

Testing for Repugnance in Economic Transactions: Evidence from Guest Work in the Gulf

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ABSTRACT

Despite the large benefits to guest workers from poor countries in rich countries, agencies charged with global poverty reduction do little to facilitate guest work. This may be because guest work is viewed as a repugnant transaction—one whose harmful side effects might cause third parties to discourage it. This paper sets out six criteria for a transaction to be repugnant in consequentialist terms and uses the criteria to formulate several uncommon empirical tests for the repugnance of guest work by Indian construction workers in the United Arab Emirates. It separates the effects of guest work from its correlates using a natural experiment that quasi-exogenously allocates guest work among a group of several thousand job applicants. The effects offer little evidence that guest work in this setting is typically the cause of repugnant consequences.

1. INTRODUCTION

People from poor countries typically raise their economic productivity and real earnings by hundreds of percentage points when they move to work in rich countries (Clemens, Montenegro, and Pritchett 2016). Guest

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work—temporary, employment-based migration—offers in principle a way for many of the poor to increase their productivity abroad without the high political barriers to permanent migration (Djajić 2014). Guest work programs common in the Gulf countries do more to reduce global economic inequality than the migration regimes of high-income Western nations (Weyl, forthcoming), and the world has seen over 580 bilateral agreements for guest work since 1945 (Chilton and Posner 2017). But many social scientists, philosophers, and jurists object to guest work as a repugnant transaction: an economic transaction in which third parties should intervene to discourage or eliminate.¹ Policy makers charged with reducing global poverty have done little to create new opportunities for guest work.

This paper tests a set of sufficient conditions for guest work to be considered repugnant by estimating some of the effects of temporary construction work in the United Arab Emirates (UAE) on a set of Indian workers and their families. It identifies thousands of successful Indian applicants for UAE construction jobs from 2008 to 2009, reports a survey of their households in India in 2011, and links them to administrative data on those working in the UAE. Because the UAE construction sector experienced a sudden crisis in late 2008, the probability of any given applicant arriving in the UAE was primarily determined by the timing of the crisis—a force beyond his control. This exogenous determinant of guest work allows me to estimate the pure effects of UAE employment on that worker and his family in India, apart from any other differences that might exist between migrant and nonmigrant households. I can then compare those to several effects that might be observed if guest work in the Gulf were repugnant under various consequentialist theories of repugnance.

The first contribution of this paper is to unify separate strands of the literature to create and execute tests for many sufficient conditions for

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1. See especially Lenard and Straehle (2012) and the literature summarized in Section 3.

repugnance. While economists have urged market design to account more seriously for repugnance (Roth 2007), this requires an assessment of which transactions are in fact repugnant, and it is rare to empirically test objective criteria for repugnance in any type of transaction. I thus address the growing social science of repugnance in general (Becker and Elías 2007; Lacetera 2016; Ambuehl 2017). The second contribution is to offer evidence from a natural quasi experiment that addressing the separation of correlation from causation to determine whether guest work in the Gulf systematically causes repugnant outcomes. It thus addresses the labor economics literature on repugnant contracts in general (Naidu 2010; Acemoglu and Wolitzky 2011; Naidu and Yuchtman 2013) and the literature on the effects of temporary labor migration in particular—which “has often been ignored in the economic literature on migration” (Dustmann and Görlach 2016, p. 98). Few studies have been able to establish a credible counterfactual (Gibson and McKenzie 2014; Dinkelman and Mariotti 2016; Clemens and Tiongson 2017). The UAE, with 98 percent of its private-sector labor force being temporary foreign workers, is an ideal natural laboratory.

I find that the typical effects of guest work in UAE construction on Indian households do not exhibit strong evidence of meeting several empirically observable criteria for repugnance. I test for evidence of five such criteria: coercion, regret, externalities, low-level equilibria, and inequity—defined in Section 2. The presence of systematic coercion is incompatible with the finding that guest work by one household member results in guest work by other household members. The presence of regret is incompatible with the effects of guest workers’ experience on applicants’ knowledge about working and living in the UAE and on the effect of guest work on indebtedness. The presence of negative externalities on households’ economic productivity is incompatible with the effects of guest work by one household member on work by other household members in India. The presence of low-level equilibria of remittance dependency is incompatible with a positive effect of guest work on new business investment in India. The presence of quasi coercion through highly skewed bargaining power is verified in the data but does not arise from guest work itself because the disparity would remain in the absence of guest work.

Section 2 draws on the literature to identify a set of separate, empirically testable necessary conditions for a transaction to be repugnant in consequentialist terms, and Section 3 reviews literature ascribing con-

sequentialist repugnance of various types to guest work. Section 4 then describes the empirical setting of Indian temporary construction workers in the UAE, the natural experiment that quasi-exogenously sorts the sampling universe into migrants and nonmigrants, and the survey. Section 5 then offers tests for observable signs of repugnance in the estimated effects of guest work, and Section 6 discusses what can and cannot be learned from this inquiry.

2. CONSEQUENTIALIST THEORIES OF REPUGNANT TRANSACTIONS

The literature offers a clear definition of a repugnant transaction: it is one that “some people would like to engage in and that others would like to prevent” (Niederle and Roth 2014, p. 132).² This might include slavery, gambling, bribery, prostitution, or the sale of human organs.

This definition allows for multiple theories of what produces repugnance, because there are many reasons that third parties might like to prevent a transaction. Some theories of repugnance rest on the view that some transactions directly harm the utility of others through their very existence (see, for example, Sen 1970; Kass 1997; Chen and Schonger 2016). This is the deontological view that some transactions are wrong by definition, justifying regulations such as bans and sin taxes independently from their empirically observable consequences (see, for example, Zamir and Medina 2008; Lockwood and Taubinsky 2017). An alternative, consequentialist view of repugnance describes it in terms of observable effects. Social scientists, philosophers, and jurists have advanced several possible sufficient conditions for a transaction to be repugnant in consequentialist terms, conditions that in principle are empirically testable:

Coercion. The transaction is forced.

Regret. One of the parties does not understand the transaction’s effects, because of naïveté or fraud.

Externality. The transaction harms agents who are not involved in it, other than by changing prices.

Equilibrium. The option to make the transaction prevents better options from arising.

Inequity. The transaction has unequal benefits because of highly un-

2. In broad terms, the literature equivalently calls such transactions noxious (Satz 2010), contested (Radin 1996), taboo (Fiske and Tetlock 1997), or simply unjust (Munger 2011), although precise definitions vary.

equal bargaining power.

Degradation. The transaction degrades the preferences or character of those involved.

Coercion, regret, externality, inequity, and degradation are discussed by Cullenberg and Pattanaik (2004), Roth (2007), Becker and Elías (2007), von Lilienfeld-Toal and Mookherjee (2010, p. 45), Sandel (2013), Guzmán and Munger (2014, p. 41), and Lacetera (2016).³ Equilibrium effects are a focus of Genicot (2002), Basu (2007), Satz (2008), and von Lilienfeld-Toal and Mookherjee (2010). For example, the existence of the option to place oneself into indentured servitude could inhibit the development of markets for loans that would, if they existed, be preferred by those now voluntarily choosing indenture. Brekke, Kverndokk, and Nyborg (2003), Ambuehl, Niederle, and Roth (2015), and Ambuehl (2017) model degradation with mechanisms by which seemingly intrinsic preferences to engage in a transaction can be endogenous to the strength of extrinsic incentives.

All of these are independent reasons why a transaction cannot be judged Pareto optimal simply because it occurs. Unlike deontological views of repugnance, these consequentialist conditions for repugnance are in principle testable with objective evidence. They rest on objective effects rather than exclusively on subjective preferences. For example, whether the purchase of a dog is repugnant because the purpose of the transaction is to eat the dog depends on subjective preferences that differ across communities (a deontological view), but whether the purchase of a dog is repugnant because the seller misrepresented the dog's breed is in principle testable with objective observed facts (a consequentialist view).

Until recently, economists have shown little interest in characterizing or addressing repugnance. "[W]hen confronted with repugnance toward a market transaction, economists often respond as if a sufficiently clear argument focused on the welfare gains due to trade will overcome that repugnance" (Roth 2007, p. 49). But this is changing. A small but dynamic

3. Fraud is distinguished from regret by Guzmán and Munger (2014): a transaction could be considered repugnant even if the agent who proceeds with the transaction on the basis of fraudulent information would have proceeded anyway had he possessed correct information (a transaction in which a loan shark lies that the interest rate is 5 percent instead of the true 30 percent could remain repugnant even if the customer would have knowingly paid 30 percent). And a transaction regretted by two misinformed agents could be considered repugnant even if neither defrauds the other (for example, two 10-year-olds make a deal involving their future retirement savings). This analysis considers it sufficient for either party to be ill-informed about what they are agreeing to, which comprises both scenarios.

literature takes repugnance seriously. This includes testing empirically for necessary conditions of consequentialist repugnance, such as testing whether easy-access, high-interest payday loans systematically lead to outcomes that borrowers regret (Melzer 2011; Bhutta, Skiba, and Tobacman 2015).

3. REPUGNANCE ASCRIBED TO GUEST WORK

Despite the general lack of economic research on temporary migration (Dustmann and Görlach 2016), an extensive research literature beyond economics analyzes contracts for guest work. Lenard and Straehle (2012), for example, find that guest work is categorically unjust and recommend policy barriers against it. Parts of that literature find that guest work typically exhibits all of the six consequentialist conditions sufficient for repugnance. The following list is illustrative rather than comprehensive.⁴

Coercion. Many researchers equate guest work to forced labor or slavery (Smith 2007; Bauer and Stewart 2013), in part because most workers cannot freely change employers or access legal remedies for violations of labor law. Guest work in the Gulf, in particular, is described generally as a form of slavery (Keane and McGeehan 2008) or bondage (Sönmez et al. 2011). Of the articles in JSTOR that mention guest workers, 431 also contain the terms “slavery,” “bondage,” or “indentured servitude.”⁵ Economists typically use “labor coercion” to mean deliberate removal of outside options for the coerced worker by another agent (Naidu 2010; Acemoglu and Wolitzky 2011; Naidu and Yuchtman 2013).

Regret. Zachariah and Rajan (2009) find that large fractions of earnings by Indian migrants to the Gulf are spent on debts incurred to travel, and Rahman (2011) finds that many Bangladeshi migrants to Saudi Arabia do not earn enough to pay back debts that they incurred to travel there, which suggests either naïveté or fraud. Johnston (2010, p. 1121) finds that US guest workers “frequently fail to earn enough money to cover their basic needs while in the United States or to repay the debts they incurred in order to travel to the United States.” Zachariah, Prakash, and Rajan (2003, p. 166) find that “nearly one-fifth of the Indian mi-

4. For example, Lenard and Straehle (2012) argue that guest work is necessarily unjust (repugnant), while Hidalgo (2010) argues that wealthy nations have a moral obligation to admit guest workers.

5. The search was conducted January 23, 2017.

grants [in the UAE] have not received the same job, wages, and non-wage benefits as stipulated in their work contracts,” Owens et al. (2014) find that guest workers in the United States are frequently charged illegal fees that are presented to them as legal, and (Smith 2016) finds fraud to be commonplace.

Externality. Several studies find an association between overseas guest work and poor outcomes for migrants’ children or elderly dependents, including the breakup of families (Hugo 2002; Antman 2011, 2012; Cortes 2015), although studies that identify causation show long-term positive effects on children’s education (Dinkelman and Mariotti 2016). It is frequently argued that remittances from temporary migrants could reduce the productivity of their households, such as by inducing withdrawal from the labor force (Chami, Fullenkamp, and Jahjah 2005; Zachariah and Rajan 2009; Adams 2011; Antman 2013; De and Ratha 2012; Abdulloev, Gang, and Yun 2014).

Equilibrium. McKenzie and Rapoport (2011) find that Mexican youths’ option to earn high wages with temporary work in the United States causes them to invest less in education. By reducing the stock of human capital at home, the migration option could thus in principle lead to fewer local job opportunities, opportunities that might be preferred by some migrants.

Inequity. Guest work contracts have been described as inherently exploitative because the alternative for many workers is dire poverty (Walzer 1983, pp. 58–60; Mayer 2002, pp. 345–46). Thus, even a contract freely chosen could be repugnant if the agent’s best alternative is sufficiently painful. Munger (2011) calls such a choice voluntary but not “eu-voluntary.” Alternatives to departure are often strictly limited by tying workers to a single employer in the destination country (see, for example, Holley 2001; Cortes 2006; Renkiewicz 2016; Casella and Cox 2017).

Degradation. Lee (2017) and many others describe the jobs performed by guest workers, beyond being difficult, as fundamentally degrading to workers. Guest work in the Gulf is described as costing workers “their basic human dignity” (Auwal 2010, p. 89). This raises the concern that participating in guest work could transform workers’ preferences in ways that they would not want ex ante but may not be able to regret ex post.

Some of this research accords with views widely held by advocates, journalists, and the general public, particularly regarding South Asian guest workers in Gulf countries. For example, Sherry (2004, p. 1) de-

scribes the working conditions of guest workers in Saudi Arabia as “slavery-like.” Human Rights Watch (2006, p. 2) characterizes guest workers in the UAE as generally subject to “wage exploitation, indebtedness to unscrupulous recruiters, and working conditions that are hazardous to the point of being deadly.” They are described as “lured into a life of squalor and exploitation” (Abdul-Ahad 2008) and “toiling in a form of modern bondage” (Freedland 2009). Buckley et al. (2016) describe Indian workers in Dubai who have not earned enough to pay the debts they incurred to travel there.

These findings suggest a partial explanation for why agencies charged with reducing global poverty invest little in promoting guest work, despite its large effects on workers’ incomes. For example, the World Bank assisted in the design of New Zealand’s Recognized Seasonal Employer scheme, an agricultural guest work program for nationals of poor South Pacific island countries (Luthria and Malaulau 2013). This program raised the household incomes of poor families in Tonga typically by a factor of 10, far exceeding the effects of any other general class of international antipoverty policies. Research in the World Bank’s Research Department thus assessed the program as “among the most effective development policies evaluated to date” (Gibson and McKenzie 2010, abstract), one that moreover benefited New Zealand’s economy (Winters 2016). But the World Bank has done little to expand that model to other countries. Similarly, an impact evaluation of US agricultural guest work visas for Haiti finds that they raise the current value of Haitian farmers’ labor by a factor of 15, an effect well beyond the reach of typical international antipoverty policy in Haiti (Clemens and Postel 2017). But US development and relief agencies with the stated goal of poverty reduction have avoided investing in guest work programs in Haiti or elsewhere.

If consequentialist theories of repugnance are to be a useful guide to guest work policy, systematic and rigorous empirical evidence matters. First, consequentialist theories of repugnance depend on consequences that are in principle observable and can be tested with objective evidence. Second, evidence must show that those effects are in some sense systematic. For example, suppose that many poor homeowners take mortgages they cannot pay. Even numerous anecdotes of such an outcome are unlikely to convey repugnance for the act of offering mortgages to the poor unless the effect is systematic rather than anecdotal. Third, establishing causality is essential. A high rate of bankruptcy among poor mortgage holders is insufficient to show that the mortgage was the cause of the

bankruptcy, since the poor are likely to go bankrupt for other reasons. Fourth, consequentialist theories of repugnance require the transaction to be sufficient for the repugnant outcome, not just necessary. For example, deceptive mortgages can be repugnant without mortgages in general being repugnant, because a mortgage contract is necessary but not sufficient for the existence of a deceptive mortgage contract.

4. A NATURAL QUASI EXPERIMENT IN THE UNITED ARAB EMIRATES

This study focuses on an empirical setting in which guest work is frequently considered repugnant on consequentialist terms: Indian guest work contracts in the Gulf. It utilizes a natural quasi experiment to distinguish the systematic effects of guest work from its correlates to test whether various consequentialist theories of repugnance apply to the case. This section describes the setting, the natural experiment, and the process of gathering data on Indian workers and their families.

4.1. Empirical Setting: Temporary Foreign Workers in the United Arab Emirates

In the early 1980s, the UAE began an economic expansion driven by its oil sector and complemented by growth in other sectors as economic diversification took hold. Growth in real gross domestic product (GDP) has been impressive since then, and progress in economic development registered through better infrastructure, improved institutions, and human capital formation among UAE nationals.

Much of this progress, particularly in physical infrastructure and the construction of megaprojects, was supported by a fast rise in employment. Because of its limited number of human resources, the UAE had to rely on a large inflow of foreign temporary workers to meet its employment needs. Employment growth accelerated after 2000, creating job opportunities for workers from low-income sending countries such as India and Pakistan. Employment grew from 288,051 in 1975 (with 42,762 UAE nationals) to about 4 million in 2010 (with about 211,000 UAE nationals). Employment roughly doubled each decade. Employment growth reached 21 percent in 2007 and 31 percent in 2008.

While most sectors during this period grew quickly, employment in the construction sector grew fastest. Between 2007 and 2008, construction employment increased by more than half a million workers, rising

from 1.347 to 1.938 million. In 2008, the construction sector made up almost half of all UAE employment, compared with 19 percent for the trade sector and 11 percent for manufacturing. More than half of all employment growth from 2007 to 2008 came from construction.

This growth was composed almost entirely of temporary foreign workers. Most of these were migrant workers from India, Pakistan, and Bangladesh. In 2007 about 433,000 new work permits were issued to workers coming from India, and about 585,000 were issued in 2008. In parts of India, the UAE is a major destination for migrants; it is the number one destination of overseas workers from Kerala, India, for example (Zachariah and Rajan 2009, p. 35). Many are low-skilled workers performing hard physical labor, and international concern for their well-being has been common. For policy makers in the UAE and other important destinations, this has created many challenges—how to manage these large inflows of workers and ensure the proper functioning of the labor supply while also ensuring that workers are protected.

4.2. Quasi-Exogenous Allocation of Guest Work

I wish to ensure that when I compare households with and without migrant workers, those households are essentially identical in all other ways, observable and unobservable. Hypothetically, this could be accomplished by a designed experiment in which randomly selected groups of Indian workers are encouraged to take a job in the UAE. In the absence of such a method, this study takes two approaches to approximate it.

First, I analyze a highly homogeneous group. The sampling universe comprises a group of Indian workers who applied and were selected for construction jobs in the UAE by one multinational construction firm in 2008 and 2009. Every household in the sample has a member who was willing to apply for a construction job in UAE, was able to express that desire by applying for the job at one of four recruitment centers in India, and received a job offer. All workers and households sampled have the observable and unobservable traits that led to such a job being demanded by and offered to them.

Second, within that group, the arrival of each worker in the UAE was determined largely by a force majeure that is unlikely to correlate with any observable or unobservable difference among households that pre-dates migration. During the period of job offers I analyze, the UAE construction sector experienced a sudden, major, and unexpected negative shock.

At the end of August 2008, the UAE faced a rapid and severe slowdown in economic activity due to the international financial crisis and the bursting of a speculative bubble in the Dubai property market. This led to the freezing or cancelation of large numbers of UAE construction projects, particularly in Dubai. Debt service quickly became difficult for the highly leveraged construction sector. International finance dried up amid the wave of instability (the same wave that would destroy the American investment bank Lehman Brothers 2 weeks later), and domestic finance dried up as the price of the UAE's chief export—petroleum—plummeted 60 percent in 2 months. Hundreds of construction projects halted, some for months and others for years.

As a result, many UAE construction firms canceled orders for new construction hires from India and elsewhere, including hires already in process for a UAE visa. Employment quickly responded with a large drop in growth following years of double-digit increases. Employment losses at first were concentrated in the construction sector, the sector mostly exposed to the shock, but became widespread afterward.

It thus happened that small differences in the date on which an Indian worker applied for the UAE job he was offered are associated with large differences in the probability that he successfully arrived in the UAE. But small differences in the date on which he applied for a job are unlikely to be associated with large differences in the observable or unobservable traits of the worker and his family. Together, these two factors allow me to observe Indian workers and their families in a setting in which work in the UAE has been as good as randomly allocated among them.

This research design has the advantage of keeping to a minimum any expected observable or unobservable differences between these workers and families other than the fact of having worked temporarily in the UAE. This allows unusually confident identification of the true effects of work in the UAE. Limiting the analysis to job applicants through one firm has the advantage of more reliably measuring the effects of work in the UAE on this population, but it has the disadvantage that its conclusions cannot uncritically be extended to other populations.

4.3. Data: A Purpose-Built Survey Matched to Administrative Records

The data for this study come from three matched sources: Indian hiring records of a major UAE construction firm, a purpose-built survey conducted in nine states in India, and administrative records of the UAE's Ministry of Labor. I individually matched hiring data to successful Indian

applicants for UAE construction jobs in 2008–9, survey data to those workers' families collected in 2011, and the UAE work history of each job applicant in all years.

First, a major UAE construction firm provided the basic characteristics and contact information of workers recruited and selected for a job in the UAE at recruitment centers in India over the course of a year. This comprises all workers recruited and selected at centers in Delhi and Mumbai between June 1, 2008, and May 31, 2009, and in Chennai and Ramnad between March 1, 2008, and April 30, 2009. For these 7,571 workers, my data include age, occupation, skill level, name (frequently a reliable indicator of whether the applicant's family is Muslim), and a contact address in India. The locations of these households are shown at the district level in Figure 1.

Second, I hired survey teams to attempt to visit the contact address for the 7,571 workers between August 25 and November 4, 2011.⁶ Many of the addresses, which the applicant had written on the job application form and which were not previously checked, were incomplete and did not provide sufficient information to locate the dwellings. The survey teams successfully located 4,425 addresses (58.4 percent) in nine states in northern and southern India. These visits resulted in 2,727 complete, hour-long interviews (61.6 percent of the addresses found) with a knowledgeable adult respondent present at the time of the visit.

Third, I matched the passport number of each job applicant to administrative records of the UAE's Ministry of Labor. This revealed whether the person holding the passport listed on the initial job application had ever worked in the UAE, either on that job or any other, and the terms of the employment contract, including occupation, wage, and dates. A worker must be physically present in the UAE to receive one of these 3-year work permits (labor cards), so these records are good indicators of presence in the UAE.⁷

Finally, I require a proxy measure of overall economic conditions in

6. With the exception of four pilot interviews, conducted July 30 to August 4, 2011, in Delhi and Chennai.

7. They are not perfect indicators of presence in the United Arab Emirates (UAE), however, for two reasons. First, limited numbers of workers might choose to depart the UAE before their work contracts end. This is uncommon, as both employers and employees incur fixed initial costs and it is in the interests of both to have workers complete the contract. Second, limited numbers of workers may have come to the UAE on a passport different than the one listed in their job application (if it was lost, stolen, or expired), so I could not match their UAE employment records to the job application. This is also uncommon; Indian passports for adults are valid for 10 years.

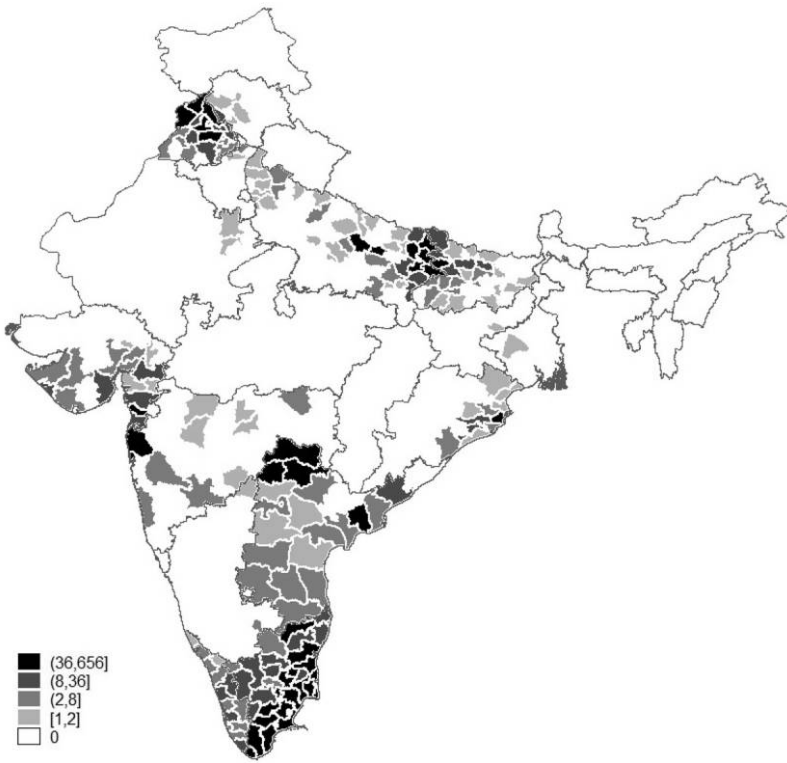


Figure 1. Location of the households sampled in India

the UAE that captures immediate changes in economic expectations that might affect hiring behavior. This has the potential to serve as a strong and valid instrumental variable for job applicants' migration. I chose the price of Dubai Fateh crude oil, the most important indicator of revenue to the UAE's national government. I made this selection before the empirical analysis and did not subsequently alter it. Figure 2 shows that this is a strong instrument for individual-level migration by the job applicant in a household. Figure 2A shows, in the data for the survey sample, how the probability that the applicant had ever traveled to the UAE by the time of the survey (in 2011) varies with the date of application. That probability closely tracks the Dubai Fateh spot oil price, which is the price per barrel for light sour crude oil extracted from Dubai, scaled to an index such that the value on May 1, 2008, equals 100. The dashed lines show 95 percent confidence bands on local regression, with a triangular kernel,

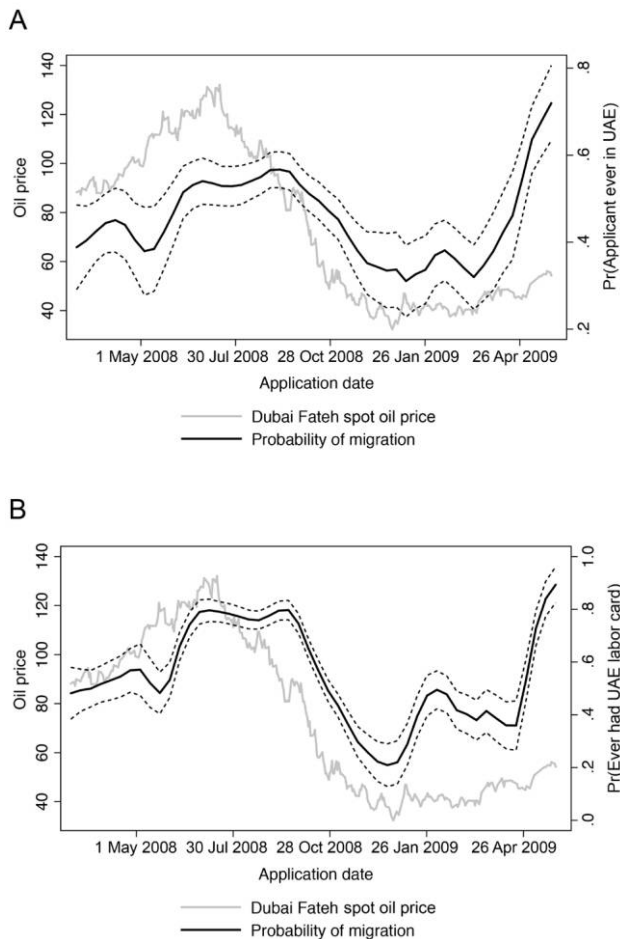


Figure 2. Initial and lasting effects of the financial crisis on migration rates

a bandwidth of 30, and degree 0. Figure 2B shows, in administrative data for the sampling universe, the probability that a UAE labor card was ever issued to the applicant, by date of application. This likewise tracks the oil price. The similarity of the migration probabilities in the samples suggests that nonresponse is not highly correlated with the migration treatment.⁸

8. The validity of the oil price as an instrumental variable for applicants' migration behavior is further explored in the Online Appendix, which presents tests for correlation between the observed predetermined traits of the job applicants and the value of the instrumental variable (the oil price index) at the time of their application. Such correlation

5. TESTS FOR REPUGNANCE

The availability of a strong and plausibly valid instrumental variable for migration allows several tests of the household-level effects of having a household member travel from India to the Gulf for guest work in construction. In a strictly observational setting I would be concerned that any positive or negative outcomes associated with migrants' households could act more as determinants of self-selection into migration than as effects of migration. In the present setting, the sampling universe contains only workers who have both self-selected into migration and been selected by the employer to travel. Moreover, whether a worker traveled was largely determined by a force majeure at the destination largely unrelated to the worker's characteristics other than his application date. This allows testing for objective effects of migration that might be sufficient to satisfy a consequentialist criterion of repugnance.

This section discusses whether data on the effects of guest work in this setting support the sufficient conditions for repugnance in Section 2. The conditions are not singly or jointly necessary for repugnance; for example, they do not address deontological theories of repugnance. Thus, the following tests are informative but not dispositive regarding the repugnance of guest work in this setting.

5.1. Coercion

While there are few allegations that Indian guest workers in the Gulf are recruited by force, there have been serious concerns about workers being held in the destination country by employers against their will, such as by a lengthy confiscation of their passports (see, for example, Human Rights Watch 2012). Direct information about cases of this kind is difficult to gather, for example because workers might fear retribution for reporting such incidents.

would imply that assignment of the migration treatment was not as good as random and that migrants' self-selection varied with the instrument. It also presents tests for correlation, in the sampling universe, between response to the survey and the instrumental variable. Any such correlation would imply that treated individuals were either more or less likely to respond to the survey than the nontreated. But in neither case are substantial correlations of this kind observed. A separate threat to the validity of the instrument would arise if an employment crisis occurred in India simultaneously with the UAE crisis, but there was no substantial rise in India's unemployment rate in late 2008. A third threat to the instrument's validity would arise in principle if the act of applying for UAE work harmed a worker's employment prospects in India, such as by taking up time and energy that could have been used for domestic search, but there is no clear evidence of such an effect in this setting.

One way to seek observable signs of coercion is to test for behavior that is unlikely under coercion. For example, a worker forced to work in the Gulf against his will might mention his condition to family and friends, as communication with India has become inexpensive and instantaneous for most workers, and Gulf workers are typically in close touch with their households in India (see, for example, Seshan and Yang 2014). He would be likely to discourage them from following in his footsteps and even more unlikely to actively encourage or facilitate their entry into a condition that he himself wishes to leave. This suggests that one effective proxy test for coercion would be to observe the effect of migration to the Gulf by one household member on migration by other household members.

Table 1 presents the results of tests of whether migration by the job applicant is followed by migration by other people in the same family. It uses a simple linear probability model to regress an indicator variable for migration by working-age household members other than the original job applicant on migration by the original job applicant. The treatment and outcome variables indicate current presence in the UAE at the time of the 2011 survey, 3 years after the UAE's construction crash. In all tables, controls are the following baseline variables from the job application in 2008–9: the applicant's age and indicator variables for skilled and semi-skilled (the base group is unskilled); Muslim; a rural indicator; recruited in Chennai, Ramnad, or Delhi (the base group is Mumbai); and state indicators for Bihar, Orissa, Andhra Pradesh, Punjab, Tamil Nadu, Maharashtra, Kerala, and Gujarat (the base group is Uttar Pradesh). Standard errors are clustered by household to allow for arbitrary correlation of the error term between household members. The Cragg-Donald *F*-statistic suggests reasonably strong instrumentation.

The coefficient on an applicant's migration in the two-stage least squares (2SLS) regressions is positive and statistically distinguishable from 0 only around the 10 percent level. This suggests that migration to the UAE for construction guest work by one household member raises the probability of migration to the UAE by other working-age members of the same household by around 8 percentage points. When controls are added, I can statistically rule out any effect below –2 percentage points at the 5 percent level. If a typical or even common experience of these guest workers is to be forced into guest work or to remain in guest work even

Table 1. Effect of an Applicant's Migration on Migration by Nonapplicants in the Same Household

	Ordinary Least Squares		Two-Stage Least Squares	
	(1)	(2)	(3)	(4)
Applicant in UAE	.004 (.003)	.004 (.004)	.113 ⁺ (.064)	.081 (.054)
Controls	No	Yes	No	Yes
N	8,548	8,542	8,548	8,542
Cragg-Donald <i>F</i> -statistic			7.80	9.99

Note. The sample is working-age (18–65 years old) members of the household of the worker who applied for a job in the United Arab Emirates (UAE), excluding the applicant. The dependent variable is instrumented by the Dubai Fateh oil price index on the day of job application and equals one if the household member was in the UAE when he was interviewed and zero otherwise. Standard errors, clustered by household, are in parentheses. All regressions include constants.

⁺ $p < .1$.

though they prefer to be in India, they might not facilitate a family member's entry into a similar predicament.⁹

5.2. Regret

Do workers regret their decisions as a result of having been misinformed (naïveté) or disinformed (fraud) about what they were signing up for? Cases of Gulf migrants receiving lower pay or fewer benefits than they retrospectively report having expected are common (see Zachariah, Prakash, and Rajan (2003), but there is little rigorous evidence. McKenzie, Gibson, and Stillman (2013), using a unique research design of randomized visa allocation that minimizes concerns that migration would be affected by impressions regarding earnings, find that permanent migrants from Tonga to New Zealand substantially underestimate their actual earnings at the destination. Shrestha (2017) finds that temporary migrants from Nepal to Malaysia and the Gulf with no prior migration experience also underestimate their true earnings and substantially overestimate the risk of death at the destination.

Information. One way to assess the information set acted on by workers prior to their first migration is to compare migrants with experience to otherwise identical nonmigrants. The quasi-exogenous allocation of

9. The other family members in question are workers. The employer does not bring workers' spouses or children to the UAE for purposes of companionship, and housing and the cost of maintaining a family would be prohibitive for workers.

migration in the present setting allows an approximation of this comparison. If Indian workers applying for guest work for the first time are typically ill-informed about working and living conditions in the UAE, I would expect substantial effects of UAE migration on their information set.

In the survey, each respondent in India was asked about typical wages, working conditions (“apart from his earnings . . . such as safety, enjoyment of the work, difficulty of the work”), and living conditions (“such as housing and food”) in the UAE. Working and living conditions were measured on a 1–5 scale of increasing quality relative to conditions in India.¹⁰ If any member of the household was in the UAE at the time, the respondent was asked about that person’s wage and working and living conditions. If no member of the household was in the UAE, the respondent was asked about what those conditions would be if “a man from this household might have the opportunity to work in the UAE.”

Table 2 reports regressions in which the outcome is respondents’ answers to the questions and the key dependent variable is applicants’ current presence in the UAE. The OLS regressions show that respondents from households whose applicant is not currently in the UAE believe that earnings there are 20 percent higher, working conditions are a quarter point better, and living conditions are .3 of a point better.

The effect of migration on respondents’ beliefs, however, differs from the correlation between household-level migration and beliefs. The 2SLS coefficients are unstable and statistically indistinguishable from 0. The coefficient on the wage regression in column 4 implies that migration causes an increase in household members’ impression of typical UAE earnings of 94 percent (that is, $e^{.662} = 1.94$). This corroborates evidence that Indian workers in the UAE often have opportunities for informal, off-the-books overtime work beyond that promised by their formal contracts, which is sometimes desired by workers seeking to earn as much as possible in a short period but disallowed by maximum-hours laws (Joseph, Nyarko, and Wang 2018).¹¹ But this estimate has a large standard error. The other 2SLS estimates in Table 2 imply that having a household

10. The scale is as follows: 1 = much worse than India, 2 = worse than India, 3 = similar to India, 4 = better than India, and 5 = much better than India.

11. It also accords with the evidence in McKenzie, Gibson, and Stillman (2013) that Tongan migrants to New Zealand earn 85 percent more than they initially believed they could. The authors explain the disparity in part because past migrants who do not wish to be asked for frequent cash gifts tend to underreport their earnings to friends and family back home.

Table 2. Effects of Migration on Respondents' Information about Working and Living Conditions in the United Arab Emirates

	Ordinary Least Squares		Two-Stage Least Squares	
	(1)	(2)	(3)	(4)
ln(Wage):				
Any household member in UAE	-.248** (.042)	-.214** (.038)	-.231 (.540)	.662 (.738)
N	2,171	2,170	2,171	2,170
Cragg-Donald <i>F</i> -statistic			12.31	6.71
Working conditions:				
Any household member in UAE	-.242** (.050)	-.256** (.050)	1.279+ (.717)	.999 (.886)
N	2,385	2,384	2,385	2,384
Cragg-Donald <i>F</i> -statistic			19.19	11.15
Living conditions:				
Any household member in UAE	-.322** (.051)	-.310** (.050)	-.821 (.654)	-.229 (.811)
N	2,385	2,384	2,385	2,384
Cragg-Donald <i>F</i> -statistic			19.19	11.15
Controls	No	Yes	No	Yes

Note. If a member of the household is in the United Arab Emirates (UAE), responses are relative to India. If no member of the household is in the UAE, responses are for if someone from that household were to work in the UAE. The dependent variable is instrumented by the Dubai Fateh oil price index on the day of job application. All regressions include constants.

+ $p < .1$.

** $p < .01$.

member in the UAE causes household members to raise their impression of working conditions in the UAE by about 1 point and to reduce their impression of living conditions by roughly a quarter of a point. None of these estimates are statistically precise at the 5 percent level. But they do not reveal strong evidence that direct experience of work in the UAE causes potential migrants to revise sharply downward their understanding of typical earnings, working conditions, and living conditions there. The Cragg-Donald *F*-statistics suggest that instrumentation is generally strong enough to give the second-stage regressions power to detect large negative effects of that kind.

The difference between the OLS and 2SLS results must arise from selection of migrants on unobserved traits. One plausible explanation is positive selection of returned migrants: many temporary workers migrate to meet earnings or savings targets (Djajić and Vinogradova 2015), which implies that those able to earn more would return earlier. Those pres-

ent in India in 2011 to answer the survey would include such migrants and their family members. This would tend to generate a positive correlation between impressions of the UAE's working and living conditions and presence in India but need not fully explain the negative OLS coefficients in Table 2. Another mechanism for the simple negative correlation between direct exposure to work in the UAE and negative ideas about working and living conditions there could be due to migrants' selection into departure: people with better prospects in general (both in India and abroad) could be less likely to go to the UAE and remain there.¹²

Do households know how much migrants are actually earning? Table 3 investigates this question. For households without a family member in the UAE, results are similar for the respondent who was the original job applicant and the respondents who were not the applicant. Households with a member currently in the UAE guess that the wage is about 20 percent less than do households without a migrant. Results with the actual mean contract wage indicate that households of workers currently in the UAE believe, on average, that those workers earn about 40 percent more than they earn.

This does not necessarily mean, however, that households receive false information from migrants. First, the households' responses may include in-kind compensation. The question asked of migrants' households was "Approximately how much do you think he earns per month for his work in the UAE?" It is plausible that most households interpreted the question to include full compensation received by the worker, which for most workers includes a monetized housing allowance and for some also includes a monetized food allowance. This might account for some or all of the difference.

Second, the person about whom households answered may not have been the person who would have been sent abroad if the opportunity were offered. Households without a migrant were asked about hypothetical UAE earnings for "a man from this household"—not necessarily

12. The two-stage least squares (2SLS) coefficients are more positive than the ordinary least squares (OLS) coefficients for respondents' impressions of UAE wages and working conditions. This may appear counterintuitive, as it implies higher migration rates by those with lower expectations. But note that workers with greater overall ability might be both better informed about conditions in the UAE and able to access better earnings opportunities in India and thus be somewhat less likely to migrate. If better information correlates with better understanding of, for example, the opportunity for informal overtime pay in the UAE, this would generate negative self-selection of migrants on UAE earnings expectations.

Table 3. Evidence of Intrahousehold Information Flow

	Applicant Not in UAE		Applicant in UAE	
	(1)	(2)	(3)	(4)
Mean ln(UAE wage)	9.921 (.033)	9.829 (.021)	9.611 (.041)	9.198 (.014)
Respondent is applicant	Yes	No	No	No
Response	Guess	Guess	Guess	Actual
N	466	1,281	381	620

Note. For households without a member in the UAE, responses are guesses of the wage if someone from that household were to work in the UAE. For households with a member in the United Arab Emirates (UAE), responses are for his monthly wage. The actual wage is from UAE's Ministry of Labor administrative records. Wages are logs of rupees per month. Standard errors of the mean are in parentheses.

the job applicant in my records. Households may have borne in mind the primary breadwinner for the household, that is, the person with the best earnings prospects in India and the UAE among all household members. As I have shown, when households have the opportunity to send a worker to the UAE, they tend to send members with somewhat lesser work prospects in India. If those men earn less in the UAE than would someone from the same household with better work prospects in India, this could also tend to explain the difference between the UAE earnings estimates of migrant households and nonmigrant households, but without informational asymmetry.

Debt. Another possible sign of poor information among new migrants would be that migration frequently causes an increase in household debt. This could signify that migrants went into debt to migrate and did not earn enough to quickly pay it off or that migrants held debt before migrating—perhaps the reason for entering guest work—but could not earn enough to service or eliminate it, and the debt grew. Either of these could be a sign that migrants had poor information about how much they would earn (see, for example, Zachariah and Rajan 2009; Rahman 2011).

Table 4 explores the effect of migration on household debt. The OLS results for household borrowing in the past 3 years show that those with a migrant in the UAE are about 8–15 percentage points more likely to have borrowed. The 2SLS coefficients are of the same rough magnitude but are not statistically significant.

Table 4 also presents results for regressions in which the dependent

Table 4. Effects of Migration on Household Borrowing and Debt

	Ordinary Least Squares		Two-Stage Least Squares	
	(1)	(2)	(3)	(4)
Borrowing in last 3 years:				
Applicant in UAE	.152** (.020)	.079** (.022)	.102 (.274)	.196 (.317)
Constant	.534** (.012)	.787** (.072)	.549** (.083)	.741** (.144)
N	2,650	2,649	2,650	2,649
Cragg-Donald <i>F</i> -statistic			15.32	11.85
Current outstanding debt:				
Applicant in UAE	−.026* (.012)	−.005 (.012)	−.259+ (.146)	−.197 (.181)
Constant	.940** (.006)	.819** (.037)	1.009** (.043)	.893** (.081)
N	2,500	2,499	2,500	2,499
Cragg-Donald <i>F</i> -statistic			16.91	11.67
Controls	Yes	No	Yes	No

Note. The dependent variable is instrumented by the Dubai Fateh oil price index on the day of job application. All regressions include constants.

+ $p < .1$.
* $p < .05$.
** $p < .01$.

variable is an indicator for whether the household still owes on the debt held at the time of the survey. In the OLS results, households with migrants are not more likely to be carrying debt; they are slightly less likely. The 2SLS coefficients suggest a negative effect of having a household member in the UAE and carrying debt. The coefficient is significant only at the 10 percent level in column 3, but the magnitudes are similar, suggesting a 20–25 percentage point decline in the chance of owing money borrowed in the past 3 years, caused by having a household member in the UAE. There is no sign of a positive effect of working in the UAE on indebtedness over the timescale considered here (3 years after initial migration).

5.3. Externality

Does migration to the Gulf exert negative economic effects on the economic productivity of the migrants’ household members in India and thus the broader community? Economists since John Stuart Mill have argued that such externalities could justify third parties’ restriction of a transaction (see von Lilienfeld-Toal and Mookherjee 2010, p. 45). One

mechanism by which this could arise is that the income effect of remittances induces the migrant's family to withdraw from the labor force. It is frequently observed that labor force participation rates in migrants' households are lower than in nonmigrants' households (see, for example, Zachariah and Rajan 2009, p. 128), but this correlation could arise by means other than the effect of one household member's migration on other household members' labor supply. For example, people from geographic areas, ethnic groups, or social networks with fewer local labor market opportunities might have a greater tendency to self-select into seeking work opportunities abroad. This would generate an association between migration and lower labor force participation at the household level that is caused by unobserved confounders.

Table 5 considers the effect of the applicant's work in the UAE on the labor force participation in India of the other members of his household. Again, the sample is restricted to working-age nonapplicants, and the key regressor indicates whether another member of the household is in the UAE. As before, the Cragg-Donald *F*-statistics show that oil prices provide a strong instrument in the 2SLS regressions.

Table 5 shows no evidence that a UAE job for one household member alters the labor force participation or earnings of other working-age household members. There is a small positive association between living with a UAE worker and employment in both regressions, but they are not statistically significant at the 5 percent level. There is a small positive association between living in a UAE worker's household and wages conditional on employment in the regressions with controls; this relationship is significant in the OLS regression and of similar magnitude but statistically insignificant in the 2SLS regression. The relationship to overall monthly income of each worker is positive and statistically significant in the OLS regression with controls and negative and statistically insignificant in the 2SLS regression with controls.

In sum, there is suggestive evidence that other workers in the households of UAE workers earn slightly more but no evidence that the UAE job caused the difference. There is no sign that having a family member with a job in the UAE causes other household members to withdraw from the labor force or to earn less.

It is possible in principle that negative economic externalities on UAE nationals could arise from the presence of Indian guest workers. In the US context, Ilias, Fennelly, and Federico (2008) find that natives' principal opposition to guest workers, across the political spectrum, arises from the

Table 5. Economic Effects of an Applicant’s Job on Nonapplicants

	Ordinary Least Squares		Two-Stage Least Squares	
	(1)	(2)	(3)	(4)
Employed:				
Applicant in UAE	.005 (.010)	.020+ (.010)	.063 (.128)	.039 (.131)
N	8,548	8,542	8,548	8,542
Cragg-Donald <i>F</i> -statistic			13.39	13.15
ln (Wage):				
Applicant in UAE	−.054 (.062)	.134* (.063)	−.058 (.397)	.123 (.477)
N	2,189	2,187	2,189	2,187
Cragg-Donald <i>F</i> -statistic			28.27	19.82
Controls	Yes	No	Yes	No

Note. The sample is working-age (18–65 years old) nonapplicants. Standard errors, clustered by household, are in parentheses. An unemployed person has earnings of \$0, and mean earnings are normalized to unity so that coefficients may be interpreted roughly comparable to the coefficient of log wages. The dependent variable is instrumented by the Dubai Fateh oil price index on the day of job application. All regressions include constants. Wage regressions omit workers at home-based family farms or businesses.

+ $p < .1$.
* $p < .05$.

perception of a negative externality on native workers’ employment. But in the UAE, where 98 percent of the private-sector workforce consists of foreign workers with temporary visas, this is a difficult concern to sustain. The economic lives of Emiratis would clearly be radically different in the absence of foreign guest workers, and there is no evidence to suggest that they would be substantially improved.

5.4. Equilibrium

It is possible in principle that migration to the UAE reduces the incentives for local investment in India that, if investment took place, would tend in the long run to generate jobs in India that migrants might prefer to jobs in the UAE. McKenzie and Rapoport (2011) find that temporary labor migration from Mexico to the United States reduces human capital investment by Mexican youths, investment that in the long run might have tended to create more job opportunities in Mexico. In the present setting, the opportunity to migrate for high wages in the Gulf might reduce the incentives to invest in business formation in India, which in turn might tend to limit job opportunities in India, a self-reinforcing low-level

equilibrium. An important strand of literature argues that such effects would be sufficient to make guest work repugnant, even if participants have perfect information and foresight and exert no negative externalities on others (for example, Genicot 2002; von Lilienfeld-Toal and Mookherjee 2010).

Does migration by the applicant encourage or discourage household-level investment? Table 6 tests the effects of migration to the UAE on the extent of entrepreneurial activity in migrants' households using as the dependent variable an indicator for whether the household has income from a home-based business. In the sample of all applicants, there is a very small negative correlation with migration to the UAE. But the causal relationship measured by the 2SLS coefficients is very different. Having a household member in the UAE causes the household to be 31 percentage points more likely to receive income from a home-based business.

In households in which the applicant is not currently in the UAE, the independent variable indicates whether the applicant previously worked in the UAE. Here the comparison is observational rather than quasi-experimental, because previous migrants who chose to return to India could differ in entrepreneurial capacity from those who do not choose to return. There is a small positive correlation in the OLS coefficients, and the first 2SLS coefficient suggests an even larger effect than for households in which the applicant is currently in the UAE, significant at the 10 percent level. This suggests that the migrant's financial and human capital may have separate and positive roles to play in business formation. Weak instrumentation in the 2SLS regression without controls is indicated by the low *F*-statistic, and the regression is not informative.

This evidence does not rule out depressing effects on investment from short-term exposure to migration or long-term repeated migration. But there is no evidence that migration reduces investment on the time scale of 3 years considered here and some evidence that it increases investment. The evidence in this setting is not compatible with theories that guest work typically traps communities in a low-level equilibrium that is sometimes referred to as remittance dependency.

5.5. Inequity

Many theorists posit that decisions to engage in migration for guest work from a very poor country to a rich country should not be considered fully voluntary, because the large international inequity means that bargaining power is highly skewed against the guest worker. Even if he can freely

Table 6. Effects of Migration on Households with Income from a Home Business

	Ordinary Least Squares		Two-Stage Least Squares	
	(1)	(2)	(3)	(4)
All applicants:				
Applicant in UAE	.011 (.012)	−.021* (.010)	.467* (.197)	.313+ (.184)
Constant	.085** (.006)	.029 (.035)	−.052 (.059)	−.103 (.084)
N	2,650	2,649	2,650	2,649
Cragg-Donald <i>F</i> -statistic			15.32	11.84
Applicants not in UAE:				
Applicant previously in UAE	.070** (.017)	.017 (.013)	.767+ (.440)	2.125 (3.549)
Constant	.065** (.007)	.017 (.040)	−.126 (.121)	−.626 (1.096)
N	1,856	1,855	1,856	1,855
Cragg-Donald <i>F</i> -statistic			4.50	.37
Controls	Yes	No	Yes	No

Note. The independent variables are instrumented by the Dubai Fateh oil price index on the day of job application. All regressions include constants.

+ *p* < .1.
* *p* < .05.
** *p* < .01.

choose not to engage in guest work or to leave guest work at any time, the freedom to choose dire poverty is not something that all people would consider a meaningful choice. Because the relative earnings of Indians in the UAE and Emirati citizens are suggestive of their relative bargaining power, an assessment of the repugnance of guest work would also need to consider, alongside the income gains to guest workers relative to their counterfactual income, the income of guest workers relative to Emiratis.

Stepping back from the natural experiment considered above, I begin by comparing the wages of Emiratis in the UAE, Indians in the UAE, and Indians in India in nationally representative survey data. Consider a Mincer (1958) wage regression with nationally representative microdata on wage workers, gathered separately in India and in the UAE, combined into a single data set. Making minimal assumptions on functional form, I regress log wage on dummy variables for different levels of observable traits: age (dummies ι^a), schooling (ι^s), gender (ι^f), and urban or rural (ι^r). I include interaction terms between these dummies (and the constant) and each of a set of dummies for three types of worker: Indians in India (dummy ι_i), Indians in the UAE (ι_u), and Emiratis in the UAE (ι_e). This

allows separate estimation, for each type of worker, of the conditional wages associated with each level of each trait.¹³

The sprawling regression equation that results is compactly expressed with Hadamard and tensor products as

$$\ln w = \alpha' \iota_w + \sum_k \mathbf{1}'_{W+1} [\beta_k \circ (\iota_w \otimes \iota_k)] \mathbf{1}_K + \varepsilon, \quad (1)$$

where ι_w is a $(W + 1) \times 1$ vector of worker-type dummies $[1 \ \iota_i \ \iota_u \ \iota_e]'$, here with $W = 3$; ι_k is a $K \times 1$ vector of dummies for levels of trait k : $[\iota_1^k \ \iota_2^k \ \dots \ \iota_K^k]'$, where $k \in \{a, s, f, r\}$ and K is the number of categories in trait k ; α is a $(W + 1) \times 1$ vector and β_k is a $(W + 1) \times K$ matrix of coefficients to be estimated; $\mathbf{1}_c$ is a $c \times 1$ vector of ones; and ε is an error term.¹⁴

The coefficients from regression (1) yield estimates of conditional mean wages for Indians in India (w_i) versus Indians in the UAE (w_u). Table 7 reports these estimates and their ratios.¹⁵ Column 1 shows the results controlling only for nationality and location (that is, with $\beta_k \equiv 0 \ \forall \ j$). Column 2 presents regression (1) using the full sample from both countries and estimates of conditional mean wages in each country for a male 30- to 34-year-old worker with some secondary education—comparing Indian workers in the UAE to urban workers in India. Column 3 estimates the same regression but compares Indian workers in the UAE to rural workers in India. Columns 4 and 5 repeat the regression with the sample restricted to workers in occupations related to the construction sector.¹⁶

13. The age dummies ι^a are for the set of 10 quinquennial ranges: 15–19, 20–24, 25–29, . . . , 60–64. Thus, for example, dummy ι_5^a equals one if and only if the worker is 25–29. The schooling dummies ι^s are for the set of eight categories of education: illiterate, read and write (but no schooling), primary, preparatory (some secondary), secondary, above secondary, university, and above university. For female, ι^f equals one; for urban, ι^u equals one. The vast majority of Indian workers in the UAE, by standards meaningful in India, work in urban settings.

14. Wages in rupees w are measured at exchange rates. The analysis includes wage income only and omits workers with no wage income. It thus compares employed wage workers between countries. It omits nonwage benefits, the most important of which in this setting is housing provided by UAE employers.

15. The data for India are from the 2008–9 India National Sample Survey (NSS); the data for the UAE are from the 2008 UAE Labor Force Survey. Dirhams were converted to rupees at the average exchange rate prevailing during the NSS data collection period (July 2007–June 2008), 10.99 rupees/dirham.

16. The Online Appendix lists the occupations considered to be construction related in the two data sets merged for this analysis: India's NSS and the UAE's Labor Force Survey.

Table 7. Earnings of Emiratis versus Indians, 2008

	Any Trait (1)	Age 30–34, Some Secondary Education			
		(2)	(3)	(4)	(5)
Conditional mean wages (rupees per month):					
Emiratis in UAE	159,321 (1,807)	167,576 (5,070)	167,576 (5,070)	107,923 (24,327)	107,923 (24,327)
Indians in UAE	34,169 (490)	18,021 (455)	18,021 (455)	16,788 (874)	16,788 (874)
Indians in India	2,154 (10)	3,710 (51)	2,279 (30)	3,704 (89)	2,994 (69)
Wage ratios (exchange-rate rupees):					
Emiratis in UAE to Indians in India	73.95 (.91)	45.17 (1.50)	73.53 (2.42)	29.14 (6.61)	36.05 (8.17)
Indians in UAE to Indians in India	15.86 (.24)	4.86 (.14)	7.91 (.23)	4.53 (.26)	5.61 (.32)
Emiratis in UAE to Indians in UAE	4.66 (.09)	9.30 (.37)	9.30 (.37)	6.43 (1.49)	6.43 (1.49)
Wage ratios at PPP:					
Emiratis in UAE to Indians in India	31.1	19.0	30.9	12.2	15.1
Indians in UAE to Indians in India	14.5	4.4	7.2	4.1	5.1
Emiratis in UAE to Indians in UAE	2.4	4.7	4.7	3.3	3.3
Occupation	All	All	All	Construction	Construction
Region of India	All	Urban	Rural	Urban	Rural
Emiratis in UAE (N)	4,871	4,871	4,871	131	131
Indians in UAE (N)	5,811	5,811	5,811	1,190	1,190
Indians in India (N)	92,709	92,709	92,709	18,513	18,513
Rural Indians in India (N)	35,047	35,047	35,047	8,235	8,235

Note. Regressions are weighted by relative sampling weights. Standard errors (in parentheses) are for the Wald test that the exponentiated linear combination of coefficient estimates yielding each conditional mean (or ratio of means) is unity. Purchasing power parity (PPP) ratios are adjusted for location of expenditure.

Observably identical Indian workers earn roughly 5 times the rupee wages in the UAE that they earn doing similar work in India. This ratio is slightly less for workers in urban areas of India, slightly more for workers in rural areas of India, and highly statistically significant. There is strong positive selection on observable correlates of wages for Indian migrants to the UAE: the ratio of unconditional mean wages in the UAE to those in India $E[w_u/w_i]$ equals 15.9 in column 1, but the ratio of conditional means $E[w_u/w_i | X]$ equals 4.9 in column 2. This is because Indians in the UAE are, among other things, much more educated than their counterparts in India. For example, 35.7 percent (SE = .2 percent) of Indian adult males in India are illiterate compared with just 3.9 percent (SE = .3 percent) of Indian adult males in the UAE.

Table 7 also presents results that adjust these and all other wage ratios to purchasing power parity (PPP). This does not imply that the relevant price level for Indian guest workers' earnings is considered to be UAE prices; guest workers often receive housing and some food in kind and either send or bring home approximately 85 percent of their earnings (Joseph, Nyarko, and Wang 2018). The PPP wage ratios are thus calculated assuming that the relevant price level for Emiratis in the UAE is the UAE price level; for Indians in India, the Indian price level; and for Indians in the UAE, a weighted average: the price level in India with a weight of .85 and the UAE price level with a weight of .15.¹⁷

The results show that real earnings for observably identical Indians in the UAE are several times greater than in India: 5–8 times for workers in general and 4–5 times for construction workers. But an Emirati earns over 9 times in real terms what an observably identical Indian earns in the UAE. These results are compatible with very low levels of bargaining power among Indian workers, who capture through guest work only a small fraction of the massive real earnings differential (a factor of 45) between an Emirati and an urban Indian worker who are otherwise observably identical. One mechanism for retaining this disparate bargaining power is the traditional system of tying Gulf guest workers to a single employer. Thus, this evidence is compatible with the findings of Naidu, Nyarko, and Wang (2016) that a UAE reform somewhat relaxing restric-

17. Price levels in Delhi are .42 times the price level in Dubai (UBS 2012). Price levels in India were .42 times the price level in the UAE (consumption price levels in 2008 [Fenstra, Inklaar, and Timmer 2015]).

tions on guest workers' mobility between employers caused the earnings of guest workers to rise.¹⁸

These empirical disparities suggest that guest work in the Gulf could have the character of a repugnant transaction through the consequentialist channel of arising from very large disparities in bargaining power. To a reader for whom large inequalities in outcomes are sufficient to make a transaction repugnant, this evidence would strongly imply that Indian guest work in the Gulf indeed possesses aspects of a repugnant transaction. Two considerations, however, limit the force of this argument.

The first is that, as Munger (2011) points out, the fact that a bargaining outcome is skewed does not mean it is not beneficial to both parties. In his terminology, even a transaction that is not *euvoluntary* because of skewed bargaining power can still benefit both parties.¹⁹ In the present setting, the fact that guest work increases Indians' earnings by a factor of 4 makes it highly beneficial to them by any meaningful standard, regardless of the fact that Emiratis in the UAE earn 9 times what they do.

A second consideration is the trade-off between migrants' rights and their numbers, as posited by Ruhs and Martin (2008) and quantitatively observed by McKenzie, Theoharides, and Yang (2014). If UAE regulations required Indian guest workers' wages to equal Emiratis' wages, for example, obviously UAE demand for Indian guest workers would fall precipitously. How much is unclear, but McKenzie, Theoharides, and Yang (2014) cannot rule out a unit elasticity of the destination country's demand for guest workers to GDP growth. If this is approximately correct in the UAE, a doubling of guest workers' wages might roughly halve the demand for them. After such a reform, Indians in the UAE would earn roughly 8 times what observably identical Indians in India would,

18. Table OA2 in the Online Appendix checks to ensure that the observational wage gains for guest workers indeed reflect the effect of guest work on earnings. The sample is the set of job applicants, and the key regressor is an indicator variable for the applicant's presence in the UAE. Migration in 2008–9 results in a 30–40 percentage point increase in the probability that the applicant is employed in 2011 and, conditional on employment, a 94 percent increase in wages (exponentiating the 2SLS coefficient). This implies large earnings gains caused by migration for observably and unobservably identical individuals, although of a magnitude somewhat lower than the observational estimates above in nationally representative data.

19. The closely related "nonworseness claim" of Zwolinski (2008, p. 357) is that "in cases where *A* has a right not to transact with *B*, and where transacting with *B* is not worse for *B* than not transacting with *B* at all, then it cannot be seriously wrong for *A* to engage in this transaction, even if its terms are judged to be unfair by some external standard."

and Emiratis would earn roughly 4.5 times what observably identical Indians in the UAE would. Thus, major disparities would remain. But only half as many Indians would benefit, and the rest would earn in India. Which is better?

An ethical problem arises in deciding between these options. Certainly, fairness of outcomes is an important constraint on people's beliefs that transactions are just (Kahneman, Knetsch, and Thaler 1986; Gneezy and Rustichini 2000). But norms of this kind are typically formed in communities of people who simultaneously come to some agreement about what is just and agree to be bound by restrictions on unjust acts. In the case of Indian guest workers, the question of whether guest work visas should exist is never—to my knowledge—posed as a question of whether Indians should form a community that agrees to restrict each other's access to guest work. Rather, the restriction is contemplated by people outside that community, almost invariably people vastly richer than the guest workers in question. And the restriction of guest work does not imply that guest workers will thus acquire the bargaining power to achieve Emirati levels of earnings: the trade-off between numbers and rights implies that the result of such restrictions is that large numbers of potential guest workers would be directly coerced to not become guest workers.

But coercion of poor workers by the rich is certainly problematic in theory. Experimental evidence shows that people form perceptions of a fair price depending on the level of prices they have been exposed to in the past (Herz and Taubinsky 2018). Thus, Indians' notions of a fair wage, which reflects bargaining power that is sufficient in their own view, could be quite different from Americans' or Emiratis' notions of a fair wage. When restrictions or moral sanctions are placed on guest work by people with different concepts of fairness than those they are restricting, it becomes unclear how to even assess whether the restrictions enhance the welfare of the people they are meant to help. Put differently, suppose the following two options were put to a vote among 100 Indians: (1) three of you can be admitted to the UAE to earn 45 times what your compatriots in India earn, but the rest of you are obliged to earn at Indian levels, or (2) all of you can be admitted to earn 4 times what your compatriots earn, but you will work alongside people who earn 9 times what you do. Low-income Indians under severe financial pressure would seem likely to vote in their large majority for option 2. Forcing them to be subject to option 1 would enhance the bargaining power of three of them but coercively eliminate the choice for 97 of them. It is not clear why the

inequity repugnance of option 2 should necessarily weigh more heavily than the coercion repugnance of option 1.

6. CONCLUSIONS

This paper estimates several effects of guest work in the UAE on Indian laborers, in a rare natural experimental setting in which the effects of guest work can be plausibly separated from its correlates. I use those estimated effects to test empirically for traits that could make guest work repugnant in consequentialist terms. On balance, the findings offer weak, if any, evidence to support five sufficient conditions for Indian guest work in the UAE to satisfy consequentialist criteria for repugnance: coercion, regret, externality, equilibrium effects, and inequity.

The data do not allow a test of the sixth consequentialist sufficient condition for repugnance: degradation. But collectively these empirical results for the effects of guest work call into question the view that guest work in this setting results in a degradation of preferences or character. The counterfactual to allowing guest work is not to allow guest work. This means coercing Indian workers not to engage in guest work. The results suggest that guest work in this setting typically causes Indian construction workers to earn multiple times what they otherwise could, be much more likely to hold a job at all, pay off their debts, start new businesses, and help their family members to access some of these same opportunities. If the work performed by guest workers is viewed as degrading, and thus guest work itself is viewed as degrading, a consequentialist view would suggest comparison to the degradation of the removal of the guest work option: sharply reduced earnings, greater unemployment, reduced ability to pay off debt, less entrepreneurship, and less ability to assist one's family.

In short, if we are to believe that guest work causes degradation, we must believe that the absence of guest work reduces degradation. But the greater poverty that would arise from the removal of guest work options, as the above evidence suggests, could be degrading in many ways. The poor might be led to repugnant acts by the pressing financial needs of a health emergency or an unpayable wedding debt. A successful consequentialist case that guest work is typically degrading would need to assess how degrading life can be when the option of the poor to engage in guest work is removed. That comparison could come out either way, but the

beneficial effects of guest work recorded here suggest that it is much less than obvious which way such a balance might fall.

The evidence presented here certainly does not establish that guest work in general, or even Indian guest work in the UAE, is not repugnant. The findings are limited in several ways. First, the theories of repugnance tested offer sufficient conditions for repugnance rather than necessary conditions. Failing to meet these criteria even in theory does not show that a transaction cannot be repugnant. Second, the empirical tests for each theory are likewise (plausibly) necessary, not sufficient, conditions for repugnance. Thus, the finding that potential migrants are typically not poorly informed about working and living conditions in the UAE is informative about whether they regret the transaction later but does not prove that they do not regret the transaction later. Third, these findings relate to Indian workers at one construction firm in the UAE. It is an informative setting, because the firm is a very major construction firm in the UAE and the Indian workers come from all over India. But the results should not be automatically and uncritically applied to other destination countries, even in the Gulf; to other construction firms in the UAE; to sectors outside construction; or to countries of origin beyond India. The paper rests its contribution on providing a very rare type of evidence to begin an inquiry and does not claim to settle it.

One lesson that is fully transferable from this study to other settings is that the true effects of migration on a worker or household can be very different from those assessed simply by observing the correlates of migration. Because people in difficult circumstances are often those who take the extraordinary step of migrating, looking only at the correlates of migration can systematically understate its benefits and overstate its costs relative to the true effects.

Finally, the findings do not suggest that the conditions under which guest work sometimes occurs are not repugnant, even in the setting considered in this paper. To return to an earlier example, the fact that fraudulent mortgages are repugnant does not make all mortgages categorically repugnant but does suggest that the terms under which some mortgages occur can be fraudulent. A policy intervention to reduce repugnance in that case might fight fraud in mortgage lending rather than act to reduce mortgage lending in general. Even the finding that typical guest workers do not show signs of a repugnant transaction does not mean that anecdotes of guest work under repugnant conditions are incorrect. But it does suggest that the burden of proof to show that guest work in the Gulf

is categorically repugnant on consequentialist terms has not been met. A constructive avenue for future research would consider the details of design of guest work programs to reduce fraud, misinformation, regret, and other conditions affecting certain numbers of guest workers (see, for example, Djajić 2013; Silverman and Hari 2016).

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