)
Latitudinal difference					-0.045** (0.021)	-0.074*** (0.018)	-0.071*** (0.018)	-0.185*** (0.064)
Observations	2,210	2,070	1,790	2,260	2,210	2,070	1,790	2,260
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Robust standard errors clustered at diaspora group-destination city dyad and reported in parentheses.

+  $p \leq 0.15$ , \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

Table A.8: *Trade Diaspora Communities (logit)*

VARIABLES	(1) European	(2) Middle Eastern	(3) South Asian	(4) Chinese	(5) European	(6) Middle Eastern	(7) South Asian	(8) Chinese
Destination city population	1.169*** (0.178)	0.776*** (0.217)	1.246*** (0.251)	0.953** (0.408)	1.138*** (0.189)	0.865*** (0.202)	1.299*** (0.266)	1.055** (0.438)
Least-cost path to destination city	-0.357*** (0.084)	0.102 (0.067)	-0.445*** (0.141)	-0.395 (0.364)	-0.862*** (0.326)	-0.316*** (0.122)	-0.587*** (0.186)	-1.125 (0.848)
Difference in mean temperature	0.054* (0.029)	0.122*** (0.044)	0.156*** (0.051)	0.184* (0.103)				
Difference in annual precipitation	0.481 (0.300)	0.286 (0.454)	-0.178 (0.548)	1.488*** (0.409)				
Longitudinal difference					0.056** (0.024)	0.049*** (0.012)	-0.006 (0.010)	-0.036 (0.053)
Latitudinal difference					-0.052 (0.033)	-0.071*** (0.017)	-0.066*** (0.019)	-0.207** (0.080)
Observations	2,210	2,070	1,790	2,260	2,210	2,070	1,790	2,260
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Robust standard errors clustered at diaspora group-destination city dyad and reported in parentheses.

+  $p \leq 0.15$ , \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

EUROPEAN TRADE DIASPORA

Population	$\Delta$ Temperature	$\Delta$ Precipitation	Probability (%)
Low	Low	High	0.07
Low	High	Low	0.08
High	Low	High	0.02
High	High	Low	0.19

MIDDLE EASTERN TRADE DIASPORA

Population	$\Delta$ Temperature	$\Delta$ Precipitation	Probability (%)
Low	Low	High	3.79
Low	High	Low	13.54
High	Low	High	6.18
High	High	Low	20.76

SOUTH ASIAN TRADE DIASPORA

Population	$\Delta$ Temperature	$\Delta$ Precipitation	Probability (%)
Low	Low	High	0.28
Low	High	Low	1.62
High	Low	High	1.39
High	High	Low	7.52

CHINESE TRADE DIASPORA

Population	$\Delta$ Temperature	$\Delta$ Precipitation	Probability (%)
Low	Low	High	0.09
Low	High	Low	0.16
High	Low	High	0.18
High	High	Low	0.33

Table A.9: *Predicted probability of observing a trade diaspora by sending region in 1400 CE. Each table shows the probabilities for combinations of destination city population; difference in temperature; and difference in precipitation. “Low” values are the 25th percentile values and “high” values are the 75th percentile values. All probabilities are percentages. All other variables are held at their mean values.*

Table A.10: *Trade Diaspora Communities — Number of Centuries of Diaspora*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	European	Middle Eastern	South Asian	Chinese	European	Middle Eastern	South Asian	Chinese
Destination city population	0.446*** (0.117)	1.208** (0.506)	0.824** (0.365)	0.004 (0.072)	0.429*** (0.118)	1.248** (0.493)	0.862** (0.376)	-0.035 (0.080)
Least-cost path to destination city	-0.055*** (0.011)	0.003 (0.044)	-0.122*** (0.042)	0.003 (0.012)	-0.076*** (0.021)	-0.086 (0.055)	-0.143* (0.073)	0.079 (0.085)
Difference in mean temperature	-0.001 (0.004)	0.055*** (0.020)	0.052** (0.024)	0.006 (0.004)				
Difference in annual precipitation	0.126** (0.054)	0.418 (0.453)	0.007 (0.298)	0.384** (0.189)				
Longitudinal difference					0.004 (0.002)	0.010** (0.004)	-0.002 (0.002)	0.010 (0.009)
Latitudinal difference					-0.001 (0.002)	-0.041*** (0.012)	-0.022** (0.010)	-0.015* (0.009)
Observations	221	207	179	226	221	207	179	226
R-squared	0.226	0.113	0.164	0.106	0.217	0.131	0.143	0.085
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Robust standard errors clustered at diaspora group-destination city dyad and reported in parentheses.

+ p <= 0.15, \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01.

Table A.11: *Summary Statistics — Mean State Area by Region*

	mean	sd	min	max	count
Cities in Europe	1.07	0.47	0	2	32
Cities in Central Asia	3.74	1.02	2	5	11
Cities in China	5.97	0.18	5	6	27
Cities in Middle East	3.64	1.35	1	5	46
Cities in South Asia	0.9	0.5	0	2	74
Cities in Southeast Asia	0.3	0.31	0	1	17

Table A.12: *Summary Statistics — Mean State Duration by Region*

	mean	sd	min	max	count
Cities in Europe	0.53	0.16	0	1	32
Cities in Central Asia	0.24	0.15	0	1	11
Cities in China	0.54	0.05	0	1	27
Cities in Middle East	0.25	0.18	0	1	46
Cities in South Asia	0.45	0.18	0	1	74
Cities in Southeast Asia	0.66	0.15	0	1	17



Table A.13: *Trade Diaspora Communities — State Characteristics*

VARIABLES	(1) European	(2) Middle Eastern	(3) South Asian	(4) Chinese	(5) European	(6) Middle Eastern	(7) South Asian	(8) Chinese
Destination city population	1.112*** (0.180)	0.808*** (0.200)	1.215*** (0.285)	1.027** (0.440)	1.110*** (0.193)	0.822*** (0.208)	1.378*** (0.283)	1.041** (0.440)
Least-cost path to destination city	-0.733** (0.341)	-0.404*** (0.126)	-0.601*** (0.205)	-0.974 (0.841)	-0.764** (0.328)	-0.342*** (0.133)	-0.531*** (0.185)	-0.983 (0.828)
Longitudinal difference	0.044* (0.026)	0.055*** (0.014)	-0.008 (0.011)	-0.027 (0.052)	0.047* (0.024)	0.050*** (0.013)	-0.004 (0.010)	-0.029 (0.052)
Latitudinal difference	-0.047* (0.027)	-0.091*** (0.018)	-0.079*** (0.019)	-0.195** (0.078)	-0.047 (0.032)	-0.073*** (0.017)	-0.077*** (0.018)	-0.185** (0.076)
State size	0.023 (0.086)	0.163*** (0.028)	0.116** (0.058)	0.142 (0.111)				
State duration					0.268 (0.368)	0.028 (0.174)	-1.181*** (0.343)	-0.073 (0.414)
Observations	2,210	2,070	1,790	2,260	1,989	1,863	1,611	2,034
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Robust standard errors clustered at diaspora group-destination city dyad and reported in parentheses.

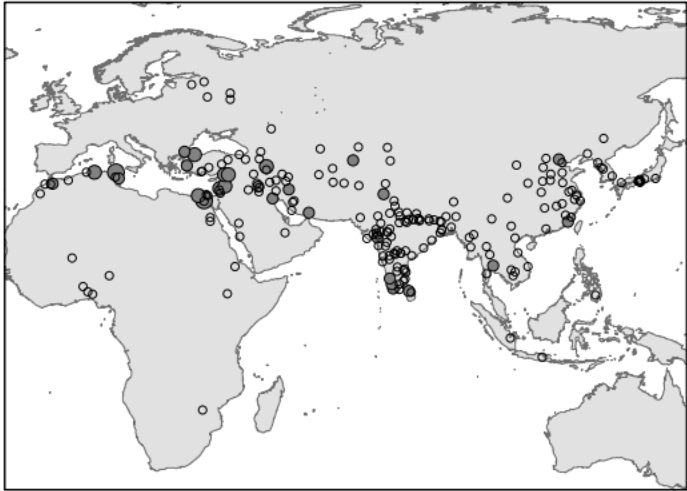
+  $p \leq 0.15$ , \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

Table A.14: *Trade Diaspora Communities — Cultural Factors*

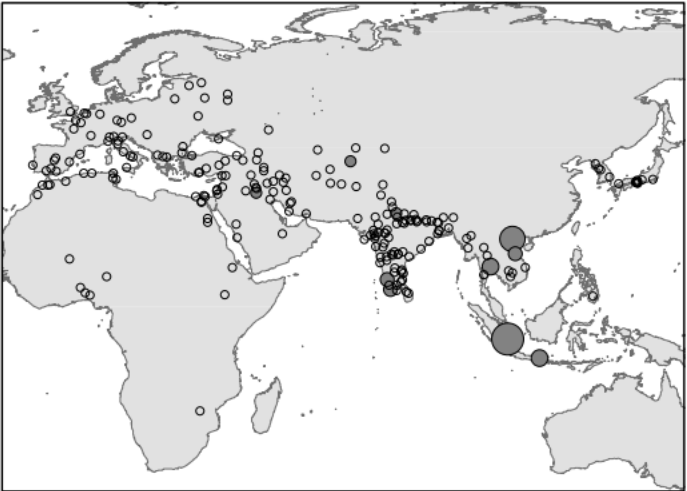
VARIABLES	(1) European	(2) Middle Eastern	(3) South Asian	(4) Chinese	(5) European	(6) Middle Eastern	(7) South Asian	(8) Chinese
Destination city population	1.032*** (0.208)	0.709*** (0.231)	1.530*** (0.327)	1.066* (0.603)	1.130*** (0.193)	0.871*** (0.193)	1.265*** (0.257)	1.131** (0.492)
Least-cost path to destination city	-0.992** (0.465)	-0.186 (0.140)	-0.531** (0.212)	-1.277 (0.874)	-0.787** (0.379)	-0.329** (0.134)	-0.263 (0.223)	-0.526 (0.528)
Longitudinal difference	0.054 (0.035)	0.055*** (0.015)	-0.001 (0.015)	-0.064 (0.078)	0.047* (0.025)	0.046*** (0.013)	0.044* (0.025)	-0.010 (0.037)
Latitudinal difference	-0.088** (0.039)	-0.134*** (0.027)	-0.101*** (0.038)	-0.202** (0.082)	-0.047 (0.032)	-0.075*** (0.018)	-0.001 (0.046)	-0.135** (0.054)
Distance to overland trade route (t-100)	0.489 (0.426)	-0.981*** (0.326)	-0.517 (0.496)	-0.323 (0.973)				
Distance to sea trade route (t-100)	-0.469 (0.459)	-0.091 (0.119)	0.091 (0.179)	0.433 (0.449)				
Distance to nearest chokepoint					0.103 (0.372)	0.187 (0.209)	-1.497** (0.664)	-0.980** (0.465)
Observations	884	828	716	904	2,210	2,070	1,790	2,260
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Robust standard errors clustered at diaspora group-destination city dyad and reported in parentheses.

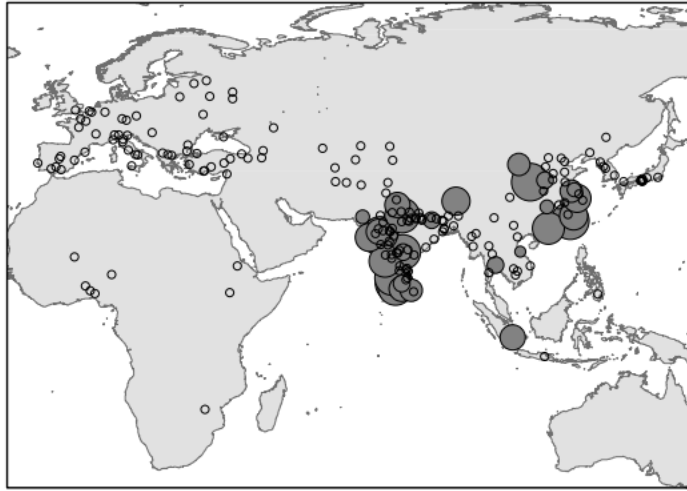
+  $p \leq 0.15$ , \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .



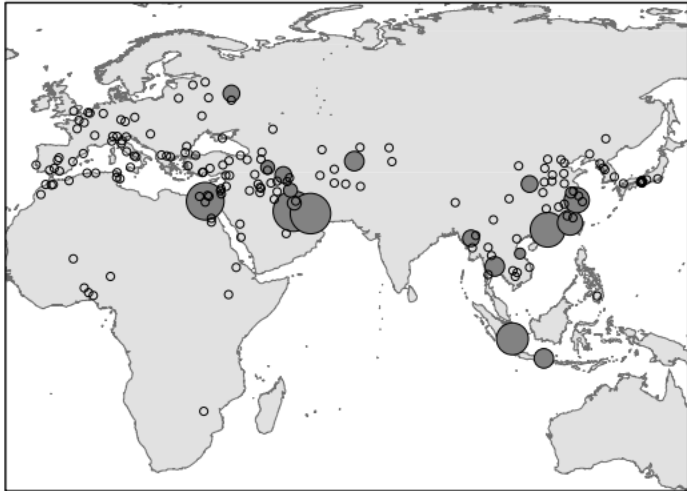
European Diaspora



Chinese Diaspora



Middle Eastern Diaspora



South Asian Diaspora

Time Period  
(Centuries)

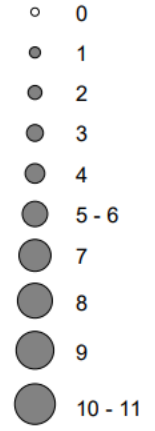
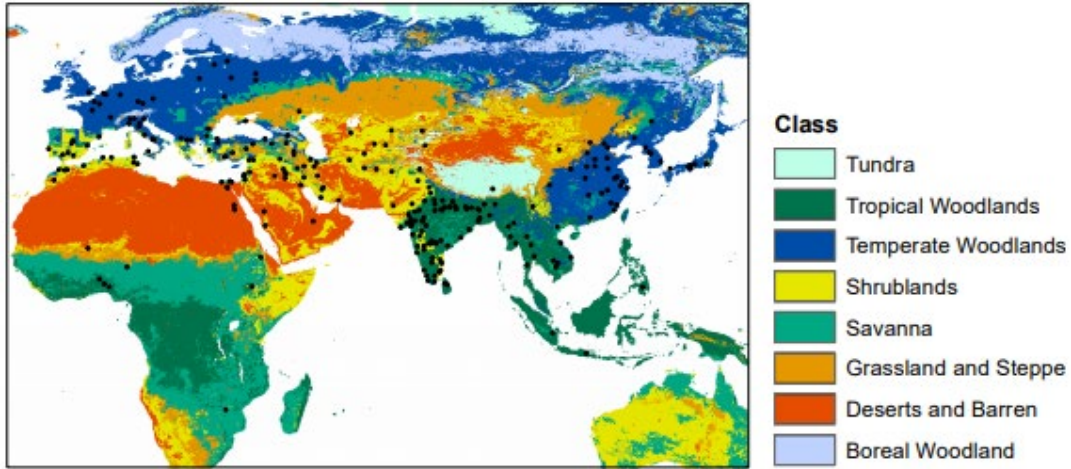
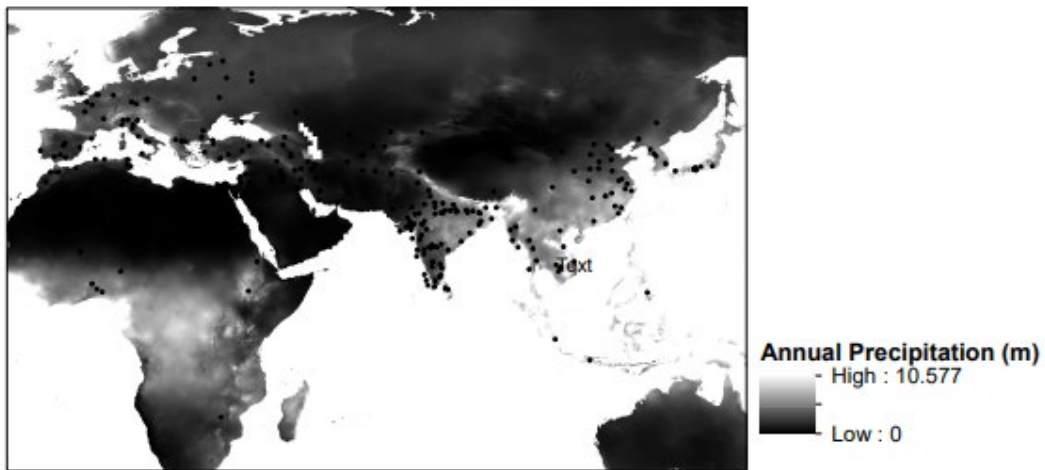


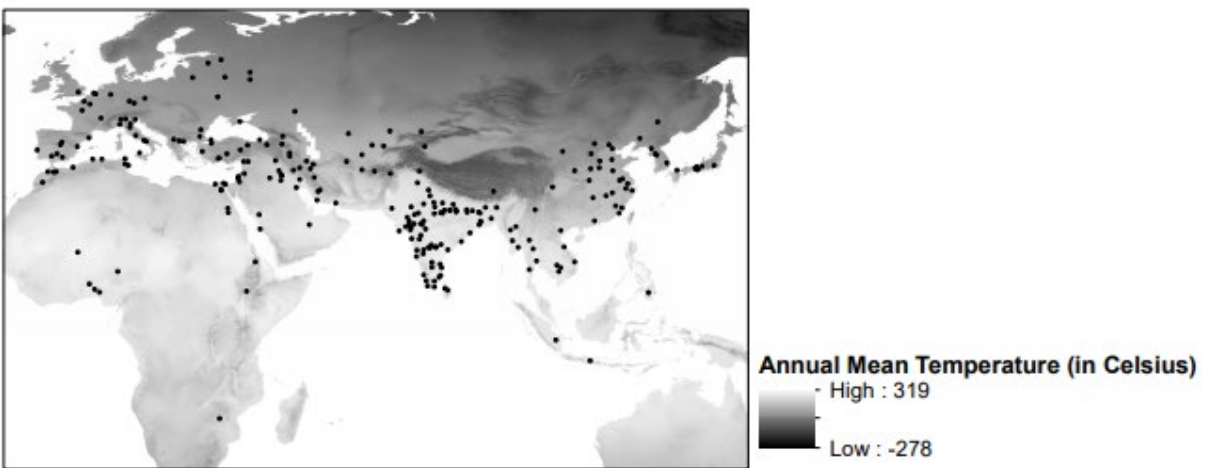
Figure 1: *Centuries of Trader Diaspora*



(a) Potential Vegetation

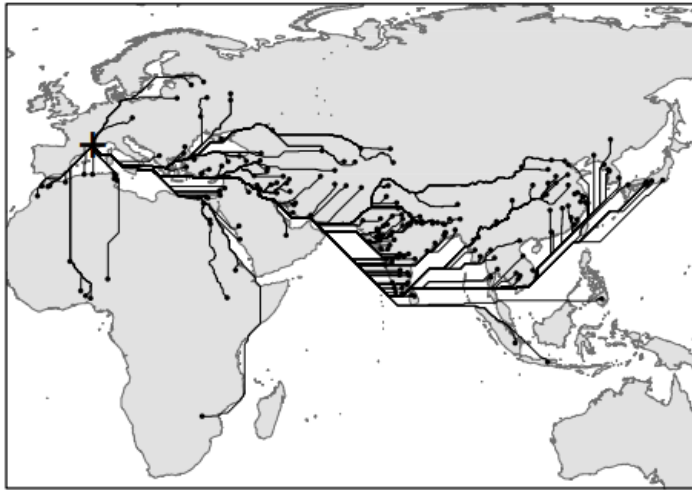


(b) Precipitation

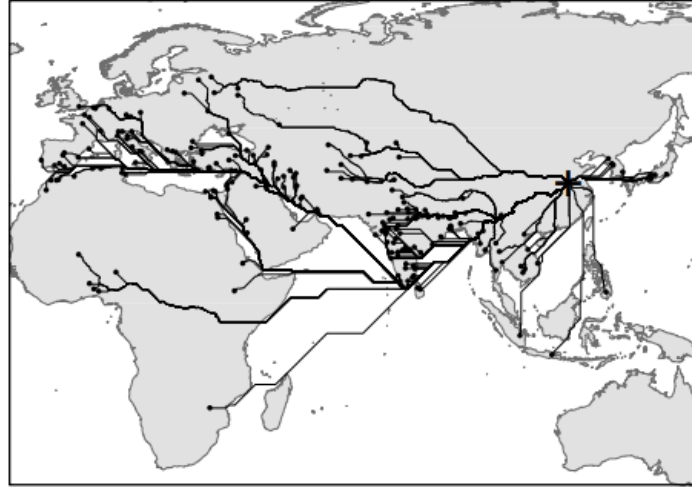


(c) Temperature

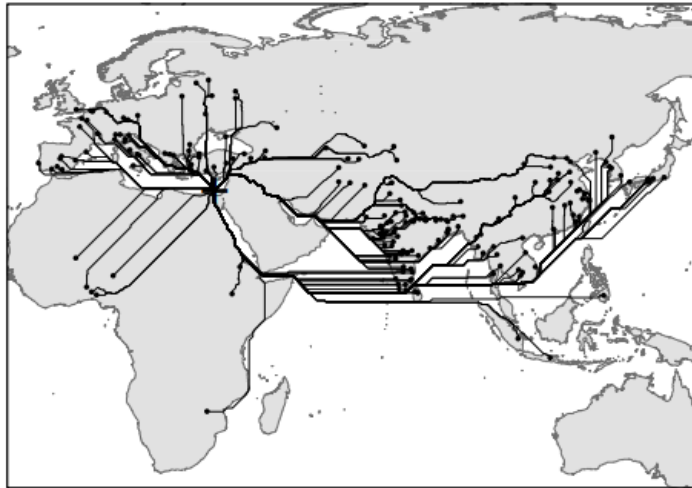
Figure 2: *Biogeographic Endowments*



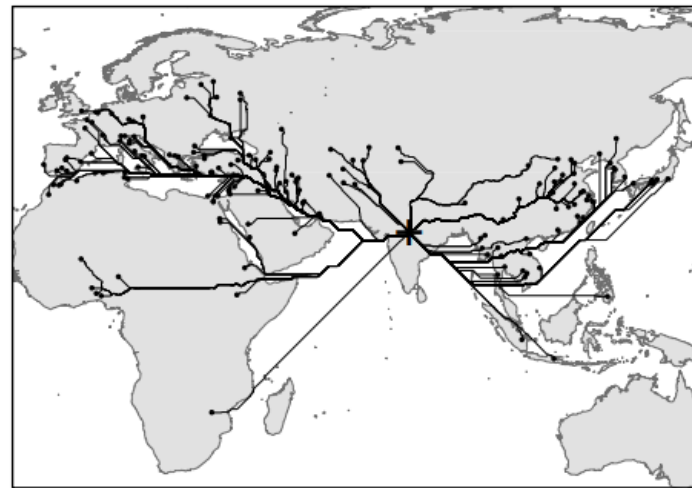
Least-cost Paths from Europe



Least-cost Paths from China



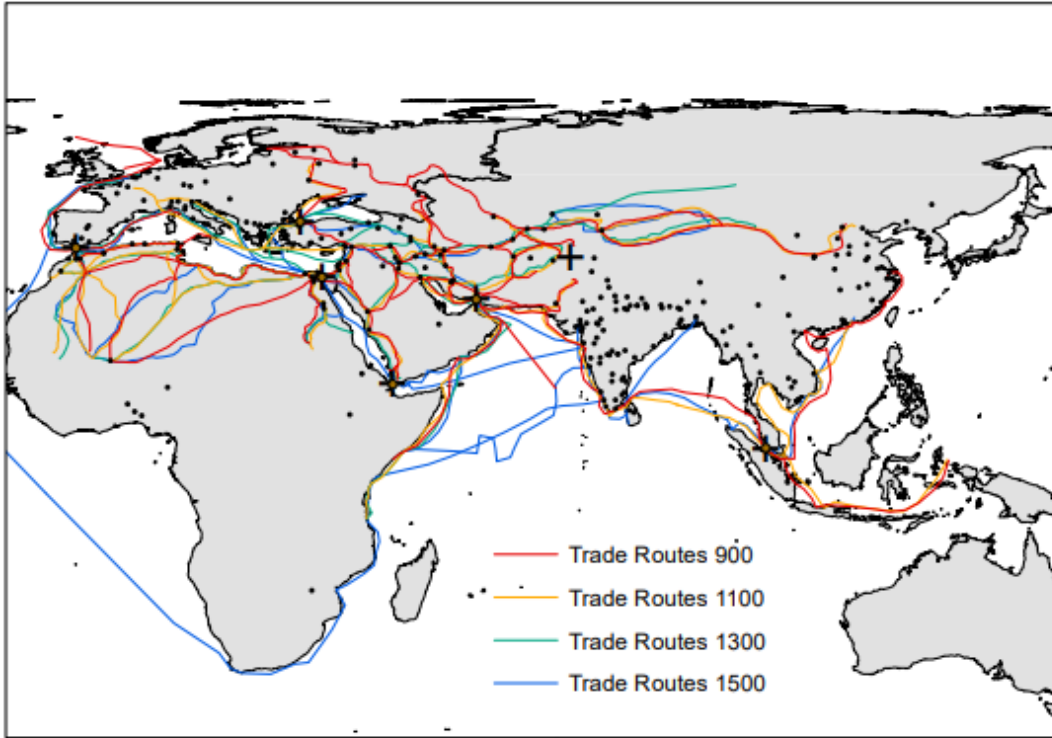
Least-cost Paths from Middle East



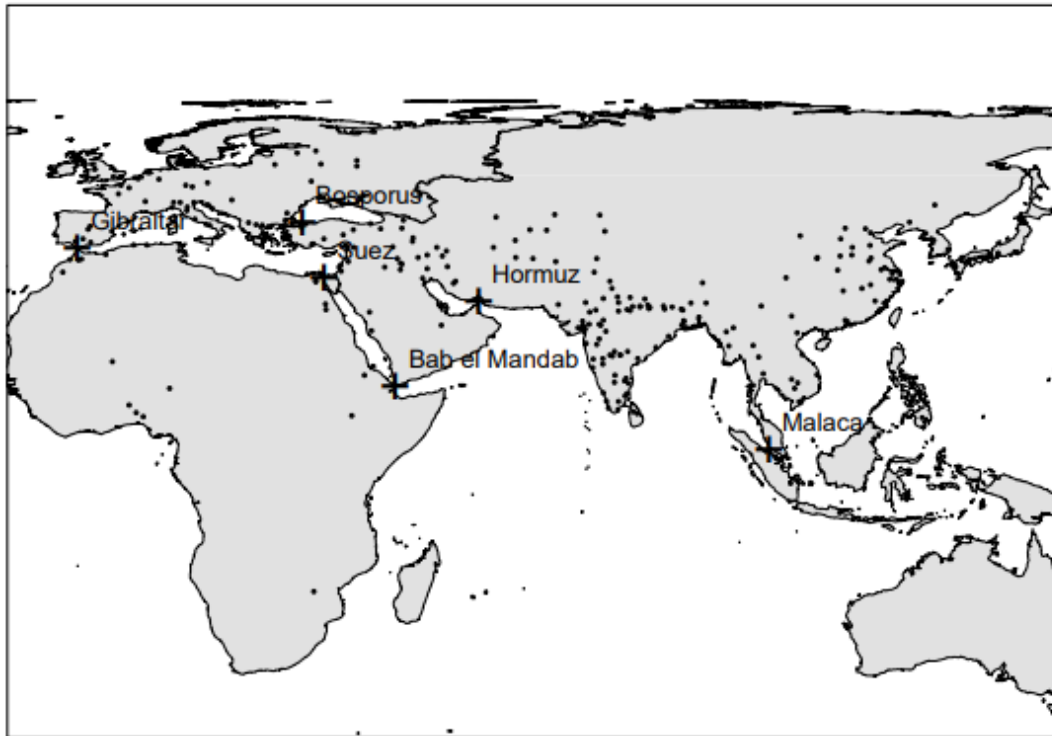
Least-cost Paths from South Asia

- City
- + Urban gravity center

Figure 3: *Least-Cost Paths*



(a) Trade Routes (Kennedy 2002)



(b) Natural Chokepoints

Figure 4: Trade Routes and Natural Chokepoints

## 2 Diaspora Coding References

We have used the following references in order code whether a diaspora trader group existed in a city in a given year. In coding diaspora groups, we looked for records of communities of merchants resettling in (and not simply passing through) new cities specifically to participate in trade within a large integrated market. We did not include diplomats, conquerors/occupiers/colonizers, artisans or missionaries. In terms of the time period, communities must have come into existence during the selected time frame, and these communities were classified by ethnicity and cultural identity that we categorize as European, Middle Eastern, South Asian and Chinese. They are: Aftab Husain Kola (english. [alarabiya.net/en/features/2018/12/13/Hadhramis-and-a-slice-of-Yemen-in-India-s-Hyderabad.html](http://alarabiya.net/en/features/2018/12/13/Hadhramis-and-a-slice-of-Yemen-in-India-s-Hyderabad.html)); Archibald Lewis (Journal of the Economic and Social History of the Orient 1973); Benjamin Arbel (Mamluk Studies review 2004); Bhaswati Bhattacharya (Journal of the Economic and Social History of the Orient 2005); BR Parineetha (United Publisher Mangalore 2006); Brahim Alaoui, Trinita Kennedy, Elizabeth Marwell, and Qamar Adamjee (Yale University Press 2007); Carl H Kraeling (Journal of Biblical Literature 1932); Chitra Unithan ([timesofindia.indiatimes.com/city/ahmedabad/Arabic-Persian-dominated-Surat/articleshow/17645063.cms](http://timesofindia.indiatimes.com/city/ahmedabad/Arabic-Persian-dominated-Surat/articleshow/17645063.cms)); Daniel C Waugh (University of Washington 2013); Daniel H Bays (John Wiley and Sons 2001); Emil Schurer ([www.jewishencyclopedia.com/articles/1171-alexandria-egypt-ancient](http://www.jewishencyclopedia.com/articles/1171-alexandria-egypt-ancient)); Finbarr Barry Flood (A Companion to Asian Art and Architecture 2011); Francisco Apellaniz (Mediterranean Historical Review 2015); Gang Deng (The International History Review 1997); Gaston Wiet (University of Oklahoma Press 1971); George Fiske (Columbia University 2012); Gwang Pan (China Intercontinental Press 2005); Haraprasad Ray (The Portuguese, Indian Ocean and European Bridgeheads 2001); Haraprasad Ray and KS Mathew (Mariners, Merchants and Oceanss Studies in Maritime History 1995); Hugh Clark (Journal of the Economic and Social

History of the Orient 2006); Hyunhee Park (Cambridge University Press 2012); Isabel Hofmeyr (PMLA 2010); Ishrath Zanoosey ([www.colombotelegraph.com/index.php/time-tested-bond-of-sinhala-muslim-friendship](http://www.colombotelegraph.com/index.php/time-tested-bond-of-sinhala-muslim-friendship)); James Onley (Springer 2014); Janel L Abu-Lughod (Oxford University Press 1989); Jawaid Akhtar (Proceedings of the Indian History Congress 1995); Jewish Virtual Library (<https://www.jewishvirtuallibrary.org/alexandria>); Jewish Virtual Library ([www.jewishvirtuallibrary.org/antioch](http://www.jewishvirtuallibrary.org/antioch)); Joel Pattison (The Journal of North African Studies 2020); John Chaffee (Journal of the Economic and Social History of the Orient 2006); John W Chaffee (Cambridge University Press 2018); Jonathan Karam Skaff (Journal of the Economic and Social History of the Orient 2003); Julispong Chulatana (Manusya: Journal of Humanities 2008); K Liji (Shree Sankaracharya University of Sanskrit NA); Kenneth R Hall (Journal of the Economic and Social History of the Orient 2009); Kenneth R Hall (TRANS: TransRegional and-National Studies of Southeast Asia 2016); Kenneth R Hull (Journal of World History 2013); Kenneth R Hull (Journal of World History Press 2014); Kim S Sexton ([depts.washington.edu/silkroad/cities/iran/isfahan/isfahan.html](http://depts.washington.edu/silkroad/cities/iran/isfahan/isfahan.html)); KP Padmanabha Menon (Asian Educational Service 1924); Kwa Chong Guan (ISEAS 2016); Lawrence G Potter (CIRS Occasional Papers 2017); M Vijayalakshmy (Proceedings of the Indian History Congress 1995); Matthew P Canepa (Ars Orientalis 2010); Mehrdad Shokoohy (Bulletin of the School of Oriental and African Studies 2012); Museum of the Jewish People ([dbs.bh.org.il/place/alexandria](http://dbs.bh.org.il/place/alexandria)); Museum of the Jewish People ([dbs.bh.org.il/place/hormuz](http://dbs.bh.org.il/place/hormuz)); Museum of the Jewish People ([www.anumuseum.org.il/jewish-community-cairo](http://www.anumuseum.org.il/jewish-community-cairo)); P Khadeeja (Kozhikode 2008); Pieris Kamalika ([island.lk/2008/03/08/satmag3.html](http://island.lk/2008/03/08/satmag3.html)); Pius Malekandathil (Primus Book 2010); Pran Nath Chopra (Sterling Publishers 2003); Richard Von Glahn (The Journal of Economic History 1996); Risha Lee (Columbia University 2012); RJ Barendse (Journal of World History 2000); Robin Cohen



(International affairs 1996); Roxani Eleni Margariti (University of North Carolina Press 2007); Scott Levi (Iranian Studies 1999); Shelomo Dov Goitein (Bulletin of the School of Oriental and African Studies, University of London 1987); Shelomo Dov Goitein (Journal of the Economic and Social History of the Orient 1980); Shireen Moosvi (Proceedings of the Indian History Congress 2009); Sophus Reinert and Robert Fredona (Harvard Business School BGIE Unit Working Paper 2017); Subhakanta Behera (Economic and Political Weekly 2008); Tai Peng Wang ([www.gavinmenzies.net/wp-content/uploads/2011/08/wangtaipeng\\_zhenghevisittocairo.pdf](http://www.gavinmenzies.net/wp-content/uploads/2011/08/wangtaipeng_zhenghevisittocairo.pdf)); Tansen Sen (Journal of the Economic and Social History of the Orient 2006); Timothy Brook (Harvard University Press 2010); Tomas Petru (Moussons. Recherche en sciences humaines sur l'Asie du Sud-Est 2016); Vijaya Lakshmi Labh (Proceedings of the Indian History Congress 1995); Vivek Menezes ([timesofindia.indiatimes.com/city/goa/israels-long-standing-go-a-connections/articleshow/59431607.cms](http://timesofindia.indiatimes.com/city/goa/israels-long-standing-go-a-connections/articleshow/59431607.cms)2017).