

Fair Trade in a military occupation context: an empirical analysis in the West Bank

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Abstract

By interviewing a sample of 227 randomly selected farmers in villages located in Jenin and Tubas areas, half of which connected to the Fair Trade network, we find that FT coop members benefit from a number of services precluded to independent farmers. Benefits range from free trees and training courses to higher and more stable prices paid for agricultural products. The econometric analysis confirms that, net of other confounding elements, coop members are more satisfied with respect to price level, price stability, seller reliability and punctuality of payments.

Keywords: fair trade, Palestine, West Bank.

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1. Introduction

Over the last sixty years the Middle East has been characterized by a situation of constant political instability, the Palestinian issue being one of the main reasons for it. After the second intifada the Palestinians' social and economic situation has become even more dramatic than before. The Israeli occupation is responsible for a number of problems: people killed or injured, damages to houses, working tools and plantations. For long periods curfews and check points have severely limited mobility of people and transportation of goods, thereby affecting the economic development of the area. The separation wall, built over the last decade, has isolated the West Bank from the surrounding countries and the farmers from (some of) their fields. Reduced mobility of people and goods and increased land confiscation are additional consequences of this policy. Finally, water is subject to rationing and its price is a multiple of that paid by Israeli. In short, doing business in the West Bank is extremely difficult. Fair Trade tries to help Palestinians by providing services to the farmers, better prices and working conditions and additional markets where to sell their products.

This paper is organized as follows: The second section provides an economic and political overview necessary to understand the context in which Fair Trade organizations operate. The third focuses on the three main problems faced by Palestinian farmers connected to land, mobility and water. The fourth describes the two cooperatives object of this analysis. The fifth describes the data collection and provides summary statistics. The sixth presents the results from the econometric analysis. The seventh concludes.

2. Economic and political overview

The occupied Palestinian territories (oPt) include the West Bank and the Gaza Strip. The West Bank covers about 5,655 km² and it has a population of 2.38 million inhabitants. The Gaza Strip is one of the most densely populated areas in the world (some 4,000 inhabitants/km²), a narrow strip of land of 365 km² along the Mediterranean sea hosting about 1.42 million. While the (oPt) is a small land in terms of area and population and does not contain natural resources such as oil or gas of crucial interest to the world's economy, the Israeli-Palestinian conflict draws great attention in the international media, politics and diplomacy. It is mainly the historical and political context that sets the parameters of the current economic and social situation of the population.

The Oslo process (1994-2000) brought for a certain period some calm in the region . It permitted the creation of the Palestinian National Authority (PNA) and established a framework for the creation of a Palestinian state. However, the agreements did not fully materialize and conflicts between Israelis and Palestinians continue to date: the occupation of Palestine does not show any sign of resolution. On the contrary, several signs show an opposite trend: the construction of the Barrier is going on, confiscation of land continues, settlements are expanding and the invasive processes in East Jerusalem and Jordan Valley are speeding up. The latest military operation in the Gaza Strip caused impressive damages to the infrastructures and left about 1,450 Palestinians dead. Armed violence within Palestinian factions increased as well, especially since 2006 and among supporters of Fatah and Hamas.

Between 1999 and 2007 the oPt's GDP per capita dropped by around 30% and investment almost ceased. GDP per capita continued to decrease at an average of 4% per year between 2006 and 2008. According to the World Bank, the GDP per capita was just above US\$ 1,000 in 2008, compared to US\$ 1,610 in 1999. In early 2009 about 21% of West Bank and 42% of Gaza's households were unemployed. Obviously, the economic situation derives from the political one. The agricultural sector in this context is crucial for several reasons: unemployed workers expelled from Israel move back to working on their land, food security is an important issue and agriculture is associated with access to basic resources. It accounts for 11-20% of the Palestinian economy, employs approximately 15% of the formal workforce and up to 39% of the informal workforce and accounts for about 20% of exports. At least three fundamental constraints, related to political situation, affect the growth of agriculture sector: access to land, access to water and mobility.

3. The three main obstacles to the Palestinian agricultural economy: availability of land, mobility and access to water

3.1. Land

Since the Israeli-Palestinian Interim Agreement was signed in 1995, the West Bank has been divided into 3 areas:

- Area A: comprising all major population centers, under the full control of the PNA;
- Area B: comprising most rural villages, under Palestinian civil control and Israeli military control;
- Area C: approximately 60% of the West Bank, under complete Israeli control for both security and civil administration.

The territorial space of Areas A and B is not contiguous and consists of some 227 separate enclaves surrounded by Area C, the only contiguous area of the West Bank including most of the West Bank's key infrastructure. East Jerusalem was not classified as Area A, B or C in the Oslo interim agreement and its status was to be resolved in final status negotiations. The Palestinian Authority was expected to take control over an increasingly larger share of land but this process has been frozen since 2000. Especially in Area C, confiscation of land by the Israeli government was made possible by using the Ottoman Code that allowed the State to confiscate lands which had been left uncultivated for a three year period. In turn, confiscated land has frequently been allocated to Israeli settlers.

Since the military occupation took place in 1967, numerous settlements have been established in the West Bank. Israeli settler population is estimated to be around 461,000 people in 2007, concentrated in and around East Jerusalem and isolating Palestinians living there from the rest of the West Bank. Other settlements are located in various parts of Area C. Between 1987 and 2005 the settler population grew by over 150% and the land area controlled by settlements by more than 400%. Settlements often include also areas of economic activity. Indeed, there are about 20 Israeli industrial settlements in the West Bank

and many settlements also have cultivated agricultural areas in or around the settlements, thereby increasing settlers' control over land and restricting Palestinian access to it. This is especially the case in the Jordan Valley. In total, about 5.1% of the West Bank land area has been taken over by the settlers.

Meanwhile, the most recent route of the Separation Barrier, planned to be 709 km long, will close off approximately 10.2% of the West Bank. In addition, all land within 100m of the wall is off limits to Palestinians. The intrusive Barrier route also affects a far larger number of Palestinians, especially farmers, whose land and water resources are located between the Barrier and the Green Line. Since October 2003, Palestinians throughout the West Bank require a permit in order to reach and cultivate their land in the closed area. Restricted access has severely curtailed agricultural practice and undermined rural livelihoods. The enclosed areas include some of the most valuable agricultural land and access to some of the richest water resources in the West Bank, which has severely impacted Palestinian farmers.

3.2. Mobility

The issue of land is strongly related to the mobility issue and to restrictions on movement of people and goods within the West Bank and to the outside world. Israel controls movement inside and outside each of the 3 areas (A, B, C). A system of checkpoints, road closure and physical restrictions (about 600) constrains movement of people and goods within and outside the West Bank and dramatically limits West Bank/Gaza Strip trade and population movement. The territory is fragmented into ever smaller and more disconnected cantons. While physical impediments are the visible manifestation of closure, the means of curtailing Palestinian movement are actually far more complex and based on a set of administrative practices which limit the freedom of Palestinians to move their residence, obtain work, invest in businesses or construction and move about outside of their municipal jurisdiction.

To ensure that settlers can travel with relative ease and safety between the West Bank and Israel and between settlements, a system of segregated roads reserved for Israeli use has been developed. The impact of this road network on citizens' livelihood is relevant since it acts as a further barrier to movement and development. Land access and movement restrictions, especially in Area C, have been extremely harmful to the agricultural sector and to the welfare of farming families. The increasing number of walls, roadblocks and checkpoints has made it increasingly difficult for farmers to access their lands and markets. A consequence of the longer time required for journeys is that the costs of transporting goods has risen significantly.

Moreover, Palestinian farmers with agricultural land close to the settlements sometimes find these properties difficult to cultivate and harvest due to intimidation, violence or property damage by settlers. Furthermore, in some areas near to the settlements considered to be high friction areas, harvesting of olive orchards is limited to specific days designated by the Israeli military. As a result, a significant share of the agricultural land is withdrawn from production or shifted to lower value and less perishable crops, while hardly any infrastructure investment is carried out.

3.3. Water

Another factor strongly affecting Palestinian agriculture is the access to water. The average water supply to the Palestinian communities of the Occupied Territories is about 63 liters per capita per day in the West Bank. However, water supply significantly varies throughout the Territories but a second extremely relevant dimension of the water crisis is the low quality of water. This aspect regards particularly Gaza Strip but the situation is also difficult in the West Bank as all of the Palestinian the agricultural sector is characterized by an extensive and inappropriate use of pesticides and fertilizers and by and inadequacy of the sewage infrastructure.

Israel's domestic consumption of water per capita is over three times higher than the Palestinian's. Two thirds of the water comes from sources 'shared' with the Palestinians. Israelis and Palestinians share two interrelated water systems, but Israel prevents Palestinians from accessing water resources. Palestinians require a permit in order to drill new wells or fix existing ones. Permits go through eighteen stages of approval in various administrative departments. Furthermore, quotas limit the drawing of water from each well.

De facto, expropriations are frequently carried out by the establishment of military areas on natural reserves, especially in the Jordan Valley. Due to the physical barriers and restrictions described above, the price of water supplied by private tankers has increased dramatically. Lastly, all these constraints raise the cost of local food and reduce the competitiveness of the Palestinian agricultural sector. There has been a gradual increase in the wholesale prices index of different locally produced agricultural commodities, which raises the cost of living for all Palestinians and make extremely unfair for farmers competing with far cheaper Israeli imports.

4. Making Trade Fair in Northern Palestine

PARC (Palestinian Agricultural Relief Committees) is a leading Palestinian non-profit, non-governmental organization involved in rural development. PARC provides advice, awareness support, services and special consultancies for individuals, groups and institutions involved in similar domains. During the first Intifada (1987-1993), PARC started to publicize the concept of household economies and rural cooperatives. Meanwhile, it began distributing seedlings, seeds and sheep to poor and marginalized rural families who were facing the problems related to the spread of war and violence such as the curfew that strongly limited income generating activities.

After this early phase, PARC mainly focused on supporting self-production and production organization [the organization of production?]. In order to do so it started supporting cooperatives and groups in selling their products in Palestinian urban centers. In 1993, PARC's "Fair Trade Department" was established with the aim to better reach the international Fair Trade markets, to support farmers organized in cooperative and producing

different kind of products (eg., oil, almonds, dates). Members of those cooperatives were provided with the technical and logistical support needed to produce high quality agricultural products.

In fact, while PARC's commercial branch, called Al Reef, trades goods in the international markets and works on the pure commercial aspects, PARC supports farmers with a large number of services and initiatives. A first important activity is reclaiming land for farmers and building fences. Next, PARC is active in assisting rural poor with extremely relevant initiatives, both on private and public goods, such as the construction or renovation of storage capacity and of agricultural roads to reach the fields. Seeds and seedlings are distributed to families to be planted in the reclaimed lands and home gardens, the latter often established and developed by PARC for rural families. Services provided to coop members include financial assistance, training and consultancies by experts to improve quantity and quality or to convert the production to organic. Particular attention is devoted to the involvement of women, who are the main beneficiaries of training activities..

Our study was conducted in Northern Palestine and involved two different farmers' cooperatives working with PARC. The first one, the Akkaba Agricultural Society, is located in the village of Akkaba, between Tubas and Jenin and in 2009 had 85 members. It was founded in 2004 with three main objectives: (i) improve the production and productivity of associated farmers, (ii) improve the quality of products, and (iii) provide services (training, technical support to facilitate water access, etc.). Al Reef buys from this organization only almonds for the international market. The production of almonds was promoted by PARC through the free distribution of almond plants during the '90s in order to diversify farmers' sources of income, since most of them were producing only olives. Every member has to pay an annual fee of around US\$ 10. The requirements to become a member are (i) being aged over 18 and (ii) being a farmer cultivating land (owned, rented or teneted). There is no upper or lower limit to the size of cultivated land. In 2009 the production of almonds sold to Al Reef was over 9 tons.

The second organization involved in our study is the Co-operative Society For the Farmers Fruitful Trees. This cooperative is based in Seelah, west of Jenin, but involves farmers' communities in different villages located in the area between Jenin and the wall. Although it was founded in 2005, some groups of farmers were already involved in PARC's activities beforehand. There is no an annual fee but farmers are required to buy a share of capital for the value of US\$ 150. There are no restrictions on affiliation. In 2009 there were 97 members selling to Al Reef almonds (7 tons), olive oil and wheat (40 tons).

In both villages PARC has wisely encouraged the production of almonds which have witnessed an impressive growth throughout Palestine for four main reasons. First, almond trees survive without watering, albeit with a reduced productivity. Second, the production of almonds is relatively stable over time in comparison to olives which are subject to huge bi-annual fluctuations in the harvest (one year of high yield-high quality followed by one year of low yield-low quality). Third, almonds have a life cycle of around twenty years and become productive after three-four years, while olives require more than ten years in order to obtain

the first (unsatisfactory) harvest. Fourth, the current price for almond is high allowing for good profits from its sales. However, in the future this rapid increase in the supply might exert a downward pressure on the market price, partly neutralizing these efforts.

5. Dataset and summary statistics

The dataset consists of 227 randomly selected people (farmers?) interviewed in March 2010 in the villages and countryside around Akkaba, in Tubas area (village A) and Silatal-Harithiya and other nearby villages such as Zububa and Anin, in Jenin area (village B). People have been submitted an extensive survey with questions ranging from standard socio-demographic verification of land ownership, sources of income and sales channels (for the full questionnaire see the Appendix). The aim was to analyze the context in which the Fair Trade organization works, the standard of living of coop members, the problems farmers face in carrying out their agricultural activities and the degree of satisfaction for the price and sale conditions of members vs. non members.

Table 1 describes the variables used in the statistical analysis. Table 2 reports summary statistics for the full sample which has been stratified by village and coop membership. The number of interviewed people is roughly the same in the two villages and in the two groups of coop members and independent producers. While almost all members belonging to the two coops have been interviewed, independent producers have been randomly selected in the villages through snow ball and word of mouth techniques. Given that the population of the villages ranges between 3,000 and 14,000 people and that the average number of people per household is 5.75, it results that a significant share of the population has been (indirectly) included in the investigation.

The majority of farmers are married men with an average age of 52, ten years of schooling, slightly less than six children of whom, on average, almost one attends university. Although after the second intifada emigrating has become extremely difficult, on average people declare to have 0.38 sons living abroad. Therefore, remittances constitute a small, but not negligible, share of the total family income. Since the context is agricultural, houses are usually built by farmers (79% of cases), inherited (19%), or rented (2%), sales being inexistent. For these reasons, and given the average family size, houses are quite big (131 squared meters) and often get expanded over time (20% of the sample between 1975 and 2009), eventually to host the sons once they get married.

While in some other contexts, like for example Africa, food has been shown to be an issue, this is not the case in the West Bank. On average farmers declare to have fish and meat respectively two and eleven times per month, the lower frequency for the first item being due to the distance from the coast and the frequent and long queues at the checkpoints by the Israeli army. On average every family farms 44 dunums of land (1 dunum=0.1 hectare): the majority is inherited, but renting and tenancing are very frequent. Usually rents are based on an annual fee to be paid cash irrespectively of the economic result, while tenancing implies that the farmer has to pay a share of the harvest, usually 50% if the trees have been

planted by the owner and 30% otherwise. The average monthly family income is 5,580 shekels, around 1,116 euros, 62% of which from agriculture. A big share of interviewed people had (one of) the following additional sources of income: second job, income of other family members living in the house, remittances, pensions, etc.

The price paid to farmers is an important, although non fundamental nowadays, element of Fair Trade. Table 3 shows means and confidence intervals for the three goods traded by PARC. Due to the scarcity and consequent high cost of water, farmers have specialized in the production of goods which do not require watering, like olives, cereals and, especially over the last decade, almonds. These items can be sold to PARC, local (Palestinian), Israeli and foreign buyers. Nobody sells to Israeli importers and only two people sell almonds and olives to foreign buyers. The majority of people declare to sell to PARC or to local buyers, the higher relevance of the latter for olives being due to the fact that in the first village PARC buys only almonds. For all the three goods Fair Trade prices paid by PARC are higher than those paid by local traders, the difference being statistically significant at 5% level.

Table 4 shows means and confidence intervals for selected variables in the subsamples composed by people living in village A and B. The first village is farther away from the wall and has a (relatively) lower population density; this increases the average number of dunums available for cultivation and the agricultural and total income, which in turn has an important effect on the perception of “job stress”, which is much higher in the second village. As to the consequences of the Israeli occupation, most people declared one or more types of damages. On average, the second village, which is very close to the wall and subject to severe restrictions, suffered the most, especially with respect to damages to plantations (17% of interviewees), confiscated land (26%) and scarcity of water (32%). In the first village farmers suffered especially because of damages to the working tools (60%) and check-points which slow down the transportation of people and goods (97%).

Table 5 repeats the exercise by splitting the sample in members and independent producers. Coop members cultivate on average more land, irrespective of the ownership status (inherited, bought, rented or tenanted). This makes their share of income from agricultural activities higher than that of independent producers (61% against 46%). However, it must be noted that the value of sales from agriculture is higher for independent producers even if the number of cultivated dunums is lower. There are two reasons for this unexpected finding. First, many independent farmers have highly productive greenhouses which require watering and are therefore a proxy for higher wealth, which is confirmed by the higher income from other (non-agricultural) activities. Second, a significant share of members joined the cooperative to participate to PARC's almonds program (trees, training and services for free). Thus, some units will become productive in the next years downward biasing the average values. Workers' salaries are similar in the two subsamples while the number of training days attended last year is much higher among members, thanks to PARC's active support. Finally, sale conditions in terms of price, price stability, seller reliability and punctuality of payments are perceived to be better among members, the difference being statistically significant at 5% level.

6. Regression analysis

Tables 6 and 7 report econometric results on the determinants of satisfaction with respect to sale conditions in four different domains: price, price stability, seller reliability and punctuality of payments. The purpose is to isolate the effect of FT coop membership from the other confounding elements which affect the judgment. The variable of interest here is the dummy equal to 1 if the respondent is a member: if, everything else being equal, this variable turns out to be positive and significant, this means that Fair Trade affiliation has a positive effect on sale conditions which cannot be ascribed to other elements (e.g. the total income, the number of cultivated dunums or the type of good produced).

For each of the four dependent variables we run, as robustness checks, three different specifications. In the first we include the number of dunums devoted to the cultivation of almonds, olives, wheat and other goods. In the second we replace this variable with the percentage of land devoted to the four items: in order to avoid perfect multicollinearity we dropped the percentage devoted to wheat which is the base for the estimate. In the third we insert the total production of almonds (kg), olive oil (lt) and wheat (kg). In this specification we could not include also the other activities which are of several different types and are impossible to aggregate.

Results are always consistent and show that, net of other confounding elements, coop membership has a strong, positive and robust effect on farmers' satisfaction with sale conditions. The variable "member" is always positive and significant at 1% level. Years of education have a positive impact on the satisfaction with seller reliability and punctuality of payments, but not on that with price and price stability. Thus, more educated people seem to understand that the advantages of Fair Trade go well beyond the mere price. This aspect should be promoted by Fair Trade organizations to stimulate awareness among their members.

Next, producing olives has a better effect than almonds: given the strong investment in almond plantations in the region and PARC's effort to support the change, this is quite surprising. Finally, damages from the Israeli occupation affect the satisfaction with sales conditions either psychologically or economically. In the first case interviewed people who suffered the loss of relatives or other economic damages might display lower life satisfaction. This, in turn, might negatively affect the declared satisfaction with respect to a number of other domains, like for example the sales conditions. In the second case farmers could be unsatisfied not because of the unfavorable conditions, but rather because they need to recuperate the previous standard of living. Looking at the regressions, the only variable exerting a strong negative effect is the damages from curfews, while damages with respect to relatives dead have a negative effect only on the satisfaction with the price levels.

4. Conclusions

Our study puts in evidence how farmers involved in Fair Trade production and commercial

chain are more satisfied with respect to price level, price stability, seller reliability and punctuality of payments. Moreover, association to the Fair Trade network sets the conditions for the improvement of living conditions of the families involved in the process by giving them the possibility to start new cultivations, such as almonds, and be trained to elevate productivity and quality.

Most people have a second source of income and are not “pure” farmers. Consequently the share of income due to Fair Trade is limited and it will be crucial in the future to elevate sales (and relative buying) to obtain greater impact with wealth variables connected to higher income. However, in a context where doing business is extremely difficult due to the political and military situation and where international aid contributes to large part of investment in West Bank, Fair Trade partnerships are a key instrument to promote a more sustainable and self-owned development model for Palestinian people. A model where, even in a hard occupation context, future steps toward a better life are not only linked to external aid but depend on Palestinian working hands and on their products.

Table 1: Description of the variables used

Variable	Description
Village A	DV=1 if the respondent lives in Zababde
Member	DV=1 if the respondent is a coop member
Female	DV=1 if the respondent is female
Age	Age (years)
Education	Education (years)
Married	DV=1 if the respondent is married
People in the house	Number of people currently living in the house
Nr. of children	Number of children
Sons at university	Nr. of sons attending (or attended) university
Nr. of emigrated sons	Number of emigrated sons
House built	DV=1 if the respondent built his house
House inherited	DV=1 if the respondent inherited his house
House rented	DV=1 if the respondent is renting his house
Squared meters	Size of the house in squared meters
Additional sq.m.	Additional sq. m. when the house was expanded
House expansion year	Year of house expansion
Meat monthly	Meat consumption: number of times per month
Fish monthly	Fish consumption: number of times per month
Land inherited	Number of dunums of inherited land
Land bought	Number of dunums of bought land
Land rented	Number of dunums of rented land
Land tenanted	Number of dunums of tenanted land
Dunum almonds	Number of dunums cultivated with almonds
Dunums olives	Number of dunums cultivated with olives
Dunums wheat	Number of dunums cultivated with cereals
Dunums other	Number of dunums devoted to other activities
Dunum almonds %	Percentage of land devoted to almonds
Dunums olives %	Percentage of land devoted to olives
Dunums wheat %	Percentage of land devoted to cereals
Dunums other %	Percentage of land devoted to other activities
Prod: almonds (kg)	Almonds production in kg
Prod: olive oil (lt)	Olive oil production in liters
Prod: wheat (kg)	Wheat production in kg
Monthly sales	Monthly sales of agric. products in shekels
Monthly sales to PARC	Monthly sales of agric. products in shekels to PARC
Total monthly income	Total monthly income in shekels
Share of agricultural income	Percentage of total income from agricultural activities
Salary: perm. worker	Daily salary of a permanent worker
Salary: temp. worker	Daily salary of a temporary worker

(cont.)

(cont.)

Variable	Description
Job satisfaction	Job satisfaction from 0 (min) to 10 (Max)
Job stress	Job stress from 0 (min) to 10 (Max)
Nr. of training days	Number of training days attended last year
Sale cond: price	Satisfaction with price of agric. products from 0 (min) to 10 (Max)
Sale cond: price stability	Satisfaction with price stability of agric. products from 0 (min) to 10 (Max)
Sale cond: seller reliability	Satisfaction with seller reliability from 0 (min) to 10 (Max)
Sale cond: punctuality of paym.	Satisfaction with punctuality of payments from 0 (min) to 10 (Max)
Dam: person dead	DV=1 if the damage from the occupation included people killed
Dam: person injured	DV=1 if the damage from the occupation included people injured
Dam: house	DV=1 if the damage from the occupation included the house
Dam: working tools	DV=1 if the damage from the occupation included the working tools
Dam: plantation	DV=1 if the damage from the occupation included the plantations
Dam: confiscated land	DV=1 if the damage from the occupation included confiscated land
Dam: scarcity of water	DV=1 if the damage from the occupation included the scarcity of water
Dam: transportation	DV=1 if the damage from the occupation included transportation
Dam: curfews	DV=1 if the damage from the occupation included curfews

Table 2: Descriptive statistics: full sample

Variable	Obs	Mean	Std. Dev.	Min	Max
Village A	227	0.54	0.50	0	1
Member	225	0.48	0.50	0	1
Female	225	0.01	0.09	0	1
Age	224	52	12	22	78
Education	225	10	4	0	18
Married	225	0.97	0.16	0	1
People in the house	223	5.75	2.61	2	20
Nr. of children	225	5.77	3.04	0	15
Sons at university	227	0.96	1.40	0	7
Nr. of emigrated sons	165	0.38	0.95	0	7
House built	225	0.79	0.41	0	1
House inherited	225	0.19	0.39	0	1
House rented	225	0.02	0.15	0	1
Squared meters	224	131	49	50	350
Additional sq.m.	45	72	37	20	200
House expansion year	47	1,999	7	1,975	2,009
Meat monthly	227	11.38	8.48	0	30
Fish monthly	227	2.13	1.74	0	12
Land inherited	222	24	29	0	162
Land bought	222	3	8	0	50
Land rented	222	6	20	0	195
Land tenanted	222	12	58	0	823
Monthly sales	225	3,456	4,451	0	19,879
Total monthly income	225	5,580	5,258	0	41,000

Table 3: Price conditions, FT vs. other channels

Variable	Obs	Mean	[95% Conf.	Interval]
Almonds				
PARC	68	20.93	20.72	21.14
Local buyer	67	18.98	18.08	19.88
Israeli buyer	0	.	.	.
Foreign buyer	1	20.50	.	.
Olives				
PARC	15	33.07	31.55	34.58
Local buyer	108	30.25	29.51	31.00
Israeli buyer	0	.	.	.
Foreign buyer	1	30.00	.	.
Wheat				
PARC	6	2.10	1.69	2.51
Local buyer	50	1.31	1.26	1.36
Israeli buyer	0	.	.	.
Foreign buyer	0	.	.	.

Table 4: Means and confidence intervals for the two villages

Variable	Village A				Village B		
	Obs	Mean	[95%	C.I.]	Obs	Mean	[95%
Member	122	0.55	0.46	0.64	103	0.39	0.30
Nr. of children	122	6.20	5.66	6.75	103	5.26	4.72
Sons at university	89	0.29	0.21	0.36	76	0.37	0.28
Nr. of emigrated sons	88	0.26	0.12	0.40	77	0.52	0.37
Land inherited	119	33.14	27.10	39.19	103	13.65	10.00
Land bought	119	2.44	1.05	3.83	103	2.89	1.44
Land rented	119	9.21	4.44	13.98	103	1.28	-0.01
Land tenanted	119	20.65	6.36	34.93	103	1.00	0.00
Monthly sales	122	5,665	450	4,775	103	839	100
Monthly sales to PARC	122	857	604	1,111	103	362	100
Total monthly income	122	7,321	6,329	8,312	103	3,517	2,500
Job satisfaction	121	7.20	6.83	7.56	103	6.51	6.14
Job stress	121	4.07	3.52	4.61	103	6.99	6.52
Dam: person dead	122	0.01	-0.01	0.02	103	0.01	-0.01
Dam: person injured	122	0.09	0.04	0.14	103	0.05	0.00
Dam: house	122	0.01	-0.01	0.02	103	0.10	0.00
Dam: working tools	122	0.60	0.51	0.69	103	0.08	0.00
Dam: plantation	122	0.00	0.00	0.00	103	0.17	0.00
Dam: confiscated land	122	0.01	-0.01	0.02	103	0.26	0.00
Dam: scarcity of water	122	0.07	0.02	0.11	103	0.32	0.00
Dam: transportation	122	0.97	0.94	1.00	103	0.86	0.80
Dam: curfews	122	0.98	0.95	1.00	103	0.39	0.30

Table 5: Means and confidence intervals for members and non members

Variable	Member				Non member		
	Obs	Mean	[95%	C.I.]	Obs	Mean	[95%
Nr. of children	107	6.35	5.68	7.01	118	5.25	4.80
Sons at university	78	0.35	0.27	0.44	87	0.30	0.22
Nr. of emigrated sons	79	0.39	0.19	0.60	86	0.37	0.10

Land inherited	105	27.04	21.03	33.04	117	21.46	16.7
Land bought	105	3.81	2.04	5.58	117	1.61	0.5
Land rented	105	6.72	1.96	11.49	117	4.46	1.6
Land tenanted	105	18.01	1.88	34.14	117	5.71	3.1
Dunum almonds %	107	0.38	0.32	0.43	118	0.32	0.2
Dunums olives %	107	0.48	0.42	0.54	118	0.52	0.4
Dunums wheat %	107	0.11	0.08	0.15	118	0.11	0.0
Dunums other %	107	0.03	0.01	0.05	118	0.05	0.0
Monthly sales	107	3,374	2,582	4,166	118	3,530	2,66
Monthly sales to PARC	107	1,269	981	1,556	118	51.66	-11.7
Total monthly income	107	5,014	4,111	5,918	118	6,092	5,05
Share of agricultural income	105	0.61	0.53	0.68	116	0.46	0.3
Job satisfaction	107	7.16	6.80	7.52	117	6.63	6.2
Job stress	107	4.97	4.34	5.60	117	5.81	5.3
Salary: perm. worker	1	50.00	.	.	1	55.00	.
Salary: temp. worker	36	50.28	48.56	51.99	22	49.32	47.3
Nr. of training days	107	5.66	3.90	7.43	118	1.37	0.8
Sale cond: price	92	7.55	7.13	7.98	94	6.46	6.0
Sale cond: price stability	92	6.39	5.91	6.87	94	5.02	4.7
Sale cond: seller reliability	92	7.88	7.48	8.27	94	6.45	6.0
Sale cond: punctuality of paym.	92	7.37	6.92	7.82	94	5.81	5.2

Table 6: Determinants of price satisfaction

Variable	Sale cond: price			Sale cond: price stability		
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
Member	1.419341 (3.75)	1.074228 (2.80)	1.3977925 (3.72)	1.7336589 (4.78)	1.3237842 (3.74)	1.6758188 (4.45)
Age	0.0349251 (1.80)	0.01392099 (0.66)	0.02799277 (1.46)	0.00507209 (0.24)	-0.01225183 (-0.61)	0.00175817 (0.09)
Education	0.08176185 (2.22)	0.06240876 (1.61)	0.05033478 (1.36)	0.02835463 (0.71)	0.01405345 (0.33)	0.0063491 (0.16)
Nr. of people in house	0.02079683 (0.21)	-0.00426183 (-0.04)	0.0366724 (0.35)	-0.01399207 (-0.14)	-0.01879211 (-0.20)	0.0008019 (0.01)
Nr. of sons at university	-0.19119046 (-1.36)	-0.14134677 (-1.00)	-0.1012086 (-0.69)	-0.04705244 (-0.35)	-0.00404981 (-0.03)	0.01132594 (0.08)
Squared meters	-0.00644573 (-1.53)	-0.0008962 (-0.25)	-0.00532187 (-1.40)	0.00081457 (0.18)	0.00634153 (1.61)	0.00131554 (0.32)
Other income	0.00008399 (2.56)	0.00005896 (1.92)	0.00007722 (2.48)	0.00005306 (1.44)	0.00002276 (0.67)	0.00004374 (1.28)
Share from agriculture	0.94820768 (1.39)	1.210967 (1.45)	0.58650132 (0.77)	1.4272891 (1.82)	1.5068418 (1.84)	1.0181791 (1.16)
Dunums olives	0.00649841 (2.83)			0.00704595 (3.11)		

Dunums almonds	-0.0054066 (-4.58)		-0.0114948 (-1.92)	
Dunums wheat	-0.0027449 (-0.38)		-0.00900398 (-1.04)	
Dunums other	-0.01120111 (-3.92)		-0.02846535 (-1.56)	
Dunums almonds %		0.17677719 (0.22)		0.43621815 (0.66)
Dunums olives %		1.4183038 (1.68)		1.8715259 (2.39)
Dunums other %		-3.8459575 (-1.97)		-4.8293075 (-3.02)
Prod: almonds (kg)		0.000033 (0.46)		0.00002873 (0.32)
Prod: olive oil (lt)		0.00027114 (3.29)		0.00022068 (2.83)
Prod: wheat (kg)		-0.00003722 (-1.45)		-0.0000659 (-2.91)

(cont.)

(cont.)

Variable	Sale cond: price			Sale cond: price stability		
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
Dam: person dead	-4.5005434 (-2.92)	-4.8460804 (-3.80)	-3.2428136 (-2.42)	0.42791776 (0.22)	-0.15624019 (-0.09)	1.0638373 (0.66)
Dam: person injured	-0.85791193 (-1.47)	-1.3177622 (-1.81)	-1.015569 (-1.69)	-0.80731942 (-1.27)	-1.1997368 (-1.73)	-0.9681209 (-1.50)
Dam: house	-1.6229586 (-1.05)	-1.243132 (-0.95)	-0.67809999 (-0.45)	-1.1860236 (-0.86)	-0.83659357 (-0.68)	-0.36880282 (-0.29)
Dam: working tools	0.47338803 (1.39)	0.1203918 (0.35)	0.37642467 (1.11)	0.79102778 (2.16)	0.4513624 (1.26)	0.65248638 (1.71)
Dam: plantations	1.2906995 (0.88)	0.33291603 (0.27)	0.31021182 (0.22)	0.41517076 (0.31)	-0.76680276 (-0.69)	-0.49335348 (-0.40)
Dam: confiscated land	0.30916421 (0.38)	0.15658684 (0.23)	0.32873441 (0.41)	-0.09892423 (-0.15)	-0.19279488 (-0.32)	-0.019765 (-0.03)
Dam: scarcity of water	0.52524135 (0.58)	1.44387 (1.74)	0.4461116 (0.51)	-0.14037866 (-0.16)	0.9148085 (1.20)	-0.12875222 (-0.17)
Dam: transportation	1.8272526 (1.95)	1.4470812 (1.64)	1.2985191 (1.38)	1.1450652 (1.18)	0.82733236 (1.04)	0.42938174 (0.45)
Dam: curfew	1.5509496	1.2551484	1.4866642	2.0721369	1.8447123	1.8804473

	(1.67)	(1.76)	(1.75)	(2.98)	(2.91)	(2.78)
Village A	-0.57267352	0.18706979	-0.68423048	-2.0605823	-1.4703089	-2.0838799
	(-0.70)	(0.27)	(-0.84)	(-2.97)	(-2.44)	(-2.93)
N	182	182	182	182	182	182
Pseudo R2	0.1319	0.1348	0.1164	0.1279	0.1301	0.0953

Legend: Results are from Ordered Logit regressions with robust standard errors. T-statistics are in brackets.

Table 7: Determinants of satisfaction with the seller's behavior

Variable	Sale cond: seller reliability			Sale cond: punctuality of payments		
	(vii)	(viii)	(ix)	(x)	(xi)	(xii)
Member	1.1774 (3.25)	1.2105049 (3.25)	1.228852 (3.35)	1.3607226 (3.51)	1.339585 (3.52)	1.4081682 (3.72)
Age	0.01170607 (0.63)	0.00559743 (0.29)	0.01291188 (0.62)	0.027108 (1.39)	0.02178145 (1.09)	0.0306052 (1.64)
Education	0.08916402 (2.62)	0.0596647 (1.71)	0.08154368 (1.93)	0.11599484 (3.25)	0.09329125 (2.38)	0.10334461 (2.54)
Nr. of people in house	-0.01343062 (-0.15)	-0.00239448 (-0.03)	-0.01247084 (-0.14)	0.04960295 (0.42)	0.05547629 (0.51)	0.05500503 (0.50)
Nr. of sons at university	-0.12355392 (-0.97)	-0.09825025 (-0.76)	-0.10583166 (-0.83)	-0.22700805 (-1.72)	-0.20712454 (-1.45)	-0.2080576 (-1.45)
Squared meters	0.00584321 (1.20)	0.00569228 (1.19)	0.004585 (0.92)	-0.00197686 (-0.37)	-0.00310874 (-0.61)	-0.0035217 (-0.63)
Other income	-0.00002302 (-0.71)	-0.00003888 (-1.09)	-0.00001715 (-0.45)	0.00003523 (1.22)	0.00001955 (0.57)	0.0000363 (1.23)

Share from agriculture	1.1746315 (1.76)	0.37681587 (0.57)	0.89516042 (1.17)	1.2481779 (1.89)	0.59814322 (0.83)	0.78256909 (1.08)
Dunums olives	-0.00816261 (-3.29)			-0.00330845 (-1.83)		
Dunums almonds	0.00428734 (2.23)			0.00295866 (1.40)		
Dunums wheat	-0.00698717 (-1.04)			0.0010247 (0.13)		
Dunums other	-0.00633895 (-2.24)			-0.0415672 (-2.23)		
Dunums almonds %		1.6495038 (2.09)			0.27811554 (0.34)	
Dunums olives %		2.2138736 (2.60)			1.2281319 (1.42)	
Dunums other %		0.70465512 (0.29)			-1.1687947 (-0.65)	
Prod: almonds (kg)			-0.00003399 (-0.41)			-0.0000226 (-0.29)
Prod: olive oil (lt)			-0.00012541 (-0.63)			-6.34E-06 (-0.06)
Prod: wheat (kg)			-0.00004843 (-1.58)			-0.0000359 (-0.85)

(cont.)

Variable	Sale cond: seller reliability			Sale cond: punctuality of payments		
	(vii)	(viii)	(ix)	(x)	(xi)	(xii)
Dam: person dead	-5.5925901 (-1.53)	-4.8235678 (-1.52)	-4.7284261 (-1.36)	-1.8175401 (-0.41)	-1.3999501 (-0.37)	-0.97159323 (-0.27)
Dam: person injured	-0.21397308 (-0.36)	-0.52345385 (-0.83)	-0.52146762 (-0.78)	-0.82958932 (-1.25)	-1.1058769 (-1.51)	-1.072812 (-1.49)
Dam: house	-0.47390139 (-0.39)	0.26589471 (0.24)	0.17445944 (0.13)	-1.1493805 (-1.12)	-0.65801627 (-0.70)	-0.58262871 (-0.54)
Dam: working tools	0.52604272 (1.43)	0.48934191 (1.30)	0.44321049 (1.20)	0.82973014 (2.15)	0.69421089 (1.84)	0.73888961 (1.77)
Dam: plantations	0.47328656 (0.28)	-0.26728804 (-0.18)	-0.0086752 (0.01)	0.49730703 (0.42)	-0.24732267 (-0.22)	0.06244255 (0.05)
Dam: confiscated land	-0.33430505 (-0.48)	-0.47429429 (-0.74)	-0.2732488 (-0.39)	-0.46435878 (-0.73)	-0.59198523 (-1.01)	-0.40867943 (-0.66)
Dam: scarcity of water	1.359578	1.4572899	1.0416555	1.0183283	1.2107866	0.70698714

	(1.33)	(1.39)	(0.99)	(1.19)	(1.28)	(0.86)
Dam: transportation	0.38606242	0.40855243	0.25618644	0.72609245	0.86646618	0.63525224
	(0.39)	(0.41)	(0.26)	(0.99)	(1.11)	(0.81)
Dam: curfew	1.4596046	1.7175435	1.5285253	2.0612474	2.0550462	2.0105824
	(2.23)	(2.58)	(2.27)	(3.52)	(3.43)	(3.38)
Village A	0.32453977	0.47308739	0.45056421	-0.70765238	-0.53475103	-0.64235888
	(0.47)	(0.63)	(0.61)	(-1.07)	(-0.80)	(-0.94)
N	182	182	182	182	182	182
Pseudo R2	0.1312	0.1234	0.1159	0.1325	0.1145	0.1059

Legend: Results are from Ordered Logit regressions with robust standard errors. T-statistics are in brackets.