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Full Research Article

The impact of assistance on poverty and food security in a fragile and protracted-crisis context: the case of West Bank and Gaza Strip

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Abstract. This paper assesses the impact of assistance on the wellbeing of Palestinian households. The impact evaluation analysis uses a difference-in-difference approach for the treatment of sample selection bias. The paper uses data from the 2013 and 2014 rounds of the Palestinian Socio-Economic and Food Security survey to estimate the impact of assistance to West Bank and Gaza Strip (WBGS) households on their poverty and food security status. Results suggest that both poverty and food insecurity would have been much higher for WBGS as a whole without assistance, further increasing in areas with lower levels of assistance. However, the average positive impact of assistance hides a lot of heterogeneity. In fact, while there is a clear positive impact of the intensity of assistance on poverty reduction, food consumption and diet diversity in the West Bank, Gaza Strip analysis shows mixed results. Results highlight how the international community cannot disengage from supporting Palestinian households without severely impacting their wellbeing.

Keywords. Poverty, food security, impact analysis, West Bank and Gaza Strip.

JEL codes. Q18, I32.

1. Introduction

The relationship between foreign assistance[2] and development is one of the most debated topics in development policy. Since World War II, the debate shifted from discussing the rationale for mobilizing foreign resources to boost economic growth (Chenery and Bruno, 1962; Chenery and Strout, 1966; Lal, 1972), to assessing the impact of aid on

[1] The views expressed in this paper are those of the author(s) and do not necessarily reflect the views of the Food and Agriculture Organization of the United Nations.

[2] Foreign assistance is a broad term for any voluntary transfer of resources from one government, international organization, or NGO to a recipient country, usually a developing country. It encompasses loans (both soft or hard) and grants as well as in-kind transfers and technical assistance. The paper uses "foreign assistance" interchangeably with the term "foreign aid".

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economic growth and poverty reduction (Bauer and Yamey, 1982; Cassens & Ass., 1986; Krueger, 1986; Mosley, 1987; Collier and Dollar, 2001 and 2002), and subsequently to generating evidence in order to better design interventions and enhance aid effectiveness (Burnside and Dollar, 2000; Hansen and Tarp, 2001).

More recently, increasing attention has been devoted to assessing the effectiveness of assistance delivered in fragile contexts.[3] This shift was driven by empirical evidence suggesting that natural, economic and political risks are rising across the world (World Bank, 2011; Zseleczky and Yosef, 2014), as well as by the rapidly growing literature on fragile states (Ipke, 2007; Kaplan, 2008; Zoellick, 2008; Baliamoune-Lutz and McGillivray, 2008; Stewart and Brown, 2009; Andrimihaja *et al.*, 2011; Chandy, 2011; Naudé *et al.*, 2011). The key question here is whether aid can deliver its expected results within fragile/conflict contexts. The literature shows mixed empirical evidence (Dollar and Levin, 2006; Fielding and Mavrotas, 2008; Ishihara, 2012; Chandy *et al.*, 2016). As a result, many practitioners, policymakers, and even laypeople express mounting concern for the poor development records within fragile country contexts. This implies a need to develop new approaches that explicitly address fragility pathways to insecurity when designing development and humanitarian assistance strategies in fragile/conflict contexts (OECD, 2007; EU Commission, 2009; World Bank, 2011).[4]

This paper contributes to the empirical literature on the impact of assistance in fragile contexts by adopting a microeconomic perspective. It aims to estimate the impact of assistance intensity on household wellbeing proxied by two outcome dimensions, poverty and food security. We adopt a counterfactual framework using a difference-in-difference approach to address sample selection bias as well as instrument variable econometric modeling to get rid of endogeneity problems where appropriate (e.g. poverty reduction).

The empirical application focuses on the specific fragile, protracted-crisis context of the West Bank and Gaza Strip (WBGS) as a case study. This specific region was chosen for several reasons. WBGS has been among the highest per-capita recipient of official development assistance worldwide (World Bank, 2019) and it is also experiencing one of the longest contemporary conflict in the world. The majority of Palestinians living under occupation would be unable to meet their own bare necessities since both humanitarian and development interventions in WBGS are largely financed by foreign assistance. Indeed, the pledge for humanitarian assistance, amounting to USD 540 million in 2018 (OCHA, 2017a), is completely financed by foreign resources. Similarly, the share of for-

[3] There is no universally accepted definition of fragility. Instead of trying to stringently define fragility, OECD (2015) identifies fragile contexts according to a multi-dimensional framework that helps reveal different patterns of vulnerability in a given country. The five fragility "clusters" considered by OECD are the following: widespread violence, limited justice, ineffective and unaccountable institutions, weak economic foundations, and low resilience to shocks and stressors. These characteristics substantially impair the fragile country's economic performance, the delivery of basic social services, and the efficacy of donor assistance.

[4] This was explicitly considered by the so-called "New Deal for Engagement in Fragile States" announced at Busan in 2011. This deal identified five "Peace-building and State-building Goals": legitimate politics, security, justice, economic foundations, and revenues and services (https://www.pbsbdialogue.org/en/). It also considered in the United Nation's "New Way of Working", (https://www.un.org/jsc/content/new-way-working) within which humanitarian, development and peace actors are called to work together to pursue collective outcomes over multiple years to overcome the traditional divide between humanitarian and development interventions. This is at the core of the so-called "Triple nexus", which aims to integrate the humanitarian, development and peace aspects of interventions.

eign support in 2018 accounted for as much as 48% of total development expenditure, a sum roughly equal to USD 381 million (IMF, 2018).

Between 2007-2016, the yearly average total of aid received amounted to more than 2.3 billion USD per year or 23% of Palestinian GDP (WDI, 2018). Despite such large aid inflows, the Palestinian GNI per capita is still around USD 3,180 (WDI, 2018), qualifying WBGS as a lower-middle income country. Similarly, the Palestinian HDI is 0.686, placing WBGS 119th out of 189 countries and territories (UNDP, 2018). According to the humanitarian needs assessment (OCHA, 2018), some 2.5 million people are in need of assistance on a total population of 4.95 million and 1.9 million people are targeted by humanitarian interventions. In factIn light of this, data released by the Palestinian Central Bureau of Statistics (PCBS) regarding the 2013 and 2014 Socio-Economic and Food Security (SEFSec) survey data (FSS-PCBS, 2016) — designed for the first time as a panel — offers a unique opportunity to assess the impact of assistance on household poverty and food security in WBGS. It is important to note that from 2013 to 2014, the period in which the data was collected, the region faced persistent occupation as well as an open-arm conflict in the Gaza Strip occurring from July 2014 to August 2014.

To conduct the aforementioned analysis, the paper is organized in the following way: Section 2 reviews the literature on aid and development, looking at both theoretical arguments and empirical results. Section 3 introduces the Palestinian context and provides an overview of assistance to Palestinian households. Section 4 analyzes Palestinian households' profiles in terms of poverty and food security at the beginning of the period of analysis. Section 5 describes the data and methods used in the impact evaluation. Section 6 discusses the results of the impact evaluation analysis. Finally, Section 7 summarizes main findings and discusses policy implications.

2. Foreign Assistance and Development: An Introduction

Foreign assistance can be traced back to the colonial period. At the time, European powers provided large amounts of money to their colonies, typically to improve infrastructure, with the ultimate goal of increasing economic output. The use of foreign assistance as it is known today — as an instrument to help poor countries improve living standards — came into existence only after World War II (Thorbecke, 2000). The emergence of a new economic order and the founding of international organizations (such as the United Nations, the IMF, and the World Bank) following WWII shaped foreign aid to become what it is today. The success of the Marshall Plan, the US-sponsored package implemented between 1948 and 1953 to rehabilitate the economies of Western and Southern European countries, showed that capital transfers alongside technical assistance could effectively spur growth so that targeted economies were able to surpass their pre-war economic levels by 1952.

Aid to developing countries today is more complex. Its use is determined by several intertwined motives, including altruism, access to markets and resources, geopolitics, and colonial legacies. The impact of foreign assistance to developing countries is mixed, with success stories in various South East Asian countries but also numerous failures in Sub-Saharan countries (Kanbur, 2000).

Foreign aid is thought to have helped poor countries raise income per-capita growth rates, in some cases converging with high-income countries, successfully lifting large seg-

ments of the population out of poverty. However, this is difficult to establish unequivocally. There are two major difficulties when analyzing the relationship between foreign assistance and development. Firstly, there are issues with different theoretical frameworks–macro as well as micro–that provide the rationale for foreign aid interventions. Secondly, empirical studies lack conclusive evidence, making it hard to identify causal links between aid and development outcomes. Indeed, there is a large gap between aid achievements at the micro and macro levels, with greater difficulties in establishing causalities at the macro/country level compared to the micro/project level. This is the so-called "micro-macro paradox" (Mosley, 1987). As a consequence, the effectiveness of aid in the promotion of development is often uncertain and controversial, with personal opinions often deeply founded in ideology.

The consequence is an ongoing debate regarding best practices in the provision of foreign assistance aptly named the "aid debate".[5] Positions on the matter range from strong believers in the potential effectiveness of foreign aid who advocate for even more aid (Sachs, 2005), to deep skeptics stressing the importance of experimentation and learning from past mistakes (Easterly, 2006). Along this spectrum lie pragmatists who support peace and the use of a broad set of instruments (Collier, 2007) as well as opponents endorsing anti-corruption practices to increase aid effectiveness (Moyo, 2009). Finally, the aid debate also includes scholars who argue for the reduction of damaging OECD trade policies in agriculture, increased provision of technical assistance regarding institution building, an increase in investment devoted to fighting diseases and improving agricultural technology in tropical environments, and greater support for institutional reforms that favor secure property rights, the rule of law, and a reduction in arms sales to developing countries (Deaton, 2013).

2.1 Macroeconomic perspective

The most important theoretical arguments in support of foreign aid as an effective strategy to boost growth and catch-up to rich countries are rooted in Keynesian growth models. The Harrod-Domar model (Domar, 1957) provides theoretical background for growth in developing country contexts by identifying savings rate and choice of technique (via the incremental capital-output ratio, or ICOR) as the two determinants of a country's growth rate. The policy implications the model suggests for accelerating growth are clear: raise the savings rate (i.e. promote savings through stronger financial institutions) and lower the ICOR (i.e. increase the marginal productivity of capital through better technology). This is where foreign aid transfers come in. Using these transfers for investment can fill domestic saving gaps in developing countries, thus providing a "Big Push" to kick-off economic growth (Rosenstein-Rodan, 1943).

A popular extension of the Harrod-Domar model devised in the 1960s in Latin America defined two kinds of capital goods used in production. The first kind are capital goods of domestic origin, such as buildings financed by domestic savings, while the other

[5] Foreign aid has throughout its history been subjected to close scrutiny both by academic researchers and others (Dethier, 2008). A large literature extending over several decades bears witness to this, and the boundary between policy advocacy and research has not always been clearly delineated.

kind are of foreign origin, such as imported intermediate goods and machinery paid for using foreign savings. If the two forms of capital are in fixed proportion, then the scarcest of the two types of savings will always be binding. This is the core of the "two-gap model" (Chenery and Bruno, 1962; Chenery and Strout, 1966). Foreign aid that increases foreign savings can effectively increase growth with enough domestic savings, despite a deficit of foreign exchange. However, foreign aid cannot translate to growth if there is a deficit of domestic savings even if an economy has enough foreign exchange to acquire necessary amounts of imported capital goods.

Subsequent developments are based on new growth theory, which endogenously explains productivity growth by extending the above paradigm with an analytical basis for empirical cross-country studies (Robinson and Tarp, 2000). The underlying causal chain runs from aid to savings, from savings to investment, and finally from investment to growth. In the new growth theory approach, investment and productivity variables are assumed to depend on policy and institutional variables.

Usually, the effectiveness of aid has been empirically tested using country-level macro data, with aggregated aid as a single resource. Such tests examined whether more aid lead to better outcomes, in particular whether more aid lead to higher growth. It is no surprise that reduced-form analysis shows tenuous links between aid and development outcomes, since aid is often advanced for non-developmental objectives, such as disaster relief or military and political ends. As emphasized by Bourguignon and Sundberg (2007: 317) development economists must better understand "the links from aid to final outcomes" because "trying to relate donor inputs and development outcomes directly, as through some kind of black box, will most often lead nowhere." Opening the black box allows for the identification of three types of links–from donors to policy-makers, from policy-makers to policies, and from policies to outcomes–which, in turn, may provide additional answers.

Empirical studies on the link from donors to policymakers reveal a body of circumstantial evidence built primarily on years of failed aid efforts (Dollar and Levin, 2006). Donor views regarding the "right development policies" have been promoted through aid conditionality with little attention to specific country contexts. For instance, public enterprise privatization and finance liberalization have at times been regarded as necessities, though were encouraged with little regards for local socioeconomic conditions, making such measures ineffective, risky, or simply counterproductive. The link from policymaking to policy formulation and implementation depends largely on governance systems. There is evidence suggesting the association between good governance and good policies, although the direction of causality is hard to determine. In practice, most research has focused on the relationship between governance and development outcomes, bypassing the impact on policies and pointing instead to the importance of good governance for better outcomes (Acemoglu *et al.*, 2005). Regarding the impact of policies on outcomes, there is a good understanding of the effect of macro stability, investment climate, as well as well-managed trade openness on growth, even though country specificity can make it hard to generalize the impact of these factors. Cross-country comparisons however indicate that better-quality policies are associated, on average, with higher GDP growth.

Some authors use empirical analyses to argue that aid leads to growth with decreasing returns (Hansen and Tarp 2001). Others suggest that national growth-inducing pol-

icies may reduce aid effectiveness because good policies and aid are substitutes of each other (Dalgaard and Hansen 2001). Finally, some authors hold that aid stimulates growth conditional on key features. For instance, it is often argued that aid works if provided to countries that implement good policies (Burnside and Dollar 2000). This conclusion was questioned by Easterly *et al.* (2004) who showed that the aid-policy relation was not robust enough for the expansion of the database in years and countries. Despite such differing positions, cross-country regression analysis largely concludes that the relationship between aid and development outcomes is weak and often ambiguous (Rajan and Subramanian, 2005; Clemens *et al.*, 2004).

In recent years, econometric assessments have included meta-analyses to synthesize results from the existing body of empirical data while controlling for heterogeneity among studies. Surprisingly, even these studies, which are supposed to provide more objective analyses, have contributed little to resolving the aforementioned controversies. Consider, for instance, two such studies by Doucouliagos and Paldman (2009) and Mekasha and Tarp (2013): while the former failed to find any significant impact of foreign aid on growth, the latter found an impact that is both positive and statistically significant.

In conclusion, macro growth effects are both harder to achieve and harder to observe. They are harder to achieve than micro growth effects because the magnitude of aid may not be sufficient to affect recipient countries' macro variables, and harder to observe because causality is difficult to establish in cross-country regressions (Mavrotas, 2015).

2.2 Microeconomic perspective

Non-conclusive results of reduced-form cross-country aid regressions brought about the need to establish the channels through which aid mattered the most for economic growth and poverty reduction (Dalgaard *et al.*, 2004). This was done through empirical studies at the micro level that analyzed the impact of single project and program interventions. Until the 1990s, these evaluations were based on cost-benefit analysis (CBA) of single projects by computating the internal rate of return of the intervention. Such studies show that aid is effective at the micro level when taking into considerations local projects (Hirschman, 1967; Mehrotra and Jolly, 1997). However, these results came under severe criticism once the concept of aid fungibility, i.e. aid money being used for purposes other than those earned, spread. In fact, rate-of-return metrics ignore more complex opportunity-cost issues like the fungible use of foreign aid. The approach also became problematic as donors started to embrace broader goals for aid, such as environmental sustainability and multiple social goals with hard-to-quantify objectives. In parallel, the weakness of CBA-based impact evaluations, summarized under headings such as "before-and-after" and "with-and-without," was the topic of many debates. Consequently, methodological issues became increasingly important in the aid-effectiveness debate (Cassen & Ass., 1987; World Bank, 1998).

More recently, knowledge at the micro and project level has expanded based on evaluations using advanced econometric techniques and rigorous experimental or quasi-experimental designs. Econometric techniques are used to examine the impact of specific policies or projects on local communities, household decision making, and individual welfare (Banerjee and Duflo, 2011). Given the number projects and their different impacts in var-

ying country circumstances, continued evaluation and revision is needed. Impact evaluation evidence began in the mid-1990s. By the turn of the century, impact evaluation publications became increasingly more common, continuing to date (Cameron *et al.*, 2016).

Rigorous ex-post impact evaluations help inform government and donor decisions, an idea supported by donor agencies and even by aid critics (e.g., Easterly 2006). However, an evaluation gap still exists. This is because governments, official donors, and other funders do not demand or produce enough impact evaluations and those that are conducted are quite often methodologically flawed (Savedoff *et al.*, 2006). This calls for a systematic review of conclusions drawn from such studies. Several initiatives have been implemented in response to this issue, such that many reviews and meta-analyses are in circulation today. In terms of sectors, the ones most represented in studies are social protection, health and nutrition, and education. Cash transfers is the most represented modality, though in-kind transfers and vouchers are also well-researched, especially in the context of humanitarian crises. Randomized control trials and difference-in-difference studies are the most widely used methods.

Studies assessing the causal relationship between interventions and outcomes of humanitarian assistance generally lack a reliable and robust base of evidence (Clarke *et al.*, 2014). Only a small proportion of the many evaluations of humanitarian assistance use designs with a counterfactual, control or comparator group that allows the studies to attribute measurable changes outcome indicators to programs or policies. However, there are also several examples of randomized trials. It is possible to generate evidence for specific questions using randomized trials, although this evidence base is limited and concentrated in certain areas, such as mental health (Cameron *et al.*, 2015).

Foreign aid has generally brought about a positive contribution in education, the most tangible outcome being increased enrolment rates in primary education (Riddell and Niño-Zarazúa, 2016; Birchler and Michaelowa, 2016). However, there is a considerable gap regarding the contribution of aid to improvements in the quality of education. Masino and Niño-Zarazúa (2016) conducted a systematic review of experimental and quasi-experimental evidence to establish what works best to improve education quality in developing countries. They found that educational policies are most successful when implemented in combination with multiple interventions. Aid channeled into a variety of interventions, targeting different educational levels and utilizing different aid modalities works best. Considering this heterogeneity, it should not be surprising that a generalized blueprint applicable to all developing countries hasn't been devised.

Literature in the food security and nutrition sector has a lot of variation in program implementation (e.g. size and modality of transfers, duration and frequency of transfers, strength of conditions, pre-existing levels of undernutrition, health services). This makes difficult to establish which of the various interventions on food security and nutrition is most effective. Conclusions of summary studies range from cautiously optimistic (Ahmed *et al.*, 2009; Ruel *et al.*, 2013) to lacking significant results (Manley *et al.*, 2012). In 2016, Doocy and Tappis reviewed 108 studies on intervention modalities. They found that unconditional cash transfers and vouchers may improve household food security among conflict-affected populations and maintain household food security during crises specifically affecting food, such as droughts. Moreover, unconditional cash transfers led to greater improvements in dietary diversity and quality than food transfers. Food transfers were

found to be more effective in increasing per capita caloric intake than unconditional cash transfers and vouchers. While the evidence reviewed offers some insights, the scarcity of rigorous research on cash-based approaches limits the strength of such findings.

However, drawing on findings from randomized control trials, Karlan and Appel (2012) identify seven ideas that work: microsavings; reminders to save; prepaid fertilizer sales; deworming; remedial education in small groups; chlorine dispensers for clean water; and commitment devices. Likewise, Banerjee and Duflo (2011) draw on experimental studies to identify a host of promising interventions in areas ranging from health and education to policing.

Though promising, impact evaluation studies have several limitations. It is illusory to believe that all interventions can be subject to impact evaluations and that such evaluations will permit the flow of aid exclusively to what works, as some have suggested (Easterly, 2006; Banerjee, 2007). It is impossible to evaluate all projects. Evaluations can also be misleading when projects or programs are applied outside the context in which they were evaluated, meaning there is a serious problem of external validity (Pritchett and Sandefur, 2013). Furthermore, many policies have general equilibrium effects often ignored by impact evaluations. This suggests that unlocking the secret of aid effectiveness is most likely to be revealed by trial and error than by randomized control trials (Deaton 2013). Nonetheless, experimental and quasi-experimental studies are grossly underutilized instruments with tremendous scope to improve and regularize their use in bilateral and multilateral donor agencies. A larger evidence base and a more standardized approach to documenting and comparing costs and benefits of interventions are needed to draw important conclusions on the effectiveness of different development interventions (Savedoff *et al.*, 2006; White, 2010; Cameron *et al.* 2016).

2.3 Aid effectiveness in fragile contexts

The new economics of aid stresses the importance of good governance to successfully achieve growth. Focusing on good governance leads to country selectivity such that transfers are targeted at countries that pass the good-policy test. This means aid is shifted from project financing to budget financing. However, targeting countries with high institutional and policy scores means that poor individuals in countries with failed states and in post-conflict societies will not be reached. The problem of building a developmental state that qualifies for aid is also left open. Social development funds, local governments, and NGOs therefore play an important role: they can bypass central governments while capacity building for improved governance goes on.

Traditional empirical research has largely dismissed the analysis of fragile or conflict contexts. For instance, econometric evidence used in the aid-effectiveness debate suggests that the ineffectiveness of aid is due to the failure of the recipient governments to create the right policy environment. However, this data uses a cross-section of countries without any specific focus on fragility contexts that, at best, were treated as a dummy variable in the regressions (Boone, 1995; Burnside and Dollar, 2000; Hansen and Tarp, 2001; Dalgaard and Hansen, 2001; Easterly *et al.*, 2004; Doucouliagos and Paldam, 2009). The same reduced-form approach based on country aggregate data has been adopted in more recent

literature on the "growth-efficient" level of aid.[6] The literature found that the relationship between aid and growth takes on an inverted-U shape for both fragile and non-fragile countries, identifying a lower growth-efficient level of aid in the former as compared to the latter (Gomanee *et al.*, 2005; McGillivray *et al.*, 2006; McGillivray and Feeny, 2008; Feeny and McGillivray, 2009; Naudé *et al.*, 2011).

Existing evidence from impact evaluations in fragile contexts is equally poorly developed. A recent evidence gap map review of impact evaluations found little to no evidence on most categories related to the five Peace-building and State-building Goals. Only two Goals (community-driven reconstruction and psycho-social programs for victims) had a large enough number of studies to be promising for evidence synthesis. While prioritizing new research in understudied areas might help fill such knowledge gaps, the nature of experiments also imposes limits on what is studied. In addition to the common limitations of randomized studies (cf. section 2.2), some interventions may be impractical or unethical in fragile/conflict contexts (Humphreys, 2015). Some authors therefore look beyond the standard impact evaluation approach, choosing instead to focus on the drivers of success in fragile contexts by developing comprehensive theories that identify important factors and establish how they interact to create outcomes. The authors then test or demonstrate the plausibility of their arguments through case studies (cf., for example, Guisselquist, 2015).

Addison (2000) was one of the first in the field to discuss the role of aid before, during, and after armed conflicts. He found that aid distributed during conflicts plays a minor yet positive role in humanitarian assistance as well as in the transition from war to peace. There are, however, serious problems in operating in wartime environments. This author notes that aid can complicate conflicts when it falls into the hands of belligerents. After periods of war, aid plays a major role in rehabilitation and reconstruction efforts. Finally, Addison considers the possibility of using aid to prevent conflict in areas at risk, arguing that foreign policy support should incorporate aid in conflict prevention efforts. Such aid should focus on reducing poverty and inequality to dampen social tensions as well as support institutions and processes for conflict resolution.

More recently, Guisselquist (2015) argued that development assistance to fragile states and conflict areas can act as a core component of peacebuilding by providing support for the restoration of government functions, the delivery of basic services, the rule of law and economic revitalization. Significant gaps exist regarding what has worked, why it has worked and the transferability and scalability of such findings. Nevertheless, three broad factors can identify why some interventions work better than others. The first is the area of intervention and the related degree of engagement with local state institutions. The second factor relates to local contextual elements, including windows of opportunity, capacity and the existence of local supporters. Finally, the third set of factors deals with project or program design and management. While the third set of factors is largely transferrable and scalable, the first two are less so and should be considered carefully when assessing the feasibility of extending project or program models to new contexts. Area of intervention, degree of engagement with domestic institutions and local contextual elements are

[6] The so-called "growth-efficient" level of aid is the level of aid beyond which more aid is associated with lower growth.

vital factors to consider when making adjustments to improve the viability of development programs.

Finally, a more radical approach was proposed by authors adopting a political economy perspective to analyze the workings of aid in conflict contexts (Murshed, 2002; Sogge, 2002; Kanafani and Al-Botmeh, 2008; Hever, 2010; Taghdisi-Rad, 2011 and 2015). The authors argue that the debate on aid effectiveness in fragile contexts has treated conflict as an external factor to be considered only at a much later stage in the analysis. They believe that a conflict and its interaction with local socio-economic structures should instead be the starting point of the analysis. As Taghdisi-Rad (2015: 5) said, it is imperative to understand "the nature of [a] conflict and the ideological forces behind its continuation … to construct a framework for the analysis of economic performance under any given conflict".

3. Assistance to Palestinian Households

3.1 West Bank and Gaza Strip: a fragile and protracted crisis context

The world's longest on-going crisis is in the West Bank and Gaza Strip, marked by more than fifty years of occupation, repeated waves of violence, and wars. The last two decades of Palestinian history have been marked by the construction of a separation barrier, the closure of the Gaza Strip in 2007, three devastating conflicts in 2008/2009, 2012 and 2014 respectively, as well as the increasing territorial fragmentation resulting from the continued expansion of Israeli settlements in the West Bank. The hope for greater welfare and stable economic growth brought about by the Oslo Accords (1993-95) has withered as a result of the unresolved Israeli-Palestinian conflict.[7] Moreover, a growing political divide between the West Bank and Gaza Strip has further destabilized the economy.

The attainment of Palestinian economic development is largely dependent on economic relations with Israel. According to the Paris Protocol, the Palestinian economy works under the framework of a customs and monetary union with Israel (Hever, 2015; UNCTAD, 2015).[8] The Palestinian government cannot exert power over its borders nor

[7] The Oslo Peace Accords, under which the Palestinian Authority (PA) was created in 1994, were intended to lead to a final negotiated settlement between the parties. The accords led to several administrative and security arrangements for different parts of the West Bank, which became divided in Areas A, B and C, with the PA having civil and security authority only in Area A (which accounts for 18% of the West Bank) and no authority whatsoever in Jerusalem. These were meant to be provisional terms, pending a final negotiated settlement. Permanent issues such as the status of Jerusalem, security arrangements, international borders, and the rights of Palestine refugees (5 million Palestine refugees are to this day dispersed across the Middle East) were left to be resolved after a five year interim period that ended in 1999. Twenty-five years after the Oslo Accords, no progress has been made to settle the aforementioned pending issues (EU Commission, 2018).

[8] The Protocol on Economic Relations, also called the Paris Protocol, is an agreement between Israel and the Palestine Liberation Organization signed in April 1994. It was incorporated into the Oslo II Accord of September 1995 with minor emendations. Originally, the Paris Protocol was to remain in force for an interim period of five years, yet it is still being enforced today. Essentially, the Protocol integrated the Palestinian economy into the Israeli economy through a customs union where Israel controls both Israeli and Palestinian borders (Elkhafif *et al.*, 2014). The Protocol regulates the relationship and interaction between Israel and the Palestinian Authority in six major areas, namely: customs, taxes, labour, agriculture, industry and tourism.

does it have an independent monetary policy.[9] Economic growth suffers as a result of restrictions and controls placed on the movement of people and goods, access to resources such as land and water and access to productive inputs and markets. The Palestinian government has limited ability of collecting its own taxes, while Israel recurrently withholds revenues collected on behalf of the Palestinians. Consequently Palestinian public finances are seriously destabilized. The situation is further complicated by the internal political divide that further limits the sovereignty of the Palestinian government. In such a situation, the scope and geographical coverage of policy interventions has limited effectiveness.

As long as barriers to trade, access, and movement remain high, the Palestinian economy will continue on its current path of low growth.[10] The Palestinian economy grew on average 5.5% per year over the last decade, with a marked difference between the West Bank and Gaza Strip. The economy slowed down in the last few years, so much so that 2017 estimates project GDP to fall from 3.1% to 1.7% per year in the medium-run (IMF, 2018). This is mostly due to the reduction of donor flows and the possibility of running tensions increasing further. With an expected population growth as high as 2.8% in 2017, the aforementioned implies a stagnation, if not a contraction, of per-capita incomes. Unemployment continues to be high (27.8% in 2017) and labor force participation continues to be low, with structural unemployment particularly affecting young people and women: only 41% of youth between 15 and 29 years of age are active in the labor market while only 19% of women are active. Household and government consumption are the main drivers of economic activity. The two crowd out the investment necessary for faster growth. Primary capital inflows into Palestine are remittances and development assistance rather than FDI. Meanwhile, the national economy is highly import-dependent, Israel remaining by far its main trading partner.

Overall, the Palestinian economy is still highly aid-dependent despite a sharp decline in aid. UNCTAD (2018) found that international developmental support to Palestine in 2017 amounted to USD 720 million, only one third of the USD 2 billion received in in 2008. Over the same period, budget support shrank from USD 1.8 billion to USD 544 million, a 70% decrease.[11] Moreover, the fiscal burden of humanitarian crises and occupation-related fiscal losses have diverted donor aid from development to humanitarian interventions and budget support. As emphasized by UNCTAD (2015), no amount of aid would have been sufficient to put any economy on a path of sustainable development under conditions of frequent military escalations.

Poverty and low standards of living are increasing in Palestine. The poverty headcount ratio at the national poverty line was estimated to be 29.2% in 2017 (PCBS, 2018a), well above the 2011 poverty headcount ratio of 25.8%. The proportion of poor in 2017 stood at 13.9% in the West Bank and 53.0% in the Gaza Strip. In that year, about 16.8% of Palestinians lived in extreme poverty (almost four percentage points more than in 2011),

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[9] The agreement defined specific arrangements through which the Government of Israel collects VAT, import duties and other so-called clearance (custom) revenues on behalf of the PA, sharing it with the latter on a monthly basis. These revenues account for 73% of the PA's total net revenues (EU Commission, 2018).

[10] World Bank (2017) estimates indicate that removing Israeli restrictions could increase annual GDP growth up to 10%.

[11] The recent decision made by the United States to halt financial assistance to the Palestinian government and to UNRWA compounds an already critical situation.

with 5.8% residing in the West Bank and 33.8% in the Gaza Strip. The increase in overall poverty percentages between 2011 and 2017 is explained by the combined effect of two diverging dynamics: standards of living dramatically worsened in Gaza Strip, causing a rise in the poverty rate of 15 percentage points while poverty decreased by four percentage points in the West Bank. According to the United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA), four out of five people living in Gaza's are currently aid-dependent.

Food and nutrition security are closely related to poverty. According to the Socio-Economic and Food Security Survey (FSS-PCBS, 2016), in 2014, 26.8% of total households were classified as severely or moderately food insecure[12]. According to the Food Insecurity Experience Scale (FAO-IFAD-UNICEF-WFP-WHO, 2017), the prevalence of moderate or severe food insecurity in the population was 29.9% between 2014-16, of which 9.5% represented severe food insecurity. Stunting (or height-for-age) stood at 7.4% for children under the age of five in 2014-2016, while the prevalence of wasting (or weight-for height) was only 1.2%. Palestinians also face malnutrition: the prevalence of overweight youth was 8.2% among children under 5 years of age in 2014-2016 (FAO-IFAD-UNICEF-WFP-WHO, 2017). Micronutrient deficiency is also a concern among vulnerable population groups, such as pregnant or lactating women and children.

3.2 An overview of assistance modalities in the West Bank and Gaza Strip

Palestinians are vulnerable to many risks. According to OCHA (2018), the most critical ones are the following: (i) the risk of conflict and violence, forcible displacement, and the denial of access to natural resources, inputs and markets that affect 2 million people in need of protection assistance; (ii) risks associated with poor water quality, poor wastewater collection and treatment, and lack of proper hygiene practices that affect 1.9 million people; (iii) the risks of food insecurity faced by 1.7 million people; and (iv) 1.2 million people are exposed to health and nutrition risks (e.g. conflict-related trauma casualties, pregnant and lactating women, children under the age of five, people with disability and elderly, etc.). Although all Palestinians are negatively impacted by the conflict, some of them – such as 1.4 million refugees, the 1.6 million Gazan civilians in need, and 0.4 million individuals living in Area C – are more severely affected (UNSCO, 2016).

In the face of economic de-development and the denial of autonomous development prospects, humanitarian and development actors increasingly recognize the importance of bridging the humanitarian-development divide in Palestine. The result is a combination of emergency response measures with longer-term interventions to better address the causes of vulnerabilities faced by the Palestinian population (Diakonia, 2018).[13] Many vulnerable

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[12] Preliminary results of the last SEFSec (PCBS, 2018b) show that the share of households classified as severely or moderately food insecure has increased by 6.2% between 2014 and 2018.

[13] The protracted nature of the crisis and the dismal prospects for positive change have led to a considerable degree of critical reflection across the nexus from different perspectives and actors in WBGS. The UN notes that "humanitarian action extends to less traditional areas of intervention and calls for a much closer collaboration between humanitarian actors and the government" (UNSCO, 2016: 17). Along the same lines, the Humanitarian Response Plan for 2018 (OCHA, 2017a: 7 and 30) recognizes that "key drivers of vulnerability are common to both the humanitarian and development needs". As noted by the Mapping and Synthesis of Evaluations carried

groups have been identified as beneficiaries of both humanitarian and development interventions, both of which must occur simultaneously in order to be effective. Humanitarian and development programming are increasingly aligned in order to provide durable and sustainable assistance capable of building resilience and reducing vulnerability. In other words, a blend of interventions tends in practice to prevail on a strict divide between humanitarian and development interventions, leveraging on the "humanitarian-development nexus" and operationalizing the so-called "new way of working" (OCHA, 2017b) as outlined in the UN Secretary-General's Report for the World Humanitarian Summit (UN, 2016).

The most important modalities of assistance in WBGS are: (i) in-kind provision of basic foodstuffs through baskets generally including wheat flour, rice, pulses and vegetable oil; (ii) food vouchers for use on selected items with designated merchants; and (iii) cash transfers distributed mostly through e-cards for cash disbursements. The aforementioned forms of assistance are listed in increasing flexibility, meaning that the mode of assistance provides a greater range of choice to targeted households, has cheaper implementation, and is less likely to focus on basic needs. Vocational training programs and other forms of livelihoods support can also help families rise above the poverty line. Other forms of support such as health and housing assistance are also quite important, especially in acute crisis (e.g. the 2014 war in Gaza).

Assistance in Palestine is delivered by many actors. In terms of financial volume, major implementing actors include the Ministry of Social Development (MoSD), the United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA), and the World Food Programme (WFP). While a large number of donors support UNRWA's activities, the two largest donors to direct assistance are the EU and, until 2017, the USA. Charities linked to zakat — the payment made under Islamic law on certain kinds of property used for charitable and religious purposes — as well as assistance through de-facto authorities in the Gaza Strip are equally important sources of financial inflows (Culbert, 2017).

While modalities of assistance vary between implementing bodies and beneficiary groups, selection criteria and program objectives are similar. The principal beneficiary selection tools used by actors for food and social assistance are poverty-based, using variations of a proxy means testing formula.

Institutional structures and political considerations are primary determinants in how social security assistance, direct food assistance and cash assistance are defined and channeled. Some development donors fund through governmental channels, such as the MoSD, while some humanitarian donors fund through humanitarian actors, such as UNRWA or WFP. As a result, the current system of delivering assistance is fragmented despite recent efforts working towards effective coordination between humanitarian and development actors (Culbert, 2017). The recent MoSD's strategy (MoSD, 2017) holds promise in both coordinating and aligning assistance efforts of multiple actors by addressing underlying social-economic challenges. However, this strategy remains at an early policy stage.

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out by UNEG (2018: 28), in the occupied Palestinian territories there is recognition that "the scope of programming needs to transcend standard 'good practice' in order to mitigate the negative effects of what is likely to be a deteriorating situation".

3.3 Assistance to Palestinians in 2013-2014

Assistance to the WBGS is composed of a very heterogeneous set of modalities, implementing bodies and beneficiary groups, reflecting different conditions at the local level as well as between the West Bank and the Gaza Strip.

Types of Assistance

According to SEFSec (FSS-PCBS, 2016), approximately 40% of all Palestinian households reported receiving at least one type of assistance in 2014. There is a marked difference in the share of households receiving assistance in Gaza Strip (84%) compared to the West Bank (less than 17%) (Table1). Between 2013 and 2014, the share of assisted households in the Gaza Strip increased by more than 18%, even greater than the amount observed in 2011 (FAO-UNRWA-WFP, 2013). However, the increase in share of assisted households between 2013 and 2014 in the West Bank was less than 2%, standing 8 percentage points below the level existing in the region in 2011.

Table1 illustrates the prevalence of in-kind food, cash transfers and food vouchers provided to Palestinian households. Between 2013 and 2014, the composition of the various types of assistance in the West Bank did not change significantly, while composition of assistance in the Gaza Strip underwent important changes. In the West Bank, a large share of households reported that "Cash" and "In-kind food" were the two types of the assistance they received the most of in 2013 and 2014. On the other hand, the major cat-

Table 1. Share of households receiving assistance by type of assistance and region, 2013-2014.

	WBGS		West Bank		Gaza Strip	
	2013	2014	2013	2014	2013	2014
In-kind food	24.6%	28.0%	7.5%	7.6%	57.5%	67.0%
Health care	0.4%	2.3%	0.6%	2.7%	0.2%	1.6%
Clothing	0.7%	2.1%	0.4%	0.3%	1.3%	5.7%
Job creation	1.3%	0.3%	0.3%	0.2%	3.2%	0.6%
Compensation martyrs	0.2%	0.3%	0.1%	0.3%	0.4%	0.4%
Cash	16.8%	16.2%	10.5%	8.3%	28.9%	31.2%
Health insurance	11.5%	7.8%	0.7%	1.2%	32.2%	20.3%
Food vouchers	3.0%	8.2%	2.0%	1.6%	4.7%	20.8%
School feeding	0.1%	0.1%	0.1%	0.0%	0.1%	0.4%
Productive inputs	0.1%	0.0%	0.2%	0.0%	0.0%	0.1%
Drinking water	0.4%	1.8%	0.0%	0.1%	1.0%	5.2%
Electricity	0.2%	0.2%	0.2%	0.3%	0.0%	0.2%
Housing[a]	-	9.2%	-	0.9%	-	25.0%
Other	0.6%	1.2%	0.2%	0.0%	1.3%	3.4%
At least one form of assistance	32.4%	39.7%	15.2%	16.5%	65.7%	84.2%

[a] Not included in the 2013 SEFSec survey.
Source: FSS-PCBS (2016): Table 7.1, modified.

egories of assistance reported in the Gaza Strip fluctuated between the two years. New types of assistance outside the three core types ("In-kind food", "Cash" and "Health insurance") were reported in the Gaza Strip. These included "Housing" (shelter, rent, caravan), "Food voucher", "Drinking water" and "Clothing". All four increased significantly between 2013 and 2014 in response to worsening living conditions as a result of the armed conflict.

Value of Assistance

In 2014, assisted households received an average of 102 US$/month. However, national averages mask significant regional differences in both levels and trends. Table 2 reports the average monthly value received by households in the two regions for each types of assistance during 2012-2014. There was a general decline in the average value of assistance for cash and food in the West Bank from 2013 to 2014. Conversely, assistance for employment and provision of agricultural inputs increased. In the Gaza Strip the average value of support increased for many assistance types but food assistance that did not change much. Employment assistance represented the largest average allowances given to households in 2014. Among "Other" forms of support, the largest average values are seen for housing and shelter assistance. Support to agricultural production activities almost disappeared in Gaza Strip after 2012.

The value of assistance varies across different types of households (Table 3). Support to refugee households was slightly greater than that of non-refugee households (107 vs. 91 US$/month). Moreover, a substantial difference was recorded in 2014 based on gender household heading: female-headed households received on average 30% more support than male-headed households (127 vs. 98 US$/month). This reveals that female-headed households are more dependent on assistance, probably due to higher vulnerability.

The composition of assistance across different household typologies emphasizes the different needs of various groups (Table 3). Female-headed households are more likely to receive assistance in the form of cash and free health services than male-headed house-

Table 2. Average value of support by type of assistance, US$/month.

Type of assistance	West Bank			Gaza Strip		
	2012	2013	2014	2012	2013	2014
Cash	115	79	55	95	92	123
In-kind food	45	34	27	37	36	48
Food vouchers	42	43	28	30	48	32
Job creation	115	97	126	82	147	215
Agricultural inputs	46	69	123	129	na	9
Housing	na	na	231	na	na	211
Other[a]	71	70	135	4	17	110
Average per assisted household	128	96	86	65	102	108

[a] The "Other" category in years 2012 and 2013 includes also housing.
Source: FSS-PCBS (2016): Table 7.3, modified.

Table 3. Composition of assistance by region and household group, share of total value received, 2014.

Type of support	West Bank	Gaza Strip	Refugee	Non-refugee	Male-headed	Female-headed
Cash	36.4%	34.5%	31.8%	40.2%	34.0%	40.4%
In-kind food	15.3%	26.8%	23.6%	24.7%	25.7%	15.6%
Health insurance	19.8%	0.8%	5.3%	5.0%	3.1%	16.2%
Food vouchers	3.1%	5.5%	4.7%	5.7%	5.5%	2.3%
Housing	13.1%	21.6%	24.4%	12.2%	20.9%	12.9%
Other	0.1%	5.6%	5.5%	2.2%	5.0%	0.7%
Remaining sources	12.2%	5.2%	4.7%	10.0%	5.8%	11.8%
Average per assisted household (US$/month)	86	108	107	91	98	127

Source: FSS-PCBS (2016): Table 7.4, modified.

holds. This is probably due to the demographic composition of the former, with a majority of households headed by widows and elderly women. The comparison between refugee and non-refugee indicates a cash preference by non-refugee households, while refugee households receive a larger share of assistance in "Other" forms, including substantial support for housing.

Sources of Assistance

Social assistance coverage increased between 2013 and 2014, reflecting deteriorating livelihood conditions–especially in the Gaza Strip, where more than four households out of five were receiving assistance in 2014. Overall, reported sources of assistance are given primarily by the Palestinian Ministry of Social Affairs (currently renamed the Ministry of Social Development, or MoSD), UNRWA, international agencies, charitable and religious associations, and informal assistance (family, relatives or friends). However, key differences are observed between the West Bank and the Gaza Strip (Table 4).

In the West Bank, 7% of households reported receiving assistance from the Ministry of Social Affairs in 2014, a slightly lower figure than that reported in 2013 (8%). The other two most cited sources of assistance in 2014 were UNRWA and informal assistance (family and relatives), which remained unchanged from 2013 levels.

A different picture emerges from the data in the Gaza Strip. Not surprisingly, the largest source of social assistance in 2014 was UNRWA, an organization that provided food assistance to some 867,000 refugees. A number of other sources of assistance were reported, including the Palestinian Ministry of Social Affairs, international agencies, charitable and religious associations, worker unions, and family and friends. Informal sources of social assistance more than halved, dropping to 7% in 2014. This is a clear sign that informal social networks were unable to help in times of widespread severe hardship caused by the war.

Table 4. Reported sources of assistance by Region[a].

	West Bank		Gaza Strip	
	2013	2014	2013	2014
Ministry of Social Affairs	8.2%	6.8%	19.6%	23.5%
Other PA agencies	0.9%	2.0%	4.2%	8.6%
Political parties	0.0%	0.1%	0.4%	8.6%
Zakat/other religious institutions	0.5%	0.6%	0.5%	2.7%
International agencies (excluding UNRWA)	1.4%	1.2%	9.3%	21.3%
UNRWA	2.1%	4.0%	42.6%	62.3%
Arab countries	0.0%	0.1%	0.3%	2.8%
Charity/religious	0.4%	0.3%	3.8%	19.5%
Family and relatives	2.8%	2.8%	14.8%	6.8%
Friends/Neighbors	1.1%	0.9%	1.8%	4.8%
Workers union	0.0%	0.0%	21.6%	12.9%
National banks	0.0%	0.0%	0.0%	0.5%
Local reform commission	0.0%	0.0%	0.1%	0.6%
Other	0.4%	0.9%	0.3%	3.3%
Any type of assistance	15.2%	16.5%	65.7%	84.2%

[a] Sources of assistance are not mutually exclusive. Some households reported receiving assistance from more than one source.
Source: FSS-PCBS (2016): Table 7.5.

4. Poverty and Food Security

The profiling of Palestinian households in terms of poverty quartiles before receiving assistance shows expected patterns[14] (Table 5): moving from poorer to richer households saw a parallel decrease in household size, an increase in educational attainment, a decrease in the dependency ratio, and an increase in the employment rate (including that of the head of the household).

Poverty in the WBGS is determined by the employability of household members. Food security on the other hand is largely influenced by access dimension, specifically by individuals' labor entitlement. Table 6 therefore provides a detailed account of household heads' labor indicators across poverty quartiles. By and large, poorer households had more problematic labor conditions. For instance, household heads who worked fewer hours were more likely to be poor, just as irregular employment and lower level occupations were more related to poverty. Usually, poverty is correlated to employment in the primary and construction sectors. In short, heads of poorer households tend to have more informal and irregular jobs that do not require high levels of formal skills and/or education, such as jobs in basic production sectors.

[14] Only the female-headed household share does not show a clear pattern. Another characteristic (not reported in the table) that does not change at all is the number of sources of income per household: on average, two per household.

Table 5. Households' profile per poverty quartile, 2013.

	Q1	Q2	Q3	Q4	Total
Average household size	7.7	5.2	4.8	4.5	5.6
Share of HH with female head	6.4%	11.5%	11.4%	9.1%	9.6%
Share of HH with head with secondary education or above	28.1%	34.2%	39.1%	51.0%	38.1%
Global dependency ratio	1.20	1.19	1.02	0.90	1.08
Share of HH whose head does not work	28.9%	28.4%	23.5%	22.4%	25.8%
Household employment rate	32.1%	36.9%	40.5%	43.7%	38.3%

Authors' elaboration on SEFSec 2014 data.

Table 6. Head of household employment statistics per poverty quartile, 2013.

	Q1	Q2	Q3	Q4	Total
Working Status					
Employed from 1-14 hours	5.1%	4.6%	2.5%	1.3%	4.2%
Employed 15-34 hours	6.1%	6.9%	5.1%	3.2%	6.0%
Employed 35 hours and over	41.7%	46.5%	58.5%	63.5%	47.7%
Temporarily absent	14.6%	10.6%	6.6%	3.9%	11.2%
Looked for a job (already worked)	6.9%	3.9%	1.2%	2.1%	4.6%
Looked for a job (never worked)	2.1%	2.6%	0.7%	1.1%	1.9%
Did not look for work because of frustration	0.7%	0.9%	0.6%	0.6%	0.7%
Full time student	0.1%	0.0%	0.0%	0.0%	0.0%
Housewife	4.0%	5.0%	4.9%	3.4%	4.4%
Unable to work	16.8%	14.7%	12.8%	8.1%	14.8%
Other	0.0%	0.0%	0.2%	0.0%	0.0%
Professional Status					
Employer	2.4%	2.2%	3.9%	11.9%	5.1%
Self-employed	11.3%	11.5%	12.4%	13.9%	12.3%
Unpaid family worker	0.2%	0.1%	0.3%	0.1%	0.2%
Waged employee	61.9%	59.9%	60.5%	52.2%	58.6%
Sector of employment					
Agriculture, fishing and forestry	8.7%	6.7%	3.5%	2.2%	5.3%
Mining, quarrying and manufacturing	6.5%	8.6%	11.5%	13.6%	10.0%
Construction	18.2%	16.7%	16.3%	12.6%	16.0%
Commerce, restaurants and hotels	10.9%	11.2%	14.6%	20.2%	14.2%
Transportation, storage and communication	7.2%	5.5%	6.1%	5.1%	6.0%
Services and other activities	24.3%	24.9%	25.1%	24.5%	24.7%

Authors' elaboration on SEFSec 2014 data.

As expected, there is a direct relationship between poverty and food insecurity (Table 7). This is measured by the Food Consumption Score (FCS) and the Household Food Insecurity Access Scale (HFIAS), two proxies for the qualitative and quantitative dimen-

Table 7. Households' assistance and food security status per poverty quartile, 2013.

	Q1	Q2	Q3	Q4	Total
Per capita expenditure (NIS/month)	305	461	593	860	554
Share of HH receiving assistance	62.5%	41.8%	21.3%	7.6%	33.3%
Average value of assistance per HH (NIS/month)	418	293	347	321	368
Households with insufficient dietary quantity (HFIAS)	50.7%	29.3%	14.8%	6.4%	25.3%
Households with poor or borderline FCS	30.4%	26.4%	17.8%	10.2%	21.2%
Average household FCS	70	72	76	80	74

Authors' elaboration on SEFSec 2014 data.

sions of food security, respectively (cf. section 5.1). Probably the most striking indicator related to poverty is the share of households receiving assistance. This value encompasses almost two thirds of all households in the lowest quartile and 7.6% of households in the highest quartile. Both indicators of food security show the expected regularities in that poorer households have lower FCS values. Meanwhile, poorer households have larger shares of poor or borderline FCS (Q1 three times larger than that of Q4) as well as insufficient dietary quantities (HFIAS in Q1 eight times larger than that of Q4). Quite surprisingly, the average value of assistance rapidly decreases from the lowest to the second-lowest quartile, but then increases again in the two higher quartiles[15].

5. Data and methods

5.1 Data

The Socio-Economic and Food Security (SEFSec) survey has been administered since 2009 to monitor the status of food security among Palestinian households. The SEFSec methodology accounts for the multi-dimensional drivers of food insecurity in WBGS by exploring topics such as asset-based poverty, food consumption, and resilience. This is done to capture the capacity households have to adapt, transform and cope with shocks. Besides these three main pillars, the questionnaire collects data on aspects such as socio-demographics, assistance, expenditure and consumption, all of which are useful for the analysis.

The dataset includes data from the fifth and sixth SEFSec surveys. Data collection took place in 2014 and 2015, with a reference period covering the six months preceding the interview (the second half of 2013 and 2014, respectively). The 2013 SEFSec survey was conducted on a sample of 7,503 households (4,949 in the West Bank and 2,554 in the Gaza Strip), while the 2014 sample included 8,177 households (5,047 in the West Bank and 3,130 in the Gaza Strip). The samples are representative for various levels of disaggregation, including gender, refugee status, governorate, locality type (i.e. urban, rural and refugee camp) and, for the West Bank only, Areas A/B and C (FSS-PCBS, 2016).

An important feature of the 2013-2014 SEFSec is that 92% of the households interviewed in 2013 were included also in the 2014 wave. Therefore, a sample of 6,881 units

[15] However, this seems to be related to the higher average value of assistance in the West Bank to households that own some type of business: essentially, it is a support to investment that is able to generate employment.

(4,454 in the West Bank and 2,427 in the Gaza Strip) can be used to analyze the impact of assistance on Palestinian households through the panel structure of the dataset.

The main variables used in the analysis are summarized in Table 8. They include the three outcome variables of interest: a measure of poverty and two measures of food security (i.e. HFIAS and FCS, the latter also broken down in its main components), a set of household socio-demographics that are the usual correlates used to analyze the outcomes, and some geographical dummies to account for regional/residence differences used to capture any unobserved heterogeneity.[16]

Poverty outcomes are measured as an asset-based poverty index closely related to living standards. An asset-based poverty index better reflects long-term wealth over an expenditure-based poverty index, a short-term measure which in principle would work better in an impact evaluation of aid effectiveness. Additionally, the asset-based poverty index was chosen since total household expenditure is not accurately sampled by the SEFSec questionnaire. Indeed, an assessment commissioned by SEFSec administrators to evaluate the robustness and reliability of expenditure-based poverty measures resulted in the decision to abandon money-based (i.e. expenditure) measures of poverty because they were inconsistent with similar measures based on benchmark data from the Palestine Expenditure and Consumption Survey of 2011 (PECS) (Langworthy *et al.*, 2014; Smith, 2014).[17] Furthermore, in the context of protracted crisis such as the currently ongoing one in Palestine, assistance becomes a key source of income for the majority of households, establishing itself as a "structural" component of household income. Assistance has significantly contributed to building household assets over the years and helps maintain a given level of standards of living via consumption smoothing. If assistance to households decreases, household assets would decrease in response because the household sells its assets to countervail the reduction in assistance.

Food security is proxied by two measures, namely the Household Food Insecurity Access Scale (HFIAS), a quantitative measure of the dimension of food consumption (Coates *et al.*, 2007), and the Food Consumption Score (FCS) that captures the quality of household diets (WFP, 2008). HFIAS is an indicator based on responses to nine questions, five of which relate to the size and frequency of meals consumed in the 30 days preceding the survey. HFIAS is value ranging from 0 to 27, where a higher score indicates an insufficient dietary quantity. FCS is an indicator based on the number of days specific food groups are consumed in the seven days preceding the survey. The FCS is a continuous score where a value less than or equal to 45 or between 45 and 62 respectively indicate poor or borderline food consumption. This value is obtained by assigning a specific weight to each food group in accordance to its contribution to dietary quality.

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[16] The variables listed in Table 3.1 are the ones actually used in the following analysis, that is they are only a subset of the wider set of candidate variables that in principle could be used. Unfortunately, the SEFSec survey is designed only to monitor the evolution of food security in Palestine. As such it does neither have the wealth of variables that can be usually found in a standard multi-purpose survey (e.g. household cultural traits, household behavior other than food consumption, etc.), nor the depth of data typical of household expenditure/consumption surveys (e.g. detailed information on household expenditures, food consumption composition, etc.).

[17] The overall conclusion of these studies was that "in the absence of other options, an asset-based measure of poverty can thus serve as a valid, stand-alone measure for the purposes of the SEFSec food insecurity analysis." (Smith, 2014: 21).

Table 8. Summary statistics of key variables.

Variable	Meaning	Mean	Standard deviation	Min	max
l_ass_index	Log of asset based poverty index	7.09	0.33	5.52	8.28
fcs	Food consumption score (FCS)	74.28	17.06	0.00	112.00
hfias	Household Food Insecurity Access Scale (HFIAS) score	4.64	6.56	0.00	27.00
vegfru_fcs	FCS cereals, tubers, pulses, vegetable and fruit	26.96	4.93	0.00	49.00
meatmilk_fcs	FCS meat and milk	40.85	14.65	0.00	56.00
oilsug_fcs	FCS fats and sugar	6.46	1.13	0.00	7.00
mass	log of HH monthly assistance	1.96	2.63	0.00	10.82
ydum	dummy for year 2014	0.50	0.50	0.00	1.00
massy	interaction mass*ydum	1.04	2.12	0.00	10.82
lhsize	Log of household size	1.81	0.42	0.69	3.30
lexp	Log of household monthly expenditure (NIS)	7.72	0.75	1.79	11.16
dep_ratio	Dependency ratio (aged 0-15+aged >65)/aged 15-65	1.10	1.34	0.00	7.00
rat_emp	% of employed people aged >15 in the HH	0.37	0.24	0.00	1.00
agehead	Age of HH head (years)	45.34	14.37	19.00	98.00
femhead	HH head gender (female = 1)	9.66%		0	1
head_ref	HH head status (refugee = 1)	41%		0	1
high_ed	HH head education (secondary education or higher = 1)	38.12%		0	1
employed	HH head occupational status (employed = 1)	70.42%		0	1
qly_deprived	HH with low FCS (< 61) (yes = 1)	22.26%		0	1
qty_deprived	HH with insufficient food intake, HFIAS (yes = 1)	23.21%		0	1
ass	HH receiving assistance (yes = 1)	37.71%		0	1
WB North	Regional dummy (West Bank North = 1)	27.58%		0	1
WB Center	Regional dummy (West Bank Center = 1)	17.69%		0	1
WB South	Regional dummy (West Bank South = 1)	19.46%		0	1
GS North	Regional dummy (Gaza Strip North = 1)	18.47%		0	1
GS Center	Regional dummy (Gaza Strip Center = 1)	5.19%		0	1
GS South	Regional dummy (Gaza Strip South = 1)	11.61%		0	1
rural	Locality of residence (rural = 1)	18.62%		0	1
camp	Locality of residence (refugee camp = 1)	9.74%		0	1
urban	Locality of residence (urban = 1)	71.64%		0	1

The pros and cons of these two indicators have been assessed in several review and validation studies of food security indicators (Carletto *et al.*, 2013). IFPRI (2006) concluded that the FCS weighting system for the food frequency scores might not be able to accommodate variations across space and time. Nevertheless, IFPRI found positive associations between FCS values and caloric consumption per capita in some studies. The information generated by HFIAS is used to assess the prevalence of household food security and detect changes over time. Moreover, validations conducted in Latin America and sub-Saharan Africa (Melgar-Quinonez *et al.*, 2006; Knueppel *et al.*, 2010) found that the indicator demonstrated reliability and validity in the local contexts in which it was deployed.

Besides the considerations above, the SEFSec dataset does not include enough data to build other food security indicators such as the food caloric intake.

5.2 Methods

To estimate the impact of assistance on a given dimension of well-being, such as poverty or food security, we need to control for possible unobserved heterogeneity in participation in the assistance program. Due to the targeting strategies of the different agencies that provide assistance to Palestinian households, treated households are quite different from untreated ones. Notably, the probability of receiving assistance is correlated with a set of characteristics mostly related to poverty (cf. section 4). As a result, the selection bias is likely to be pervasive (Khandker *et al.*, 2010). Moreover, further unobserved targeting variables may affect both the outcome variable and the probability to receive assistance.

Building on the panel structure of SEFSec dataset, we used a difference-in-difference (DD) approach to get rid of aforementioned biases. The DD model assumes that the heterogeneity in participation is fundamentally time invariant once conditioned on a set of household characteristics (**X**):

$$E(Y^0_t - Y^0_{t-1} \mid T = 1,\mathbf{X}) = E(Y^0_t - Y^0_{t-1} \mid T = 0,\mathbf{X}) \tag{1}$$

where Y^0_t is the potential outcome without the treatment measured at time t. T is the treatment status, which equals to 1 if the household received assistance and 0 otherwise. The assumption of time invariant heterogeneity implies that the dynamics observed in the control group are the same as the ones observed in the treated group had the latter not been treated. Unfortunately, the SEFSec dataset does not allow testing for the "parallel trend" hypothesis. However, considering the short time distance between the two SEFSec waves, the risk that this assumption does not hold is low.

In regression form the DD estimator is given by:

$$Y_{i,t} = \alpha_i + \beta T_i + \gamma t + \delta T_i t + \Sigma\zeta X_{i,t} + \varepsilon_{i,t} \tag{2}$$

where t is a time dummy (1 in the second period, 0 otherwise). T_i is the treatment dummy, with a value of 1 for the treatment group and 0 for the control. The casual effect of the treatment is assumed to be additive. In the classical DD model, the δ parameter — which is associated with the interaction term between the treatment T_i and the time dummy variable t — identifies the expected impact (Angrist and Pischke, 2008).

The traditional DD regression uses dichotomic (i.e. treated/non-treated) treatment variables. However, continuous treatment variables measuring the intensity of the treatment can be also used (Card, 1992; Acemoglu *et al.*, 2004). Continuous variables fully exploit the information content of available data. For the purpose of this study, the most suitable candidate is the monthly value of assistance received by the household. In this case, it can be demonstrated that for the i-th household the δ parameter is equivalent to:

$$\delta = \frac{(Y_{i1} - Y_{i0} \mid T_i = T_{i1},X_i) - (Y_{i1} - Y_{i0} \mid T_i = T_{i0},X_i)}{\mathrm{T_{i1}} - \mathrm{T_{i0}}} \tag{3}$$

where the numerator is the difference in outcome variation over time given the final and initial values of the continuous intervention variable and the denominator is the difference between the final and the initial value of the continuous treatment variable. In the case of an increase of the continuous treatment variable between the two periods, a positive value of δ indicates that the increased treatment intensity determines a higher increase of the outcome variable. This implies that the impact of the treatment is positive.

Moreover, thanks to the time dimension of the panel, we can include in (2) household specific intercepts or fixed effect, α_i. Irrespective of the adopted fixed effect estimator, this is equivalent to including a dummy variable for each household in equation (2) (Wooldridge, 2013). Equation (3) will still hold provided that we condition on both $\mathbf{X}$ and α_i.

The key identifying assumption in this context is that treatment intensity is not correlated with individual unobserved trends, although it can correlate with individual permanent characteristics. We posit that the intensity of assistance ("mass", measured in logarithms) impacts the outcome variable, i.e. either the log of poverty asset index ("l_assindex") or one of the food security indicators ("hfias" or "fcs"). The intensity of assistance and the outcome variable are both affected by a set of household characteristics that we assume to be time-invariant, including location, refugee status, and education of the head of household. All of these are captured by α_i. We further conditioned on potential time variant confounders such as dependency ratio, household size, ratio of employed household members to the number of household members of working age, and employment status of the head of the household. In the case of poverty models potential endogeneity may remain even after having conditioned on the fixed effects due to the nature of the targeting process. Therefore, we implemented the 2SLS version of both the pooled OLS and the fixed effect estimators. In the case of food security indicators, we can assume that regressors are exogenous because targeting is made on poverty, not on food security indicators.

Noticeably, in the case of the HFIAS score, we have to deal with a censored variable whose distribution has a clear peak at zero. In such a case the fixed effects tobit model estimates would be affected by the so-called "incidental parameters" problem especially in case of short time panel datasets (Greene, 2004). To ensure consistency with the fixed effect models of continuous outcome variables (asset-based poverty index and FCS), in the case of HFIAS model we used the semi-parametric estimator of fixed effect tobit models proposed by Honoré (1992), which is consistent and asymptotically normal even for time dimension of 2 as in our case.

6. Results

We first run a pooled OLS regression using a sandwich estimator of the covariance matrix. Results in the case of the asset-based poverty index[18] are reported in the first two columns of Table 9. All independent variable parameters except for a few regional dummies are significant at p=0.05. Both the household size and the dependency ratio affect the index negatively, while the ratio of employed household members over working age

[18] The dependent variable – i.e., the log of the asset-based poverty index – is built in such a way a higher index value corresponds to wealthier households. This should be considered when interpreting the results in Table 9.

Table 9. Asset-based poverty index regression models, Palestine.

	Pooled OLS		Pooled 2SLS		Fixed Effect		Fixed Effect IV	
	Coef.	Student's t	Coef.	z	Coef.	Student's t	Coef.	z
mass[a]	-0.03	-24.96	-0.03	-25.33	-0.02	-15.56	-0.02	-15.07
ydum	-0.01	-1.89	-0.01	-1.91	-0.03	-5.18	-0.03	-5.07
massy[a]	0.00	2.06	0.00	2.11	0.01	6.04	0.01	5.75
lhsize	-0.31	-54.19	-0.31	-54.22	-0.27	-37.46	-0.27	-37.47
dep_ratio	-0.02	-14.26	-0.02	-14.23	-0.02	-10.77	-0.02	-10.77
rat_emp	0.10	8.53	0.10	8.47	0.15	12.29	0.15	12.32
employed	0.04	5.55	0.03	5.35	-0.01	-4.20	-0.01	-4.20
agehead	0.00	10.45	0.00	10.42				
refhead	0.04	8.5	0.04	8.47				
femhead	-0.02	-2.77	-0.02	-2.70				
high_ed	0.09	19.05	0.09	18.85				
WB North	0.13	13.33	0.12	12.84				
WB Center	0.23	22.58	0.23	21.98				
WB South	0.09	9.25	0.09	8.83				
GS North	-0.01	-1.01	-0.01	-1.05				
GS Center[b]								
GS South	-0.01	-1.03	-0.01	-1.01				
rural	-0.10	-16.06	-0.10	-15.98				
camp	-0.04	-5.06	-0.03	-5.01				
constant	7.44	417	7.45	415.01				
R^2	0.45				0.36			
KP rk under-identification ChiSq							p=0.00	
CD Wald F			>350				>350	
HJ over-identification ChiSq			exactly id.				exactly id.	
IV (excluded)			ass, assy				ass, assy	
F test of fixed effect					1.8	p=0.00		

[a] This variable has been instrumented; [b] GS Center, where Gaza City is located, is assumed as reference. Note: KP is the Kleibergen-Paap LM test for under-identification of the model; CD is the Cragg Donald weak identification test; HJ is the Hansen J statistics for over-identification of the model (cf. Baum *et al.*, 2007).

household members shows a clear positive effect. This confirms that poverty is mostly a matter of (a lack of) employability. The characteristics of head of households that positively impact the index are the following: education, age, employment status, refugee status or living in the West Bank. On the other hand, households situated in rural areas and refugee camps negatively impact the outcome variable. All estimates have expected signs: higher educational attainment, employment and living in the West Bank over the Gaza Strip all decrease the chances that a household is poor. Conversely, holding refugee status or living far away from an urban center increases the likelihood of being poor.

The impact denoting the intensity of assistance is captured by the interaction term "massy". The value of monthly assistance positively impacts the asset-based poverty index.

However, despite being statistically significant, the coefficient estimate is close to 0. To deal with possible endogeneity, we performed a pooled 2SLS instrumenting the variable and the interaction term with dummies for assistance and its interaction with time. However, the size of the coefficient of the interaction term does not change in the case of 2SLS.

In order to account for unobserved individual heterogeneity, we run a fixed effect regression. This is done because the Hausmann test rejected the hypothesis of absence of correlation between random effects and regressors. Table 9 reports the parameter estimates obtained with the fixed effect estimator on transformed data as deviations from the group means.[19] We also implemented the corresponding 2SLS version for the fixed effect estimator using the same instruments employed in the pooled model (last two columns of Table 9). All time-invariant regressors are perfectly correlated with the household specific intercepts, therefore only the time varying variables are considered in the fixed effect models: dependency ratio, household size, ratio of employed household members to working age members, and employment status of household head. Both models confirm that the intensity of assistance has a significant effect in reducing household poverty. In all the models, the coefficients of the interaction term are statistically significant stable around 0.01: a 10% increase of assistance on average leads to a direct 0.1% increase of the asset-based index.

To take into account the fact that the West Bank and the Gaza Strip are physically, politically and economically apart, we estimated the impact of assistance separately for the two regions (Table 10 and 11, respectively). As expected, the impact is significantly positive in the West Bank and of the same order of magnitude as Palestine as a whole (Table 9). This was true after having accounted for individual heterogeneity.

Quite surprisingly, we obtained a non-significant impact of assistance in the Gaza Strip. This seems related to the very peculiar situation present in Gaza. In 2014, more than four households out of five received assistance (cf. section 3.3), largely irrespective of the household characteristics.[20] This was done in order to offset the region's widespread humanitarian crisis resulting from a ten-year long blockade and generalized "de-development" (UNCTAD, 2017). To make matters worse, a series of military operations took place over the last decade, ultimately culminating in the devastating war of July-August 2014 — exactly during the second period surveyed. This is likely to have blurred the causal relationship between assistance and poverty.

The estimates in the case of HFIAS show the expected signs.[21] In the models for Palestine as a whole (Table 12), the coefficient of the interaction term is significantly negative in the simple pooled OLS model as well as in models addressing the censored nature of the HFIAS variable. This means that assistance has a significant positive impact in ensur-

[19] With this transformation we get rid of the large number of group dummies that would be included in the least square dummy variable estimator had the transformation not being made (Baltagi, 2005).

[20] The poverty headcount ratio in the Gaza Strip is 53.0% while one third of population (33.8%) lives in extreme poverty according to monthly consumption patterns (PCBS, 2018a). According to Atamanov and Palaniswamy (2018) more than 90% of the bottom 40% in the Gaza Strip receive some form of aid; and even among the most well-off, half receive assistance. Another anecdotal evidence of the generalized humanitarian crisis is the higher concentration around the mean of average assistance per household in Gaza Strip vis-à-vis West Bank with the latter having a coefficient of variation that is five times larger than the former.

[21] HFIAS is a measure of quantity deprivation of food showing higher scores the lesser the food consumed by the household.

Table 10. Asset-based poverty index regression models, West Bank.

	Pooled OLS		Pooled 2SLS		Fixed Effect		Fixed Effect IV	
	Coef.	Student's t	Coef.	z	Coef.	Student's t	Coef.	z
mass[a]	-0.03	-16.29	-0.03	-17.15	-0.02	-10.01	-0.03	-10.15
ydum	-0.02	-3.02	-0.02	-3.01	-0.03	-5.55	-0.03	-5.42
massy[a]	0.00	0.53	0.00	0.47	0.01	3.61	0.01	3.34
lhsize	-0.30	-38.49	-0.30	-38.49	-0.23	-25.1	-0.23	-25.13
dep_ratio	-0.02	-10.99	-0.02	-10.94	-0.02	-8.25	-0.02	-8.24
rat_emp	0.09	5.91	0.09	5.85	0.16	9.82	0.15	9.72
employed	0.05	5.89	0.05	5.66	-0.02	-4.01	-0.02	-3.97
agehead	0.00	8.03	0.00	8.00				
refhead	0.05	7.31	0.05	7.26				
femhead	-0.02	-1.86	-0.02	-1.77				
high_ed	0.10	15.75	0.10	15.68				
WB North	-0.11	-14.93	-0.11	-14.85				
WB Center[b]								
WB South	-0.15	-18.74	-0.15	-18.64				
rural	-0.11	-16.37	-0.11	-16.25				
camp	-0.07	-5.69	-0.07	-5.63				
constant	7.63	345.45	7.63	345.47				
R^2	0.31				0.21			
KP rk under-ident. ChiSq			1083	p=0.00			1013	
CD Wald F			>350				>350	
HJ over-identific. ChiSq			exactly id.				exactly id.	
IV (excluded)			ass, assy,				ass, assy	
F test of fixed effect					1.8	p=0.00		

[a] This variable has been instrumented; [b] WB Center, where Ramallah and East Jerusalem are located, is assumed as reference.
Note: KP is the Kleibergen-Paap LM test for under-identification of the model; CD is the Cragg Donald weak identification test; HJ is the Hansen J statistics for over-identification of the model (cf. Baum *et al.*, 2007).

ing the consumption of adequate quantities of food. Moreover, being a refugee, employed, well-educated, younger household head reduces household food insecurity.

Regional models tell the same story, although it is worth noting that the impact of assistance is much stronger in the Gaza Strip than in the West Bank. This confirms the key role of assistance to ensure food security in a humanitarian crisis context such as the Gaza Strip, where two third of households receive in-kind food assistance and one fifth of surveyed households received food vouchers (cf. Table 1). In the West Bank, households have a wider portfolio of coping strategies available to them, including non-assistance strategies.

Both regions have marked sub-regional differences. The governorates of the two main economic centers – Ramallah and East Jerusalem in the West Bank and Gaza City in the

Table 11. Asset-based poverty index regression models, Gaza Strip.

	Pooled OLS		Pooled 2SLS		Fixed Effect		Fixed Effect IV	
	Coef.	Student's t	Coef.	z	Coef.	Student's t	Coef.	z
mass[a]	-0.03	-14.98	-0.03	-14.38	-0.02	-9.32	-0.02	-8.74
ydum	0.03	2.67	0.03	2.17	0.00	-0.11	0.00	-0.16
massy[a]	0.00	-1.5	0.00	-1.08	0.00	1.34	0.00	1.15
lhsize	-0.35	-43.49	-0.35	-43.28	-0.33	-33.63	-0.33	-33.69
dep_ratio	-0.02	-9.1	-0.02	-9.11	-0.02	-6.81	-0.02	-6.82
rat_emp	0.14	7.86	0.14	7.86	0.12	7.46	0.12	7.49
employed	0.00	-0.17	0.00	-0.20	-0.01	-1.45	-0.01	-1.46
agehead	0.00	7.82	0.00	7.80				
refhead	0.02	3.06	0.02	3.06				
femhead	-0.02	-2.13	-0.02	-2.11				
high_ed	0.07	11.34	0.07	11.14				
GS North	0.00	0.36	-0.01	-1.05				
GS Center[b]								
GS South	0.00	-0.09	0.00	-0.08				
rural	0.01	0.4	0.01	0.40				
camp	-0.01	-0.9	-0.01	-0.88				
constant	7.52	314.63	7.52	312.85				
R^2	0.48				0.46			
KP rk under-identific. ChiSq							p=0.00	
CD Wald F			>350				>350	
HJ over-identification ChiSq			exactly id.				exactly id.	
IV (excluded)			ass, assy				ass, assy	
F test of fixed effect					1.5	p=0.00		

[a] This variable has been instrumented; [b] GS Center, where Gaza City is located, is assumed as reference. Note: KP is the Kleibergen-Paap LM test for under-identification of the model; CD is the Cragg Donald weak identification test; HJ is the Hansen J statistics for over-identification of the model (cf. Baum *et al.*, 2007).

Gaza Strip – perform on average better than other districts. We do not have econometric evidence to explain this. However, we can argue that this happens for different reasons on the basis of secondary information. For instance, in the case of the West Bank, residing within the municipality of Ramallah or close to it is an advantage in terms of employment and market opportunities. Furthermore, the impact of Israeli settlements and territorial fragmentation is less pronounced in these areas compared to WB North and WB South. For the Gaza Strip, residing close to the decision-making center of the de facto ruling authority and further away from the Israeli border[22] is an advantage in terms of food security.

[22] Israeli forces enforce a buffer zone by land and sea, the "access restricted areas". According to Israeli authorities, up to 100 meters from the double wired/concrete fence built along the Gaza-Israel border is a "no go" area and up to 200 meters there is no access for heavy machinery. However, "humanitarian partners in the field have

Table 12. HFIAS regression models.

Variables	Palestine						West Bank						Gaza Strip					
	Pooled OLS		Tobit		Honoré estimator		Pooled OLS		Tobit		Honoré estimator		Pooled OLS		Tobit		Honoré estimator	
	Coef.	Student's t	Coef.	z	Coef.	z	Coef.	Student's t	Coef.	z	Coef.	z	Coef.	Student's t	Coef.	z	Coef.	z
mass	0.82	22.82	1.17	22.37	0.93	12.62	0.61	12.04	0.61	12.04	0.97	7.27	0.97	16.46	1.40	16.80	1.18	11.84
ydum	-1.34	-13.69	-2.51	-11.08	-3.45	-12.14	-1.47	-14.93	-1.47	-14.93	-4.45	-13.29	-0.69	-1.99	0.24	0.43	0.90	1.33
massy	-0.40	-9.73	-0.26	-4.22	-0.35	-4.53	-0.21	-3.24	-0.21	-3.24	-0.35	-2.1	-0.58	-7.51	-0.78	-6.84	-1.16	-8.1
lhsize	2.43	19.82	4.51	19.71	3.90	11.17	1.73	13.13	1.73	13.13	4.05	7.42	3.62	14.19	4.71	13.75	3.95	8.38
dep_ratio	0.05	1.36	0.15	2.27	0.10	0.99	0.02	0.46	0.02	0.46	0.11	0.7	0.16	1.85	0.25	2.16	0.10	0.67
rat_emp	-1.84	-8.08	-3.68	-7.77	-3.37	-4.7	-1.04	-4.27	-1.04	-4.27	-3.36	-3.26	-3.79	-7.63	-5.59	-7.75	-3.45	-3.29
employed	-0.93	-6.51	-1.30	-5.15	-1.32	-3.36	-0.85	-5.44	-0.85	-5.44	-1.52	-2.48	-0.68	-2.39	-0.41	-1.13	-1.17	-2.21
agehead	-0.03	-9.13	-0.05	-8.19			-0.02	-5.03	-0.02	-5.03			-0.06	-8.16	-0.08	-7.70		
refhead	-0.25	-2.26	-0.81	-3.94			-0.41	-3.41	-0.41	-3.41			-0.21	-0.94	-0.27	-0.92		
femhead	0.18	0.99	0.67	2.05			0.36	1.86	0.36	1.86			-0.05	-0.13	-0.04	-0.09		
high_ed	-1.32	-13.69	-2.66	-13.89			-0.87	-8.88	-0.87	-8.88			-2.02	-9.44	-2.68	-9.44		
WB North	-1.10	-4.43	-2.79	-7.00			0.71	6.04	0.71	6.04								
WB Center[a]	-1.75	-6.9	-5.15	-11.56														
WB South	-0.73	-2.86	-0.72	-1.79			1.16	9.29	1.16	9.29								
GS North	2.22	8.54	2.58	6.93			0.19	1.61	0.19	1.61			2.10	7.95	2.28	6.22		
GS Center[b]							1.30	5.27	1.30	5.27								
GS South	2.15	7.92	2.45	6.36			1.91	5.08	1.91	5.08			2.09	7.6	2.32	6.09		
rural	0.02	0.18	0.43	1.67									-1.59	-2.97	-3.21	-3.97		
camp	1.42	7.28	2.70	9.20									1.59	5.37	2.20	5.81		
constant	3.25	7.73	-0.72	-0.96									2.63	3.33	-1.36	-1.24		
R^2	0.31						0.23						0.23					

[a] WB Center, where Ramallah and East Jerusalem are located, is assumed as reference in the West Bank model; [b] GS Center, where Gaza City is located, is assumed as reference in both the Palestine and Gaza Strip models.

Table 13. FCS regression models.

Variables	Palestine				West Bank				Gaza Strip			
	Pooled OLS		Fixed effects		Pooled OLS		Fixed effects		Pooled OLS		Fixed effects	
	Coef.	Student's t	Coef.	Student's t	Coef.	Student's t	Coef.	Student's t	Coef.	Student's t	Coef.	Student's t
mass	-0.84	-9.64	-0.58	-6.22	-0.80	-6.36	-0.70	-6.22	-1.14	-8.54	-1.04	-6.22
ydum	-0.01	-0.04	-0.27	-0.78	0.35	0.98	-0.10	-0.28	-1.93	-1.98	-3.78	-3.28
massy	-0.26	-2.28	-0.22	-1.68	0.21	1.19	0.58	2.63	-0.13	-0.64	0.27	1.01
lhsize	3.29	8.79	4.51	9.22	3.34	7.37	4.42	7.57	3.84	5.81	5.11	5.76
dep_ratio	0.27	2.44	0.26	1.82	0.29	2.21	0.29	1.76	0.09	0.38	0.10	0.33
rat_emp	7.68	11.03	8.27	9.85	6.96	8.57	8.51	8.48	9.79	7.31	8.03	5.3
employed	1.25	2.98	-0.46	-2.1	1.39	2.74	-0.47	-1.84	0.62	0.85	-0.43	-1.02
agehead	0.07	6.1			0.05	4.31			0.09	4.51		
refhead	-0.45	-1.44			0.61	1.58			-2.59	-4.69		
femhead	-0.86	-1.62			-0.75	-1.19			-1.02	-1.03		
high_ed	3.28	11.16			2.83	8.07			3.46	6.42		
WB North	-0.67	-0.93			-0.77	-1.89						
WB Center[a]	0.00	0										
WB South	-9.88	-13.15			-10.43	-22.66						
GS North	-5.76	-7.95							-4.81	-6.54		
GS Center[b]												
GS South	-7.49	-9.71							-6.70	-8.6		
rural	-1.26	-3.42			-1.90	-4.95			4.24	3.15		
camp	-1.69	-3.07			-4.42	-5.75			0.67	0.86		
constant	67.27	53.95			66.28	49.87			68.57	34.38		
R^2	0.13		0.06		0.13		0.03		0.13		0.06	
F test of fixed effect		1.28	p=0.0			1.36	p=0.0			1.28	p=0.0	

[a] WB Center, where Ramallah and East Jerusalem are located, is assumed as reference in the West Bank model; [b] GS Center, where Gaza City is located, is assumed as reference in both the Palestine and Gaza Strip models.

The FCS results are quite different. According to OLS estimates (first column of Table 13), the quality of food consumption in Palestine seems to be negatively affected by the intensity of assistance.[23] However, in the fixed effects model, the interaction parameter is not significant. All variables whose coefficients are statistically significant show the same signs as in the poverty index models except for two cases: the dependency ratio and the household size. They both have a positive effect on FCS, possibly because a larger number of household members includes a sizeable share of children and elders calling for particularly dietary requirements and/or making the household more eligible for food aid targeting. Regional dummies are all negative vis-à-vis Central Gaza except for the North and Central West Bank. The latter two regions show non-significant coefficients, possibly explained by higher population density and more urban nature.

The West Bank and Gaza Strip models provide quite a different picture when considering the fixed effect model. The impact of assistance on FCS is positive and significant in the West Bank but it is not significant in the Gaza Strip. This may depend on the nature of the outcome variable. A higher FCS presupposes the availability and physical accessibility of a variety of food, a condition that may not have held in Gaza Strip because of the open armed conflict and strict blockade that occurred in 2014.

Keeping in mind that under these very specific conditions food security was pursued primarily through humanitarian assistance, we have to consider that in-kind food aid is based on food baskets containing only basic foodstuffs such as wheat flour, rice, pulses and vegetable oil. Therefore, in order to assess the impact of assistance on FCS via in-kind food aid, we disentangled the overall FCS in three additive components[24] and estimated the impact model per each FCS component (Table 14).

Doing so resulted in a slightly different picture. The intensity of assistance showed a positive impact of the two components provided via in-kind food assistance. The first component, which includes cereals, tubers, pulses, fruits and vegetables, is positive though significant only at p=90%. The second component, which includes oil and sugar, has a positive and significant impact at p=95%. Conversely, the component not included in the food aid basket, i.e. the meat and milk component, was not significant. This may be attributed in part to the nature of in-kind food assistance constituted of cereals, pulses and vegetable oil during the war in Gaza and in part to the low-income elasticity of these food categories as a source of low-cost calories and proteins. The less significant relationship found with reference to the first components can be explained by the dramatic drop in the availability of fruit and vegetables in the Gaza Strip as a result of the war.[25] This drop was only partially compensated by the in-kind food assistance of cereals and pulses. In conclusion, food security was ensured more in terms of the quantity of food provided than the

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reported that in practice up to 300 metres from the perimeter fence is considered by most farmers as a "no-go" area and up to 1,000 metres a "high risk" area" (OCHA, 2018: 5). This area is where most military operations take place.

[23] Higher FCS scores means in fact higher food quality as it measures food security in term of diet diversification.

[24] The three components and the relevant FCS weights are the following: fruits, vegetables, cereals, tubers and pulses (weights from 1 to 3); milk and meats (weight equal to 4); oil, sugar and others (weight equal to 0.5).

[25] Commercial food imports to the Gaza Strip cover a significant share of Gazan food needs. They stopped almost completely in the second half of 2014 because of the war and were partially offset by humanitarian imports providing food aid (Latino and Flämig, 2017).

Table 14. FCS components fixed effect regression models, Gaza Strip

	Total		Cereals, pulses, vegetables & fruit		Meat & milk		Oil & sugar	
	Coef.	Student 's t	Coef	Student's t	Coef	Student's t	Coef	Student's t
mass	-1.04	-5.44	-0.20	-3.31	-0.83	-5.01	-0.01	-0.97
ydum	-3.78	-3.28	0.23	0.62	-3.37	-3.46	-0.63	-8.12
massy	0.27	1.01	0.14	1.72	0.09	0.39	0.03	2.01
lhsize	5.11	5.76	1.39	5.18	3.37	4.27	0.35	5.77
dep_ratio	0.10	0.33	-0.06	-0.71	0.23	0.88	-0.07	-3.39
rat_emp	8.03	5.30	-0.15	-0.31	8.14	6.21	0.05	0.51
employed	-0.43	-1.02	0.24	1.87	-0.66	-1.75	-0.02	-0.53
R^2	0.07		0.02		0.07		0.06	

quality of diet during the war and following the conclusion of the hostility, at the height of the humanitarian crisis when interventions were primarily a matter of saving lives.

7. Conclusions

This paper contributes to the scanty literature on the impact of humanitarian assistance interventions and outcomes (Clarke *et al.*, 2014). It aims to answer a question that, to the best of our knowledge, has yet to be addressed: does assistance – broadly defined as any type of in-kind or cash transfer – improve the well-being of Palestinian households? To do so, we apply advanced econometric techniques and impact evaluation approaches widely advocated in the debate on aid effectiveness (cf. section 2.2). Specifically, we coupled the classical counterfactual framework of impact evaluation analysis with fixed effect econometric modelling using a difference-in-difference approach. This allowed us to treat sample selection bias. We also instrumented the fixed effect model to get rid of endogeneity where needed, such as in poverty models.

The main results are in line with existing literature (Ruel *et al.*, 2013). Assistance is indeed crucial to support the standards of living of Palestinians: both poverty and food insecurity would have been much higher without the massive assistance provided by the international community to Palestine. This result supports similar conclusions attained by recent studies on contexts marked by violent conflicts and food insecurity crises (Doocy and Tappis, 2016; Mercier *et al.*, 2017; Trachant *et al.*, 2018). We confirmed the key role played by assistance, specifically food aid, extending the evidence to a protracted crisis context such as Palestine.

The first policy implication is therefore that the international community should not keep disengaging from supporting Palestinian households. Over the last decade, overall assistance to Palestine shrank by two thirds since 2008. The international community should be aware that if assistance continues to diminish, the severely negative consequences on the ground will affect the wellbeing of these households. More generally, the positive impact of assistance on poverty reduction and food security established in

this paper encourages renewed investment and further effort in enhancing aid effectiveness through better coordination of implementing actors and better design, targeting and delivery of assistance to the Palestinian people.

It is important to keep in mind that the average positive impact of assistance hides a lot of heterogeneity with marked differences on each outcome dimension (poverty, quantity of food consumed, diet diversity) and region (West Bank or Gaza Strip). In the case of poverty reduction, there is a clear positive impact of intensity of assistance for both Palestine as a whole and the West Bank. However, this relationship is not significant for the Gaza Strip, probably because of the July-August 2014 war that could have blurred the causal relationship between assistance and poverty reduction.

Assistance has a positive and significant impact on the amount of food consumed (proxied by HFIAS) in both regions, though the impact is much larger in the Gaza Strip than in the West Bank. This is thanks to massive in-kind food aid, food vouchers and cash interventions during and after the 2014 war that helped keep levels of food consumption at an acceptable level and restore household resilience (Brück *et al.*, 2018). In the case of diet diversity (proxied by the FCS), there is no significant impact of assistance for Palestine as a whole. The impact is however significantly positive for the West Bank but not for the Gaza Strip. When disentangling this last result according to main diet components, we see that the two components included in the food basket provided to households in need – cereals and pulses, and oil and sugar – have positively affected Gazan households. This is true despite the fact that in-kind food aid was only partially able to compensate for the dramatic drop in the availability of fruit and vegetables imports during and after the 2014 military escalation.

A second policy implication therefore relates to the importance of the composition of food baskets provided to a population in need in order to ensure a balanced diet (Webb *et al.*, 2014). This issue was raised in recent worldwide debates, specifically in Palestine where the food basket provided by UNRWA (OCHA, 2016) and by WFP (2017a and 2017b), the two most important implementing agencies, recently changed in order to provide more fortified and balanced food baskets. Careful consideration of the composition of food baskets is extremely important, especially when considering long-term consequences of a balanced diet to targeted households with children (Alderman *et al.*, 2006).

Our study presents some limits. Understanding why assistance determined the abovementioned outcomes would require more detailed information as well as an information-eliciting tool different from the one used by the SEFSec. Indeed, the SEFSec dataset, although quite informative on quantitative aspects of assistance to Palestinian households, is not able to open the black box of mechanisms that lead to these outcomes. Nor was it possible to analyze the effectiveness of different forms and sources of assistance, which affect the logics of intervention in a different manner. Addressing these topics would have required a larger and more detailed database supplemented by qualitative information, which we did not have.

Nevertheless, the SEFSec dataset may be further exploited to shed light on issues such as the spatial distribution of assistance. The dataset could even be used to conduct a finer analysis of the impact of different types of assistance on food security as soon as the third wave (carried out in late 2018) data is made available. Methodological speaking, a possible future improvement to consider would be to model the different impact of assistance on

asset accumulation/decumulation or even on household expenditure, provided the data is of adequate quality.

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