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THE ECONOMIC RESPONSE OF RURAL AREAS TO LOCAL SUPPLY SHOCK: EVIDENCE FROM PALESTINE

Belal Fallah

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Send correspondence to:
Belal Fallah
Palestine Polytechnic University
bfallah2000@yahoo.com

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Abstract

This paper examines the economic effect of return commuting from the Israeli labor market on non-commuters in rural areas of the Occupied West Bank. The results show that returned commuting, when forced, has negative repercussions. Specifically, wages decrease for workers with same skill type (low skilled). The results also provide evidence that favors the crowd out effect hypothesis. The estimated probability of unemployment increases for non-commuters with disproportionate effect for job seekers relative to those reportedly employed. Consistent with this result, increases in return commuting prolong unemployment duration for the low skilled.

JEL Classification: J1

Keywords: Supply shock; labor market; wage decrease, Palestine.

ملخص

تبحث هذه الورقة الأثر الاقتصادي للعودة من سوق العمل الإسرائيلي إلى غير المسافرين في المناطق الريفية في الضفة الغربية المحتلة. وتظهر النتائج أن التنقل العائدين، عندما يجبر، له تداعيات سلبية. وعلى وجه التحديد، تنخفض الأجور بالنسبة للعمال الذين لديهم نفس نوع المهارة (ذوي المهارات المنخفضة). كما توفر النتائج أدلة تثبت فرضية تأثير الحشد. وتزداد الاحتمالات المقدرة للبطالة لغير المسافرين الذين يتأثرون بشكل غير متناسب بالباحثين عن عمل مقارنة بالأشخاص الذين يقال إنهم يعملون. وانسجاما مع هذه النتيجة، فإن الزيادات في العودة من أجل إطالة أمد فترة البطالة بالنسبة للمهارات المنخفضة.

1. Introduction

The economic impact of rural migration has been at the central interest of economists and policy makers (See Démurger and Xu 2011; Wang and Fan 2006; Adams and Page 2005). Researchers have mainly emphasized the importance of remittances to diversify income and alleviate poverty (Ellis 1998; De Brauw & Rozelle 2008; Adams and Page 2003).Another strand of literature addresses return migration, highlighting the economic performance of returned migrants up on arrival. A mounting research focuses on wage premium of the returnees (Coulon and Piracha 2005; Co *et al* 2000) and their occupational choices and entrepreneurial activities (Dustmann & Kirchkamp, 2002; McCormick & Wahba, 2000; Piracha &Vadean, 2010; Wahba & Zenou 2012; Démurger and Xu 2011). In this context, most cited research has mainly explored the motives behind return migration, modeling the decision to return to reflects self-selection to maximize utility (Borjas and Bratsberg 1996; Dustmann 1997; Coulon and Piracha 2005; Zhao 2002).[1]

Still, little research addresses how returned migrants affect local labor market outcomes for the non-migrants in rural areas. This paper aims at bridging this gap focusing on the short run effect on wages and unemployment in rural areas of the occupied West Bank. Right after the break out of the Second Intifada, in September of 2000, the Israeli government placed a closure policy that substantially limited the access of Palestinian commuters, mostly low skilled, into its labor market. Most affected are rural commuters in which prior to the closure they represented about one third of the total rural workforce and 60% of total commuters. As the restriction intensified during the first quarter of 2001, the share of rural commuters dropped to 7%. Throughout the following years, the share of returned commuters, at the district level, varied depending on the extent of restriction (Mansour 2010).

Unlike most of the cited research, the decision for Palestinian commuters to return is involuntary (not based on self-selection) and forced by Israel's closure policy (See Farsakh 2002). Thus, exploring the return of rural commuters in the occupied West Bank is particularly interesting as it provides a simulation of how an exogenous influx of returned migrants affects rural local market. Broadly, the outcome of this research contributes to the literature of rural-urban linkages, mainly in the context of negative demand shocks. It also paves the way for a better understanding of how labor export policies would yield when the risk of forced return migration is high.

While the literature, to the best of my knowledge, lacks theoretical reasoning to explain the economic effect of returned migration on non-migrants (or the effect of returned commuters on non-commuters as in this paper), the theory of immigration can be informative. In a framework of a perfect competitive market, the short run effect on natives basically depends on whether they are perfect (imperfect) substitute to the immigrants (Borjas 2006; Ottaviano and Pari 2012). To the extent that the relationship is perfect substitute, immigrants are likely to compete with native workers with same skills. In short, immigrants may be willing to work at lower wages, leading to decrease native wages and reduce their employability (Bauer, *et al* 2000; Edo 2013; Ottaviano and Perri 2012). Consistent with this hypothesis, wages and employment outcome for rural non-commuters are expected to decrease (increase), depending on the type of skills acquired by rural commuters and the extent to which such skills complement or compete with non-commuters.

Utilizing labor force data from Palestine Census Bureau of Statistics (PCPS), the study draws up on the overtime variation of rural commuting in the occupied West Bank to examine the

[1]Economic theories have suggested a number of venues that explain return migration, including the role of accumulated savings abroad and the preference for consumption in the own country (see Dustmann 2003; Galor and Stark 1991 ; Dustmann and Weiss 2007). Others have given importance to accumulation of human capital. For example, Dustmann (1997) suggests that individuals may return after acquiring skills that are highly rewarded back home.

short run impact on wages and unemployment for rural non-commuters. The span of the study is between the 2nd quarter of 2002 until the end of 2008. In this framework, return commuting is measured as the decrease in the logarithmic share of commuters relative to that of the initial period (third quarter of 2000-right before the breakout of the Second Intifada and the associated imposition of the closure policy). The main identification assumption of this analysis is that the extent of restricting the access of Palestinian commuters determines the level of return commuting. Still, I address a possible endogeneity concern that commuting to the Israeli labor market is initially driven by the local labor market conditions (see more discussion below). In other words, rural areas with weak economic conditions prior to Second Intifada are more likely to experience greater share of return commuters up on imposing the closure policy. To tackle this issue, the paper neutralizes the effect of local labor conditions by utilizing the Instrumental Variable (IV) approach, with an instrument that predict the share of rural commuters based on changes in Israel's overall demand for Palestinian workers.

The most conservative results of this paper, those based on the IV estimation, provide evidence of negative effects on labor market outcomes for rural non-commuters. Specifically, increasing the share of returned commuters by 1%, relative to the initial period, reduces wages for rural non-commuters by 0.7% to 0.11%, depending on identifying criteria of non-commuters. Consistent with skill effect hypothesis, the wage decrease is limited to low skilled workers. As for unemployment, the results favor the crowd effect hypothesis; increasing the share of returned commuters by 1%, raises the probability of unemployment for rural individuals by 0.07. Markedly, the crowd out effect is larger for job seekers relative to those reportedly employed. The paper also extends the analysis to investigate the effect on unemployment duration for the low skilled. The results show that increasing the share of returned commuters by 1%, increases unemployment duration by 0.22%. to 0.29%.

This paper is not, however, the first to examine the labor market impact of restricting mobility access to Israeli labor market. Utilizing quarterly-district data over the second Intifada period (2000-2005), Mansour[2] (2010) finds that the associated labor supply shock reduces wages and increases unemployment, mainly for low skilled workers. In addition to focusing on rural communities, this paper deviates from Masour's in the following fashion. Mansour's documented findings cannot be generalized to infer the effect on rural non-commuters and rigorously test for the crowd out effect. The sample he draws up on comprises of non-commuters and returned commuters. Thus, the effect on non-commuters is indistinguishable, whereas this paper focuses on the non-commuter sample. This paper also extends the analysis to examine the effect of returned commuting on unemployment duration as well as extends the testing of the crowd out effect to emphasize the differential effect on job seekers versus those reportedly employed. In addition, Mansour's main identification assumption is that return commuting is independent of local economic conditions, whereas this paper addresses the likelihood that intensity of return commuting is endogenous.

The remaining of the paper is organized as follows: section 2 exhibits a brief discussion on the motives for Palestinian workers to commute to the Israeli labor market. The third section discusses source of data, changes in returned commuting, and characteristics of rural workers. Section four presents the empirical wage model and documents the main wage findings. Similarly, section five presents the empirical methodology and findings for the unemployment analysis. Section 6, exhibits the extent to which the results of the base models are sensitive to modify the identifying criterion of returned commuter. Finally, the paper briefly concludes in section 7.

[2]A number of studies have utilized the Palestinian labor force data to examine how labor markets respond to political conflict. For example, Miaari and Sauer (2006) explore how conflict affect wages for Palestinian workers in the Israeli labor market. Cali and Miaari (2013) also estimate the impact of internal closure, across the occupied territories of West Bank, on employment and wages. See also Nandi and Miao (2010); Angrist (1996); Farsakh (2002); and Bulmer (2003).

2. Background on Commuting to Israeli Labor Market

Up on occupying West Bank and Gaza (WBG) in 1967, Israel has implemented a number of policies that reshaped the Palestinian economy. The main one hinges on eliminating borders with the Israeli labor market (Farsakh 2002). In early 1970's, average wages in Israel amounted to 200% relative to the occupied Palestinian territories'(oPt), inducing a rapid inflow of Palestinian commuters into the Israeli labor market. During the first years of the Israeli occupation, the share of commuters peaked at one third of the total Palestinian work force. The flow of commuters had, however, disrupted in periods that witnessed political turmoil, such as in the beginning of the First Intifada in 1987 and the breakout of the first Gulf war in 1991 (see Astrup and Dessus 2006).

After 1991, the Israel government has gradually placed closure policy aiming at restricting mobility access to its labor market. It required Palestinian commuters to obtain a special permit based on age, sex, marital status, and security clearance. During the period of 1994-1997, few years after establishing the Palestinian authority (PA), the share of Palestinian commuters decreased to about 17%. Nonetheless, the restrictions were partially lifted in the following years (see Arnon and Weinblat 2001), increasing the share of commuters by the end of 1999 to 29%.

The major closure measures took place when the Second Intifada broke out at the end of 2000. The Israeli government restricted mobility across the oPt, declared curfews in many areas, and substantially reduced the number of work permits. These led to a severe restriction in the flow of Palestinian commuters into the Israeli labor market. Figure (1) exhibits the abrupt decrease in the share of rural commuters across the West Bank's districts as the Second Intifada started. Depending on the security conditions and the strictness of border closure, the share of commuters has risen and fallen but never picked up to its initial level. As for Gaza strip, Israel maintained its strict closure policy and completely barred commuting as Hamas took control of Gaza in 2007. Therefore, the analysis of this paper is limited to return commuting in the occupied West Bank.

3. Data

To examine how the influx of returned commuters affects wages and unemployment for non-commuters in rural areas, I utilize place of work data[3] for workers in West Bank's rural areas between the 2nd quarter of 2001 and end of 2008. The dimension of the pooled data comprises of the sampled rural workers, commuters and non-commuters, in district's rural areas over 31 quarters. For each district, a rural area comprises all rural localities, amounting to 10 rural areas for the occupied West Bank. The sample excludes the rural area of East Jerusalem as the commuting restrictions do not apply to its citizens. In addition, the sample is limited to workers aging between15-64employed and excludes data prior to 2nd quarter of 2000 and post 2008 as place of work data for this period is not readily available. For the wage model, the sample only includes workers employed in the private sector. The source of data is the PCBS' labor force survey, which collects detailed employment and socioeconomic characteristics of individual household members.

Unlike the analysis documented in the immigration literature, commuters cannot be identified with back ground characteristics, such as ethnicity. Still, the rotation nature of the labor force survey is a key to identify returned commuters. In particular, each household is interviewed twice, over the two consecutive quarters, dropped from the sample for two quarters, and then represented again for another, and last, two consecutive quarters. This represents a 50% overlap of the same sample between both consecutive quarters and across two consecutive years. In this framework, I distinguish between non-commuters and returned commuters

[3] The wage and unemployment data excludes rural residents who work in urban areas of same district or work in other districts.

based on place of work in previous quarter. Non- commuters are those who reported their local rural areas as usual place of work in the current and previous quarter. Still, this methodology is silent about place of work in earlier periods, and therefore, the analysis may not fully isolate the wage and unemployment effect for the non-commuters. As a robustness check, I use period spent working for same employer as an alternative criterion.

In terms of labor characteristics,[4]rural non-commuters are generally less educated. The average years of education of the sampled workers amounts to 9.6 years. Consistently, the share of skilled workers (those with more than 12 years of education) is about 10%. In terms of industry distribution, about 34.5% of the waged rural workers are employed in manufacturing, 28.5% in construction, 28% in service, and the remaining works in agriculture.[5] At the gender level, female workers represent about 18% of the total employment and mostly work in the service and manufacturing sector.

As for rural commuters to the Israeli labor market, they are overwhelmingly males (98% of total commuters) and low killed with an average of 9 years of schooling. They are also disproportionately working in the construction sector (52%), while the remaining are somehow equally distributed across the other sectors. The overwhelming majority of these commuters are employed in low skilled jobs (72% are employed in elementary occupation and 16% works in craft and plant-machine occupations). These statistics clearly show that skill characteristics of commuters are similar to low skilled workers in rural areas. The empirical analysis in the following sections provides evidence that commuters are perfect substitute to non-commuters.

4. Empirical Model

4.1 The wage effect for rural non-commuters

The empirical strategy for estimating the wage model utilizes a modified version of Mincer's earning equation (Mincer 1974):

$$\log W_{ijq} = \gamma \text{Returned}_{jq} + \mathbf{B_1 Control}_{ijq} + \mu_j + \pi_q + e_{ijq} \qquad (1)$$

where $\text{Log}W_{ijq}$ is the logarithmic daily wage, measured in new Israeli Shekel, for non-commuter worker "*i*" , who is employed in rural area of district "*j*" and observed in quarter "*q*". The main independent variable of interest is "Returned_{jq}" commuters, which is measured as the difference between the logarithmic share of commuters at the initial period (3rd quarter of 2000) and at quarter "q" for rural area "j". This is to exhibit the increase (decrease) in (returned) commuting relative prior to the shock. The share of rural commuter is calculated as the number of commuters relative to total number of workers residing in the rural area of each district. The estimate "γ" reflects returned commuting elasticity of daily wages. Alternatively, returned commuting can be measured using the logarithm of the number of commuters. Although the results, unreported,[6] do not change qualitatively, I prefer the former measure as it properly accounts for differences in the size (total employment) of the rural areas.

One concern of the wage model is that changes in the influx of past commuters might also pick labor demand effect, which is also correlated with closure policy. In specific, the Israeli government exercised a system of restrictions, after the breakout of the Second Intifada, limiting the mobility of goods and individuals within and across districts in the oPt. The restrictions had taken different forms including permanent and partial checkpoints,

[4] The statistics used in describing labor characteristics are averaged throughout the period of study.

[5] When considering labor characteristics for all workers, waged and non-waged, the agriculture sector is the main employer with a worker share of 43%. In other words, most of the workers in this sector are non-waged (family) workers.

[6] All unreported results in this paper are available upon request from the author.

roadblocks, barrier gates, and trenches.[7] A number of reports, published by international institutes such as the World Bank or the IMF,[8] have directly related these restrictions to a substantial decrease in economic activities. In the same vein, Cali and Miari (2013) extend the investigation to cover the effect on labor market outcomes. They find that the mobility restrictions across and within the West Bank cause negative effect on wages and employment. Mansour (2010) also relates the negative demand shocks to violence intensity, measured as number of fatalities in each district.

Not controlling for the demand effects may lead to omitted variable bias. The extent and direction of the bias depend on the degree of correlation with return commuting. Unfortunately, detailed data on mobility barriers and fatality are not readily available at the rural level. Instead, I control for the demand effect (shock) using a measure that is similar to the demand shifts proposed by Katz and Murphy (1992). In specific, the measure of the demand shifts at a given rural area (j) and quarter (q) is defined as: $\text{Shock}_{jq} = \Sigma\pi_{sjq}(\Delta E_{jq})$. The term π_{sjq} is the share of workers in industry s in rural area j and measured at the initial period. ΔE_{jq} is the difference between the regional (for all West Bank districts) share of industry s at the initial period and at quarter q. The demand shifts variable measures the effect of decreases in demand of employment between sectors in each quarter relative to the initial period.

The vector $\mathbf{X}_{ijq}$ control for workers demographic and socioeconomic characteristics, including sex, education, marital status, age, and age squared. The vector also includes a list of dummy variables to account for wage differences across industries, which are classified using ISIC's 4 digit level. The vector "μ_j" includes another list of rural area fixed effects to account for factors that are common to all workers in same rural area but varies little over time. These include distance to the Israeli labor market. Adnan (2015) shows that geographical location is a main determinant of commuting to the Israeli labor market. Moreover, the regression model also includes quarter dummies to account for national effects, such as changes in the intensity of the Second Intifada, that are common to all rural workers in the occupied West Bank. Descriptive statistics of the main variables in wage model are presented in Table (1) in the appendix.

Before presenting the results, I address two main concerns that may affect the estimate of the returned commuters. Akin to modeling economic effect of immigration (see Borjas 2006), returned commuters may not be randomly distributed across local labor markets. In particular, they may cluster in areas with thriving economic conditions, leading to a spurious relationship between wages and influx of returned commuters. The second highlights the possibility that the effect of returned commuters on rural areas might be attenuated by the move-out effect of non-commuters to other areas (urban or rural).

It turned out that these concerns are less likely to affect the results. In particular the share of returned commuters who moved to other districts of residence, during the study period, is only about 3%.This indicates that non-random distribution of returned commuters seems not to be a major issue. To tackle the move-out effect, I estimate the impact of returned commuters on the likelihood of a non-commuter to move out and work in different district or in the urban area of same district of residence. The model is estimated using the following probit regression:

$$MO_{ijq} = \alpha_1 \text{Returned}_{jq} + \alpha_2 \mathbf{Control} + \mu_j + \pi_q + e_{ijq} \qquad (2)$$

The dependent variable is dichotomous, which takes a value of 1 for non-commuters who moved out of their rural area and zero for those who stayed. The control variables include worker's age, level of education, and the demand shifts (Shock_{jq}). The model also controls for

[7] See Cali and Miaari (2013) for more discussion about the mobility restrictions in the oPt.

[8] See World Bank (2007) and (2010), and UNCTAD (2011)

quarter (π_q) and rural area (μ_j) fixed effects. The results, unreported, show that effect is positive but insignificant, with a z-statistics of 0.54. The result is robust even when restricting the sample to low skilled workers.

To ensure that the findings of the wage model are not driven by model specification, I controlled for the share of rural workers who commuted to other areas within the occupied West Bank. The results, unreported, remain unchanged. This indicates that the effect of return commuting on rural wages is absorbed locally. The results also remain the same even when assuming that return commuting is endogenous (correlated with rural economic conditions).[9]The insignificant effect can be explained by the mobility restrictions that Israel imposed within and across districts mainly during the first few years of the Second Intifada. Including road blocks and check points, these restrictions substantially increased the commuting time and cost and force people to take a lengthy bypass routes (See Mansour 2010).

4.2 Results for the wage model

Before discussing the results, it is worth noting that the wage model, and other models reported below, combines aggregated level data (share of returned commuters and demand shifts) with individual level data. Moulton (1990) shows that failing to account for common group errors can bias standard errors downward and accordingly invalidate tests from the OLS estimates. To address this issue, I clustered standard errors by district. Since the number of West Bank districts is only 10, I use critical values from a t_{G-K-1} distribution, where G is 10 and K (number of aggregated variables) is 2 (see Cameron and Miller, 2010; Cohen and Dupas, 2010).

Table (2), placed in the appendix, documents the results for the effect of returned commuters on wages of rural non-commuters. Column (1) reports the results for all workers regardless of their skill level. The estimate of the $Returned_{jq}$ variable is negative and statistically significant at 5%. All else equal, increasing the share of returned commuters by 1% reduces daily wages by 0.08%. The results of the control variables are in line with the findings documented in the literature. The effect of the demand shifts variable is negative but statistically insignificant. This variable seems to have a greater influence on employment status (see below). As for the socioeconomic characteristics, wages tend to increase with years of education. Also wages increases with age, though at a decreasing rate as captured by age squared variable.

As indicated above, rural commuters are mostly lows killed. So, to shed light on the nature of skill substitutability between commuter and non-commuter, the wage model is separately estimated for skilled non-commuters (those with more than 12 years of education) and low skilled non-commuters (those with fewer than 13 years of education). Column (2) of Table (2) reports the result for the skilled, which show that the effect on their wages is negative but statistically insignificant. Though, this finding should be interpreted with caution as the sample size is small for a panel dimension that combines individuals and aggregated level data. Nonetheless, when considering the sample for the low skilled, the findings show negative and significant effect. The magnitude of the estimated coefficient is similar to that of the entire sample. This indicates that wages decreases only for non-commuter workers with similar skills, signaling that returned commuters are perfect substitute to this section of non-commuters.

4.3 IV estimation

The main identification assumption for the wage model is that return commuting is independent of the labor market conditions in rural areas. Specifically, changes in the share of

[9] See Section (4.3) for a detailed discussion on the expected correlation between returned commuting and rural economic conditions, as well as the instrument used to address this issue.

returned commuters hinge on changes in restriction intensity. Still, this argument ignores the fact that commuting is basically driven by the state of economic conditions in the oPt. As mentioned above, low wages in the Palestinian labor market, relative to Israel's, has remained the main motive to commute. The estimated wage premium in Israel, net of type of industry, years of education, and district of residence, ranged between 35% and 55% for the low skilled during the study period. Then, it might be the case that the rise in the commuting rate, as mobility restrictions softens (see Figure 1), is correlated with the level of wages, or generally economic conditions, in the local rural areas.

To address this issue, I re-estimated the wage model using the IV estimation technique. In spirit of Bartik (1991) and Moretti (2010), I utilize an instrument that isolates the effect of rural economic conditions by using changes in Israel's overall demand for Palestinian workers. Local share of commuters at the initial period is used as distribution weight. The instrument is specified as follows:

$$is\_iv = \log[(isr_q - isr_{jq}) \times isr_{jq0}] \quad (3)$$

where $isr_q$is total Palestinian commuters to the Israeli market in quarter "q" and isr_{jq0} is the share of commuters in rural area *j* measured in the initial period (right before the breakout of the Second Intifada). To ensure exogeneity, the number of commuters in own rural area (isr_{jq}) is purged off the total commuters. The identification assumption of this instrument is that increases in the overall demand of Palestinian commuters would disproportionately increase commuting share for rural areas with greater initial share. Consistent with this argument, the coefficient of the instrumental variable is positive, with an estimate of 16.17, and statistically significant at 1%. Importantly, the F-statistics of the first stage is above the conventional level, indicating the instrument is relevant.

The second stage results qualitatively accord with the OLS estimates. However, the magnitude of the returned commuting effect increases to about 0.11 for the entire sample and for the low skilled sample. As for the skilled findings, the magnitude of the coefficient increases to about 0.1 but statistically insignificant. These findings indicate that the documented effect of return commuters hold even if return commuting is regarded as endogenous to economic conditions in rural areas.

5. The Effect of Returned Commuters on Unemployment

5.1 Effect on unemployment status

This section investigates how returned commuters affect employment status for non-commuters in rural areas. It is expected that returned commuters would compete for same jobs with non-commuters, decreasing the likelihood for the latter to be employed. Similar to the wage model, the testing of this hypothesis utilizes individual level data for rural workers in each district of West Bank between the 2nd quarter of 2001 and end of 2008. The testing methodology is based on using probit model to estimate the probability for rural individuals to be unemployed following the return of commuters. The sample utilized in this analysis excludes those reported Israeli labor market as place of work in previous quarter. The sample is also limited to individuals who did not commute to the Israeli labor market in the previous quarter and work or search for work in rural areas. The model is specified in the following fashion:

$$UR_{ijq} = \lambda_1 Returned_{jq} + \lambda_2 \mathbf{Control}_{ijq} + \mu_j + \pi_q + e_{ijq} \quad (4)$$

The dependent variable is dichotomous, taking a value of 1 for unemployed individual and zero for the employed. The independent variable of interest ($Returned_{jq}$) is defined as specified above. The control variables include demand shifts, worker's age, level of education, and marital status. This is in addition to controlling for rural area and quarter fixed effects.

The model is firstly estimated for the entire sample, skilled and low skilled. The results, presented in Table (3), show that the impact of return commuting is positive and significant at 1%. In specific, increasing the share of return commuters by 1% increases the probability of unemployment by about 0.028, all else equal. As for the control variable effect, the estimates are consistent with the apriori expectations. The probability of unemployment decreases with individual age[10] and years of education. Though, males are more likely to be unemployed than females.

The effect on unemployment status is limited to the low skilled individuals, with an estimated probability of about 0.033. The estimated effect for the skilled sample is about 0.014 but statistically insignificant (see column 2 and 3). Table (3) also exhibits the results for the IV models, which confirms this finding, though the IV estimates are higher (about twice as much). In nutshell, this finding suggests that the impact of returned commuters favors the crowd out hypothesis. In the light of the insignificant effect of the skilled sample, the following analysis focuses mainly on the low skilled.

Worth noting, the specification of model (4) is silent about the extent to which the crowd out effect channels via competing with the employed versus those seeking jobs. To explore these channels, I split the low skilled sample into two. The first includes individuals who were employed and worked in the same rural area in previous quarter. The second sample is limited to those, who were unemployed in previous quarter to account for job seekers. The two samples are utilized to re-estimate model (4). Still, I modified the model of the former sample such that to control for the type of industry in the previous quarter (agriculture, manufacturing, construction, and services).

The findings document differential impact of returned commuting. In particular, the OLS estimate is 0.1, and statistically significant at 1%, for those unemployed in previous quarter. On the other hand, the estimate for those previously employed reduces to 0.01 but statistically insignificant. IV estimate confirms the differential effect, though the estimates are larger and statistically significant for both samples. (see Table 4). This shows that returned commuters compete more with job seekers. The results also show that decreases in economic activities, as captured by the demand shifts variable, increases the probability of unemployment, with a greater effect for the previously unemployed model.

5.2 The effect of returned commuters on unemployment duration

This section considers another dimension of unemployment. It specifically investigates how returned commuters affect the unemployment duration for rural job seekers. The underlying mechanism is that job competition between returned commuters and those searching for jobs in their rural locality is expected to increase the employment duration for the latter. The specification of the regression is similar to model (4).The only difference is that the dependent variable is defined as the logarithm of the number of months an unemployed individual has spent searching for a job in rural area j and observed in quarter q.

The OLS findings, reported in Column (1) of Table (5), show that the effect on unemployment duration is positive and statistically significant at 5%. This indicates that increasing returned commuters by 1% would increase unemployment duration for the low skilled by 0.14%. As for the effect of the control variables, the results show that the effect of demand shifts, age, and level of education are positive and statistically significant. The IV estimates are reported in Column (2) of the same table, exhibiting similar findings, but with greater effect.

[10] In a separate model, I added age square to account for non-linearity of age effect. The results, unreported, remain the same.

5.3 More robustness check: identifying past commuters

The main theme of this paper addresses the effect of returned commuters on labor market outcomes for non-commuters. Throughout the analysis, non-commuters are identified as those did not commute to the Israeli labor market in the previous quarter, assuming that this section of workers did not commute in earlier quarters either. However, there is no guarantee that this is exactly the case, and thus, the reported estimates may not fully capture the effect on non-commuters.

Alternatively, I utilize the period, measured in number of months; a worker has spent at the same job as a criterion to identify non-commuters for the wage model. I separately re-estimated the wage model for low skilled workers who have spent at least a year and two years The findings, for both OLS and IV models, show that the effect of returned commuters is robust, though the magnitude of the commuting effect is smaller; about 0.07 (See Table 6).[11]

Since period of employment cannot be used for the unemployment analysis, I limit the sample to low skilled workers who did not identify the Israeli labor market as place of work up to the past five quarters. This is made possible as the labor force survey identifies current or usual place of work. The following discussion compares the results relative to the base models (those tracking workers only for previous quarter). Still, one must be careful about interpreting the results as this methodology reduces the sample size to more than half.

The findings for the effect on unemployment period remain the same for the IV model, though the estimates are greater in magnitude relative to the base IV model (see Column 4 and 5 in Table 4). I also apply same identifying criteria to the unemployment status model for the previously unemployed. The OLS and IV results, reported in Table (7), are similar to the corresponding base models, though the magnitude of the return commuting estimates is larger.

6. Conclusion

This paper examines how an exogenous influx of returned commuters affects rural local market. Specifically, it utilizes commuting restrictions that Israel imposed on Palestinian commuters, during the Second Intifada, to examine then short run effect on wages and unemployment for non-commuters. The findings show that returned commuters are perfect substitute to low skilled non-commuters (similar skill type), leading to a wage decrease for the latter. Consistently, the results favor the crowd effect hypothesis; returned commuters compete for same jobs with rural individuals and increase their probability of being unemployed. Most of this effect is limited to those seeking jobs. In addition, the results also show that unemployment duration increases the low skilled individuals.

Overall, this paper provides a venue to evaluate labor export policies that countries often utilize to eliminate excess labor supply. The results suggest that this policy might be back firing, at least for rural areas, when risks of forced returned migration or commuting are high. In this vein, the results are informing in the context of the Israeli-Palestinian conflict. Specifically, excessive reliance on the Israeli labor market to sustain lower unemployment may not be effective in the long run. The demand for the Palestinian workers continues to be governed by the prerequisite of Israel's security conditions.

[11]The reason to limit the sample to maximum employment period of five years, is due to the decrease in the sample size.

References

Adams, R. and Page, P. (2003) "International Migration, Remittances and Poverty in Developing Countries," World Bank Policy Research Working Paper 3179.

Adams, R. and Page, P. (2005) "Do International Migration and Remittances Reduce Poverty in Developing Countries?". World Development, 33: 1645-1669.

Adnan, W. (2015) Who gets to cross the border? The impact of mobility restrictions on labor flows in the West Bank". *Labour Economics*, 34: 86-99.

Angrist, J. (1996) "Short-Run Demand for Palestinian Labor," Journal of Labor Economics, 14: 425-53.

Arnon, A. and Weinblatt, J. (2001) "Sovereignty and Economic Development: The Case of Israel and Palestine". The Economic Journal, 111, F291-F308.

Bulmer, E.R. (2003) "The Impact of Israeli Border Policy on the Palestinian Labor Market." Econ. Dev. Cult. Change 51: 657–676.

Astrup, C. and Dessus,S. (2005) "Exporting Goods or Exporting Labor?: Long-term Implications for the Palestinian Economy," Review of Middle East Economics and Finance, 3: 39-61.

Bartik, T. (1991) "Who Benefits From State and Local Economic Development Policies?" Kalamazoo, MI: W.E. Upjohn Institute for Employment Research.

Bauer, T., Lofstrom, K. and Zimmermann, K. F. (2000) "Immigration Policy, Assimilation of Immigrants and Natives' Sentiments towards Immigrants: Evidence from 12 OECD countries," mimeo., Bonn: IZA.

Borjas, G.J., and Bratsberg, B. (1996) "Who leaves? The outmigration of the foreign-born". Review of Economics and Statistics, 78: 165–176.

Borjas, G.J. (2006) "Native Internal Migration and the Labor Market Impact of Immigration". Journal of Human Resources, 41: 221-258.

Cali, M. and Miaari, S. (2013) "The labor market impact of mobility restrictions: Evidence from the West Bank". World Bank Policy Research Working Paper 6457

Cameron, CA., Miller, D L. (2010) "Robust inference with clustered data". Working Paper 10-7. Department of Economics, University of California—Davis.

Co, C.Y., Gang, I.N. and Yun, M. (2000) "Returns to Returning". Journal of Population Economics, 13:57–79.

Cohen, J and Dupas, P (2010) "Free distribution or cost-sharing? evidence from a randomized malaria prevention experiment". Quarterly Journal of Economics 125:1–45.

Coulon, A. and Piracha, M. (2005) "Self-Selection and the Performance of Return Migrants: The Source Country Perspective". Journal of Population Economics, 18: 779–807.

Démurger, S. and Xu. H. (2011) "Return migrants: The rise of new entrepreneurs in rural China." World Development 39:1847-1861.

de Brauw, A. and Giles, J. (2008). Migrant opportunity and the educational attainment of youth in rural China". Policy Research Working Paper 4526, Washington DC, The World Bank.

Dustmann, C., Kirchkamp, O. (2002) "The optimal migration duration and activity choice after re- migration." Journal of Development Economics, 67: 351-372.

Dustmann, C. and Weiss, Y. (2007) "Return migration: theory and empirical evidence from the U.K.". British Journal of Industrial Relations, 45: 236-56.

Dustmann, C. (1997) "Return Migration, Savings and Uncertainty." Journal of Development Economics 52:295–316.

Dustmann C. (2003) "Return migration, wages differentials and the optimal migration duration". European Economic Review, 47: 353-367.

Edo, A. (2013) "The Impact of Immigration on Native Wages and Employment", CES working paper 13-64.

Ellis, F. (1998) "Household Strategies and Rural Livelihood Diversification". Journal of Development Studies, 35: 1-38.

Farsakh, L. (2002) "Palestinian Labor Flows to the Israeli Economy: A Finished Story.". Journal of Palestine Studies XXXII: 13–27.

Galor, O. and Stark, O. (1991) "The probability of return migration, migrants' work effort and migrants' performance". Journal of Development Economics, 35:399-405

Katz, L.F., Murphy, K.M. (1992) Changes in relative wages, 1963–1987: supply and demand factors". The Quarterly Journal of Economics, 107: 35–78.

Mansour, H. (2010) "The Effects of Labor Supply Shocks on Labor Market Outcomes: Evidence from the Israeli-Palestinian Conflict". Labor Economics,17: 930-39.

McCormick, B., and Wahba, J. (2000) "Overseas employment and remittances to a dual Economy", The Economic Journal, 110: 509-34.

Miaari, S.H., and Sauer, R.M. (2006) "The Labor Market Costs of Conáict: Closures, Foreign Workers, and Palestinian Employment and Earnings," IZA Discussion Paper no. 2282.

Mincer, J. (1974) "Schooling, Experience and Earnings". New York: Columbia University Press.

Moulton, B.R. (1986) "Random Group Effects and the Precision of Regression Estimates." Journal of Econometrics, 32: 385-97.

Moretti, E. (2010) "Local Multipliers." American Economic Review, 100: 1–7.

Moretti, E (2004) "Estimating the Social Return to Higher Education: Evidence from Longitudinal and Repeated Cross-Sectional Data." Journal of Econometrics 121:175-212.

Nandi, T., and Di Maio, M. (2013) "Conflict, Economic Shock and Child Labor in Palestine." Working Paper No. 74, Household in Conflict Network, University of Sussex, Brighton, United Kingdom.

Ottaviano, G. I.P. and Peri, G. (2012) "Rethinking the Effect of Immigration on Wages". Journal of the European Economic Association, 10:152-197.

Piracha, M and Vadean, F. (2010) "Return Migration and Occupational Choice: Evidence from Albania". World Development, 38: 1141-1155.

UNCTAD (2011) Report on UNCTAD assistance to the Palestinian people: Developments in the economy of the occupied Palestinian territory, UNCTAD: Geneva.

Wang, W. W. & Fan, C. (2006) "Success or failure: selectivity and reasons of return migration in Sichuan and Anhui, China". Environment and Planning A, 38: 939- 958.

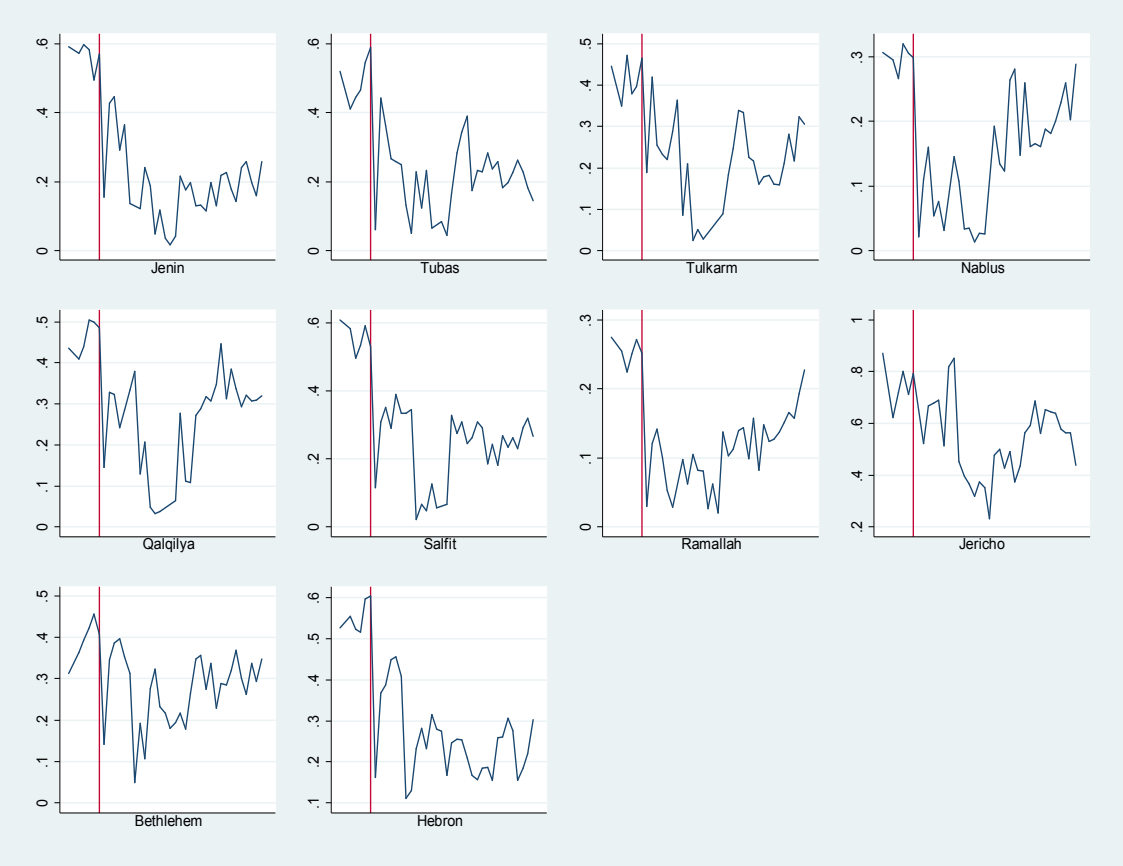
World Bank (2007) “Movement and access restrictions in the West Bank: uncertainty and inefficiency in the Palestinian economy".

World Bank (2010) "Checkpoints and barriers: Searching for livelihoods in the West Bank and Gaza – Gender and economic collapse".

Wahba, J., and Zenou, Y. (2012): “Out of Sight, Out of Mind: Migration, Entrepreneurship and Social Capital”. Regional Science and Urban Economics, 42: 890–903.

Zhao,Y. (2002) "Causes and consequences of return migration: recent evidence from China". Journal of Comparative Economics 30 376 -394.

Figure 1: Quarterly Changes in the Share of Rural Commuter in the Occupied West Bank During the 1999-2008 Period‡



Notes: ‡The reference line marks the breakout of the Second Intifada at the 3rd quarter of 2000.

Appendix

Table 1: Descriptive Statistics of the Main Variables in the Regression Models

Quantitative Variables	Average	standard deviation	minimum	maximum
Wage	62.69	33.56	3.84	1153.84
years of Education	9.55	9.55	3.3	22
Age	30.67	9.99	15	65
Qualitative Variables	**Percent**			
Male	83.5			
Females	15.95			
marital status:				
Single	41.83			
Married	56.69			
other	1.49			
Type of Industry				
Agriculture	9.9			
Manufacture	35.98			
Construction	27.43			
Services				

Table 2: Effect of Returned Commuting on Wages for Rural Non-Commuters, OLS and IV

Variable	All workers OLS -1-	Low skilled OLS -2-	skilled OLS -3-	All workers IV -4-	Low skilled IV -5-	skilled IV -6-
Log share of returned commuters	-0.0801	-0.0722	-0.0383	-0.1146	-0.1058	-0.0989
	(-2.32)**	(-3.22)**	(-0.41)	(-3.31)***	(-3.51)***	(-0.99)
demand shifts	0.0001	-0.0001	-0.0003	0.0001	-0.0001	-0.0003
	(0.20)	(-0.32)	(-0.31)	(0.13)	(-0.49)	(-0.35)
Sex	0.39	0.3453	0.3782	0.3886	0.3452	0.3743
	(11.16)***	(7.35)***	(3.60)***	(11.31)***	(7.41)***	(3.48)
years of education	0.0207	0.0133	0.0689	0.0207	0.0133	0.0705
	(5.47)***	(4.03)***	(2.67)***	(5.40)***	(3.96)***	(2.54)***
Age	0.0412	0.0448	0.019	0.0418	0.0455	0.0157
	(4.28)***	(6.79)***	(0.50)	(4.30)***	(6.69)***	(0.49)
Age squared	-0.0005	-0.0005	-0.0002	-0.0005	-0.0006	-0.0001
	(-3.55)***	(-5.81)***	(-0.36)	(-3.57)***	(-5.73)***	(-0.27)
marital status	Yes	Yes	Yes	Yes	Yes	Yes
type of industry	Yes	Yes	Yes	Yes	Yes	Yes
rural area FE	Yes	Yes	yes	Yes	Yes	Yes
quarter FE	Yes	Yes	yes	Yes	Yes	Yes
Constant	2.9735	2.9691	1.965	3.02	3.20	2.07
	(16.30)***	(11.47)***	(2.77)***	(11.25)***	(16.07)***	(2.17)***
No. obs	2763	2390	373	2763	2390	373
Adjusted R-sq	0.55	0.54	0.68	0.55	0.54	0.68

Notes: t-statistics are reported in parentheses. The standard errors corrected for clustering at the district level. Critical values are from a t-distribution with 8 (10–2) degrees of freedom. All regressions are estimated using sampling weights. *Statistically significant at the 0.10 level. **Statistically significant at the 0.05 level. *** Statistically significant at the 0.01 level.

Table 3: Effect of Returned Commuting on Unemployment Status for Rural Non-Commuters, OLS and IV

Variable	All workers Probit	Low skilled Probit	Skilled probit	All workers IV	Low skilled IV	Skilled IV
	-1-	-2-	-3-	-4-	-5-	-6-
Log share of returned commuters	0.0276	0.0325	0.014	0.061385	0.073425	0.021505
	(3.37)**	(3.02)**	(0.85)	(11.2)***	(10.07)***	(0.95)
demand shifts	0.0002	0.0002	0.0003	0.0002	0.0003	0.0003
	(1.29)	(1.33)	(1.38)	(1.69)	(1.83)	(1.49)
Sex	0.1198	0.1698	-0.0046	0.1194	0.1689	-0.0046
	(11.13)***	(14.78)***	(-0.53)	(11.19)***	(14.49)***	(-0.53)
years of education	-0.0027	-0.001	-0.0099	-0.0027	-0.00093	-0.01
	(-1.62)	(-0.68)	(-2.04)*	(-1.61)**	(-0.63)	(-2.05)**
Age	-0.0027	-0.0014	-0.005	-0.0026	-0.0014	-0.005
	(-3.83)***	(-2.31)**	(-3.94)***	(-3.82)***	(-2.28)**	(-3.88)***
marital status	Yes	Yes	yes	Yes	Yes	Yes
rural area FE	Yes	Yes	yes	Yes	Yes	Yes
quarter FE	Yes	Yes	yes	Yes	Yes	Yes
No.obs	25567	20548	5015	25567	20548	5015

Notes: z-statistics are reported in parentheses. The standard errors corrected for clustering at the district level. Critical values are from a t-distribution with 8 (10–2) degrees of freedom. All regressions are estimated using sampling weights. *Statistically significant at the 0.10 level. **Statistically significant at the 0.05 level. *** Statistically significant at the 0.01 level.

Table 4: Effect on Unemployment Status for previously Unemployed and Employed Rural Workers

Variable	previously unemployed Probit -1-	previously unemployed IV Probit -2-	previously employed Probit -3-	previously employed IV probit -4-
Log share of returned commuters	0.1011	0.1742	0.0139	0.0435
	(4.37)***	(10.01)***	(1.62)	(5.14)***
demand shifts	0.0007	0.0008	0.0002	0.0003
	(2.34)*	(2.44)**	(1.44)	(2.08)*
Sex	0.163	0.166	0.118	0.1095
	(2.05)*	(2.07)*	(12.88)***	(12.72)***
Years of education	0.0062	0.0065	-0.0014	-0.0011
	(1.27)	(1.31)	(-0.87)	(-0.88)
Age	-0.0009	-0.0007	-0.0008	-0.0007
	(-0.54)	(-0.43)	(-2.01)*	(-2.03)*
marital status	Yes	Yes	Yes	Yes
rural area FE	Yes	Yes	Yes	Yes
quarter FE	Yes	Yes	Yes	Yes
No.obs	2293	2293	14179	14179

Notes: z-statistics are reported in parentheses. The standard errors corrected for clustering at the district level. Critical values are from a t-distribution with 8 (10–2) degrees of freedom. All regressions are estimated using sampling weights. *Statistically significant at the 0.10 level. **Statistically significant at the 0.05 level. *** Statistically significant at the 0.01 level.

Table 5: Effect of Returned Commuting on Unemployment Period for the Low Skilled

Variable	Unemployment period-past quarter OLS -1-	Unemployment period-past quarter IV -2-	Unemployment period-past 5 quarter OLS -3-	Unemployment period-past 5 quarter IV -4-
log returned commuters	0.1665	0.2202	0.1589	0.2872
	(2.93)**	(4.33)***	(1.41)	(3.88)***
demand shifts	0.0014	0.0014	0.0013	0.0013
	(1.59)	(1.56)	(1.29)	(1.35)
Sex	-0.0156	-0.0125	-0.0425	-0.043
	(-0.21)	(-0.17)	(-0.32)	(-0.33)
years of education	0.003	0.0026	-0.0038	-0.0046
	(0.40)	(0.35)	(-0.34)	(-0.41)
Age	0.0064	0.0065	0.0048	0.0049
	(4.62)***	(5.09)***	(1.61)	(1.69)
marital status	Yes	Yes	Yes	Yes
type of industry	Yes	Yes	Yes	Yes
type of occupation	Yes	Yes	Yes	Yes
rural area FE	Yes	Yes	Yes	Yes
quarter FE	Yes	Yes	Yes	Yes
Constant	0.4738	1.8648	0.5147	2.0209
	(3.21)**	(5.46)***	(2.35)**	(2.85)**
N.obs	2276	2276	1055	1055
R-squared	0.10	0.10	0.09	0.09

Notes: t-statistics are reported in parentheses. The standard errors corrected for clustering at the district level. Critical values are from a t-distribution with 8 (10–2) degrees of freedom. All regressions are estimated using sampling weights. *Statistically significant at the 0.10 level. **Statistically significant at the 0.05 level. *** Statistically significant at the 0.01 level.

Table 6: Effect of Returned Commuting on Wages for Low Skilled Rural Non-Commuters, OLS and IV-Robustness Check.

Variable	More than a year OLS -1-	More than 2 years OLS -2-	More than a year IV -3-	More than 2 years IV -4-
Log share of returned commuters	-0.0641	-0.0609	-0.0659	-0.0737
	(-5.28)**	(-3.93)***	(-3.73)***	(-3.20)**
demand shifts	-0.0001	-0.0001	-0.0001	-0.0001
	(-0.47)	(-0.36)	(-0.49)	(-0.46)
Sex	0.3527	0.3182	0.3527	0.3185
	(4.30)***	(3.31)**	(4.31)***	(3.30)**
years of education	0.0116	0.0114	0.0116	0.0114
	(2.33)***	(2.45)***	(2.32)***	(2.44)***
Age	0.0387	0.0319	0.0388	0.0321
	(7.16)***	(6.10)***	(7.32)***	(6.39)***
age_2	-0.0005	-0.0004	-0.0005	-0.0004
	(-5.77)***	(-4.33)***	(-5.88)***	(-4.49)***
marital status	Yes	Yes	Yes	Yes
type of industry	Yes	Yes	Yes	Yes
rural area FE	Yes	Yes	Yes	Yes
quarter FE	Yes	Yes	Yes	Yes
Constant	2.8635	3.0471	3.22	2.81
	(34.38)***	(21.44)***	(18.99)***	(14.79)***
No. ons	3266	2742	3266	2742
Adjusted R-sq	0.55	0.54	0.54	0.55

Notes: t-statistics are reported in parentheses. The standard errors corrected for clustering at the district level. Critical values are from a t-distribution with 8 (10–2) degrees of freedom. All regressions are estimated using sampling weights. *Statistically significant at the 0.10 level. **Statistically significant at the 0.05 level. *** Statistically significant at the 0.01 level.

Table 7: Effect on Unemployment Status for the Past Five Quarters: OLS and IV Robustness Check

Variables	Low skilled & previously unemployed OLS -1-	Low skilled & previously unemployed IV -2-
Log share of returned commuters	0.1891	0.260386
	(3.85)***	(6.03)***
demand shifts	0.0004	0.000622
	(0.61)	(0.89)
sex	0.1529	0.15923
	(1.66)	(1.77)
years of education	0.1073	0.1073
	(2.08)*	(2.24)*
age	0.0006	0.0005
	(0.27)	(0.23)
marital status	Yes	Yes
type of industry	Yes	Yes
type of occupation	Yes	Yes
rural area FE	Yes	Yes
quarter FE	Yes	Yes
N.obs	989	989

Notes: z-statistics are reported in parentheses. The standard errors corrected for clustering at the district level. Critical values are from a t-distribution with 8 (10–2) degrees of freedom. All regressions are estimated using sampling weights. *Statistically significant at the 0.10 level. **Statistically significant at the 0.05 level. *** Statistically significant at the 0.01 level.