Economic informality and the venture funding impact of migrant remittances to developing countries[1]

Candace Martinez [a,2], Michael E. Cummings [b,3], Paul M. Vaaler [c,d,*]

[a] IE Business School, Calle María de Molina, 11, 28006 Madrid, Spain
[b] Lee Business School, University of Nevada, Las Vegas, 4505 S. Maryland Parkway, Las Vegas, NV 89154, USA
[c] Law School, University of Minnesota, 412 Mondale Hall, 229 19th Avenue South, Minneapolis, MN 55455, USA
[d] Carlson School of Management, University of Minnesota, 3-424 CarlSMgmt, 321 19th Avenue South, Minneapolis, MN 55455, USA

ARTICLE INFO

ABSTRACT

In developing countries, weak institutional capacity to observe and regulate the economy discourages foreign capital inflows vital to venture investment. This informality effect may differ for migrant remittances, inflows less reliant on formal arrangements. We use institutional and transaction cost theories to propose that informality shifts migrant remittances toward venture funding. Analyses in 48 developing countries observed from 2001 to 2009 support our proposition. When the informal sector exceeds approximately 46% of GDP, remittances increase venture funding availability. Migrants and their remittances are vital to funding new businesses and entrepreneurially-led economic growth in developing countries where substantial informality deters other foreign investors.

© 2014 Elsevier Inc. All rights reserved.

1. Executive summary

Many recent studies in entrepreneurship (Kiss et al., 2012; Webb et al., 2012), business, and economic development (Bruton et al., 2012. McGahan, 2012; Webb et al., 2009; Yang, 2011) have highlighted the importance of informal sector entrepreneurship and called for new theoretical models and empirical evidence to guide our understanding of how entrepreneurs and their firms emerge and

grow in the informal sector. In response, we develop and test a theoretical framework based on institutional theory and transaction cost economics to describe how entrepreneurs in developing countries with substantial informal sectors might find venture funding abroad through remittances. Remittances are individual-to-individual or household-to-household money transfers from host to home countries. We propose that an increase in informality shifts the allocation of these remittances away from their default use of financing household consumption toward venture investment.

We find support for this proposition in empirical analyses of remittances to and informality in 48 developing countries observed from 2001 to 2009. Although informality has a negative direct effect on venture funding availability, it has a positive moderating effect; remittances increase venture funding availability when informal transactions exceed approximately 46% of gross domestic product (GDP). That basic finding proves robust to reasonable variations in data sampling and empirical model specification, including a dynamic panel estimation strategy that addresses the possibility of omitted variable bias and reverse causation between remittances and venture funding availability.

Despite the importance of our study for understanding entrepreneurship in the informal economy, it is important to point out that informality is most productively thought of as an institutional condition to be studied and understood, rather than a development goal to be sought after. Our empirical findings (negative direct effect, positive moderation effect) suggest that the combination of high remittance contributions and high informality is more of a consolation prize than a fast track to a robust entrepreneurial economy.

Our theory-based explanation complements other recent research focusing on the venture-funding role of large multinational corporations ("MNCs") in developing countries. Their approach emphasizes that large-scale foreign direct investment ("FDI") from MNCs can generate indirect venture funding spin-off effects (Kim and Li, 2012; Webb et al., 2010). In contrast, our approach emphasizes how small-scale transfers from individuals and households abroad can generate direct venture funding effects, contingent on the level of informality.

Our study also contributes to current debates in development research (e.g., Yang, 2011), practice (e.g., Moneygram, 2010), and in public policy (e.g., Ratha, 2003) circles. These researchers share an interest in understanding the conditions under which remittances to developing countries are more likely to shift toward financing commercial transactions such as new business creation. Development economists typically explain this shift based on occasional disruptions in other venture funding resources (i.e. resulting from natural disasters), or to the location of would-be entrepreneurs in more remote, rural areas (Yang, 2011). Our study suggests informality as an alternative driver of shifts in remittance uses; one that is linked to differences in a developing country's institutional rather than natural environment.

Lastly, our findings regarding institutional shifts in remittance uses will permit foreign development professionals (e.g., Ratha, 2003) to better calibrate policies designed to decrease the transaction costs of remitting for household versus business uses. Similarly, important remittance industry players such as banks and money transfer organizations (e.g., Moneygram) can better anticipate customer needs and offer services better-tailored to household or business uses. More generally, firms and development professionals can better serve remitters abroad and recipients in developing countries trying to fund, found and grow new, often-unregistered microenterprises serving very low-income populations.

2. Introduction

Economic activity in many developing countries is still substantially located in the so-called "informal" sector where local public authorities lack adequate resources to observe and regulate business transactions. Maloney (2004), for example, estimates that from 30 to 70% of Latin American workers operated outside the purview of tax authorities during the early 2000s, while Friedman et al. (2000) estimate that from 14 to 63% of economic output in developing countries during the 1990s came from entrepreneurs and businesses gone underground. Informal economies are not merely transitory phenomena; they seem to persist and even grow in many developing countries. Indeed, during the 1990s and early 2000s several countries in Sub-Saharan Africa and Latin America saw faster economic growth in informal sectors than in the formal economy (Maloney, 2004).

Recent research in entrepreneurship (Kiss et al., 2012; Webb et al., 2012) and other fields in business and economic development academies (Bruton et al., 2012. McGahan, 2012; Webb et al., 2009; Yang, 2011) highlights the importance of informal sector entrepreneurship and calls for new theoretical models and empirical evidence to guide our understanding of how entrepreneurs and their firms emerge and grow in the informal sector. In response, we develop and test a theoretical framework explaining how entrepreneurs in developing countries with substantial informal sectors find venture funding abroad. We use institutional theory (North, 1990; Ramamurti, 2003) and transaction cost economics ("TCE") theory (Coase, 1937; Williamson, 1975, 1985) to propose that migrant remittances from abroad ("remittances") increase venture funding for local entrepreneurs when economic informality ("informality") is substantial. An increase in informality shifts these small individual-to-individual or household-to-household transfers away from their "default" use of financing household consumption toward venture investment. We find support for this proposition in empirical analyses of remittances to and informality in 48 developing countries observed from 2001 to 2009. Remittances increase venture funding availability when informal transactions exceed approximately 46% of gross domestic product (GDP).

Our study contributes to entrepreneurship theory, practice and public policy. We answer a call in academic research in entrepreneurship (Dau and Cuervo-Cazurra, 2014; Webb et al., 2012) and elsewhere in the business academy (Webb et al., 2009) to develop and test models that explain entrepreneurial processes in informal economies typical of many developing countries. Our theory-based explanation complements other recent research focusing on the venture-funding role of large multinational corporations ("MNCs") acting alone (Kim and Li, 2012) or in concert with others such as non-governmental organizations (Webb et al., 2010) in developing countries. Their approach emphasizes that large-scale foreign direct investment ("FDI") from MNCs can generate indirect venture funding spin-off effects. In contrast, our approach emphasizes that small-scale transfers from individuals and households abroad

can generate *direct* venture funding effects, contingent on the level of informality. To our knowledge, this study is the first to articulate theory and document evidence related to this complementary explanation.

In doing so, we also contribute to current debates in development research (e.g., Yang, 2011), practice (e.g., Moneygram, 2010) and public policy (e.g., Ratha, 2003) circles. They share with entrepreneurship researchers an interest in understanding whether and when remittances to developing countries are more likely to shift toward financing commercial transactions such as new business creation. Development economists typically explain this shift based on occasional disruptions in other venture funding resources due to, say, natural disasters, or to the location of would-be entrepreneurs in more remote, rural areas (Yang, 2011). Our study suggests informality as an alternative causal factor linked to a developing country's institutional rather than natural environment. With a better understanding of informality's effects on remittance uses, foreign development professionals (e.g., Ratha, 2003) can better calibrate policies designed to decrease the transaction costs of remitting for household versus business uses. Similarly, important remittance industry players such as banks and money transfer organizations (e.g., Moneygram, 2010) can better anticipate customer needs and offer them services better-tailored to household or business uses. More generally, firms and development professionals can better serve remitters abroad and recipients in developing countries trying to fund, found and grow new, often-unregistered microenterprises serving very low-income populations (Hall et al., 2010, 2012; London and Hart, 2010; Prahalad, 2004, 2006).

The remainder of this study is divided into five sections. Section 2 elaborates on fundamental concepts relevant to our study: migrant entrepreneurs, remittances and informality. Section 3 uses these concepts as well as institutional and TCE theories to develop our theoretical framework about informality, remittances and their effect on foreign capital inflows and venture funding availability. Section 4 then articulates the methods used to test our three hypotheses: 1) that remittances increase venture funding availability; 2) that informality decreases it; and 3) that the venture investment impact of remittances is positively moderated by economic informality. Section 5 reports results from descriptive, multiple regression and related marginal effects analyses of how remittances to and informality in 48 developing countries from 2001 to 2009 influence venture funding availability. Section 6 reviews key findings, articulates implications for research, practice and public policy, and discusses our study's limitations and future research directions.

3. Background concepts and literature

Elaboration of three concepts and their related literatures provides important context for our theoretical framework and empirical investigation: *migrant entrepreneurs* who live abroad and fund new business ventures in their home countries; *remittances* from those migrant entrepreneurs that can be used to fund those new ventures; and *informality* in the home country economy prompting migrant entrepreneurs to remit more for venture funding purposes.

3.1. Migrant entrepreneurs

Migrants entrepreneurs are "self-employed immigrants whose business activities require frequent travel abroad and who depend for the success of their firms on their contacts and associates in another country, primarily their country of origin" (Portes et al., 2002: 287). Also referred to as "transnational entrepreneurs" by Drori et al. (2009): 1006), these individuals renew their relationships through frequent communication and travel creatively "enhancing … and maximizing their resources base." For migrant entrepreneurs adroit at this "balancing act" (Patel and Conklin, 2009), these cross-country relationships help generate more venture ideas and better means to implement them.

The migrant population from which these entrepreneurs arise comprises anyone living outside their country of birth or first citizenship. This broad definition incorporates both legal and illegal refugees, political asylum-seekers, temporary workers and other transients (World Bank, 2006), a worldwide population that has grown rapidly in the 2000s. From 2000 to 2013, it tripled from approximately 70 million to more than 200 million, making migrants the fifth largest "country" in the world. An increasing percentage of this growth has been in so-called "South-South" migration, that is, migration from one to another developing country (World Bank, 2013a–b).

The concept of migrant entrepreneur may fit researcher intuition more easily when substantial wealth, education and or social privilege attributed to it. These characteristics give migrants legitimate economic and social bases for creating and maintaining the cross-country relationships that many view as critical to venture discovery. Consistent with this perspective, Madhavan and Iriyama (2009) describe "transnational technical communities" that permit entrepreneurs with scientific training or expertise to transfer new business ideas from developed to developing countries. Saxenian and Hsu (2001) describe how entrepreneurs working between the US and Greater China experience advantages in technical training and extended family wealth. For these researchers and others (e.g., Kuznetsov and Sabel, 2006), the advantages of venture discovery and implementation are limited to migrant elites.

Yet, this prevailing view is difficult to fully reconcile with recent evidence. Vaaler (2011, 2013) investigates the influence of remittances on venture funding availability in as many as 61 developing countries in the 2000s. He finds that remittances increase venture funding availability overall, but that remittances from better-educated migrants diminish (rather than magnify) that increase. He also finds that remittances to wealthier emerging-market countries increase venture funding availability less than remittances to less-developed countries, particularly those from Sub-Saharan Africa. At least with regard to venture funding, his findings cast doubt on a common view among researchers that transnational entrepreneurship among migrants is limited to elites distinguished by greater educational achievement, wealth, or both. Our conjecture is that more *and* less privileged migrants possess useful transnational relationships with extended family members or others from the same town or local district (e.g., province) in the home country. Such clan or community relationships can provide an alternative to formal commercial relationships based on contract and property rights when transferring venture capital, particularly capital for the smaller microenterprises often found in developing countries.

3.2. Remittances

Remittances are individual-to-individual or household-to-household money transfers from host to home countries, and are thus characteristic of the migrant and the migrant entrepreneur's experience (Vaaler, 2011). Compared to FDI, remittance transactions are typically smaller ($150–250) and occur more frequently (12–20 times annually). Remittances also contrast with FDI in that they are not necessarily payments for some transnational good or service (Yang, 2011). The largest share of total remittances, about 60–70%, is defined as "personal transfers," and the bulk of these include workers remittances, that is, transfers from migrants employed in a host country where they have more than a year's residence. Another 20–25% share of total remittances is defined as "compensation of employees". They are earnings by migrants with less than a year's residence in the host country. They are presumed to return with the temporary migrant. Two other typically small components of total remittances are social benefits (e.g., social security payments) that migrants might receive while abroad and transfer home, and capital transfers in the form of goods (e.g., automobiles) that migrants bring back with them when repatriated (IMF, 2013).

Remittances sent to developing countries more than quadrupled from $100 billion in 2000 to more than $400 billion in 2013. In most non-industrialized countries, they have become the second largest financial inflow after FDI, and in some less-developed countries, remittances are now the largest financial inflow (World Bank, 2013a–b). As migration patterns have changed, so, too, have remittances, with more remittance channels flowing South-South. Even the recent global recession only slightly and temporarily affected the steady increase in remittances (Ratha and Silwal, 2012; World Bank, 2012).

These changes have prompted academic and policy research about the scope of remittance uses, including their use in venture funding by migrant entrepreneurs. Recent reviews by Brown (2006) and Yang (2011) conclude that household consumption is still the primary usage for remittances, but funding new, often unregistered microenterprises is also significant, especially in areas that are rural or given to occasional environmental shocks (Clarke and Wallsten, 2003; Yang and Choi, 2007).

Along these lines, Woodruff and Zenteno (2007) find that remittances fund from 20–33% of microenterprises in and around several cities in Mexico. As noted earlier, Vaaler (2011, 2013) finds that remittances significantly increase venture funding availability. They also increase new business founding rates and broader internationalization of commercial activity. Some sampled developing countries in this study have large percentages of population living in rural areas (e.g., Kenya ≅ 76% in 2005) while others do not (Peru ≅ 23% in 2005), suggesting that remittances might shift to venture funding purposes for reasons other than a rural location.

3.3. Informality

One such factor may be *informality*, that is, the extent to which transactions occur outside the bureaucratic "gaze" and thus avoid the regulatory control of government (Hart, 2007).[4] We think Webb et al. (2009) set the domain of informality appropriately when they let it comprise any illegal transaction as long as it is legitimate, that is, it does not violate local social norms of acceptability. Thus, an unlicensed backroom hair-styling business in Nigeria may be illegal (and thus informal) if the government simply lacks the capacity to observe and regulate it, but a similarly unlicensed lending business would not be considered informal if the interest rates it charges are deemed usurious by local community standards.

Informality is a two-edged sword. It permits market participants to operate without government accountability but also hinders their access to government protection under relevant legal and regulatory provisions (Kistruck et al., 2014). Resulting institutional voids (Khanna and Palepu, 2000) can be filled in several ways, including with private agreements among transacting individuals where enforcement is provided by non-governmental third parties such as firms, professional or industry associations, community groups or even organized illegal (but not illegitimate) associations (Webb et al., 2009).

We have already noted the size, persistence and even growth of informality in developing countries (e.g., Maloney, 2004). Schneider and Enste (2002) explain informality in terms of economic and non-economic constraints. Less well-trained and resourced regulatory and non-regulatory institutions may follow from economic constraints familiar to most developing countries (Blades et al., 2011). But other non-economic constraints can hinder development of formal oversight and regulation of many commercial transactions in developing countries. For example, fractionalization along linguistic, ethnic and or religious lines at the founding of many developing countries in Sub-Saharan Africa may undermine the legitimacy of "national" governmental institutions and thus compliance with their dictates. Similarly, a history of sometimes arbitrary one-party rule in countries of the former USSR may result in legitimacy problems with post-Soviet governmental institutions (Flodman-Becker, 2004). Add to this the possibility that governments may intentionally turn a blind eye toward unregulated microenterprises in order to encourage entrepreneurial market-led economic growth (Kan, 2000).[5] With this in mind, we assume that informality follows chiefly from weak institutional capacity to observe

---

[4] Researchers on remittances also use the term informality, though with slightly different focus, to refer to the extent that remitters use non-commercial channels to transfer capital to home-country recipients. Commercial channels for remittances include banks (e.g., Wells Fargo) and money transfer organizations (e.g., Ria Financial) and post and telecommunications offices. Non-commercial channels include individuals carrying remitted monies across borders as well as more sophisticated debt-transfer practices based on *hawala* principles in classical Islamic law (Qorchi et al., 2003). Such alternative conduits are important, though better monitoring of remittance flows for taxation and anti-terrorism purposes have increased the percentage flowing through standard commercial conduits since 2001 to approximately 60% of estimated total remittances in 2009 (Freund and Spatafora, 2008; Moneygram, 2010). In this paper, our references to "informality" refer more specifically to the size of the informal economy, rather than describing the nature of remittance conduits.

[5] If so, then such policy has a low likelihood of success, at least according to La Porta and Shleifer (2014). They document the lower long-term productivity of businesses and entrepreneurs operating in informal sectors. They attribute inferior productivity to a lack of education and training for such entrepreneurs. Thus, their policy prescriptions emphasize better public and related business administrative education rather lower taxes and less burdensome business regulation.

and regulate transactions, but acknowledge that institutional unwillingness to observe and regulate may also matter in some developing countries.

Explication of our three concepts sets a foundation upon which we develop our theoretical framework. Migrant entrepreneurs have the potential to transfer capital from host to home countries for venture funding purposes and use informal clan and community assurances to protect their capital investment. Remittances have the potential to serve as that venture capital, especially in light of the recent growth in migrant entrepreneurs from and remittances to developing countries. Substantial, persistent, and even growing informality in developing country economies can shift migrant entrepreneurs and remittances from venture funding potential to reality.

4. Theory and hypotheses

4.1. Institutional theory

We elaborate on this basic explanation with grounding in institutional and TCE perspectives. Institutions, those "humanly devised constraints that shape human interaction" (North, 1990:3) establish a society's working rules, its ability to uphold the rule of law, and the actions that it allows or discourages (North, 1990; Ostrom, 1990; Scott, 1995). For most entrepreneurs, including those in developing countries, the quest for venture funding depends on well-functioning formal institutions related to law and regulation. Ramamurti (2003) describes this as an "institutional design challenge" requiring the right combination of substantive legal and regulatory rules, related legal and regulatory processes for applying them, and well-trained, well-resourced legal and regulatory officials to run such processes and enforce the substantive rules.

In this context, it may not be surprising that recent entrepreneurship research in developing country contexts has documented links between higher levels of entrepreneurial activity, including more venture funding activity, and stronger legal and regulatory institutions (Li and Zahra, 2012). That strength matters for formal institutions related to tax policy and contract enforcement (Lerner, 2009). It also matters for law and legal professionals, politics and elected officials (Khoury et al., 2012), and financial markets (Straub, 2005).

By implication, less venture funding flows into economies where formal institutions provide weaker protection to investors, particularly when those investors are well-educated and technically-oriented (Guler and Guillen, 2010). Khoury et al. (2012) observe that investors in these environments often have to commit more resources to compensate for the possibility of costly contractual transgressions, and may instead opt not to invest at all. Surveying 119 venture capitalists from three different institutional settings, Zacharakis et al. (2007) conclude that venture capital markets in emerging and transitional economies pose greater challenges for entrepreneurs. Unlike their counterparts in more developed economies, they cannot rely on legal and regulatory institutional safeguards to protect the terms of their initial venture investment agreements from opportunistic renegotiation by local creditors and governments.

If informality denotes the absence of such important legal and regulatory institutional capacity, then informality also undermines assurances critical to the creation and transfer of venture capital to new and growing businesses. Less oversight and accountability is a small consolation for the absence of predictably protective legal and regulatory institutions. Thus:

Hypothesis 1. Economic informality decreases venture funding availability in developing countries.

4.2. TCE theory

Institutional theory guides our rationale for informality's negative impact on venture funding availability in developing countries. TCE theory helps us understand the positive venture funding impact of remittances. According to Bucheli et al. (2010), the descriptive aim of TCE is to compare the long-term cost of producing and exchanging goods and services in a market regime with the cost under alternative regimes where individuals "internalize" aspects of transactions by employing rather than contracting, merging rather than selling at arm's length, and otherwise replacing markets with bureaucratic hierarchies. The primary normative aim of TCE is to define the circumstances when internalization is more cost efficient than the market.

In our context, the appropriate cost comparison for potential venture investors is not between market and hierarchical modes of capital transfer. Such TCE analysis may better fit the context of large foreign manufacturing or investment firms deciding whether to do business in developing countries either through arms-length trading with a domestic firm or internal expansion through the establishment of a subsidiary operation (see, e.g., Teece (1986)). In either case, the MNC has made the initial decision to do business there rather than forgo. In the context of developing country venture investment, which often involves smaller firms or individuals, TCE analysis also helps inform that initial decision regarding whether to invest at all. Here, however, the relevant comparison is between migrant and non-migrant entrepreneurs and the different transaction costs they face when considering whether to fund a new venture in a developing country.

Costs associated with coordinating the transfer of scarce venture funds to developing countries deter many non-migrant venture investors, particularly foreign-domiciled ones, who incur liabilities of "foreignness" (Zaheer, 1995) and "newness" (Stinchcombe, 1965) associated with any emergent enterprises they may fund. From a Coasean (1937) TCE perspective, the benefits of investing in many developing countries often do not exceed the high costs of negotiating, implementing, overseeing and, in the breach, legally enforcing initial terms of a new business investment. From a Williamsonian (1985) TCE perspective, prospects of opportunistic contractual breach and costly re-negotiation often undermine the attractiveness of contracting in the first instance.

Vaaler (2011, 2013) uses TCE logic to explain why migrant entrepreneurs are better positioned and more likely to go forward with venture investment than similarly-situated non-migrant entrepreneurs. That logic is closely associated with migrant tendencies to transfer capital from host to home country in the form of remittances. Migrants typically remit to extended family and community members where norms of reciprocity, social solidarity, trust, mutual support, and loyalty can supplant formal assurances provided by law and regulation. These "common values and beliefs provide the harmony of interests that erase the possibility of opportunistic behavior" (Ouchi, 1980: 138). When opportunistic behavior decreases, so, too, do transaction costs of negotiating, overseeing, and enforcing the transfer of money whether it be for financing a new business or for household consumption.

Such reasoning helps explain in TCE terms, for instance, the allocation of credit by migrant entrepreneurs in Vietnam during the 1990s (McMillan and Woodruff, 1999), and migrant venture investing patterns into Albania (Kilic et al., 2007), China (Ghosh, 2006), Egypt (McCormick and Wahba, 2003), India (Kuznetsov and Sabel, 2006), Mexico (Woodruff and Zenteno, 2007), and Turkey (Dustmann and Kirkchamp, 2002). Remitting migrant entrepreneurs can use informal relationships based on clan and community to assure the transfer of venture funding to emergent businesses, particularly microenterprises that benefit from small but regularly-frequent capital transfers. Even if only a small percentage of remitted monies is earmarked for business rather than for household consumption, the enormity of total worldwide remittances means that they will most likely affect – significantly and positively – overall venture funding availability back in the home country. Thus:

Hypothesis 2. Remittances increase venture funding availability in developing countries.

4.3. Integrating institutional and TCE theories

So far, we have treated the theoretical grounding for our hypotheses as separate and independent. Institutional theory explains why the absence of well-defined laws and regulations deters would-be entrepreneurs abroad from risking the transfer of venture capital (thus decreasing venture funding availability in developing countries), while TCE theory explains why remittances from migrant entrepreneurs, protected by informal clan- and community-relationships, increase venture funding availability in developing countries. But of course, these two hypotheses and related theories have some common grounding. From an institutional perspective, North (1990: 67) tells us that the rules of the business game are both "formal and informal" and that informal rules play a larger role in providing the "structure for exchange" in many developing countries. From a TCE perspective, Williamson (1993, 476) tells us that "culture is a check on opportunism" that helps explain cross-country differences in market- versus hierarchically-based transacting.

The entrepreneurial challenge is to shift behaviors to accommodate increased informality and mitigate increased transaction costs based on alternative (to formal institutional) culture-based assurances. Research in entrepreneurship, development and related fields has documented such adaptation in developing countries ranging from Guatemala (Khavul et al., 2013; Sutter et al., 2013) to Jamaica (Honig, 1998), Ghana (Boso et al., 2013) Russia and China (Puffer et al., 2010), Taiwan (Kan, 2000), and other countries with substantial base-of-the-pyramid populations (Martinez, 2010; Webb et al., 2010).

Applied to our context, institutional and TCE perspectives help explain the venture funding challenge faced by migrant entrepreneurs as informality increases in developing countries. In instances of extreme informality, venture funding is hamstrung by the lack of functioning courts or regulatory agencies. Witness post-civil war, "failed" states like Somalia that lack the most basic public governance and are still re-building in the 2000s. Except for capital city Mogadishu and Hargeisa, the country's second most populated city, almost the entire economy lies outside the observation and regulatory reach of officialdom. The only substantial venture capital inflows hail from migrant entrepreneurs remitting from neighboring states such as Kenya and from diaspora communities located in the UK and US (Maimbo, 2006). Remittances are nothing less than the "lifeblood of [Somalia's] economy" (New York Times, 2009: A14), funding more than 80% of all new domestic business start-ups (Hasan and Chalmers, 2008). Contrast this example with another developing country in the 2000s, Morocco, where stronger institutional capacity to observe and regulate transactions means a smaller informal sector — roughly 35% of total GDP. There is also better availability to venture funding at home; remittances from Moroccans abroad in France, Spain and elsewhere go predominantly to finance household expenses such as food, clothing, home improvement, education and healthcare. As little as 1–2% of total remittances to Morocco may go toward starting or helping support new businesses (Ria Financial, 2011).[6]

In terms of our theoretical framework, these contrasting examples suggest a shift in remittance use from household consumption to venture investment as overall levels of informality increase. A deteriorating formal institutional environment raises transaction costs for all potential foreign venture investors, but less so for migrant entrepreneurs with transnational kinship and community relationships capable of providing informal assurances for remitted capital. Migrant entrepreneurs adapt to increasing informality by shifting more of their venture investing activity to remittance channels, thereby enhancing the positive impact of remittances on venture funding availability. Thus:

Hypothesis 3. Increasing informality magnifies the positive venture funding impact of remittances in developing countries.

We summarize these three theoretical framework hypotheses graphically in Fig. 1. Hypotheses 1–2 predict direct negative (Hypothesis 1) and positive (Hypothesis 2) effects on venture funding availability in developing countries. Hypothesis 3 predicts a positive moderating (magnifying) effect of informality on the venture funding impact of remittances. The predicted direction of these interaction effects may be a function of differing theoretical logics, requiring us to explore alternative possibilities regarding

---

[6] Estimates of the percentage of remittances used for business investment in developing countries vary. They are as low as 0.50% (Amuedo-Dorantes et al., 2004) and as high as 20% (Bhatia, 2011). For additional detail, see Vaaler (2013) and Yang (2011).
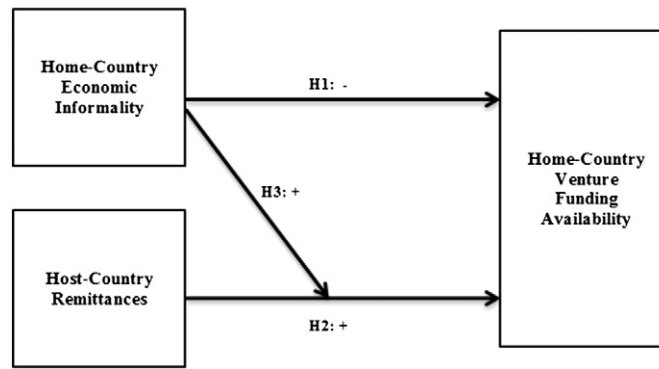
Fig. 1. Theoretical framework explaining individual and interaction effects on venture funding availability in developing countries.

the composition of effects of remittances on venture funding availability in developing countries. On the one hand, remittances may positively affect venture funding availability at any level of informality; increasing those levels merely magnifies that base positive effect. On the other hand, those same positive remittance effects may be more deeply conditioned on some minimal level of informality, without which, the positive effects on venture funding availability are nullified. We evaluate the evidence below with both theoretical possibilities in mind.

5. Method

5.1. Overview of data and sampling strategy

To test these three hypotheses we gather and analyze data on 48 developing countries observed from 2001 to 2009. We define our range of developing countries based on World Bank criteria using a maximum Gross National Income per capita level of US$12,000 on an inflation-adjusted basis. We start observing those countries in 2001 to take advantage of better quality data on remittances and migrants (see Vaaler (2011)) and end in 2009, the last year for which we have cross-country informality measures (Schneider et al., 2010). We lag independent and control variables by one year thus losing one year for analyses in return for greater confidence regarding temporal precedence and causal inference. After accounting for missing data on key variables, we have an unbalanced panel of 329 country-year observations.

5.2. Variable data sources

Table 1 lists variables used in our analyses as well as their measurement, data sources and descriptive statistics. Key variables relate to venture funding availability (*Venture_Funding*), remittances (*Remit_GDP*) and informality (*Informality*). Data for *Venture_Funding* come from the World Economic Forum (WEF, 2002–2010). *Venture_Funding* is the average response to an annual survey question of country managers asking how difficult it is to secure funding for "innovative but risky" business projects. The response corresponds to a 1–7 Likert scale with higher scores indicating greater venture funding. Governments use these rankings to benchmark their competitiveness with peers, to motivate policy changes, and to tout the attractiveness (or explain the unattractiveness) of their country for foreign lending and investment. Academic research in entrepreneurship (e.g. Stenholm et al., 2013) also uses these survey-based measures.

Data for *Informality* comes from Schneider et al. (2010), who measure annually the percentage of economic activity in a country concealed from government observation, usually to avoid taxation or other costly regulation. They use a multiple indicator multiple causal ("MIMIC") structural equation approach to generate percentage estimates of the informal or "shadow" economy.[7] Management researchers (e.g., Webb et al., 2009) refer to these MIMIC-based estimates in assessing the size of informal economies.

---

[7] The informal economy is modeled as a latent variable varying across countries i and years t, say η_{it}. To derive estimates of the latent variable, researchers include it first in a "structural" Eq. (1) as a left-hand side dependent variable explained by a vector of causal variables x_{it} (e.g., total average tax burden on citizens in country i in year t) and coefficients, γ. The error term, ξ, represents the unexplained component. Researchers also include the latent variable as a right-hand side variable in a factor analytic "measurement" Eq. (2) estimating a vector of dependent variables, y_{it} (e.g., labor force participation rate) representing different types of activity in the official economy, λ, the corresponding coefficient vector. ε is a vector of white noise disturbances. The resulting equation system for simultaneous estimation takes the following form:

$$\eta_{it} \;=\; + \gamma^{'} x_{it} \;+\; \xi_{it} \tag{1}$$

$$y_{it} \;=\; + \lambda \eta_{it} \;+\; \varepsilon_{it} \tag{2}$$

The resulting index estimates of η_{it} are converted to percentages using previous percentage estimates from some base year (e.g., 2000). For more on MIMIC estimation, see Schneider and colleagues (2010: 447–448).

Table 1
Variable names, measurements, descriptions, sources and descriptive statistics.

Variable category	Variable name	Variable measurement	Variable description	Variable source and descriptive statistics
Dependent variable	*Venture Funding$_{it}$*	A 1–7 scale indicating ease or difficulty for entrepreneurs to secure venture capital funding in country i in year t: 1 = very difficult; 7 = very easy	Survey response regarding availability of venture funding in country i in year t for "innovative but risky projects" there	WEF (2002–2010) Mean: 2.848 Standard dev: 0.580
Control variables	*Ln_GDP$_{it-1}$*	Natural log of GDP in US dollars for country i in year t-1	Value of goods and services produced within borders of home country i in year t-1	WDI (2013) Mean: 24.663 Standard dev: 1.549
	Per_Growth$_{it-1}$	GDP growth for country i in year t-1 adjusted for inflation, expressed as a percentage	Growth rate in GDP for home country i in year t-1	WDI (2013) Mean: 6.285 Standard dev: 3.806
	Ln_PCI$_{it-1}$	Log of GDP per capita in US dollars for country i in year t-1	Level of wealth of county i in year t-1	WDI (2013) Mean: 7.356 Standard dev: 0.875
	Per_Inflation$_{it-1}$	Inflation rate for country i in year t-1 divided by 100	Rate of change in consumer prices in country in year t-1	WDI (2013) Mean: 0.084 Standard dev: 0.067
	Common_Law$_i$	0-1 dummy equaling 1 if country i's legal system is considered to be derived from Anglo-American Common Law, otherwise equaling 0	Whether country i's legal system is based on an Anglo-American Common-Law legal heritage	CIA World Factbook (2013) Mean: 0.165 Standard dev: 0.373
	Per_Gov_GDP$_{it-1}$	GDP accounted for by revenues from government and state-owned enterprises for country i in year t-1, expressed as a percentage	Level of country i's government involvement in producing goods and services in year t-1	WDI (2013) Mean: 13.351 Standard dev: 4.461
	Trade_GDP$_{it-1}$	Sum of imports and exports divided by total GDP for country i in year t-1	Level of country i's involvement in foreign trade in year t-1	WDI (2013) Mean: 0.75 Standard dev: 0.35
	Diaspora_Size$_{it-1}$	Percentage of population living abroad for country i in year t-1	Relative size of diaspora in year t-1.	WDI (2013) Mean: 3.70 Standard dev: 7.47
	Aid_GDP$_{it-1}$	Official foreign aid in US dollars divided by GDP in US dollars to country i in year t-1	Level of official development aid (ODA) to country i in year t-1	WDI (2013) Mean: 0.038 Standard dev: 0.053
	Portfolio_GDP$_{it-1}$	Net inward portfolio investments in US dollars divided by GDP in US dollars to country i in year t-1, expressed as a percentage	Level of equity and debt securities investment to country i in year t-1	WDI (2013) Mean: 0.01 Standard dev: 0.45
	FDI_GDP$_{it-1}$	Net inward foreign direct investment divided by GDP in US dollars to country i in year t-1	Net inflows of investment to country i in year t-1 to acquire a lasting management interest (10% or more of voting stock) in an enterprise	WDI (2013) Mean: 0.039 Standard dev: 0.038
Key independent variables	*Informality$_{it-1}$*	Percentage of economic activity for country i in year t-1 that is untaxed, otherwise conducted outside of a formal regulatory environment	All market-based, legal production of goods and services for country i in year t-1 concealed from public authorities to avoid payment of taxes or other costly regulation	Schneider et al. (2010) Mean: 34.892 Standard dev: 11.362
	Remit_GDP$_{it-1}$	Sum of three items in the Balance of Payment Statistics divided by GDP in US dollars for country i in year t-1: Workers' remittances, compensation of employees, and migrants' transfers all in US dollars	Level of individual-to-individual or household-to-household transfers to country i in year t-1 by senders in another country	WDI (2013) Mean: 0.056 Standard dev: 0.062

This table presents variable names, measures, descriptions, sources and descriptive statistics (Sample means and standard deviations) for all terms used in core analyses of remittance and informality effects on venture funding availability in 48 developing countries observed from 2001 to 2009. See Table 2 for a list of the 48 countries. *Aid_GDP* and *FDI_GDP* also include the dollar value of host-country subsidies paid or financial guarantees given to host-country (*Aid_GDP*) or investing firms (*FDI_GDP*). We thank a reviewer for pointing this out.

The measurement for *Remit_GDP* is taken from the WDI (2013), which gleans from IMF Balance of Payments data annual country estimates of the three total remittance components in US dollars: personal transfers, compensation of employees, benefits and household transfers (IMF, 2013). This total is divided by country GDP in US dollars. Vaaler (2011, 2013) uses remittance data standardized by GDP or domestic population to estimate their venture-investment impact in developing countries.

Data for other variables used in our analyses come from the World Development Indicators (*Ln_GDP*, *Per_Growth*, *Ln_PCI*, *Per_Inflation*, *Aid_GDP*, *Per_Gov_GDP*, *Trade_GDP*, *Diaspora_Size*, *Portfolio_GDP*, *FDI_GDP*) and the *CIA Factbook* (*Common_Law*). These terms serve as controls for various factors other than informality and remittances that may explain differences in venture funding availability: domestic factors include GDP size (*Ln_GDP*), GDP growth (*Per_Growth*), per capita income (*Ln_PCI*), inflation (*Per_Inflation*), the size of the public sector (*Per_Gov_GDP*) and institutional factors such as the legal system (*Common_Law*); foreign factors include foreign aid (*Aid_GDP*), foreign direct investment (*FDI_GDP*) and foreign portfolio inflows (*Portfolio_GDP*) as well as

venture funding arising from trade (*Trade_GDP*). With this approach we distinguish between domestic and foreign sources of venture capital in a given developing country and isolate the two factors of central interest: informality at home and remittances from abroad.

5.3. Sample statistics

Sample means in the far-right column of Table 1 exhibit an intuitive picture of developing countries. Compared to industrialized countries in North America, Western Europe and Asia, they have smaller ($\cong$ US$55 billion) but faster growing ($\cong$ 6.3%) GDP, lower per capita GDP ($\cong$ US$2900), higher inflation ($\cong$ 8.4%), and higher shares of GDP that comprised state-owned enterprises ($\cong$ 13.4%). They are more open economies in terms of dollar value of imports and exports as a percentage of GDP ($\cong$ 75%). Foreign aid and inward FDI as a percentage of GDP are comparable ($\cong$ 3.8% and 3.9%). Portfolio flows are low as a percentage of GDP, in some cases zero due to the absence of any domestic stock exchange or bonds in circulation ($\cong$ 1.1%). About one in six countries have an Anglo-American Common Law legal system ($\cong$ 17%). Their mean percentages of population living outside the country are higher than in industrialized countries ($\cong$ 3.7%), but with a substantially higher standard deviation about this sample mean.

Means for key variables also follow intuition. On a 1 (very difficult) to 7 (very easy) Likert scale, sampled countries score an average of 2.848 for *Venture Funding*, thus indicating substantial difficulty in obtaining capital to fund and grow new ventures. Average *Informality* is roughly 35%, that is, more than a third of economic activity in sampled countries is beyond the bureaucratic gaze of government. Average *Remittances* exceed foreign aid, portfolio flows and even inward FDI as a percentage of GDP ($\cong$ 5.6%). Indian migrants remit the highest average annual amounts in absolute terms ($\cong$ US$27 billion) with the Philippines and Jordan having the highest average annual amounts as a percentage of GDP ($\cong$ 21%). These sample statistics are also in line with previous broad-sample statistical studies of remittances and venture investment patterns in developing countries (e.g., Vaaler, 2011).

Table 2 ranks sampled countries based on their average *Venture Funding* score with a second column exhibiting average *Informality*. As we move down the ranks of Table 1 from sampled countries with the most venture funding access (Malaysia $\cong$ 3.99) to the least (Ethiopia $\cong$ 2.01) we also note generally increasing informality levels, but the trend is not uniform. For example, Panama ranks fourth in average *Venture Funding* ($\cong$ 3.69), but also has one of the largest informal sectors (= 63.54%). At the other end of the spectrum, Argentina ranks fortieth in average *Venture Funding* ($\cong$ 2.31), but has one of the lowest levels of economic informality (= 25.50%).

5.4. Empirical model terms and testing approach

To assess empirical support for our hypotheses about the venture funding impact of informality at home, remittances from abroad, and their interaction, we define the following statistical model for estimation:

$$
\begin{aligned}
Venture\ Funding_{it} = {} & \alpha + \sum_{s=1}^{s=8} \lambda_s\ Country\ Controls_{it-1} + \beta_1 Aid\_GDP_{it-1} + \beta_2 Portfolio\_GDP_{it-1} + \beta_3 FDI\_GDP_{it-1} \\
& + \beta_4 Informality_{it-1} + \beta_5 Remit\_GDP_{it-1} + \beta_6 Aid\_GDP * Informality_{it-1} + \beta_7 Portfolio\_GDP * Informality_{it-1} \\
& + \beta_8 FDI\_GDP * Informality_{it-1} + \beta_9 Remit\_GDP * Informality_{it-1} + + \sum_{j=1}^{j=47} \gamma_j Countries_i \\
& + \sum_{\chi=2001}^{\chi=2009} \xi_\chi Years_t + \varepsilon_{it}
\end{aligned}
$$

$$(1)$$

In Eq. (1), *Venture Funding* in country i of year t is regressed on an intercept (α) and then eight terms (λ_{1-8}) representing domestic country factors thought to affect venture funding availability (*Country Controls*). Seven of these terms (expected signs) vary across country i and year t: *Ln_GDP* (+), *Per_Growth* (+), *Ln_PCI* (+) and *Per_Inflation* (−), *Diaspora_Size* (+), *Per_Gov_GDP* (−), and *Trade_GDP* (+). One term varies across country i but is time invariant: *Common_Law* (+). We expect countries with larger economic size, faster growth, wealthier citizens, lower inflation, a larger diaspora, a smaller public sector, more trade and a generally more investor-protective legal system to have greater venture funding availability.

Venture Funding is also regressed on three terms (β_{1-3}) related to alternative (to remittances) foreign capital inflows affecting venture funding availability: foreign direct investment (*FDI_GDP*) (+); portfolio flows (*Portfolio_GDP*) (+); and foreign aid (*Aid_GDP*) (−). They also vary by country i and year t. The expected positive signs on FDI and portfolio flows are again consistent with intuition and previous research precedent (Vaaler, 2011, 2013). The expected negative sign on foreign aid follows evidence first presented by Burnside and Dollar (2000) documenting the pernicious domestic economic growth effects of foreign aid in many Sub-Saharan African countries since World War II.

Venture Funding is then regressed on two right-hand side terms (β_{4-5}) permitting initial tests of Hypotheses 1–2. Consistent with Hypothesis 1 grounded in institutional theory, we expect *Informality* to enter with a negative sign ($\beta_4 < 0$). Consistent with Hypothesis 2 grounded in TCE theory, we expect *Remit_GDP* to enter with a positive sign ($\beta_5 > 0$).

Hypothesis 3 integrating institutional and TCE theories predicts that the positive venture funding impact of remittances will increase in tandem with greater informality. More informality shifts remittance use from household consumption to venture funding. Thus we expect *Remit_GDP*Informality* to enter with a positive sign ($\beta_9 > 0$). For comparison purposes, we also iteratively estimate interaction effects for other foreign capital inflows (β_{6-8}): *Aid_GDP*Informality*, *Portfolio_GDP* *Informality* and *FDI_GDP*Informality*.

Table 2
Average venture funding availability and economic informality levels for sampled countries, 2001–2009.

	Country	Venture funding availability	Economic informality		Country	Venture funding availability	Economic informality
1	Malaysia	3.987	30.92	25	Costa Rica	2.745	25.74
2	India	3.847	22.18	26	Peru	2.685	58.04
3	Tunisia	3.727	37.22	27	Uganda	2.681	42.31
4	Panama	3.691	63.54	28	Philippines	2.657	41.57
5	South Africa	3.602	27.31	29	Colombia	2.635	37.33
6	Lithuania	3.467	32.04	30	Romania	2.622	32.59
7	Indonesia	3.444	18.94	31	Cambodia	2.598	48.74
8	Chile	3.438	19.28	32	Guatemala	2.590	50.47
9	Botswana	3.343	32.94	33	Dominican Rep.	2.560	31.86
10	Macedonia	3.228	37.64	34	Jamaica	2.505	34.77
11	Thailand	3.205	50.60	35	Mexico	2.460	30.01
12	Sri Lanka	3.171	43.86	36	Honduras	2.416	48.32
13	Morocco	3.036	34.93	37	Nicaragua	2.400	44.59
14	China	3.035	12.69	38	Turkey	2.361	31.27
15	Jordan	2.977	18.51	39	Ghana	2.328	40.66
16	Vietnam	2.974	15.13	40	Argentina	2.306	25.30
17	Kenya	2.966	33.16	41	Venezuela	2.281	33.84
18	Namibia	2.960	30.29	42	Bolivia	2.212	66.07
19	Brazil	2.878	39.04	43	Paraguay	2.153	38.83
20	El Salvador	2.825	45.11	44	Ecuador	2.127	32.40
21	Russia	2.817	43.80	45	Mali	2.102	40.69
22	Pakistan	2.811	35.71	46	Armenia	2.085	44.02
23	Tanzania	2.787	56.43	47	Cameroon	2.072	32.03
24	Ukraine	2.762	49.72	48	Ethiopia	2.005	38.64

This table presents average venture funding availability and economic informality scores for 48 developing countries observed from 2001 to 2009. See Table 1 for information on measurement of annual venture funding availability (*Venture Funding$_{it}$*) and economic informality (*Informality$_{it}$*) variables used to construct averages. Countries are ranked by average venture funding availability score.

To control for other unspecified factors linked to specific countries or years we also regress *Venture Funding* on individual country *i* (γ_{1-47}) 0–1 dummies (omitting Argentina) and individual year *t* ($\xi_{2001-2008}$) 0–1 dummies (omitting 2009). The error term (ε) picks up other unspecified, randomly-varying effects on *Venture Funding*.

5.5. Estimation strategy

We implement all estimations using Stata Release 12 statistical software (StataCorp, 2011). We use panel ordinary least squares (OLS) regression to gain an initial understanding of the Eq. (1)'s overall significance as well as the direction and significance of specific terms in Eq. (1). We then use panel feasible generalized least squares (FGLS) to estimate Eq. (1) with robust (to heteroskedasticity) standard errors and adjustment for panel-specific first-order autoregression in the error. After estimating a fully specified Eq. (1) we also simulate and plot marginal effects of *Remit_GDP*, *Aid_GDP*, *Portfolio_GDP* and *FDI_GDP* on *Venture Funding* at different levels of *Informality*.

6. Results

6.1. Pairwise correlational analyses

Table 3 reports results from pairwise correlation of all terms used in Eq. (1). Of the 13 individual terms in Eq. (1), five exhibit the predicted sign in pairwise correlations with *Venture Funding*, three at commonly-accepted levels of statistical significance, that is, at least the 10% ($p < 0.10$) level. Both remittances (*Remit_GDP*) and informality (*Informality*) exhibit positive signs (one expected, one unexpected), but neither is statistically significant at commonly-accepted levels. Only a few of the pairwise correlations suggest the possibility of multicollinearity that might affect subsequent regression estimates: foreign aid (*Aid_GDP*) exhibits high pairwise correlation with public sector size ($\rho = 0.65$), diaspora size with per capita GDP ($\rho = 0.62$) and portfolio flows with both GDP ($\rho = 0.56$) and per capita GDP ($\rho = 0.80$). Though not reported here, post-estimation examination of variance inflation factor statistics do not exceed 10, a common threshold for concern regarding the severity of such multicollinearity.[8]

6.2. Core regression results

We next turn to Table 4 to review results from multiple regression analyses using panel OLS and FGLS estimators. Column 1 presents results from panel OLS regression. Eight *Country Control* terms, three non-remittance foreign capital inflow terms, and

---

[8] These results are available from the authors.

Table 3

Pairwise correlations of variables used in analyses of venture funding availability, remittances and economic informality for sampled countries, 2001–2009.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Venture Funding$_{it}$	1.00													
2. Ln_GDP$_{it-1}$	0.56	1.00												
3. Per_Growth$_{it-1}$	−0.01	−0.01	1.00											
4. Ln_PCI$_{it-1}$	−0.06	−0.05	0.73	1.00										
5. Per_Inflation$_{it-1}$	−0.09	−0.12	0.15	0.24	1.00									
6. Common_Law$_i$	−0.01	−0.01	−0.07	−0.24	0.12	1.00								
7. Per_Gov_GDP$_{it-1}$	0.01	0.00	0.19	0.39	0.04	−0.06	1.00							
8. Trade_GDP$_{it-1}$	−0.11	−0.10	0.25	0.30	0.25	−0.07	0.34	1.00						
9. Diaspora_Size$_{it-1}$	−0.09	−0.09	0.45	0.62	0.37	−0.10	0.46	0.42	1.00					
10. Aid_GDP$_{it-1}$	−0.05	−0.08	0.35	0.49	0.24	−0.07	0.65	0.15	−0.03	1.00				
11. Portfolio_GDP$_{it-1}$	−0.05	−0.03	0.56	0.80	0.35	−0.13	0.31	0.23	−0.01	0.26	1.00			
12. FDI_GDP$_{it-1}$	0.23	0.16	0.04	−0.04	0.00	−0.08	−0.07	−0.09	0.08	−0.13	0.01	1.00		
13. Remit_GDP$_{it-1}$	0.03	0.02	−0.10	−0.09	0.01	0.04	−0.01	−0.05	0.01	0.00	−0.05	0.21	1.00	
14. Informality$_{it-1}$	0.01	0.01	−0.14	−0.15	0.05	−0.01	−0.12	−0.03	0.02	−0.10	−0.13	0.16	−0.39	1.00

$N = 329$.

This table presents pairwise correlations of all terms used in core analyses of remittance and informality effects on venture funding availability in 48 developing countries observed from 2001 to 2009. See Table 2 for a list of the 48 countries. Correlations greater than 0.09 or less than −0.09 are significant at the 10% level ($p < 0.10$). Correlations greater than 0.11 or less than −0.11 are significant at 5% level ($p < 0.01$).

country and year dummies in Eq. (1) explain 85% of variation in *Venture Funding*. This finding raises confidence that we have set a rigorous test for assessing the sign and significance of additional terms we add to Eq. (1) in connection with Hypotheses 1–3. Of the eight *Country Controls* and three capital inflow terms, six enter with the expected sign; three do so at commonly-accepted levels of statistical significance. The common law dummy (*Common_Law*) enters with a point estimate of 2.33 ($p < 0.01$). Sampled developing countries with a more protective common law system vault from the bottom to the top rank of Table 2, other things being equal. Re-estimation with panel FGLS in Column 2 yields similar point estimates, but now four correctly signed terms are statistically significant at commonly-accepted levels.

Panel FGLS estimation in Column 3 adds *Informality* to Eq. (1) and permits a test of Hypothesis 1. We expect *Informality* to enter with a negative sign and it does with a point estimate of −0.07, significant at the 1% level. Consistent with institutional theory, higher levels of informality in developing countries decrease access to venture funding. Increasing *Informality* by one standard deviation (11.362) decreases *Venture Funding* 0.80 (11.362 × −0.07 ≅ −0.80). A 0.80 decrease from the sample mean of 2.848 brings a country's *Venture Funding* score down to 2.048. Given the rankings in Table 2, this decrease implies a practically substantial drop in rank from approximately 19th (Brazil) to 46th (Armenia) in venture funding availability. As a country's level of economic informality increases, the likelihood of securing funds for a "risky or innovative" new business project decreases significantly and substantially.

Column 4 drops *Informality*, adds *Remit_GDP* and permits an initial test of Hypothesis 2. We expect *Remit_GDP* to enter with a positive sign and it does with a point estimate of 2.17, significant at the 1% level. Consistent with TCE theory, more remittances from migrants increase venture-funding availability back in the home country. This is consistent with our TCE-grounded proposition that informal assurances based on transnational relationships among community and family members lead to some non-trivial percentage of remittances going to fund new businesses. Increasing *Remit_GDP* by one standard deviation (0.062) increases *Venture Funding* 0.13 (2.17 × 0.062 ≅ 0.13). A 0.13 increase from the sample *Venture Funding* mean of 2.848 brings a country's score up to 2.978. Given the rankings in Table 2, this increase implies a jump of four ranks from approximately 19th (Brazil) to 15th (Jordan) in venture funding availability, suggesting that the availability of funding new businesses in the receiving country is commensurate with higher volumes of migrant remittance flows. Again, remittance effects on venture funding availability proved significant and substantial, though less substantial then informality effects noted above.

Columns 5 adds back *Informality* and adds its interaction with remittances (*Remit_GDP*Informality*). The interaction term permits a test of Hypothesis 3. We expect *Remit_GDP*Informality* to enter with a positive sign and it does with a point estimate of 0.22 which is significant at the 1% level. Consistent with our integration of institutional and TCE theories, the positive venture funding impact of remittances has greater magnitude at high levels of informality. This is consistent with our proposition that migrant entrepreneurs are resorting more often to informal assurances associated with remittances to fund new ventures rather than finance household purchases of food, clothing and other necessities. Contrast this interaction term coefficient with the drastically different −8.17 estimate for *Remit_GDP*, which captures remittance effects on *Venture Funding* when informality is nil. The sharply negative effect at this extreme likely represents a re-direction of remittances to its more traditional use related to financing household consumption.

We then drop *Remit_GDP*Informality* and iteratively add interaction terms including informality and foreign aid (*Aid_GDP*Informality*) in Column 6, informality and portfolio investment (*Portfolio_GDP*Informality*) in Column 7, and informality and FDI (*FDI_GDP*Informality*) in Column 8. In contrast to results in Column 5, none of these other interaction terms exhibit statistical significance at commonly accepted levels. These formally commercial and political capital inflows do not vary significantly in effects on *Venture Funding* as institutional capacity to observe and regulate the economy weakens.

Column 9 includes all terms in Eq. (1), including all four interactions between informality and various foreign capital inflows. In this fully-specified version of Eq. (1), the pattern of results regarding remittances and informality is confirmed along with support for Hypothesis 3. Remittances alone increase venture funding availability in developing countries, but only after informality increases substantially.

Table 4

Results from core regression analyses of venture capital availability on economic informality, remittances and related terms, 2001–2009.

Eq. 1 Specifications → estimators → variables ↓	(1) Controls only OLS	(2) Controls only panel FGLS	(3) Controls, informality panel FGLS	(4) Controls, remit panel FGLS	(5) Controls, informality, remit, info-remit interaction panel FGLS	(6) Controls, informality, remit, info-aid interaction panel FGLS	(7) Controls, informality, remit, info-port interaction panel FGLS	(8) Controls, informality, remit, info-fdi interaction panel FGLS	(9) Controls, informality, remit, all interaction panel FGLS
Ln_GDP_{it-1}	2.37**	2.05**	1.07**	1.86**	1.61**	0.94**	0.98*	0.98**	1.75**
(λ_1)	(0.58)	(0.29)	(0.39)	(0.29)	(0.43)	(0.39)	(0.39)	(0.40)	(0.44)
Per_Growth_i	0.02**	0.02**	0.02**	0.02*	0.02**	0.02**	0.02**	0.02**	0.02**
$t-1$ (λ_2)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Ln_PCI_{it-s}	−2.01**	−1.73**	−0.84*	−1.52**	−1.38**	−0.70*	−0.73*	−0.72*	−1.53**
(λ_3)	(0.45)	(0.23)	(0.33)	(0.24)	(0.38)	(0.33)	(0.33)	(0.34)	(0.40)
$Per\_Inflation\_$	0.48	0.25	0.28	0.17	0.18	0.23	0.21	0.24	0.18
100_{it-1} (λ_4)	(0.45)	(0.30)	(0.29)	(0.31)	(0.29)	(0.30)	(0.30)	(0.30)	(0.30)
$Common\_Law_i$	2.33**	2.24**	2.66**	2.08**	2.76**	2.56**	2.52**	2.55**	2.78**
(λ_5)	(0.72)	(0.40)	(0.40)	(0.41)	(0.41)	(0.41)	(0.41)	(0.41)	(0.41)
$Per\_Gov\_GDP_{it-1}$	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
(λ_6)	(0.03)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
$Trade\_GDP_{it-1}$	−0.41†	−0.16†	−0.15†	−0.14	−0.13	−0.14	−0.13	−0.13	−0.13
(λ_7)	(0.22)	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)
$Diaspora\_$	0.00	0.02	0.03†	0.02	0.03†	0.03†	0.03†	0.03†	0.02†
$Size_{it-1}$ (λ_8)	(0.03)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Aid_GDP_{it-1}	−0.73	−1.18	−0.84	−1.14	−0.45	−1.55	−0.89	−0.89	−3.23
(β_1)	(1.04)	(0.73)	(0.72)	(0.73)	(0.72)	(2.21)	(0.73)	(0.73)	(2.04)
$Portfolio\_$	−0.50	−0.16	−0.02	−0.10	−0.01	0.03	−0.44	0.03	−0.47
GDP_{it-1} (β_2)	(0.37)	(0.32)	(0.33)	(0.33)	(0.32)	(0.33)	(0.78)	(0.33)	(0.77)
FDI_GDP_{it-1}	1.53	1.06**	1.07*	1.20*	1.32**	1.21*	1.22*	1.09	0.46
(β_3)	(1.05)	(0.49)	(0.47)	(0.50)	(0.46)	(0.48)	(0.48)	(1.05)	(0.95)
$Informality_{it-1}$			−0.07**		−0.07*	−0.07**	−0.06**	−0.06**	−0.07**
(β_4)			(0.02)		(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
$Remit\_GDP_{it-1}$				2.17**	−8.71**	1.81*	1.78*	1.78*	−9.89**
(β_5)				(0.73)	(3.36)	(0.73)	(0.72)	(0.72)	(3.38)
Aid_GDP*						0.02			0.07
$Informality_{it-1}$ (β_6)						(0.05)			(0.05)
$Portfolio\_GDP*$							0.00		0.02
$Informality_{it-1}$ (β_7)							(0.00)		(0.03)
FDI_GDP*								0.00	0.02
$Informality_{it-1}$ (β_8)								(0.03)	(0.03)
$Remit\_GDP$					0.22**				0.26**
$*Informality_{it-1}$ (β_9)					(0.07)				(0.07)
Constant	−42.53**	−36.46**	−17.03*	−33.29**	−26.46**	−14.96†	−15.73*	−15.60*	−28.72**
(α)	(11.49)	(5.58)	(7.72)	(5.63)	(8.18)	(7.65)	(7.64)	(7.77)	(8.35)
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N (Country N)	329 (48)	329 (48)	329 (48)	329 (48)	329 (48)	329 (48)	329 (48)	329 (48)	329 (48)
Wald χ^2 (R^2)	(0.85)	3374.21	3517.78	3522.67	3984.02	3651.32	3697.76	3700.86	3971.04

This table presents point estimates, standard error (in parentheses) and related results from core regression analyses of remittance and informality effects on venture funding availability in 48 developing countries observed from 2001 to 2009. See Table 2 for a list of the 48 countries. Col. 1 presents such results after ordinary least squares (OLS) estimation. Cols. 2–9 present such results after panel feasible generalized least squares (Panel FGLS) estimation with robust standard errors and panel-specific (country-specific) adjustment for first-order autocorrelation. Venture capital availability (*Venture Funding_{it}*) is the dependent variable in Cols. 1–9. Regression results for country and year dummies are not reported but are available on request. † $p < 0.10$; * $p < 0.05$; ** $p < 0.01$.
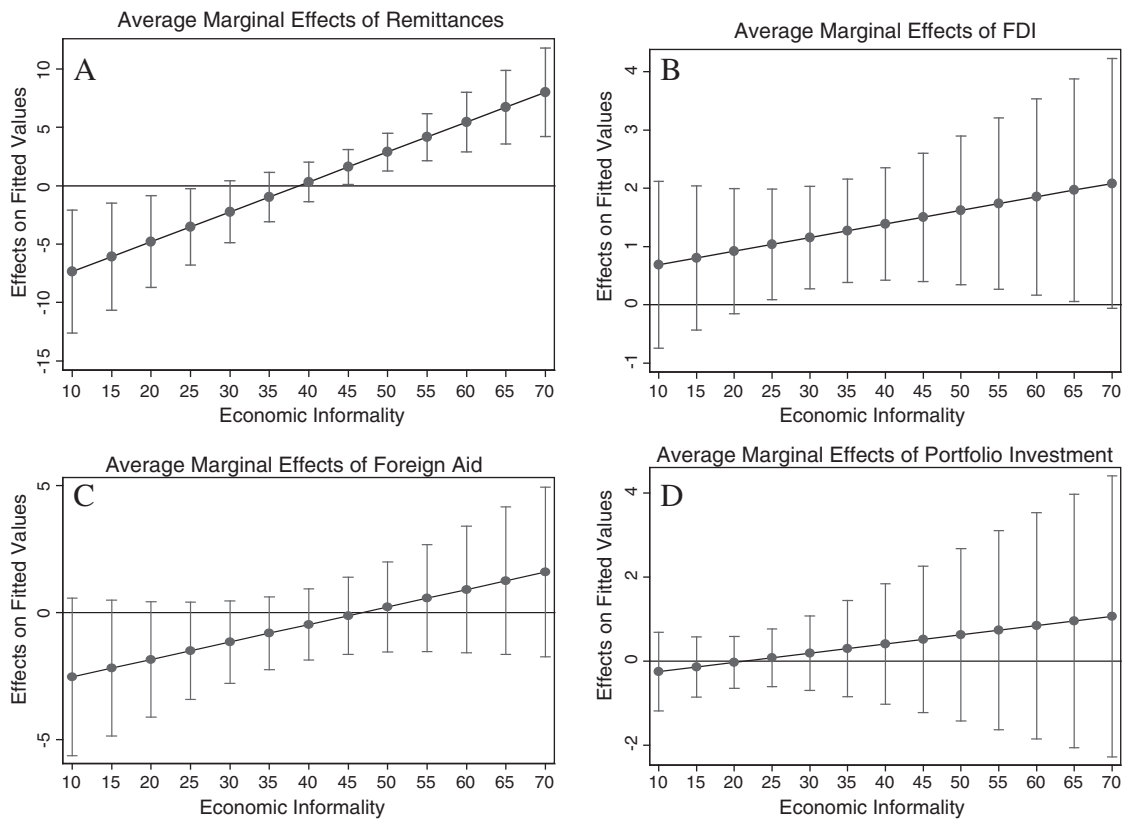
Fig. 2. A–D Fitted values indicating average marginal effects of foreign capital inflows on venture funding availability in sampled countries at different levels of economic informality, 2001–2009. A–D presents average marginal effects of foreign capital inflows on home-country venture capital availability at various levels of economic informality in 48 developing countries observed from 2001 to 2009. See Table 2 for a list of the 48 countries. Each point on the trend line indicates an estimate of marginal effects and is bounded by a 95% confidence interval. Graphs are generated using the Stata 12 (StataCorp, 2011) "margins" command after panel FGLS estimation of a fully-specified Eq. (1) (see Table 4, Column 9).

How substantially? Fig. 2a visually depicts regression results in Column 9 by plotting the marginal effect of remittances (*Remit_GDP*) on venture funding availability (*Venture Funding*) at increasing levels of informality (*Informality*). To do this, we use the post-estimation "margin plots" procedure available in Stata Version 12 (StataCorp, 2011). Dots (●) in Fig. 2A represent simulated point estimates while vertical brackets (**I**) above and below the dots represent confidence intervals corresponding to 5% significance levels. The net effects of remittances on venture funding availability in sampled developing countries turn significantly positive at approximately one standard deviation above our sample mean, that is, when the informal sector exceeds 46%. When we implement the same marginal effects analysis other foreign capital inflows in Fig. 2B–D, we find no similarly clear linear trends.

6.3. Related regression results

These core results prove robust to reasonable variation in sampling, model specification, and estimation strategy. Table 5 reports results from these supplementary analyses. To investigate whether our results are specific to the venture funding environment or generalizable to other funding sources, we re-estimate Eq. (1) in Column 1 of Table 5 using an alternative measure of capital funding developed by the World Economic Forum. This alternative measure assesses the ease of obtaining loans from banks with only a good business plan and no collateral (WEF, 2002–2010).[9] The sample mean for this *Bank Loans* alternative is 2.978 with a standard deviation of 0.772, not dissimilar to the sample mean and standard deviation for *Venture Funding*.

Column 1 results based on *Bank Loans* contrast with results in Column 9 of Table 4 based on *Venture Funding*. While *Informality* and *Remit_GDP* continue to enter with consistent (negative and positive, respectively) signs and with statistical significance at commonly-accepted levels, the sign on the interaction term, *Remit_GDP*Informality*, turns negative and significantly so at the 10% level. Remittances increase bank lending availability in the home country,[10] but in contrast to our prior finding regarding venture funding

---

[9] Here the question for country managers is: "How easy is it to obtain a bank loan in your country with only a good business plan and no collateral?" They respond on a 1–7 Likert scale with higher scores indicating greater ease of access, this time to loans from banks.

[10] In an additional analysis not reported here, we drop the interaction term (*Remit_GDP*Informality*) and re-estimate the equation using panel FGLS. We find that remittances alone have a significant (p < 0.10) and positive effect on bank loan availability. These results are available from the authors.

Table 5

Results from related regression analyses of venture capital availability on economic informality, remittances and related terms, 2001–2009.

Eq. 1 Specifications → estimators → variables ↓	(1) Controls, informality, remit, all interactions, bank loan dep. variable (panel FGLS)	(2) Controls, informality, remit, all interactions, business starts dep. variable (panel NBR)	(3) Controls, informality, remit, info-remit interaction, dias-size interactions (panel FGLS)	(4) Controls, informality, remit, dias-size interactions, high info sub-sample (panel FGLS)	(5) Informality, remit, all interactions, 1-, 2-year lagged dep. variables (Panel GMM)
Ln_GDP_{it-1}	0.17	−0.15	1.59**	0.60**	
(λ_1)	(0.47)	(0.09)	(0.43)	(0.21)	
Per_Growth_{it-1}	0.01	−0.00	0.01**	0.02**	
(λ_2)	(0.00)	(0.01)	(0.00)	(0.01)	
Ln_PCI_{it-s}	0.28	0.13	−1.38**	0.75**	
(λ_3)	(0.43)	(0.12)	(0.38)	(0.26)	
$Per\_Inflation\_$	0.78**	0.66	0.07	1.36**	
100_{it-1} (λ_4)	(0.32)	(0.57)	(0.29)	(0.50)	
$Common\_Law_i$	3.73**	−0.46	2.61**	1.91**	
(λ_5)	(0.41)	(0.46)	(0.41)	(0.47)	
$Per\_Gov\_GDP_{it-1}$	0.00	−0.05**	0.01	0.03*	
(λ_6)	(0.01)	(0.02)	(0.01)	(0.02)	
$Trade\_GDP_{it-1}$	−0.00**	0.00	−0.00†	−0.00**	
(λ_7)	(0.00)	(0.00)	(0.00)	(0.00)	
$Diaspora\_$	0.03**	0.05**	0.03*	0.03	
$Size_{it-1}$ (λ_8)	(0.01)	(0.01)	(0.01)	(0.03)	
Aid_GDP_{it-1}	2.37	2.51	0.10	−0.59	−1.27
(β_1)	(2.13)	(4.16)	(0.82)	(1.09)	(1.63)
$Portfolio\_$	−0.00	0.04	−0.00	−0.01	−0.01
GDP_{it-1} (β_2)	(0.01)	(0.02)	(0.00)	(0.01)	(0.01)
FDI_GDP_{it-1}	1.80*	0.62	2.29**	3.10*	1.63*
(β_3)	(1.82)	(2.02)	(0.56)	(0.90)	(0.73)
$Informality_{it-1}$	−0.12**	−0.02†	−0.07**	−0.18**	−0.02
(β_4)	(0.02)	(0.01)	(0.02)	(0.03)	(0.04)
$Remit\_GDP_{it-1}$	8.31*	−16.56**	−10.00**	2.51**	−24.15**
(β_5)	(3.35)	(4.72)	(3.34)	(0.69)	(7.47)
Aid_GDP^*	−0.03	−0.04			0.04
$Informality_{it-1}$ (β_6)	(0.05)	(0.10)			(0.04)
$Portfolio\_GDP^*$	0.00	−0.00†			−0.00
$Informality_{it-1}$ (β_7)	(0.00)	(0.00)			(0.00)
FDI_GDP^*	−0.01	0.03			−0.01
$Informality_{it-1}$ (β_8)	(0.02)	(0.06)			(0.06)
$Remit\_GDP^*$	−0.13†	0.35**	0.25**		0.60**
$Informality_{it-1}$ (β_9)	(0.07)	(0.11)	(0.07)		(0.17)
Aid_GDP^*			−0.07†	0.60*	
$Diaspora\_Size_{it-1}$			(0.04)	(0.28)	
$Portfolio\_GDP^*$			0.00	0.00	
$Diaspora\_Size_{it-1}$			(0.00)	(0.01)	
FDI_GDP^*			−0.06*	−0.57*	
$Diaspora\_Size_{it-1}$			(0.02)	(0.25)	
$Venture$					0.69**
$Funding_{it-1}$					(0.13)
$Venture$					−0.27**
$Funding_{it-2}$					(0.05)
$Constant$	−2.03	6.83*	−25.91**	16.98†	
(α)	(8.97)	(2.23)	(8.22)	(4.36)	
Country dummies	Yes	Regions, yes	Yes	Yes	N/A
Year dummies	Yes	Yes	Yes	Yes	Yes
Hansen test					12.01
A–B test AR(3)					1.54
# of Instruments					35
N (Country N)	327 (48)	226 (38)	329 (48)	167 (27)	204 (42)
Wald χ^2 (R^2)	4489.13	97.37	4193.91	2061.47	366.85

This table presents point estimates, standard error (in parentheses) and related analyses from core regression analyses of remittance and informality effects on venture funding availability in 48 developing countries observed from 2001 to 2009. See Table 2 for a list of the 48 countries. Cols. 1 and 3–4 present such results after panel feasible generalized least squares (Panel FGLS) estimation with robust standard errors and panel-specific (country-specific) adjustment for first-order autocorrelation. Col. 2 presents such results after panel negative binomial regression (Panel NBR) estimation. Col. 5 presents such results after dynamic panel generalized method of moments difference (Panel GMM) estimation. 10 countries were dropped for the Panel NBR (Col. 2) due to data unavailability: Cameroon, China, El Salvador, Honduras, Mali, Nicaragua, Paraguay, Tanzania, Venezuela, and Vietnam. Six countries were dropped for the Panel GMM (Col. 5): Cambodia, Namibia, Sri Lanka, Uganda, Ukraine, and Vietnam. Hansen test results in Col. 5 do not reject the null hypothesis that the 35 instrumental variables generated are plausibly exogenous as a group. Arellano–Bond (A–B) test results in Col. 5 do not reject the null hypothesis of no third-order or higher-order autocorrelation. Venture capital availability ($Venture\ Funding_{it}$) is the dependent variable in Cols. 3–5. Bank loan availability is the dependent variable in Col. 1. The count of new businesses in official registries is the dependent variable in Col. 2. Regression results for year dummies in Cols. 1–5, country dummies in Cols. 1, 3–4, and geographic region dummies in Col. 2 are not reported but are available on request. † $p < 0.10$; * $p < 0.05$; ** $p < 0.01$.

availability, that positive impact diminishes (not magnifies) as levels of informality rise. These results confirm our framework's focus on explaining the contingent effects of remittances for venture funding specifically rather than for a broader range of business-funding sources.

To confirm that we are explaining venture investment tendencies, we re-estimate Eq. (1) in Column 2 of Table 5 after changing both the dependent variable and estimator. Another indicator of venture investment is new business starts, the venture founding act that typically follows better venture funding availability. If remittances increase venture funding availability with increasing informality, then they should also do the same for new venture foundings. To assess support for this closely related proposition, we replace *Venture Funding* with the alternative *New Business Starts*, the count of new businesses listed on official registries for country *i* in year *t*. Data on new business starts are available through the WDI and the World Bank's Group Entrepreneurship Survey (see, e.g., Bruhn and McKenzie (2013)). Note that these data count new business starts on *official* registries, thus they underestimate the actual annual count of new enterprises created in developing countries, particularly when the informal sector is substantial. However, this bias in measurement likely works against finding significant relationships related to informality, remittances and their interaction.

New business start data are available for 38 of the 48 countries in our sample, yielding a total of 226 country-year observations to analyze. The sample mean for *New Business Starts* is 32,156 with a standard deviation of 62,593. We change the estimator from panel FGLS to panel negative binomial regression (NBR) because we are working with count data that exhibit over-dispersion. Inclusion of 37 individual 0–1 country dummies impairs convergence for panel NBR estimation purposes, so we replace country with five 0–1 geographic region dummies for six regions (omitting Sub-Saharan Africa). [11] Panel NBR results presented in Column 2 of Table 5 exhibit the same pattern of signs and significance for *Informality* (−), *Remit_GDP* (−) and *Remit_GDP_Informality* (+) observed in Column 9 of Table 4. As with venture funding availability, remittances increase new business starts as informality increases, despite the aforementioned downward bias of the measure used to count new business starts, i.e., formally registered businesses only.

To investigate whether it is the contingent impact of migrant remittances specifically or migrant-related capital inflows more generally increasing venture funding, we re-estimate Eq. (1) in Columns 3–5 of Table 5 after changing the right-hand side (RHS) terms and varying sampling strategies. A reasonable response to our core results in Table 4 might be that we have diligently accounted for other non-remittance sources of venture funding, but not for non-remittance *and* migrant-related sources of venture funding. Saxenian and Hsu (2001) have chronicled the role that migrant-related FDI played in the development of major research facilities in Taiwan leading to related increases in funding for small technology businesses during the 1990s. In entrepreneurship research, Kim and Li (2012) have documented greater venturing activity in developing countries with more FDI combined with the right socio-economic conditions. In related international business research, Madhavan and Iriyama (2009) have described migrant communities as "carrier waves" for transnational venture funding from host to home countries through FDI and portfolio investment channels. Indeed, we see in Table 4 that diaspora size (*Diaspora_Size*) positively affects venture funding availability in the home country, sometimes at commonly-accepted levels of statistical significance. On their own, migrants may stimulate growth in venture investing back home.

In management research, Barnett et al. (2014) describe various means by which migrants individually and collectively may transplant from host countries business norms and public policies promoting entrepreneurship back home. Individually, migrants discover in host countries and communicate new venture funding, founding, growth and governance ideas that extended family members in the home country can then put into practice. Collectively, migrants abroad might lobby host countries for more FDI, portfolio investment and or foreign aid to stimulate economic growth back home. Migrants abroad might also lobby home-country politicians to lessen regulatory burdens on the use of such foreign capital for new ventures. These possibilities prompt additional investigation regarding whether and how migrants might also affect venture funding availability through FDI, portfolio and foreign aid inflows that follow from their individual and collective efforts.

To that end, we re-specify Eq. (1) in Columns 3–4 of Table 5 as follows. Once again reverting back to the original dependent variable in this study, *Venture Funding*, we then drop from Eq. (1) three interaction terms, *Aid_GDP*Informality*, *Portfolio_GDP*Informality*, and *FDI_GDP*Informality*. We replace them with three new interaction terms combining foreign aid, portfolio and FDI with the size of the migrant diaspora, *Aid_GDP*Diaspora_Size*, *Portfolio_GDP*Diaspora_Size*, and *FDI_GDP*Diaspora_Size*. Now we have terms to pick up differences in these effects on *Venture_Funding* tied to the size of a home-country's migrant diaspora. Just as larger diasporas increase venture funding availability on their own, we conjecture that larger diasporas will magnify the positive venture funding impact of FDI and portfolio flows. Larger diasporas may also diminish the negative impact of foreign aid on venture funding availability. In short, we expect positive signs on all three new interaction terms.

Results in Column 3 of Table 5 largely undercut these expectations. After panel FGLS estimation of the same full sample of countries and years used in Table 4, we see that *Portfolio_GDP*Diaspora_Size* does not achieve statistical significance. *Aid_GDP*Diaspora_Size* and *FDI_GDP*Diaspora_Size* enter with negative (not positive) signs significant at the 10% and 5% levels respectively. The positive impacts of FDI and foreign aid on venture funding availability diminish (not magnify) with larger diasporas. Meanwhile, we observe the same signs and significance on *Informality* (−), *Remit_GDP* (−) and *Remit_GDP*Informality* (+) we saw in Table 4, Column 9. These results indicate that it is quite specifically migrant remittances that increase venture funding availability as informality increases in developing countries. In contrast, the venture investment impact of other foreign capital inflows is not positively enhanced with changes in at least one important migrant characteristic, diaspora size.

---

[11] The 38 sub-sampled countries include (by region): East Asia and the Pacific: Cambodia, Indonesia, Malaysia, Philippines, and Thailand; Europe and Central Asia: Armenia, Lithuania, Macedonia, Romania, Russia, Turkey, and Ukraine; Caribbean and Latin America: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, El Salvador, Guatemala, Jamaica, Mexico, Panama, and Peru; Middle East and North Africa: Jordan, Morocco, and Tunisia; South Asia: India, Pakistan, and Sri Lanka; and Sub-Saharan Africa: Botswana, Ethiopia, Ghana, Kenya, Namibia, South Africa, Tanzania, and Uganda.

In Column 4 of Table 5, we re-estimate this variation of Eq. (1) but with a sub-sample of countries exhibiting above average (≅ 34%) informality from 2001 to 2009. Perhaps the moderating impact of diaspora size on foreign capital inflows is itself conditioned on greater informality in the home country. This high-informality sub-sample comprises 27 countries[12] yielding a total of 126 country-year observations. We drop the *Remit_GDP*Informality* term as all observations are now in the high informality range. Again, *FDI_GDP*Diaspora_Size* enters with a negative sign significant at the 5% level. But *Aid_GDP*Diaspora_Size* now exhibits the expected positive sign significant at the 5% level. Larger diasporas may help diminish the negative impact foreign aid has on developing countries but only in the presence of a sizeable informal economy. In any case we observe the same signs at commonly-accepted levels of statistical significance on *Informality* (−) and *Remit_GDP* (+), confirming our core findings that informality decreases but remittances increase venture funding availability.

Column 5 of Table 5 presents results from a final variation in model specification, estimation and sampling, this time to address issues related to model identification. In our prior estimations of Eq. (1), we assume that informality, remittances and their interaction are exogenous causes of venture funding availability in developing countries. That assumption may be uncontroversial in the case of informality, which likely follows from deep-seated historical trends and institutions. Perhaps our assumption is debatable, however, in the case of remittances, which could affect and be affected by other venture-funding trends that vary considerably from year to year in migrants' home countries. To deal with that possibility, we resort to an alternative dynamic panel GMM estimation strategy proposed by Arellano and Bond (1991) and used with increasing frequency in management research (e.g., Vaaler, 2008). The dynamic panel GMM estimator typically includes lagged dependent variables and other RHS variables of central interest for hypothesis testing along with 0–1 dummies to account for time (e.g., year) effects. Unless the time series is substantial — more than 30 time periods — estimates of lagged dependent variable and other potentially endogenous RHS variable effects can be substantially biased (Hsiao, 1986). Dynamic panel GMM estimation adjusts these potentially-biased estimates by generating plausibly exogenous instruments for them based on lags in their first differences. We implement this dynamic panel GMM difference estimation with an add-on program to Stata Version 12 developed by Roodman (2006).

The number of instruments can quickly explode with more RHS terms treated as endogenous. Thus, we drop from Eq. (1) all RHS country controls. In their place, we add one-year and two-year lagged dependent variables (*Venture Funding$_{it-1}$*, *Venture Funding$_{it-2}$*). Following a long line of econometric research starting with Granger (1969), we assume that these two lagged terms capture all otherwise-unspecified past effects on current-year venture funding availability. This strategy lets us isolate effects on venture funding availability related specifically to informality, remittances, and their interaction. We treat *Informality* as exogenous and treat all other RHS variables in this variant of Eq. (1) as endogenous for instrument-generation purposes.

Results from this re-estimation confirm most core results reported in Table 4. *Informality* (−) again exhibits the predicted sign but is no longer statistically significant at commonly-accepted levels. *Remit_GDP* (−) and *Remit_GDP*Informality* (+) again exhibit the same signs and significance as in Table 4, Column 9. Our model re-specification strategy limits the number of instruments generated to 35. Following Roodman's (2006) recommendations, we implement a Hansen test, which does not reject the null hypothesis that these instruments are exogenous as a group, and an Arellano–Bond (A–B) test, which does not reject the null hypothesis that there is no third- or higher-order autocorrelation. These dynamic panel GMM results further broaden the evidentiary basis for holding that remittances prompt an increase in venture funding availability in developing countries with sizeable informal sectors and that some reverse process is not at work.[13]

7. Discussion

7.1. Central aims and results

Our study was designed to explore whether and how informality at home and remittances from abroad affected venture funding availability in developing countries. Regression and related analyses of remittances to and informality in 48 developing countries observed from 2001 to 2009 indicated first a statistically significant and practically substantial negative relationship between venture funding availability and informality as predicted by institutional theory. Increasing the size of the informal sector of the economy by one standard deviation above the sample mean — from 34% to 46% of country GDP — essentially dropped a country from the highest to near lowest ranks of venture funding access in our sampled countries. Second, and as predicted by TCE theory, we initially found that remittances increased venturing funding availability in developing countries though the practical increase in country ranking was small. But third, we then found that this small increase varied with informality. At levels of informality below 46%, mean levels

---

[12] The 27 high-informality countries include: Armenia, Bolivia, Brazil, Cambodia, Colombia, El Salvador, Ethiopia, Ghana, Guatemala, Honduras, Jamaica, Macedonia, Mali, Morocco, Nicaragua, Pakistan, Panama, Paraguay, Peru, Philippines, Russia, Sri Lanka, Tanzania, Thailand, Tunisia, Uganda, and Ukraine.

[13] We also obtain but do not report here results consistent with those in Column 9 of Table 4 when we implement these additional variations: 1) drop 2009 from our analysis to control for effects on *Venture Funding* that may be related to the global recession but are not accounted for in our year dummies and other controls; 2) sub-sample only from the 50% of our countries with lowest "control of corruption" scores from the World Bank's World Governance Indicators (Kaufmann et al., 2000; WGI, 2013) to control for effects on *Venture Funding* that may be related to public institutional malfeasance rather than to mere institutional incapacity associated with informality; 3) sub-sample only from the 50% of our countries with the most geographically concentrated migrant diasporas in the 2000s (Parsons et al., 2007; Vaaler, 2013) to control for effects on *Venture Funding* that may be related to structural aspects of the diaspora; 4) add two 0–1 dummy variables to account for either the "emerging country" (better market and regulatory structure, better trading environment, and better operational efficiency) or "frontier country" (worse than "emerging" country market and regulatory structure, trading environment, and operational efficiency) status according to the Dow Jones Indexes Country Classification system (Dow Jones, 2012). Results are available from the authors.

of remittances exhibited no significantly positive effects on venture funding availability. Above that level, migrant remitters act more like migrant entrepreneurs and increase venture funding availability in developing countries.

7.2. Implications for research, practice, and public policy

These core findings matter for current academic research in entrepreneurship that, to date, has said little about the venture investment impact of foreign capital inflows aside from the impact of FDI associated with MNCs (Kim and Li, 2012; Webb et al., 2010). We identified a different type of foreign venture investor and investment source — migrant entrepreneurs and their remittances. We demonstrated in theory and then empirically when and how both might increase venture funding availability even as larger institutional trends rendering the economy less observable and regulable decreased the same. We also demonstrated that these effects are specifically linked to remittances. They applied to venture funding availability and not necessarily to other indicators of financial depth and breadth such as bank loan availability. They applied to remittances and their changing impact on venture funding availability as informality increases and not necessarily to other foreign capital inflows such as FDI. These findings are important not merely for entrepreneurship research but also for economic development research where debates continue regarding whether, how, and how much remittances enhance business-led economic development (Yang, 2011).

Our findings complement rather than challenge research indicating the importance of institution-building in developing countries, particularly legal institution-building critical to attracting foreign entrepreneurs (Li and Zahra, 2012) and foreign venture capital firms (Guler and Guillen, 2010). But perhaps we do constructively challenge a commonly-held assumption by many in the entrepreneurship field that "venture capital exists because of the structure and rules of capital markets" (Zider, 1998:132). We showed how venture capital in the form of remittances from migrant entrepreneurs might flow into developing countries where few, if any, formal rules are enforced with predictable vigor. Remittance-based venture funding is resilient to formal institutional voids (Khanna and Palepu, 2000) in some of the least developed, least formal country contexts.

Perhaps, too, informal assurances protecting migrant entrepreneurs are more resilient in such contexts. Kim and Li (2013) document higher likelihoods of new venture founding in developing countries where general levels of trust among residents are higher. But remittances for venture funding purpose may rely less on national trust and more on local clan and community relationships that migrant entrepreneurs are uniquely positioned to exploit.

This point leads to implications relevant for practitioners and policy-makers. Organizations such as banks, money transfer organizations and other international financial institutions are analyzing how, how much, how often, and for what purpose migrant customers remit funds to their home country. Our research aids that analysis by highlighting certain institutional cues which make it more likely that a migrant remitting a few hundred US dollars each month is doing so to fund a new business rather than a new household purchase. Firms attentive to such cues can be better positioned to offer that customer and millions of others value-added services tailored to their venture investing.[14]

Policy makers at international organizations like the World Bank (Ratha, 2003), national agencies such as the UK's Department for International Development (Hasan and Chalmers, 2008), and non-governmental organizations like the Global Entrepreneurship Monitor (Bosma and Levie, 2010) will also better understand when policy initiatives that "harness" the diaspora for investment and economic development are more likely to succeed. They also appreciate the importance of these transnational agents for transferring money and ideas from the developed to the developing world with its sizable informal sector. Indeed, economic development policy recommendations from the World Bank and other aid-granting organizations are now likely to include analysis of a country's diaspora community for its potential to assist in venture investing back home as part of a larger strategy to alleviate poverty and increase economic growth (e.g., World Bank, forthcoming).

Our findings matter for related management and policy initiatives aimed at engaging the world's poorest in business-based economic opportunity. Remittance-based small and medium-sized enterprises create new opportunities for employment, learning and wealth creation among the neediest people of the world living at the "base of the pyramid" (BoP). These billions were originally characterized as under-served consumers whose sheer numbers merited closer attention from marketers in MNCs (Hart and Prahalad, 2002; Prahalad, 2004, 2006). More recently, however, BoP research in entrepreneurship has focused on when these billion are more likely to start new businesses and contribute to the kind of private-sector led economic growth espoused by wealthier industrialized democracies and major international organizations (Hall et al., 2010, 2012). Our research contributes theory and evidence regarding important transnational sources to fund those enterprises. We also confirm previous research (e.g., Vaaler, 2011) pointing to the importance of transnational clan and community links assuring the proper use of such venture funds.

A 2010 report from the Global Entrepreneurship Monitor states bluntly that "if all of them [informal investors] stopped providing money to start-ups, the global economy would immediately feel the effect with a sudden jump in unemployment" (Bosma and Levie, 2010: 52). More than 200 million migrants worldwide comprise a sizeable share of those informal investors. We showed when those informal investors are more likely to remit venture funds so important to individual developing countries and to the global economy of which developing countries comprise an increasingly large share. The global economic impact of migrants now and in the near term compels much more attention in research, practice and policy-making communities.

---

[14] Money transfer organizations might, for example, direct remitting customers, their pay-out recipients, or both of these groups to professional service firms in home and host country to provide advice about legal, accounting and other matters that arise as small, unregistered microenterprises grow.

7.3. Limitations and future research

Like any study, ours has limitations, which also suggest future research directions. We analyzed the venture funding impact of remittances as informality varied in recipient developing countries, but did not control for the level of economic informality in the migrant remitters' host country. In a world where migrants and remittances increasingly flow "South-South" between developing countries, this host-country characteristic may be another important conditioning factor for future research to explore. Patterns of remittance and venture funding availability may be similar to recent research on FDI in developing countries suggesting that multinational firms from developing countries are more effective when investing in other developing countries (Holburn and Zelner, 2010).

Another migrant characteristic we did not control for was motivation. We assumed that migrants as venture investors follow the motives of other entrepreneurs generally seeking profitable new venture investment opportunities. But certainly not all migrants fit this profile. McMullen (2011) identifies multiple profiles, including business- and socially-motivated entrepreneurs active in developing countries. Transnational migrant entrepreneurs also likely exhibit different profiles and motivations. Future research should strive to isolate and analyze their different remitting and investing patterns in developing countries with differing levels of informality. Perhaps, for example, migrant entrepreneurs coming from communities of displaced war refugees are more socially-motivated to remit for new business development purposes than counterparts coming from diaspora communities that arose for economic reasons.

Other home-country characteristics missing from our analyses may also influence relationships we theorized about and then documented. Take, for example, home-country public policies that might impose legal or regulatory burdens on would-be venture funders. Recently in entrepreneurship research, Dau and Cuervo-Cazurra (2014) documented increased rates of both formal and informal venturing activity in the 2000s for countries that liberalized and supposedly lightened such burdens. Their findings beg questions regarding the strength and persistence of remittance effects on venture funding availability in developing countries undergoing such reforms.

One set of reforms to think about in future research relates to home-country financial infrastructure. Many of the least-developed countries lack conventional banking and related financial-service firms to cost-effectively receive and disburse remittances from abroad (Demirguc-Kunt and Klapper, 2012). Current policy prescriptions for such countries include scrapping regulatory limits on the number of banks and money transfer organizations that can provide these services (e.g., World Bank, forthcoming). Future research on our topic will benefit from closer accounting of these reforms and their effects on the cost of remitting for venture investment in formal and informal sectors.

Finally, our approach to measuring key variables such as venture funding, informality and remittances followed relevant research precedents (Schneider et al., 2010; Vaaler, 2011, 2013) but does not represent the only legitimate approach. Future research might use alternative indicators of home-country venture funding availability (see, e.g., Angkinand et al. (2002–2008)) or remittance components rather than total remittances to confirm and extend the evidence generated in this study. Such follow-on research should improve research perspectives on how a limited bureaucratic gaze changes the way firms and individuals fund new ventures in the developing world.

References

Amuedo-Dorantes, C., Bansak, C., Pozo, S., 2004. On the remitting patterns of immigrants: evidence from Mexican survey data. Paper Presented at the Payments in the Americas Conference. Federal Reserve Bank of Atlanta (7–8 October).
Angkinand, A., Barth, J., Lee, C., Li, T., Lu, W., Malaiyandi, S., McCarthy, D., Phumiwasana, T., Sui, S., Trimbath, S., Yago, G., 2002–2008. Capital Access Index 2001–2007 (Various Annual Issues Written by Combinations of Co-authors Listed Above and Published from 2002–2008). Milken Institute, Los Angeles, CA.
Arellano, M., Bond, S., 1991. Some tests of specifications for panel data: Monte Carlo evidence and an application to employment equations. Rev. Econ. Stud. 58, 277–297.
Barnett, M., Cummings, M., Forbes, D., Vaaler, P., 2014. Bring it on home: how migrant remittances shape home country corporate governance practices. Working Paper. Carlson School of Management, University of Minnesota, Minneapolis, MN.
Bhatia, R., 2011. Remarks by USAID senior advisor for diaspora partnerships, Romi Bhatia. 12th Annual International Business Forum: Diaspora Investment & Entrepreneurship: The Role of People, Their Movements, and Capital in the International Economy. Fox Business School, Temple University, Philadelphia, PA (October 15).
Blades, D., Ferreira, F., Lugo, M.A., 2011. The informal economy in developing countries: an introduction. Rev. Income Wealth 57 (Special Issue), S1–S7.
Bosma, N., Levie, J., 2010. Global entrepreneurship monitor 2009 global report. Global Entrepreneurship Research Association and Global Entrepreneurship Monitor. Utrecht University, Utrecht, The Netherlands.
Boso, N., Story, V., Cadogan, J., 2013. Entrepreneurial orientation, market orientation, network ties, and performance: study of entrepreneurial firms in a developing economy. J. Bus. Ventur. 28, 708–727.
Brown, S., 2006. Can remittances spur development? A critical survey. Int. Stud. Rev. 8, 55–75.
Bruhn, M., McKenzie, D., 2013. Entry regulation and formalization of microenterprises in developing countries. World Bank Policy Research Paper WPS6507. World Bank Development Research Group. World Bank, Washington, DC.
Bruton, G., Ireland, D., Ketchen, D., 2012. Toward a research agenda on the informal economy. Acad. Manag. Perspect. 26 (3), 1–11.
Bucheli, M., Mahoney, J.T., Vaaler, P.M., 2010. Chandler's living history: the visible hand of vertical integration in nineteenth century America viewed under a twenty-first century transaction costs economics lens. J. Manag. Stud. 47 (5), 859–883.
Burnside, C., Dollar, D., 2000. Aid, policies, and growth. Am. Econ. Rev. 90, 847–868.
Clarke, G., Wallsten, S., 2003. Do remittances act like insurance? Evidence from a natural disaster in Jamaica. World Bank Development Research Group Working Paper. World Bank, Washington, DC.
Coasean, R., 1937. The nature of the firm. Economica 4, 386–405.
Dau, L., Cuervo-Cazurra, A., 2014. To formalize or not to formalize: entrepreneurship and pro-market reforms. J. Bus. Ventur. 29, 668–686.
Demirguc-Kunt, A., Klapper, L., 2012. Measuring financial inclusion: the global findex database. World Bank Policy Research Working Paper No. 6025. World Bank, Washington, DC.
Drori, I., Honig, B., Wright, M., 2009. Transnational entrepreneurship: an emergent field of study. Enterp. Theory Pract. 33, 1001–1022.
Dustmann, C., Kirkchamp, O., 2002. The optimal migration duration and activity choice after re-migration. J. Dev. Econ. 67, 351–372.
Flodman-Becker, K., 2004. The Informal Economy. Swedish International Development Cooperation Agency, Stockholm, Sweden.

Freund, C., Spatafora, N., 2008. Remittances, transaction costs, and informality. J. Dev. Econ. 86, 356–366.
Friedman, E., Johnson, S., Kaufmann, D., Zoido-Lobatón, P., 2000. Dodging the grabbing hand: the determinants of unofficial activity in 69 countries. J. Public Econ. 76, 459–493.
Ghosh, B., 2006. Migrants' remittances and development: myths, rhetoric and realities. International Organization for Migration Working Paper, Washington, DC.
Granger, C., 1969. Investigating causal relations by econometric models and cross-spectral methods. Econometrica 37, 424–438.
Guler, I., Guillen, M., 2010. Institutions and the internationalization of US venture capital firms. J. Int. Bus. Stud. 41, 185–205.
Hall, J., Daneke, G., Lenox, M., 2010. Sustainable development and entrepreneurship: past contributions and future directions. J. Bus. Ventur. 25, 439–448.
Hall, J., Matos, S., Sheehan, L., Silvestre, B., 2012. Entrepreneurship and innovation at the base of the pyramid: a recipe for inclusive growth or social exclusion. J. Manag. Stud. 49, 785–812.
Hart, K., 2007. Bureaucratic form and the informal economy. In: Guha-Khasnobis, B., Kanbur, R., Ostrom, E. (Eds.), Linking the Formal and Informal Economy. Oxford University Press, New York, pp. 21–35.
Hart, S., Prahalad, C.K., 2002. The Fortune at the Bottom of the Pyramid, Strategy+ Business 26, 54–67.
Hasan, M., Chalmers, C., 2008. UK Somali Remittances Survey. Department for International Development, London, UK (Available electronically on January 1, 2014 at: http://www.diaspora-centre.org/DOCS/UK_Somali_Remittan.pdf.).
Holburn, G., Zelner, B., 2010. Political capabilities, policy risk, and international investment strategy: evidence from the global electric power generation industry. Strateg. Manag. J. 31, 1290–1315.
Honig, B., 1998. What determines success? Examining the human, financial, and social capital of Jamaican microentrepreneurs. J. Bus. Ventur. 13, 371–394.
Hsiao, C., 1986. Analysis of Panel Data. Cambridge University Press, Cambridge, UK.
IMF, 2013. Balance of Payments, Manual 6, Appendix 5: Remittances. Washington, DC, International Monetary Fund.
Jones, Dow, 2012. Dow Jones Indexes Country Classification System. CME Group Index Services LLC, Chicago, IL (http://www.djindexes.com/mdsidx/downloads/brochure_info/Dow_Jones_Indexes_Country_Classification_System.pdf Last accessed July 1, 2014).
Kan, K., 2000. Informal capital sources and household investment: evidence from Taiwan. J. Dev. Econ. 62, 209–232.
Kaufmann, D., Kraay, A., Zoido-Lobatón, P., 2000. Governance matters: from measurement to action. Financ. Dev. 37.
Khanna, T., Palepu, K., 2000. Is group affiliation profitable in emerging markets? An analysis of diversified Indian business groups. J. Financ. 55, 867–891.
Khavul, S., Chavez, H., Bruton, G., 2013. When institutional change outruns the change agent: the contested terrain of entrepreneurial microfinance for those in poverty. J. Bus. Ventur. 28, 30–50.
Khoury, T., Junkunc, M., Mingo, S., 2012. Navigating political hazard risks and legal system quality: venture capital investments in Latin America. J. Manag. http://dx.doi.org/10.1177/0149206312453737.
Kilic, T., Carletto, C., Davis, B., Zezza, A., 2007. Investing back home: return migration and business ownership in Albania. World Bank Policy Research Working Paper 4366World Bank, Washington, DC.
Kim, P., Li, M., 2012. Injecting demand through spillovers: foreign direct investment, domestic socio-economic conditions, and host-country entrepreneurial activity. J. Bus. Ventur. 29, 210–231.
Kim, P., Li, M., 2013. Seeking assurances when taking action: legal systems, social trust, and starting businesses in emerging economies. Organ. Stud. 35, 359–391.
Kiss, A., Danis, W., Cavusgil, T., 2012. International entrepreneurship research in emerging economies: a critical review and research agenda. J. Bus. Ventur. 27, 266–290.
Kistruck, G.M., Webb, J.W., Sutter, C.J., Bailey, A.V., 2014. The double-edged sword of legitimacy in base-of-the-pyramid markets. J. Bus. Ventur. http://dx.doi.org/10.1016/j.jbusvent.2014.06.004.
Kuznetsov, Y., Sabel, C., 2006. International migration of talent, diaspora networks, and development: overview of main issues. In: Kuznetsov, Y. (Ed.), Diaspora Networks and the International Migration of Skills: How Countries can Draw on their Talent Abroad. Washington, DC, World Bank, pp. 3–20.
La Porta, R., Shleifer, A., 2014. Informality and development. J. Econ. Perspect. 28 (3), 109–126.
Lerner, J., 2009. Boulevard of Broken Dreams. Princeton University Press, Princeton, NJ.
Li, Y., Zahra, S., 2012. Formal institutions, culture, and venture capital activity: a cross-country analysis. J. Bus. Ventur. 27, 95–111.
London, T., Hart, S., 2010. Next Generation Business Strategies for the Base of the Pyramid. UK, FT Press, London.
Madhavan, R., Iriyama, A., 2009. Understanding global flows of venture capital: human networks as the "carrier wave" of globalization. J. Int. Bus. Stud. 40 (8), 1241–1259.
Maimbo, S., 2006. Remittances and economic development in Somalia. Social Development Papers: Conflict Prevention & Reconstruction, Paper No. 38. World Bank, Washington, DC.
Maloney, W., 2004. Informality revisited. World Dev. 32, 1159–1178.
Martinez, C., 2010. Informal waste-pickers in Latin America: sustainable and equitable solutions in the dumps. In: Stoner, J., Wankel, C. (Eds.), Global Sustainability as a Business Imperative. Palgrave Sustainability Through Business Series, New York, NY, pp. 199–217.
McCormick, B., Wahba, J., 2003. Return international migration and geographical inequality: the case of Egypt. J. Afr. Econ. 12, 500–532.
McGahan, A.M., 2012. Challenges of the informal economy for the field of management. Acad. Manag. Perspect. 26 (3), 12–21.
McMillan, J., Woodruff, C., 1999. Interfirm relationships and informal credit in Vietnam. Q. J. Econ. 114, 1285–1320.
McMullen, J., 2011. Delineating the domain of development entrepreneurship: a market-based approach to facilitating inclusive economic growth. Enterp. Theory Pract. 35, 185–215.
Moneygram, 2010. Remittance trends and the role of money transfer organizations. Presentational Materials Dated July 20. Moneygram International, Minneapolis, MN.
New York Times, 2009. Somalis' Money is Lifeline for Homeland. , p. A14 (November 11).
North, D., 1990. Institutions, Institutional Change, and Economic Performance. Norton, New York, NY.
Ostrom, E., 1990. Governing the Commons: The Evolution of Institutions for Collective Action. Cambridge University Press, New York, NY.
Ouchi, W., 1980. Markets, bureaucracies, and clans. Adm. Sci. Q. 25, 129–142.
Parsons, C., Skeldon, R., Walmsley, T., Winters, T., 2007. Quantifying international migration: a database of bilateral migrant stocks. World Bank Policy Research Working Paper 4165. World Bank, Washington, DC.
Patel, P.C., Conklin, B., 2009. The balancing act: the role of transnational habitus and social networks in balancing transnational entrepreneurial activities. Enterp. Theory Pract. 33 (5), 1045–1078.
Portes, A., Guarnizo, L., Haller, W., 2002. Transnational entrepreneurs: an alternative form of migrant economic adaptation. Am. Sociol. Rev. 67, 278–298.
Prahalad, C., 2004, 2006. The Fortune at the Bottom of the Pyramid. Prentice Hall (Originally published in 2004 through Wharton School Publishing), Upper Saddle River, NJ.
Puffer, S., McCarthy, D., Boisot, M., 2010. Entrepreneurship in Russia and China: the impact of formal institutional voids. Enterp. Theory Pract. 34, 441–467.
Qorchi, M., Munzele-Maimbo, S., Wilson, J., 2003. Internal funds transfer systems: an analysis of the informal hawala system. IMF Occasional Paper 222. International Monetary Fund, Washington, DC.
Ramamurti, R., 2003. Can governments make credible promises: insights from infrastructure projects in emerging economies. J. Int. Manag. 9, 253–269.
Ratha, D., 2003. Workers' remittances: an important and stable source of external development finance. Global Development Finance. World Bank, Washington, DC, pp. 157–175.
Ratha, D., Silwal, A., 2012. Remittance flows in 2011 — an update. Migr. Dev. Brief 18, 1–3.
Ria Financial, 2011. Survey Data on Remittance Uses by Customers in France, Germany, Spain and UK. Madrid, Spain, Ria Financial (Available from authors).
Roodman, D., 2006. How to do xtabond2: an introduction to difference and system GMM in Stata. Working Paper No. 103. Center for Global Development, Washington, DC.
Saxenian, A., Hsu, J., 2001. The Silicon Valley–Hsinchu connection: technical communities and industrial upgrading. Ind. Corp. Chang. 10, 893–920.
Schneider, F., Enste, D., 2002. The Shadow Economy. Cambridge University Press, Cambridge, UK.
Schneider, F., Buehn, A., Montenegro, C., 2010. New estimates for the shadow economies all over the world. Int. Econ. J. 24, 443–461.

Scott, R., 1995. Institutions and Organizations. Sage Publications, Thousand Oaks, CA.

StataCorp, 2011. Stata Statistical Software: Release 12. StataCorp LP, College Station, TX.

Stenholm, P., Acs, Z., Wuebker, R., 2013. Exploring country-level institutional arrangements on the rate and type of entrepreneurial activity. J. Bus. Ventur. 28, 176–193.

Stinchcombe, A., 1965. Social structure and organizations. In: March, J. (Ed.), Handbook of Organizations. Rand-McNally, Chicago, IL, pp. 142–193.

Straub, S., 2005. Informal sector: the credit market channel. J. Dev. Econ. 78, 299–321.

Sutter, C., Webb, J., Kistruck, G., Bailey, A., 2013. Entrepreneurs' responses to semi-formal illegitimate institutional arrangements. J. Bus. Ventur. 28, 743–758.

Teece, D.J., 1986. Transactions cost economics and the multinational enterprise: an assessment. J. Econ. Behav. Organ. 7, 21–45.

The World Factbook2013-14. Central Intelligence Agency, Washington, DC Available at https://www.cia.gov/library/publications/the-world-factbook/.

Vaaler, P., 2008. How do MNCs vote in developing country elections? Acad. Manag. J. 51, 21–44.

Vaaler, P., 2011. Immigrant remittances and the venture investment environment of developing countries. J. Int. Bus. Stud. 42, 1121–1149.

Vaaler, P., 2013. Diaspora concentration and the venture investment impact of remittances. J. Int. Manag. 19, 26–46.

WDI, 2013. World Development Indicators. World Bank, Washington, DC.

Webb, J., Tihanyi, L., Ireland, D., Sirmon, D., 2009. You say illegal, I say legitimate: entrepreneurship in the informal economy. Acad. Manag. Rev. 34, 492–510.

Webb, J., Kistruck, G., Ireland, D., Ketchen, D., 2010. The entrepreneurship process in base of the pyramid markets: the case of multinational enterprise/nongovernment organization alliances. J. Bus. Ventur. 34, 555–581.

Webb, J., Bruton, G., Tihanyi, L., Ireland, D., 2012. Research on entrepreneurship in the informal economy: framing a research agenda. J. Bus. Ventur. 28, 598–614.

WEF, 2002–2010. Global competitiveness reports for years 2001–2009. Davos, Switzerland, World Economic Forum.

WGI, 2013. World Governance Indicators, 1996–2012. World Bank, Washington, DC (Available electronically on December 1, 2013 at: http://info.worldbank.org/governance/wgi/index.aspx#doc.).

Williamson, O., 1975. Markets and Hierarchies. The Free Press, New York, NY.

Williamsonian, O., 1985. The Economic Institutions of Capitalism. The Free Press, New York, NY.

Williamson, O., 1993. Calculativeness, trust, and economic organization. J. Law Econ. 36, 453–496.

Woodruff, C., Zenteno, R., 2007. Migration networks and microenterprises in Mexico. J. Dev. Econ. 82, 509–528.

World Bank, 2006. Global economic perspectives: economic implications of remittances and migration. World Bank Report No. 34320. World Bank, Washington, DC.

World Bank, 2012. Latin America: despite the crisis, remittance flows are still robust. November 20. World Bank News. World Bank, Washington, DC.

World Bank, 2013a. Migration and Development Brief 19. April 19. World Bank, Washington, DC.

World Bank, 2013b. Migration and Development Brief 21. October 3. World Bank, Washington, DC.

World Bank, 2014. Terra Ranca! A Fresh Start: Country Economic Memorandum for Guinea-Bissau. Report No. 58296-GW. World Bank, Washington, DC (forthcoming).

Yang, D., 2011. Migrant remittances. J. Econ. Perspect. 25 (3), 129–152.

Yang, D., Choi, H., 2007. Are remittances insurance? Evidence from rainfall shocks in the Philippines. World Bank Econ. Rev. 21, 219–248.

Zacharakis, A., McMullen, J., Shepherd, D., 2007. Venture capitalists' decision policies across three countries: an institutional theory perspective. J. Int. Bus. Stud. 38, 691–708.

Zaheer, S., 1995. Overcoming the liability of foreignness. Acad. Manag. J. 38, 341–363.

Zider, B., 1998. How venture capital works. Harvard Business Review, pp. 131–139 (November–December Volume).