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THE LABOR MARKET OF ISRAELI ARABS

Key Features and Policy Solutions

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The views expressed in this paper do not necessarily reflect those of the Bank of Israel.

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Executive Summary

This aim of this policy paper is to characterize the main problems affecting the labor market of Israeli Arabs and to propose policy solutions. Our characterization of the problems is based on data from the Central Bureau of Statistics, and on a review of papers and studies on the topic. The proposed policy solutions, which aim to address the problems described, are drawn from an existing body of knowledge – Israeli and global – on the relevant issues. They include a budget breakdown and simulations of future scenarios, including the anticipated return on the policy measures.

The key problems of the Israeli Arabs labor market are as follows. For men – a high degree of concentration in industries and occupations located at the lower part of the skill distribution. This fact has several consequences: early retirement due to the physical nature of the work in question, retirement that is premature even compared with Palestinian labor force participation patterns and with those of men in Muslim and Arab countries; below-average productivity and wages; under-employment in more highly-skilled occupations, even among those with appropriate skills; and disincentives to study and acquire skills for the younger generation.

For women – the headline issue is that of low rates of labor force participation. This fact has the following implications: women do not play a meaningful role in the economy’s productive side; women do not (to a significant degree) help their families escape poverty; and there is insufficient incentive for young women to pursue education and acquire skills – including social skills – necessary for labor market participation.

Consequently, Israeli Arabs rank among the country’s poorest population sectors and seem to be “stuck” in a “poverty trap.”

These problems are the result of many factors, including relatively low education levels, limited geographical distribution, inadequate resource allocation on the part of the public sector, and cultural differences.

The problems are exacerbated by two phenomena:

- a. Employment discrimination and wage discrimination, with many Arabs facing barriers to suitable employment.
- b. A high cost of getting to work, due to a lack of transportation or the absence of support services (e.g., child care facilities). Some of these problems are related to Israeli Arabs' geographical dispersion and to poor transportation infrastructure.

These problems create a vicious cycle: when the population is poor and its labor market participation is only partial (women) and subject to barriers (men), it is difficult to invest in basic and higher education and to develop employment opportunities; this in turn leads to continued poor performance in the labor market. The physical and cultural distance from Jewish employment and residential hubs intensifies feelings of alienation and poses an obstacle to efforts that may reduce discrimination. When these problems compound each other over the course of time, the incentive and willingness to change the situation are negatively affected.

There are many, diverse policy solutions. Given the multiplicity of problems and their gravity, these solutions entail significant fiscal costs. The paper offers a budget breakdown of the policy proposals. Expenditures run into the hundreds of millions or even billions of NIS for certain items. These budget numbers reflect the recognition that the proposed expenditures are meant to address structural problems of the economy from a long-term perspective, and with the expectation of significant returns in terms of increased employment, GDP and economic welfare. Quantification of the rates of return on this government investment policy is presented and found to be substantial.

It should be emphasized that these costs and return projections are not geared to generate an increase in the government budget deficit or in the national debt. Clearly, should the recommendations be adopted, it would be necessary to define where exactly they fall within the general order of priorities, and whether their funding should come from cutbacks on other expenditures or from additional taxes.

We present wide-ranging solutions, which relate to different time horizons. The solutions span the spheres of education and higher education policy, matching jobseekers and job vacancies, taxation and subsidization, transportation, encouraging population dispersion, encouraging the employment of university graduates, promoting employment of women, and more. The proposed solutions include policy measures aimed at addressing issues within the Arab sector and measures to increase integration with the Jewish sector.

Three points should be noted with regard to the proposed government policy:

First, a structural resolution of the problems faced by Israeli Arabs in the labor market would entail major policy changes in numerous spheres.

Second, a comprehensive solution would have to distinguish between the various sectors within the Arab population – Bedouin, non-Bedouin Muslim, Druze and Christian – and cater for their specific needs.

Third, fiscal limitations make it necessary for public spending priorities to be clearly defined with regard to encouraging employment. It is not easy to arrive at such a definition given the complexity of the problems and the magnitude of the measures needed to address them.

In addition to the detailed description of an array of policy measures, we provide an analysis of a limited-budget policy framework. We subsequently undertake an analysis of the return to be expected from the proposed policy measures, comparing the cost of these measures with their value in terms of increased GDP. The internal rate of return on the fiscal investment in promoting Arab women's employment, over a horizon of 40 years, is around 7% per annum, under the most conservative estimates, making for a substantial lower bound on the expected returns.

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Introduction

The situation of Israeli Arabs in the labor market draws considerable attention in the public discourse, especially in the economic debate, due to both their large share of the population and their incomplete integration in the labor market. Analysis of this situation indicates that Arab men retire from work at a relatively early age and that only a fifth of the women participate in the labor force. There are high unemployment rates, especially among the less educated. Those who are employed are concentrated mainly in low-skilled industries, where wages are relatively low. The fortunes of workers with higher education are also less favorable. Some work in occupations that do not fit the subjects they had studied, while others deliberately avoid studying fields where their chances of employment are low. Most workers with higher education are employed in the public sector and only a small minority is employed in advanced industries, such as in high-tech firms.

The situation of Israeli Arabs in the labor market has many consequences both for Arab society and for the entire economy. The Arab sector, one fifth of the population, accounts for almost 50 percent of all the poor in the economy. The sector's economic situation also affects the social situation and the relations with the Jewish sector. Due to this partial integration and the failure to exploit the sector's potential, the growth of the economy is lower than it could be.

The negative labor market outcomes of Israeli Arabs and the consequences for the socioeconomic situation and for the underutilization of the economy's productive capacity highlight the need for comprehensive government policy to help integration in the labor market. This paper proposes a plan which purpose is to facilitate more successful integration.

In Chapter One we outline the main problems, using data analysis and a survey of the relevant literature. At its conclusion, we briefly

summarize the problems. In Chapter Two we present the existing policy plans and our recommendations. We delineate a breakdown of the proposed government budget, including policy proposals for a limited budget. We then present simulations of future labor force participation rates for women and the rate of return on the proposed government investment.

Chapter One

Key Features of the Labor Market of Israeli Arabs

In this chapter we present key data on Israeli Arabs in the following areas: demography, education, labor force participation, unemployment, employment (distribution by industry and by occupation), wages and geography. In the relevant cases we use international comparisons. Section 1 is based mainly on data from the Central Bureau of Statistics (CBS) and on calculations presented and reviewed in Yashiv and Kasir (Kaliner) (2011, 2013). Most of the labor market data discussed is updated to 2011, as the CBS changed the sampling framework of its Labor Force Survey in 2012 and data since then are not readily comparable with past data. Section 2 reviews the literature on the topic.

1. Data

1.1 Demography

The Arabs comprise 20.8 percent of Israel's overall population and 18.7 percent of the working-age population. The reason for the difference in these shares lies in the fact that this population is characterized by a large share of children and youth (below the age of 15). The share of children aged 0-14 is 35 percent (versus 27.7 percent among Jews).

The Arabs' share of the population has fluctuated over the years: when the State of Israel was established, 18 percent of its inhabitants were Arab; in the wake of large waves of Jewish immigration, the share dropped sharply to less than 14 percent a year later and to 11 percent in 1951; from then until the end of the 1950s it remained stable at about 11 percent. Due to a relatively high fertility rate

among Arabs, their share of the population rose to about 12 percent in 1966; in 1967 it rose to over 14 percent with Israel's annexation of East Jerusalem; from 1967 to 1989 it grew at an average rate of one percentage point every five years, reaching 18.5 percent by the end of the 1980s. In the wake of the immigration wave from the former Soviet Union in the 1990s, the share of Arabs in the population stopped rising (even declining somewhat) and stabilized at about 18 percent. Since 2000 its growth has resumed, rising to almost 20 percent at the end of 2005. The CBS forecast for 2030 is for the share to be 24.3 percent in its high growth scenario.

The CBS demographic forecasts point to the following trends:

- a. In all of Israel's population groups a drop in the total fertility rate is expected, and therefore also in the population's growth rate. This is true for both *haredi* Jews as well as non-*haredi* Jews but the decline is expected to be sharper among the *haredi* Jews.
- b. The group with the highest growth rate was and remains the Muslim Arab group, especially Muslims in the South. Its growth rate is projected to decline from 2.3-2.5 percent per annum to 1.9-2.5 percent per annum in 2030, in comparison to a decline among Jews from 1.5-1.7 percent per annum to 1.1-1.7 percent per annum in 2030.
- c. Total fertility is expected to range from 4 to 6 children among Muslims in the South and from 2.1 to 3.5 children among Muslims in the North, in comparison to 2.1-2.9 children among the Druze, Christians and Jews.
- d. The Muslim share of the population is therefore expected to rise from 16.3 percent in 2005 to about 24 percent in 2030. Concurrently, the Jews' share will drop from 76 percent in 2005 to 71-72 percent in 2030.
- e. The small groups—Christians and Druze—will remain small, but the Druze are expected to be the larger group in 2030 (about 1.7-1.8 percent of the population, versus the Christians' 1.4-1.6 percent), whereas the situation was the reverse in 2005.

1.2. Education

Education has a large impact on integration in the labor market. The scope and quality of education in the Arab sector are significantly lower than in the Jewish sector. Here are some key facts:

- Israeli Arabs are characterized by relatively low educational levels (see the distribution of years of study in Table 1 below).
- Pupils in the Arab sector achieve much lower grades than their counterparts in the Jewish sector both on international tests (according to OECD data) and on national feedback tests in primary education, as well as on the tests which determine School Efficiency and Growth Indicators (*Meitzav*).
- Dropout rates from the educational system are higher in the Arab sector—21 percent in grades 9-11, in comparison to about 11 percent in the Jewish sector.
- The rate of eligibility for a matriculation certificate in the Arab sector is relatively low—among twelfth-grade pupils it stood at 49.9 percent in 2011, versus 58.5 percent in the Jewish sector.
- Looking at threshold qualifications for admission to universities in Israel, the share of those qualifying in the Arab sector is relatively low, about 36 percent of all twelfth-graders, versus about 50 percent in the Jewish sector.
- Arabs' share of the university student population in Israel is only half their share of the population—in 2011/2012 Arabs accounted for only 10.8 percent of all university and college students in Israel. The rate goes down the higher is the academic degree, and in PhD studies Arabs make up only 4.4 percent of all students.
- Avoidance of study in fields where chances of finding employment are low.

Table 1: Years of Schooling, Rates of Matriculation Eligibility, and Rates of Satisfying University Entrance Requirements – by Population Groups, 2011

	Arab	Jewish
Years of schooling, population aged 15 and over:		
0-8 years	23.1	7.5
9-10 years	15.9	8.3
11-12 years	37.2	35.2
13 years and more	23.7	48.8
Rate of Matriculation Eligibility, pupils in 12th grade	49.9	58.5
Rate of 12th grade pupils that satisfy university entrance requirements	36	49.7

Source: CBS Statistical Abstract 2013, data for 2011.

The above points notwithstanding, it should be noted that over time there has been an improvement in Israeli Arab human capital and the differentials with Jewish society have narrowed. For example, Arabs' median years of study have risen significantly and the difference between the two sectors, which stood at 7.4 years of study in 1961, has closed. In addition, over time the rates of eligibility for a matriculation certificate and of those meeting the Israeli universities' threshold requirements are rising continuously. The number of Arab students in Israeli universities is growing at double the rate of Jewish students, and as a result Arab students' share of all the students has tripled in the course of the past thirty years.¹ One should also note the big rise in the share of women within the Arab university and college student population: from 40% in the early 1990s to about 66% recently.

Low output in the Arab education sector is influenced also by the inputs invested in education in the sector. For example, investment in education per child in Arab local authorities is 38 percent lower than in Jewish local authorities (Gal et al (2009)). The relatively low investment in Arab education finds expression in, among other

1 For more on these issues, see Jabareen (2007) and Mustafa and Arar. (2009)

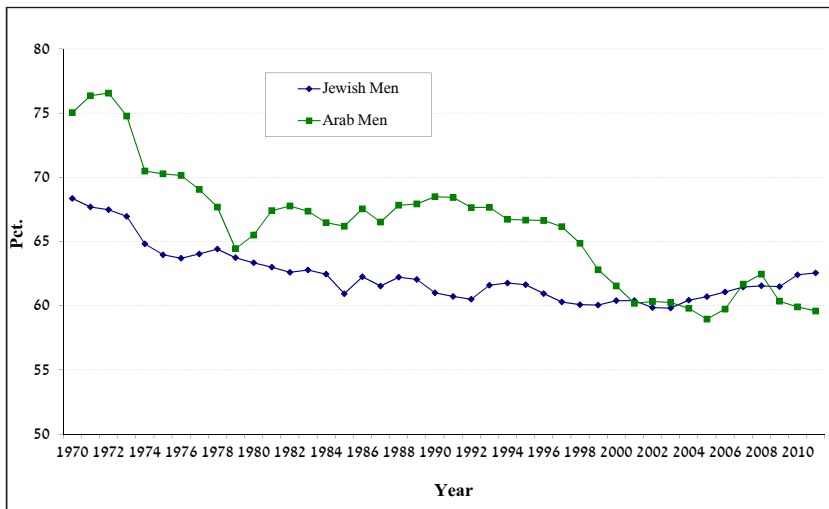
things, relatively large classes and a low number of teaching hours per pupil.

1.3. Participation in the Labor Force

The Arabs, who, as mentioned above, constitute 18 percent of the working-age population, comprise only 13 percent of the civilian labor force. Arab-Israelis' patterns of participation are characterized by low participation rates of women in the Labor Force and by early retirement from the labor force among the men.

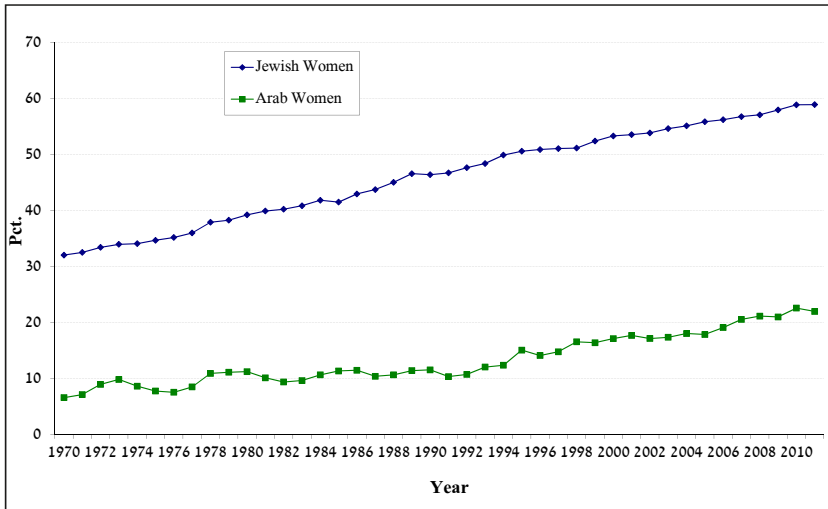
When we look at Israeli Arabs' participation rates over time, it is evident that the Arab men's participation rate has steadily declined, while the women's participation rate has risen (Figures 1a and 1b), similar to the changes in many Western countries.

Figure 1a: Men Labor Force Participation Rate, 1970-2011



Source: Calculations based on CBS Labor Force Surveys.

Figure 1b: Women Labor Force Participation Rate, 1970-2011



Source: Calculations based on CBS Labor Force Surveys.

While the participation rate of Jewish men has gone down, the decline among Arab men is more pronounced. In 1990 the participation rate of Arab men was five percentage points higher than that of Jewish men, but in recent years the situation has been reversed and the Arabs' participation rate is lower. In 2011 it was about three percentage points below that of Jewish men.

A possible explanation for the sharp drop in participation rates among Arab men is the decline of the relative demand for uneducated workers—the outcome of technological developments, bigger opening of the economy to imports, and the process of globalization. A particularly steep decline is evident in the 1970s, perhaps due to replacement by Palestinian workers. The sharp drop in Arab men's participation rates at the beginning of the 1990s was also due to the entry of foreign workers into Israel.² In the early 2000s the sharp decline in participation rates was halted, probably due to extensive cuts in National Insurance benefits and the tightening of conditions

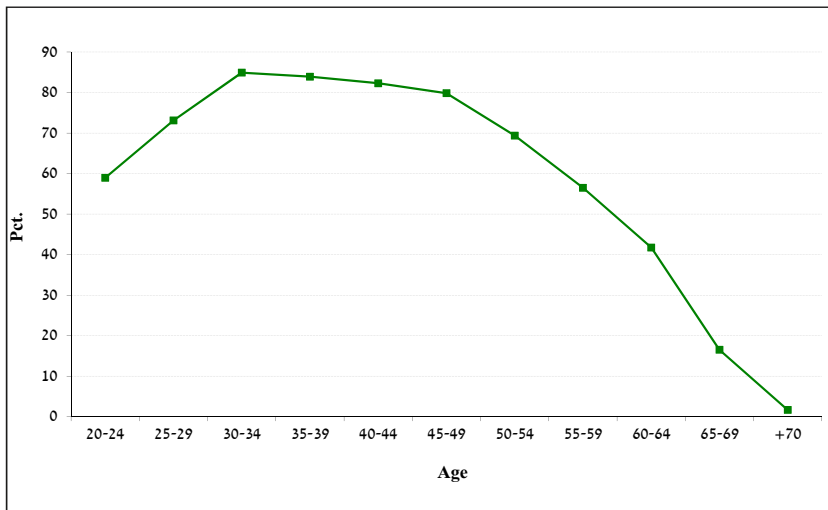
2 See "Changes in Israeli Arabs' Employment in the Last Decade," 2004 Bank of Israel Report, chap. 2, "Employment and Wages," Table b2, pp. 127-129.

for receiving them.³ In recent years there has been a certain rise back to the level at the start of the decade, but over the past two years a trend of decline in participation rates is discernible again.

Although Arab women's participation rates doubled from 1990 to 2011—from about 10 to about 22 percent—they are still exceptionally low. The rise in the participation rate has been lower than among Jewish women, and therefore the differential has widened since the 1970s.⁴

Looking at the labor force participation life-cycle profile, two central findings emerge: the participation rate among Arab men rises at first with age, but after age 45 it drops significantly. This early retirement phenomenon persists over time, among different cohorts, and in all educational groups, especially among the low-educated. Arab women's participation profile is much lower, but it also includes retirement at a relatively early age (Figures 2a and 2b).

Figure 2a: Arab Men Life Cycle Participation Rates, 2011

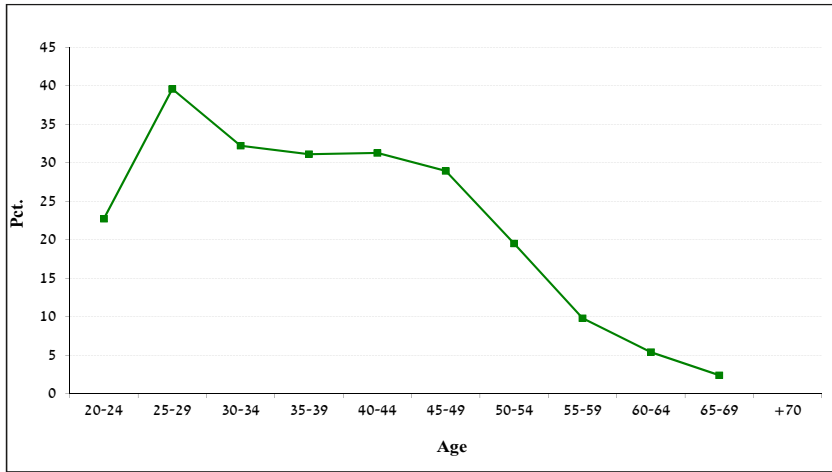


Source: Calculations based on CBS Labor Force Surveys.

3 See the discussion in the 2007 Bank of Israel Report, chap. 8, "Issues in Welfare Policy."

4 For more on this, see Yashiv and Kasir (Kaliner), 2011.

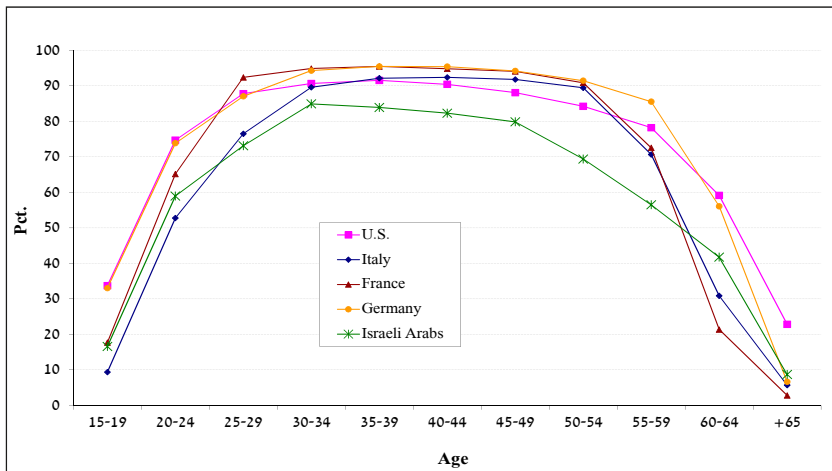
Figure 2b: Arab Women Life Cycle Participation Rates, 2011



Source: Calculations based on CBS Labor Force Surveys.

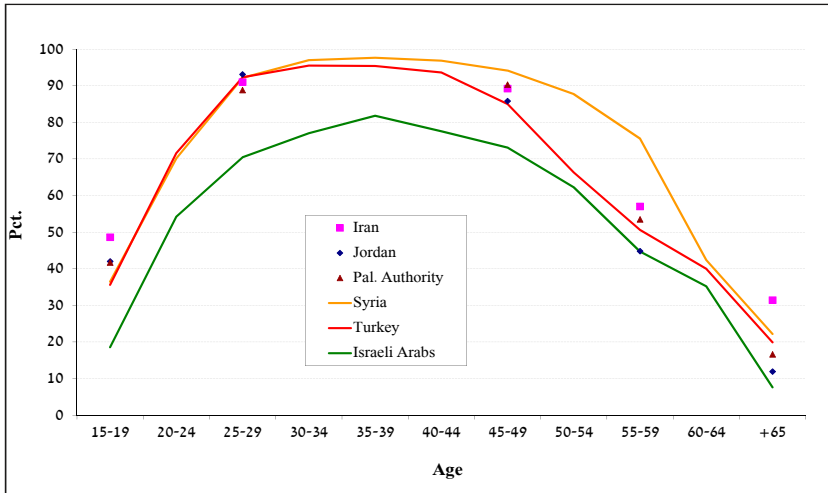
In order to assess the uniqueness of the participation profile over the life-cycle of Arab men in Israel, it is useful to compare it to the participation profiles of men in other economies (Figures 3a and 3b). Israeli Arab men’s participation rate turns out to be lower than the rates that are found in Western countries, and also lower than those in other Arab countries and Muslim countries.

Figure 3a: Participation Rates, Men in Western Countries and Arab-Israeli Men, 2010



Source: OECD and Calculations based on CBS Labor Force Surveys.

Figure 3b: Participation Rates, Men in Arab and Muslim Countries and Arab-Israeli Men, 2010

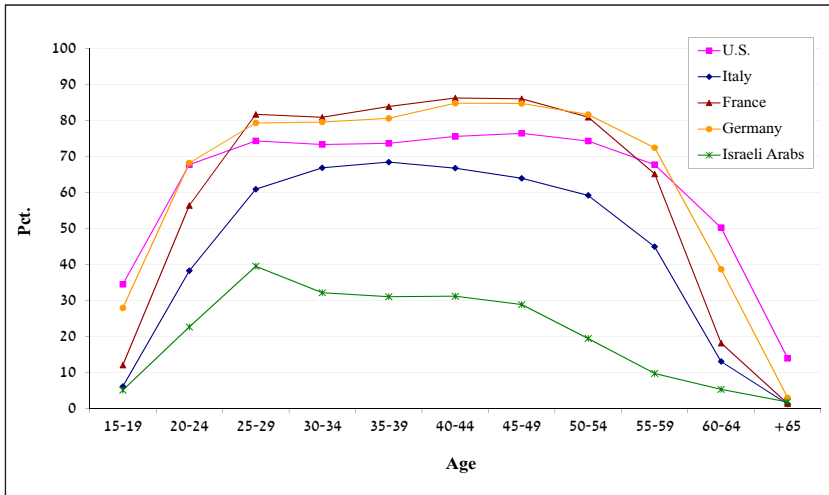


Source: ILO, OECD and Calculations based on CBS Labor Force Surveys.

The participation profile of Israeli Arab men stands out as it declines rapidly after the age group 45-49. In all other economies the participation profile features the classic hump-shape curve of a rising, flat and declining schedule over the life-cycle. The decline in Europe begins after the age group 50-54, and in the U.S. it begins—more gradually—after the age group 55-59. Among Israeli Arabs the “hump” is shorter and sharper, even in relation to Palestinian men in the West Bank and Gaza and in other Arab and Muslim countries. Although early retirement is common also in Turkey, men’s participation rate in that country is significantly higher than that of Israeli Arab men. We explain this phenomenon below.

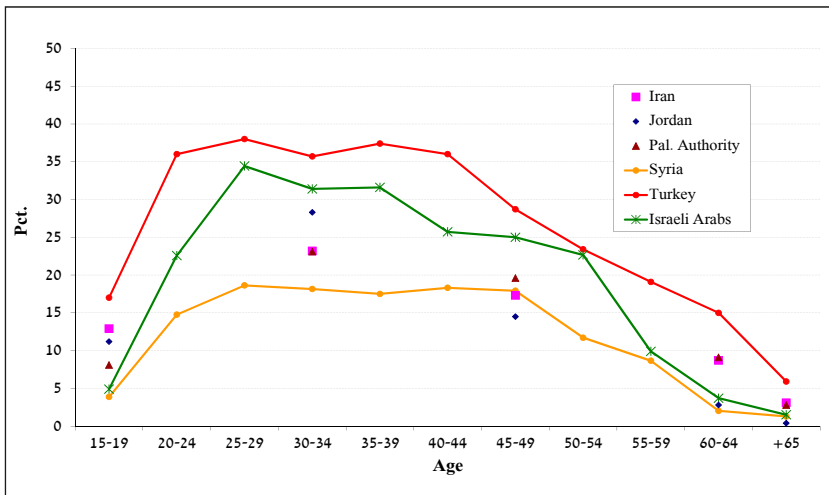
Israeli Arab women’s participation rate is low in comparison to the levels found in Western countries and for Jewish women in Israel. However it is not essentially different from the prevalent pattern in other Arab and Muslim countries.

Figure 4a: Participation Rates, Women in Western Countries and Arab-Israeli Women, 2010



Source: OECD and Calculations based on CBS Labor Force Surveys.

Figure 4b: Participation Rates, Women in Arab and Muslim Countries and Arab-Israeli Women, 2010



Source: ILO, OECD and Calculations based on CBS Labor Force Surveys.

Tables 2 and 3 break down the composition of the non-participant population among Arabs.

Table 2: Rate of Non-participation in the Labor Force in the Arab Population, by Age and Schooling - 2011

	Aged 25-64 ¹	Under age 65, over 12 years of schooling ²	Under age 65, under 10 years of schooling ²
Men	37.4	20.8	27.7
Women	57.9	16.9	34.5

- 1) The percentage of non-participants aged 25-64 out of the total non-participant population of all ages.
- 2) The percentage of non-participants aged 65 and lower in the group out of all groups of schooling.

Source: Calculations based on CBS Labor Force Surveys.

Table 3a: Number of Non-participants in the Labor Force, Arab Population, by Age and Gender, 2011

Men			Women		
Age	Number	Percentages	Age	Number	Percentages
15-17	49,826	24.5	15-17	49,375	12.7
18-24	49,727	24.5	18-24	79,079	20.3
25-29	15,787	7.8	25-29	31,176	8
30-34	8,216	4	30-34	39,369	10.1
35-44	16,514	8.1	35-44	67,880	17.4
45-54	16,628	8.2	45-54	51,416	13.2
55-59	10,172	5	55-59	20,283	5.2
60-64	8,574	4.2	60-64	15,411	4
65-69	10,483	5.2	65-69	12,990	3.3
70-74	7,253	3.6	70-74	9,852	2.5
75+	9,876	4.9	75+	12,809	3.3
Total	203,056	100	Total	389,640	100

Source: Calculations based on CBS Labor Force Surveys.

Table 3b: Number of Non-participants in the Labor Force, Arab Population, by Schooling and Gender, 2011

Men			Women		
Years of schooling	Number	percentages	Years of schooling	Number	percentages
0	8,662	4.3	0	38,860	10
1-4	11,204	5.5	1-4	19,070	4.9
5-8	35,766	17.6	5-8	66,915	17.2
9-10	38,418	18.9	9-10	63,492	16.3
11-12	69,790	34.4	11-12	139,785	35.9
13-15	25,067	12.3	13-15	42,616	10.9
16+	11,885	5.9	16+	17,326	4.4
Unknown	2,264	1.1	Unknown	1,576	0.4
Total	203,056	100	Total	389,640	100

Source: Calculations based on CBS Labor Force Surveys.

Table 3c: Number of Non-participants in the Labor Force, Arab Population, by Districts, 2011

Men			Women		
District	Number	percentages	District	Number	percentages
Jerusalem	36,579	18	Jerusalem	77,634	19.9
North	92,198	45.4	North	173,962	44.6
Haifa	29,059	14.3	Haifa	56,024	14.4
Center	17,346	8.5	Center	33,045	8.5
Tel-Aviv	3,017	1.5	Tel-Aviv	2,755	0.7
South	24,749	12.2	South	46,016	11.8
Judea and Samaria	108	0.1	Judea and Samaria	204	0.1
Total	203,056	100	Total	389,640	100

Source: Calculations based on CBS Labor Force Surveys.

Table 3d: Number of Non-participants in the Labor Force, Arab Population, by Marital Status, 2011

Men			Women		
Marital Status	Number	percentages	Marital Status	Number	percentages
Married	81,196	40	Married	215,239	55.2
Married, living alone	526	0.3	Married, living alone	3,255	0.8
Divorced	1,482	0.7	Divorced	6,791	1.7
Widower	3,093	1.5	Widower	34,369	8.8
Single	116,759	57.5	Single	129,986	33.4
Total	203,056	100	Total	389,640	100

Source: Calculations based on CBS Labor Force Surveys.

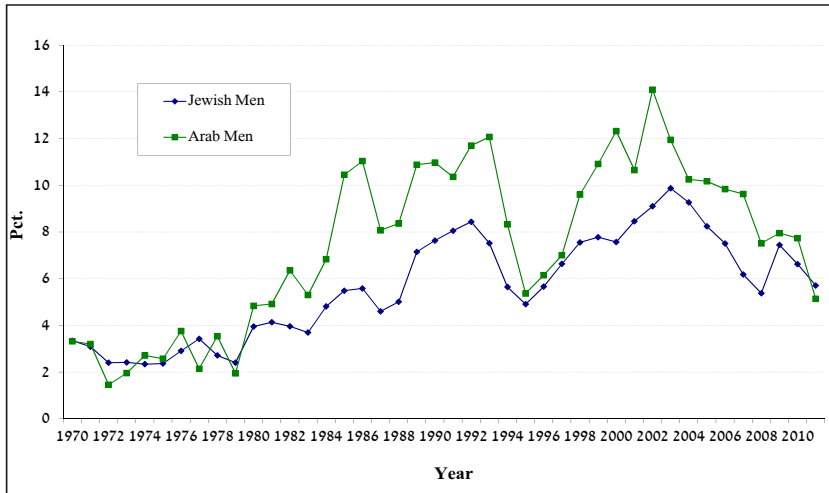
The analysis of the non-participant population points to several interesting features:

- a. About 33 percent of the women non-participants are unmarried, and about 9 percent are widows. This means that a considerable share of the women non-participants, over 40 percent, do not live with partners, i.e., have higher incentives to participate.
- b. About half of the women non-participants are at prime work ages, 25 to 54, i.e., at ages relevant to participation in the market.
- c. Almost 20 percent of the men non-participants are aged 45-64, ages still very relevant to participation in the labor market. This is due to Arab men's early retirement from participation in the market.
- d. About half of the non-participants (men and women) have had 10 years of education or less. This figure attests to the importance of education, which is also confirmed by econometric studies (e.g., using participation regressions).

1.4. Unemployment⁵

Arab men have in most years suffered from a higher unemployment rate than Jewish men, though the size of the differential has not been constant over time.

Figure 5a: Men Unemployment Rate, by Sectors, 1970-2011

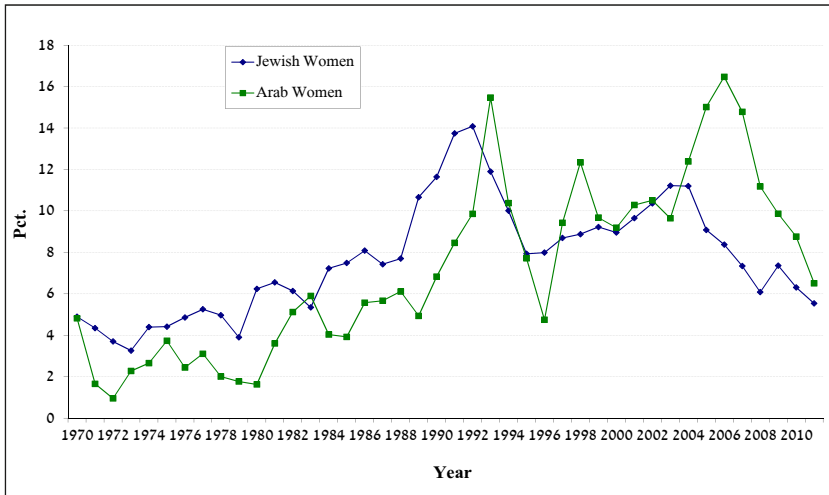


Source: Calculations based on CBS Labor Force Surveys.

For women a differential has developed over the years with higher unemployment among Arab women in comparison to Jewish women. In most years until the end of the 1990s, Arab women's unemployment rate was lower than that of Jewish women, but towards the end of that period the relation was reversed and Arab women's unemployment rate surpassed that of Jewish women. Note that the unemployment rate refers to women who actually participate in the labor market, not to the total population of women.

5 As mentioned above, in 2012 the Central Bureau of Statistics made a substantial revision to the Labor Force Survey. In the new survey Arab men unemployment rate doubled and the women's rate tripled. Labor force participation rates changed too, with an increase in rates for Arab women. These changes reflect the revision of the sampling framework, which now takes into account smaller villages and communities. Regrettably, the new data cannot be compared to the older data and are available only from 2012 onward.

Figure 5b: Women Unemployment Rate, by Sectors, 1970-2011



Source: Calculations based on CBS Labor Force Surveys.

A look at unemployment rates by educational level shows that, as in many countries, the unemployment rate declines with education.

Table 4: Unemployment Rate, Arab Population, by Gender and Schooling, 2011

Years of Schooling	Men	Women
0-8	9.4	14.4
9-10	7.8	10.1
11-12	4.5	9.5
13-15	3.1	2.4
16+	1.1	3.6

Source: Calculations based on CBS Labor Force Surveys.

1.5. Employment

Table 5 displays the distribution of occupations among Arabs and among Jews, divided into men and women. The occupations have been

classified into four groups. Figures 6 and 7 present the breakdown of employment by industry and by occupation, respectively.

Table 5: Employed Persons, by Occupation Groups, 2011

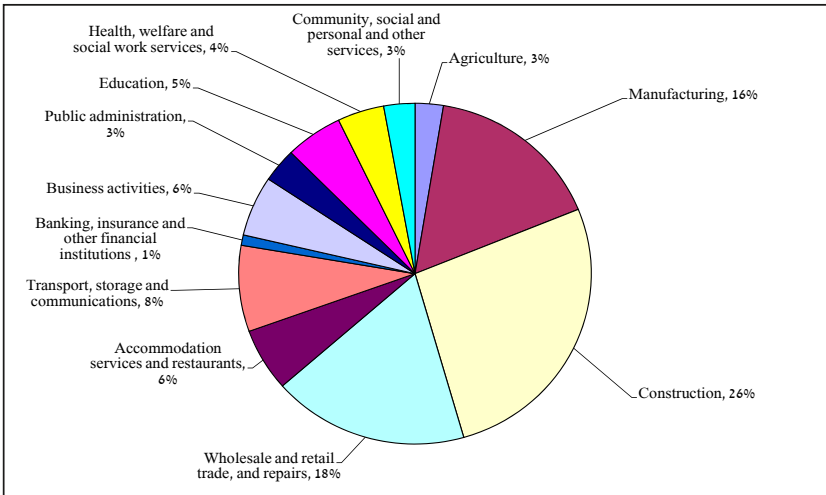
Thousands					
	Total	Group 1	Group 2	Group 3	Group 4
Jewish Men	1,244,188	522,378	325,634	312,076	84,100
Jewish Women	1,260,036	506,114	643,418	35,616	74,888
Arab Men	279,370	43,176	53,440	146,668	36,086
Arab Women	101,062	45,162	41,822	3,382	10,696
Percentages					
	Total	Group 1	Group 2	Group 3	Group 4
Jewish Men	100	42	26.2	25.1	6.8
Jewish Women	100	40.2	51.1	2.8	5.9
Arab Men	100	15.5	19.1	52.5	12.9
Arab Women	100	44.7	41.4	3.3	10.6

Definitions:

- Total** The sum of all occupations which are classified as 1 to 9 (first digit), not including unknown occupations.
- Group 1** Academic occupations, associate professionals and technicians and managers.
- Group 2** Clerical workers and agents, sales workers and service workers.
- Group 3** Skilled agricultural workers and manufacturing, construction and other skilled workers.
- Group 4** Unskilled workers.

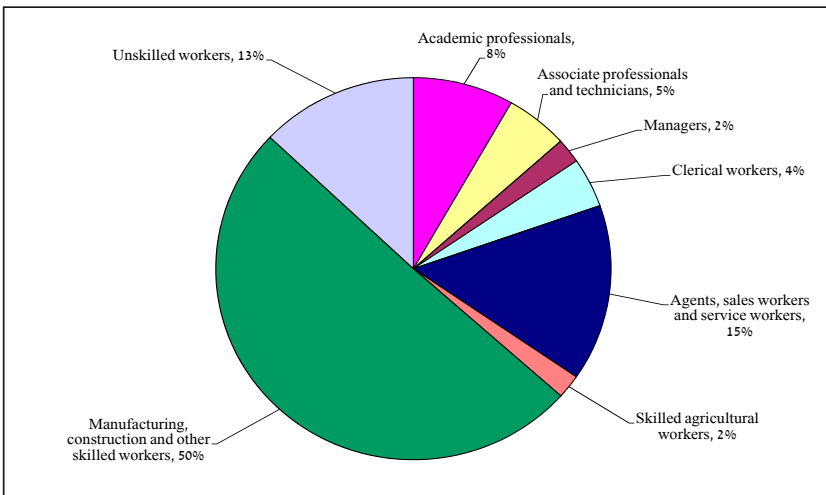
Source: Calculations based on CBS Labor Force Surveys.

Figure 6a: Arab Men Employment, by Industry, 2011



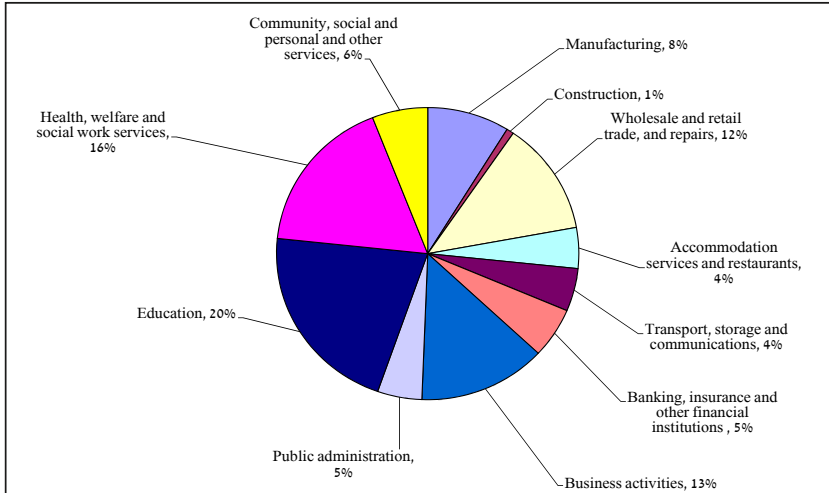
Source: Calculations based on CBS Labor Force Surveys.

Figure 6b: Arab Men Employment, by Occupation, 2011



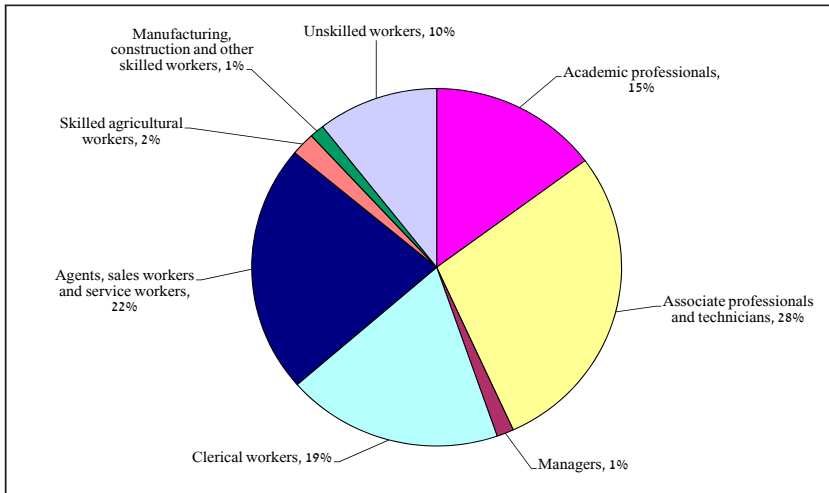
Source: Calculations based on CBS Labor Force Surveys.

Figure 7a: Arab Women Employment, by Industry, 2011



Source: Calculations based on CBS Labor Force Surveys.

Figure 7b: Arab Women Employment, by Occupation, 2011



Source: Calculations based on CBS Labor Force Surveys.

The table and figures depict the following picture:

For men, whereas among Jews about 40 percent are employed in occupations at the top skill group, among Arabs only 15 percent are

employed in those occupations. The relations are reversed for the two bottom groups where Arabs are employed in such occupations at a rate almost double that of Jews. The employed Arab men are concentrated in occupations and industries characterized by relatively low skill levels: about 60 percent of them are employed in the construction, commerce and manufacturing industries, and about 62 percent do professional work in manufacturing, construction and agriculture occupations and in unprofessional work. Employment in advanced industries and in public administration is of very limited scope. This concentration of men in occupations that require physical labor helps explain the patterns of early retirement discussed above.

For women, there is only a small differential between Jews and Arabs in the top group of occupations; in fact, the Arab women's rate (about 45 percent) is higher than the Jewish women's rate (40 percent). Nonetheless, in the bottom group of occupations the Arab women's share is 11 percent while the Jewish women's is 6 percent. The industry distribution of Arab women is heavily concentrated, with 36 percent of them being employed in education or healthcare services, their occupations suiting these industries.

These findings point to the high employment concentration of Arab men in occupations and industries that do not require higher education. By comparison, for Jewish men the concentration is at the top group of occupations. For women, there is an apparent dichotomy: on one hand a significant share of all employed Arab women are engaged in occupations at the top group, like Jewish women, but on the other hand they also have a high share also at the low end of the occupation distribution.

Research conducted at the Bank of Israel (see chapter on the labor market in the 2009 Bank of Israel Report) has shown that the employment tenure rate, i.e., months of employment divided by potential working months, among Arab Israeli women is only about 24 percent, as opposed to 64 percent among Jewish women. This means that on average employed Israeli Arab women are working about a quarter of their potential time (taking a long-term perspective).

1.6. Income

Table 6 shows data on income, hourly wages, and weekly work hours in the Arab and Jewish sectors, respectively.

Table 6: Income, Hourly Wages and Weekly Work Hours, by Gender and Population, 2011

	Jewish		Arabs	
	Men	Women	Men	Women
Average Income from Wage Earnings (NIS)	11,107	6,819	5,982	4,749
Average Weekly Work Hours per Worker	44	36	44	33
Hourly Wages	57	44	33	35
Average Income from Self Employment (NIS)	11,428	7,403	8,080	5,152
Percentage of Social Security Beneficiaries, by Types:				
Child Benefits	17.7		22.7	
Work Injury Compensation	0.3		0.2	
Disability Benefits	4.0		4.0	
Unemployment Insurance	0.9		0.9	

Source: Calculations based on CBS Labor Force Surveys.

The major findings that emerge from the table are:

- The average income of employed Arabs is significantly lower than that of employed Jews. This is mainly due to their lower hourly wage, mostly because of their concentration in occupations and industries situated at the bottom of the wage distribution. Among women, the low wages they receive are related to employment in part time positions. The hourly wage of Arab men is about 43 percent lower than that of Jewish men, while the hourly wage of Arab women is about 21 percent lower than that of Jewish women.
- The hourly wage of Arab women is higher than that of Arab men, due to the selectivity of women who are employed.
- The wage differential between the Arab and Jewish sectors is substantial in salaried labor: a salaried Jewish man's income is almost double that of an Arab, while a salaried Jewish woman's wage is a third higher than an Arab woman's. Among the self

employed, however, the average income of a Jewish man is only about a third higher than an Arab man's.

- d. The share of families receiving National Insurance child benefits is relatively high in the Arab sector, due to the high share of children.

1.7. Geographical Concentration and Transportation Problems

The high geographical concentration of Israeli Arabs in a relatively small number of localities should be noted. About 44 percent of the Arab population in Israel, with the exception of Jerusalem, lives in 14 localities, including the mixed population town of Ramle and Lod. The largest are Nazareth, with about 66,000 inhabitants, Um el-Fahm with about 44,000, and Rahat with about 42,000. As is well known, the Arab localities are concentrated in the Galilee (especially the western Galilee), the Triangle (central Israel) and the Negev.

By comparison, Jewish localities of similar size to these Arab localities—from 20,000 to 70,000 inhabitants—number 50, and include such towns as Modi'in with about 67,000, Carmiel with about 45,000, Rosh Ha'ayin and Ramat Hasharon with about 38,000 each, and Dimona with about 34,000.

Table 7 shows data on Arab, mixed and Jewish localities using various economic and demographic indicators, based on the 2008 Census.

Table 7: Economic and Demographic Indicators of Arab, Mixed and Jewish Localities

Arab Localities	Population (Thousands, End of 2007)	Local Authority Revenue Per Person	Deficit/Revenue Ratio	Ratio of Property Taxes to Total Revenue	Social Economic Rank	Ratio of Government Participation to Revenue	Ratio of Expenditures on Education to Total Expenditures	Percentage of matriculation eligibility, pupils in 12th Grade (2006/2007)	Car Accidents With Casualties, 2007	Gini Index, wages, 2006
Average	12.68	5,100	7.8	8.8	2.75	57.9	26.2	47.3	10.8	0.34
Median	9.2	4,962	3.6	8.8	3	57.9	25.2	46.3	6	0.335
Standard Deviation	10.98	1,039	10.1	3.9	1.02	7.8	7.2	9.7	13.7	0.031
Maximum	65.5	7,864	45.1	19.8	6	75.1	42.1	74.4	86	0.412
Minimum	1.9	2,866	0.1	1.5	1	41.6	10.4	25.5	1	0.259
Mixed Localities	Population (Thousands, End of 2007)	Local Authority Revenue Per Person	Deficit/Revenue Ratio	Ratio of Property Taxes to Total Revenue	Social Economic Rank	Ratio of Government Participation to Revenue	Ratio of Expenditures on Education to Total Expenditures	Percentage of matriculation eligibility, pupils in 12th Grade (2006/2007)	Car Accidents With Casualties, 2007	Gini Index, wages, 2006
Average	205.6	6,737	4.5	34.1	5	29.3	16.2	49.1	549.3	0.415
Median	65.95	5,864	3.9	34.6	4	30.4	16.7	47	77.5	0.381
Standard Deviation	238.8	2,017	2.1	8.4	1.5	10.1	3.1	10.3	756.6	0.059
Maximum	747.6	11,042	7.8	51.5	8	74.4	20.6	64.7	2,275.00	0.508
Minimum	21.2	5,146	2.6	19.7	4	10.1	11.6	33.3	14	0.354

(cont. next page)

Table 7: Economic and Demographic Indicators of Arab, Mixed and Jewish Localities (cont.)

Jewish Localities	Population (Thousands, End of 2007)	Local Authority Revenue Per Person	Deficit/Revenue Ratio	Ratio of Property Taxes to Total Revenue	Social Economic Rank	Ratio of Government Participation to Revenue	Ratio of Expenditures on Education to Total Expenditures	Percentage of matriculation eligibility, pupils in 12th Grade (2006/2007)	Car Accidents With Casualties, 2007	Gini Index, wages, 2006
Average	35	7,165	4	28.2	5.99	31.6	21.5	60.9	61.1	0.431
Median	18.2	6,570	2	28.5	6	28.9	20.4	61	15	0.429
Standard Deviation	47.16	2,440	4.3	11.1	1.93	15.4	6.7	12.6	103.8	0.043
Maximum	224.3	17,414	15.7	50.2	10	70.3	43	91.8	491	0.561
Minimum	1.3	3,726	0	6	1	3.7	8.6	26.7	1	0.341

Source: Calculations based on CBS 2008 Census.

Several features stand out from the table:

- a. The Arab localities rank lower on the socioeconomic scale (which ranges from a low of 1 to a high of 6), with a median rank of 3 versus a median of 4 for mixed localities and a median of 6 for Jewish localities. Furthermore, according to the data of the Authority for Economic Development of the Arab, Druze and Circassian Sector in the Prime Minister's Office, the situation of the Arab local authorities is grave: 13 of them are governed by an appointed committee, 62 of them have an appointed comptroller, and 63 out of 81 localities are ranked from 1 to 3 on the socioeconomic scale.
- b. The municipal authority in Arab localities has lower revenue per capita: about 5,100 NIS per capita on average, in comparison to 6,700 NIS in mixed localities and 7,165 NIS in Jewish localities; it also has a bigger budget deficit—almost 8 percent of revenue on average in comparison to 4.5 percent in mixed localities and 4 percent in Jewish localities. One of the reasons for this is low revenue from property taxes: only 9 percent of an authority's total revenue in Arab localities comes from property taxes in comparison to 34 percent in mixed localities and 28 percent in Jewish localities.
- c. The educational situation in Arab localities is considerably worse in relation to Jewish localities. The percentage of twelfth-graders eligible for a matriculation certificate is 47 percent on average in Arab localities as opposed to about 61 percent in Jewish localities.

Until recently, Arab localities suffered from poor transportation infrastructure. Table 8 presents the data.

Until 2009 the situation was as follows: 41 percent of Arab localities had no public transportation at all, and 43 percent had only low-level public transportation service. These problems originate in the historical development of Arab localities, which started out as villages and grew considerably over the years. As a result there is an appreciable shortage of internal infrastructure allowing the entry and regular operation of public transportation: an absence of roads or roads that are too narrow, no sidewalks, etc. In 2011 a government plan went into effect to subsidize the operation of means of transport, with the intention of applying it to all Arab

**Table 8: Level of Public Transportation Services
December 2009***

Service Level	Localities	Percentage	Inhabitants	Percentage
0	60	41 %	103,456	10 %
1	39	27 %	284,879	28 %
2	23	16 %	422,470	41 %
3	25	17 %	212,302	21 %
Total	147	100 %	1,023,107	100 %

*Not including mixed localities.

Level of Service 0: No public transport services.

Level of Service 1: Low level of public transport services (less than 5 rides a day per 1,000 inhabitants).

Level of Service 2: Low level of bus service, regular taxi service.

Level of Service 3: 5 or more rides a day per 1,000 inhabitants.

Source: Israeli Ministry of Transport, National Infrastructures and Road Safety slideshow.

localities. The road infrastructure nonetheless still suffers from enormous deficiencies.

The transportation infrastructure problems (both roads and public transportation) are directly related to and aggravate the problems of employment. These problems greatly increase the costs of getting to work and therefore constitute a disincentive to participation in the labor market. In combination with cultural and social norms, this poses a cardinal issue for women, since by custom an Arab woman will not walk any great distance or drive alone to work. For a woman to get to work she must have access to appropriate transport enabling her to arrive there in reasonable time, but all of the problems delineated above constitute a significant barrier to that. Even inside Arab towns and villages, as in Bedouin localities, it is difficult for women to travel from their home to the workplace or even to another location from which they could travel to work (Abu Bader and Gotlieb (2008)).

2. The Literature

In what follows we present a few prominent studies on the labor market of Israeli Arabs that were published in recent years, though this is not an exhaustive survey of the literature. In particular, see OECD (2010, 2013) and IMF (2012) for more information.

The Arab Society in Israel Book vol. 4, published by the Van-Leer Institute in 2011, notes the following findings, among others:

- a. Differentials in labor force participation rates between the religions: using data from 2007 the rates for men were around 62 percent among the Muslims, 53 percent among the Druze, and 66 percent among the Christians; for women, 20 percent among the Muslims, 26 percent among the Druze, and 38 percent among the Christians.
- b. Differentials in labor force participation rates between geographical areas: 57 percent in mixed localities, 43 percent in the Galilee, about 42 percent in the Triangle and about 34 percent in the Negev.
- c. The relation between place of residence and workplace location: 43 percent of employed Arabs work in their residential locality; the share is 66 percent for women and 36 percent for men.
- d. In the Negev there is a high concentration of employment in low-skilled occupations—about 64 percent of the employed, in comparison to about 40 percent in mixed localities, 55 percent in the Galilee and 57 percent in the Triangle. When we look only at the data for men, these numbers are even higher.
- e. The Arab labor force is young: 53 percent are aged 15 to 34; only 19 percent of the labor force are aged 45 and above, and only 5 percent are aged 55 and above.
- f. The labor force is less educated in comparison to Jews: about 72 percent had up to 12 years of study; 16 percent had 16 years of study or more, versus about 42 and 29 percent among the Jews, respectively.
- g. Many findings point to considerable concentration in employment: 61 percent of the employed men worked in three industries—manufacturing, construction and commerce; 76 percent of the

employed women worked in four industries—manufacturing, commerce, education, and healthcare and welfare services; in distribution by occupations 42 percent were professional workers versus 16 percent among Jews; among those in academic occupations about 49 percent were employed as teachers (versus about 21 percent among Jews), and about 47 percent of vocational and technical professionals were employed in teaching (versus about 43 percent among Jews).

- h. Not being employed in the occupation for which one was trained is common among Arab men: out of those with university or post-secondary education in the natural sciences and agriculture, about 25 percent do not work in occupations suited to their education; in law, medicine, engineering, architecture, the social sciences and humanities, about 40 percent do not work in occupations suited to their education.⁶
- i. A high share of the Arab unemployed, about 71 percent, have been looking for work for 6 months or more.⁷

Blass and Adler (2009) of the Taub Center for Social Policy Research in Israel report substantial differences between the educational systems in the Jewish and Arab sectors. They note especially the differential in teaching hours per pupil, a large differential of almost three times in the share of those with 13 years of study or more, a decline in average education among the Arab public over the course of the last decade, a higher dropout rate from the educational system, much lower achievements on the national feedback tests in primary education and on the tests which determine School Efficiency and Growth Indicators (*Meitzav*), and a low percentage of students (relative to their share of the population) in institutions of higher education.

In their paper *Mi'ari, Nevuani and Hatab (2011)* examine the Israeli labor market as a dual labor market, consisting of a primary labor

6 These data are updated to the year 2004 and taken from *The Arab Society in Israel Book vol. 2*.

7 The data are updated to the year 2005 and taken from *The Arab Society in Israel Book vol. 3*.

market comprised mostly of the Jewish population, and a secondary labor market in which most of the Arabs are situated. The paper examines the probabilities of transition from non-employment to employment and vice versa in good times and in bad times. The authors show that among the Arab population the probability of being fired in recessions is higher than that of Jews, and the probability of finding employment in booms is correspondingly lower. In the same vein, they show that the average duration of non-employment is higher among the Arab population.

The *Report of the Committee for Economic and Social Change* (2011), commonly referred to as the "Trajtenberg Committee," also pointed to the very low participation and employment rates among the minorities sector. The committee identified several major barriers to the integration of Arab women in the labor market: the need to deal with a large number of young children, problems of education and language, transportation and accessibility, cultural features, employers' informal discrimination, a lack of occupational guidance especially among 18-22 year-olds, as well as low wages and lack of enforcement of labor laws.

A publication of the *Abraham Fund Initiatives* from 2009 provides an extensive survey on the topic of "The Economic Benefit of Integration and Equality between Arabs and Jews in Israel." The survey was written by several authors and encompasses many issues, including employment. On the latter topic, the survey features the article by King, Naon and Valda-Tzedek (2009).

With respect to policy recommendations, the following proposals are given: in David Brodet's article, the opening of preschools and infant daycare centers, expanding professional training and subsidizing appropriate public transportation from the villages to central employment areas, and reducing the number of foreign workers (who mainly have taken the work of Arabs); in Amin Fares's article, ensuring that the composition by occupation and industry among the employed of the Arab sector be similar to the composition in the economy at large, finding appropriate occupational solutions

for the large excess supply in the Arab labor force (not only as workers but also as part of entrepreneurial activity), and implementing the law and government resolutions regarding the integration of Arab workers in all government ministries (to constitute at least 10 percent of the total); in Kobi Huberman's article, integrating Arab academics in the wake of initiatives of NGOs such as "*Kav Mashve*," "*Tzofen*" and the "*New Technological Center for Promoting High-Tech*" in Nazareth, and encouragement on the part of Arab communities' leadership for women to acquire education and find employment; in Aiman Saif's article, wage subsidies for Arab employers and implementing the government resolutions for 2006 and 2007 regarding employment of Arabs in the state's civil service; in Ezra Sadan and Ramzi Halabi's article, taking action to remove restrictions that limit demand for Arab workers by firms in knowledge-intensive industries, developing empowerment and employment support programs, especially for women (including outside of their home town), and developing professional training tracks; in Yaron Zelicha's article, encouraging the integration of Arabs in the high-tech industries, as has been done at the Israeli Arab Center for Technology and High-Tech in Nazareth, and establishing an Israeli Arab College of the Sciences in Nazareth.

The report of the *Sikui [Chance] Association* for 2009, which appeared in December 2010, points to the following problems of the Israeli Arab labor market: a backward economy that suffers from institutional discrimination, the dependency of the peripheral Arab economy on the central economy, high unemployment rates, low participation rates especially among the women, and an average monthly wage 67 percent lower than the average Jewish wage. Most of the Arab workers are employed in labor-intensive industries characterized by low wages, and the Arab population is almost entirely absent from industries characterized by high wages. Likewise, the representation of Arabs in "prestigious" occupations is lower than that of Jews. Employment opportunities are in short supply both because of discrimination on the part of Jewish employers and due to the shortage of workplaces in areas where the Arab population is concentrated.

This state of affairs makes it possible to replace the Arabs by foreign workers with relative ease.

Asali (2006) examined the topic of wage discrimination in the Arab sector. In his study he documented the differentials between the wages of Jewish men and the wages of Arab men in the period 1990-2003 and estimated a wage regression in order to study the reasons for the wage differential. The observed wage differentials are decomposed into three components: differentials originating in differences in human capital, differentials originating in discrimination in occupation, and differentials originating in discrimination in wages. The study's findings attest to the existence of wage discrimination and its intensification in the course of the sample period: whereas in 1991-1992 only 5-10 percent of the wage differential was ascribed to wage discrimination, in the years 1999-2003 the figure stood at 20-30 percent. *Cohen and Haberfeld* (2007), who studied the effect of the growth in income inequality on the Israeli labor market during the years 1975-2001, also found that the discrimination toward workers from the Arab sector did not diminish from 1992 onward and perhaps even intensified. *Mi'ari, Nevuani and Hatab* (2011) found that during the years 1997-2009 distinctive wage discrimination remained constant throughout, its level fluctuating in accordance with changes in the economy, e.g., waves of immigration, the intifada, the number of foreign workers, etc.

Schlosser (2006) examined the effect of the introduction of free education for the young on fertility, the rates of attendance by Arab children at preschools, and the labor supply of mothers in the Arab sector. In 1999 the Israeli government began to gradually implement a policy of free education for ages 3 and 4. The study reveals that implementation of the law led to a significant rise in the rate of attendance by children at preschools in those places where the law was implemented and consequently also to a significant rise in their mother's employment rate. The rise in the mothers' employment rate took place mainly among the educated mothers. No short-term effect was found on the mothers' fertility.

3. Summary: Major Problems in the Labor Market of Israeli Arabs

The data presented in this chapter indicate the following major problems facing **Arab women**:

- A low labor force participation rate (around 20 percent).
- High concentration of employment in education, health, and welfare services.
- Especially low labor force participation rates among less educated women (12 years of education or below) and women aged 45 and up.
- High rates of part-time employment.
- Short average distance to the workplace and low rate of employment outside one's place of residence, indicating limited employment opportunities.

The data indicate the following major problems facing **Arab men**:

- A high share of low-skilled, manual occupations.
- Relatively early retirement from the labor force for manual workers.
- Low average pay, largely as a result of the above problems.
- A high percentage of individuals with higher education not employed in their field of study.

Chapter Two

Policy Alternatives

1. Introduction

The problems described in the previous chapter are numerous and complex. Since not all of them can be solved quickly or simultaneously, government efforts to handle them must set priorities. The following recommendations distinguish, then, between short-, medium- and long-term policies and present the budgetary implications of each.

Extensive effort has been made in recent years to encourage Arab participation in the Israeli labor force, yet differentials between Jews and Arabs are still considerable. We preface our recommendations with a review of the major programs implemented or approved by the Israeli government and by other agencies. We then briefly discuss the objectives of policy.

2. Existing Plans and Programs

2.1. Government Programs

Key Recent Plans

On March 21, 2010, the government approved a five-year, 800 million NIS economic development plan for a selection of Israeli Arab towns (Government Resolution 1539). The plan was drafted by the Ministry of Finance, the Ministry of Minorities Affairs at the Prime Minister's Office, and the Authority for the Economic Development of the Arab, Druze, and Circassian Sectors at the Prime Minister's Office. The plan covers 13 Arab towns in a five-year period: Sakhnin, Majar, Tamra, Arraba, Nazareth, Daliyat al-Carmel, Isfiya, Tira, and Shefa-Amr in Northern Israel; Umm al-Fahm, Qalansawe, and Kafr

Qasim in Central Israel; and Rahat in Southern Israel. The plan focuses on housing, employment, and transportation.

The plan's budget of 778.5 million NIS is allocated as follows: 226.15 million NIS for economic development and job creation; 301.4 million NIS for housing and real estate; 100.9 million NIS for transportation; 145 million NIS for law enforcement; and 5 million NIS for consultation, control, assessment, and advertising.

The plan aims to create 18,000 new jobs in the period 2010-2014, increasing Israel's GDP by 3.19 billion NIS annually. To this end, the plan seeks to develop (1) economic infrastructure (local employment, industrial parks, physical and tourism infrastructure); (2) employment support services (day care centers, professional and occupational training, placement services); (3) incentives for investors and entrepreneurs; (4) subsidies for real estate development; and (5) local and intercity transport, including local public transport to centers of employment, and long-distance public transport from Arab towns and villages to central Jewish cities, major junctions and highways, intercity transit terminals, and regional centers of employment.

Government Resolution 4193, adopted in January 2012 to implement the Trajtenberg Committee's recommendations for the Arab population, allocated an additional 730 million NIS over two years (2012-2013) to expand training and placement centers, subsidize day care, and fund language and training programs in nursing and technology. Of this sum, 250 million NIS were allocated to incentivize the employment of Arab workers and to enhance employment-related infrastructures. The plan's other objectives include the development of underdeveloped industrial parks in Arab municipalities; the establishment of new industrial parks; and the provision of transport subsidies to improve access from Arab towns and villages to Israel's major centers of employment.

Government Resolution 4432 (March 2012) expanded the real-estate section of the five-year plan to cover all of Israel's Arab towns (in addition to the 13 towns covered in the original plan). A sum of 50 million NIS is to be allocated over the period 2012-2016 for land planning and infrastructure development in the participating towns.

Public transport accessibility is of vast importance to the Arab sector and has received special attention in recent years. Plans to construct a 41-km light rail connecting Haifa, Nazareth, and Upper Nazareth were approved by the government in February 2010 and are currently advanced by the National Transport Infrastructure Company *Netivei Israel*. According to current plans, works are to be completed by 2015. *Netivei Israel* is also working to improve existing roads neglected by local municipalities. A sum of 500 million NIS was allocated in February 2009 to improve such roads, with special emphasis on intercity roads in the vicinity of Arab towns and villages (e.g., 4 million NIS to improve a 1.6 km road segment near Kafr Qama). *Netivei Israel*'s five-year plan for 2011-2015 (which is unrelated to the aforementioned five-year plan for the Arab sector) targets two roads in predominantly Arab areas: the Wadi Ara Road, with a budget of 1.2 billion NIS for road improvement and the construction of new interchanges; and Route 79 between the Soleim Interchange and the outskirts of Nazareth, with a budget of 410 million NIS for road improvement. The plan has yet to be finalized; it is currently under negotiation between the Ministry of Transportation, *Netivei Israel*, and the Ministry of Finance.

Other Plans

Over a decade ago, on October 22, 2000, the Israeli government approved a multiannual 4 billion NIS program to develop Israel's Arab towns and villages. The program was never implemented.

The same year, 2000, the Planning Administration at the Ministry of the Interior launched a comprehensive project to "promote outline and master planning in the non-Jewish sector" after years of neglect. The project was developed in collaboration with the Israel Land Administration, the Ministry of Housing and Construction, the Prime Minister's Office, and the relevant municipalities, and was approved by Government Resolution 980 (January 2000). The plan aims to improve the quality of life in the participating towns by allocating land and resources for new residential areas, public buildings, employment facilities, open areas, and adequate infrastructure. The project initially included complete outline plans for 30 towns in

Northern and Central Israel. Outline plans for 36 more towns were added at a later date. Master plans (without detailed outlines) were also prepared for 13 additional towns, and regional master plans were prepared for 11 towns in the Wadi Ara area. To date, updated statutory outline plans have been approved for only about half of the participating towns (a total of 28 plans covering 33 towns; 15 additional plans covering 18 towns have been submitted and are currently under deliberation). Another 8 plans that are not part of the project have been ratified and are pending final approval (Yehudkin and Shalev (2012)). More recently and in addition to the above, the Ministry of Transportation has approved a roads development plan for the non-Jewish sector, with a budget of 200 million NIS for the next two years. The plan will fund between 80 and 100 projects throughout Israel, largely benefiting the Muslim, Christian, Bedouin, and Druze population.

Steps have also been taken to increase employment in the Arab sector by offering incentives to employers and by providing Arab job seekers with in-demand skills. The Ministry of the Economy helps underemployed Israelis (Arabs, ultra-Orthodox Jews, people with disabilities, single parents, etc.) find jobs by offering subsidies to employers, especially in Israel's geographical periphery. The current subsidy rates are 35% of total pay during the first ten months; 25% from the 11th to the end of the 20th month; and 15% from the 21st to the end of the 30th month. Subsidies were previously offered only to employers of 15 or more employees, but were recently extended to employers of 5 or more, leading to higher participation rates. In 2011, 80 requests to employ 1,660 Arab workers were subsidized at a cost of 85 million NIS—a significant increase over 2009, with only 37 requests to employ 831 Arab workers at a cost of 39 million NIS. The Ministry of the Economy has recently requested a larger budget to meet the growing demand for subsidies. Subsidy rates for Arab women and Bedouin workers were raised by 10 percentage points in 2012, up to 35% of total pay over the first 30 months of employment.

The Israeli government has also made efforts to increase the number of Arab, Druze, and Circassian public sector employees. Government Resolution 2579 (November 2007) pledged to increase

the share of government workers from these populations by at least 10 percent by the end of 2012. The government also pledged to create 800 new jobs for Arab, Druze, and Circassian candidates; add 37.5 new positions annually for students from these groups; and match each hiring of an Arab employee with a new position reserved for Arab candidates, up to a limit of 20 new positions. To reach the eligible population, the new jobs were to be advertised widely and prominently. In addition, each government ministry or agency was to prepare an initiation program for the new employees. An inter-ministerial committee was charged with the task of removing barriers to Arab public sector employment and was to report to the government semi-annually regarding its progress. Ministry director-generals who failed to meet these objectives were to report in person to the inter-ministerial committee.

Geographical distance from the workplace is another major barrier to Arab employment in Israel. Government Resolution 4436 pledged to provide rent assistance of up to 2,000 NIS a month to Arab, Druze, and Circassian workers who must relocate over 70 km away in order to take up government employment. As of December 2012, 200 workers received this benefit.

Other key government resolutions designed to benefit the non-Jewish population include:

- a. Government Resolution 2861 (February 2011) approving a multiannual development and empowerment plan for Druze and Circassian towns and villages over 2011-2014.
- b. Government Resolution 3211 (May 2011) approving a multiannual development and empowerment plan for Bedouin towns and villages in Northern Israel over 2011-2015.
- c. Government Resolution 3708 (September 2011) approving an economic growth and development plan for the Bedouin population in Southern Israel.

Credit

Israeli Arabs experience difficulties obtaining bank credit. In 2010, the Authority for the Economic Development of the Arab, Druze, and Circassian Sectors at the Prime Minister's Office collaborated

with the Ministry of Finance and the Ministry of the Economy to establish a 177 million NIS private equity fund with 80 million NIS of government funding. The fund is projected to invest in several dozen businesses and must invest all its funds within a period of five years. So far, the fund has invested 8 million NIS in two projects. In addition, a small business lending fund has been active for several years, making 208 loans in 2011 for a total of 65 million NIS. Another fund was established in 2011 to assist 2,800 small female-owned businesses over a period of three years at a total sum of 21 million NIS. During an experimental run in Northern Israel, the fund made 525 loans for a total of 3.6 million NIS. Further steps have been taken to encourage exports by Arab-owned companies. Assistance provided by the *Tevel* Program helped such companies increase their exports by \$5 million in 2011.

Industrial Parks and Commercial Centers

The Israeli government has committed a total of 265 million NIS over the period 2010-2015 for the expansion, development, and administrative consolidation of industrial parks in Arab population centers. Government Resolution 1539 has allocated 20 million NIS over the period 2010-2014 for development and expansion and 62 million NIS for upgrades. Resolution 2861 has allocated 42 million NIS over the period 2011-2014. Resolution 3708 has allocated 141 million NIS over 2011-2015. These resolutions call for the expansion of existing industrial parks and the construction of new ones in over a dozen towns.

Government Resolution 1539 has allocated 25 million NIS to the establishment of business assistance centers to guide and assist novice Arab entrepreneurs. Each center may assist up to 20 novice entrepreneurs for a period of up to 2 years. In addition, Government Resolution 1539 has allocated 25 million NIS (over the period 2010-2014) in grants to small tourism enterprises in order to encourage tourism to Israel's Arab towns and villages.

The Negative Income Tax

A negative income tax (NIT) was implemented in 2008, initially only in areas covered by the *Orot* [Lights] Employment Program. Coverage was expanded in 2012 to all of Israel.

NIT payments currently depend on the number of children per family. The maximal sum is 470 NIS a month for a worker with 3 children or more earning around the minimum wage (gross income of 3,540 to 4,730 NIS a month). In 2010, the average annual sum paid to eligible workers (for work done in 2009) was 2,800 NIS. The average annual sum paid to Arab workers was slightly higher at 3,000 NIS. The difference is explained by the relatively large size of Arab families which makes them eligible for the maximal sum. NIT payments rose by 50 percent in 2013 following the Trajtenberg Committee's recommendation to expand support for working parents. The sums are still modest, however, relative to comparable programs in other countries including the U.S. and the U.K.

The rate of enrollment in the NIT program is lower in the Arab population relative to the general eligible population, probably due to lack of access to the relevant information.

Education

Government resolutions have approved several education programs to benefit the Arab population over the period 2012-2016. Some of these programs are already in place, with a total budget of 382 million NIS. The Arab sector's education budget (day care to higher education) for the current five-year period is 687 million NIS. Several additional projects with a total budget of 62 million NIS have been greenlighted but are pending final approval.

The short-term costs are around 2 percent of Israel's total education budget and are roughly equal to the Ministry of Education's overall development budget. Long-term costs are approximately ten times higher but are divided over a longer period of time.

Using so-called "encouragement indicators," the Israeli education system invests considerable resources in affirmative action programs, many of which (around 40 percent) target Arab schools and pupils.

Daycare Centers

The number of public daycare centers targeting the Arab population increased from 39 to 52 in 2011 but is still only a fraction of Israel's 1,600 public daycare centers. Less than 2% of Arab children with working mothers attend such centers. The Ministry of the Economy has allocated around 300 million NIS to building new daycare centers. New daycares were approved in 2011, 10 centers at a total cost of 7.9 million NIS. Requests to build 31 additional centers targeting the Arab population were submitted in 2012, at a total projected cost of 73 million NIS. Requests to build new daycare centers must be submitted through local municipalities or public non-profit organizations. The move to build new centers has been assisted by the recent decision to reduce the minimum mandatory contribution of disadvantaged municipalities to building costs, from 25% to only 5%. Given their socioeconomic standing, most Arab municipalities are eligible for subsidies covering up to 95% of building costs for new daycare centers.

Following Government Resolution 4193 and the recommendations of the Trajtenberg Committee, the number of price-controlled private daycare centers targeting the Arab population increased, from 1,166 in 2010/11 to 1,402 in 2011/12.

In the past, daycare subsidies for working mothers were offered only to mothers working at least 36 hours per week. Beginning in 2012/13, mothers working 24 hours or more per week have become eligible. Preferential daycare admissions have also been expanded to cover children with mothers working part-time. The budget to cover this expansion was 15 million NIS in 2012 and is projected to increase to 47 million NIS in 2016, for a total of 135 million NIS over the entire five-year period (2012-2016). The Authority for Economic Development of the Arab, Druze and Circassian Sector reports, however, that many eligible parents in the Arab sector are not aware of the benefit. To increase awareness, the Authority plans to launch a campaign next year throughout Israel's Arab towns.

Long School Days and Warm Lunches

Long school days with warm lunches for children aged 3-9 will be offered in more schools over the five-year period 2012-2016, in keeping with the recommendations of the Trajtenberg Committee and Government Resolution 4088. The expanded program was already implemented in the 2012/13 school year in most Arab towns and villages which are on the lowest three socioeconomic rankings.

School Curriculum

A new school curriculum with emphasis on Arabic language studies was introduced in 2009 and has since been implemented in Arab schools from kindergarten to high school.

The non-profit organization *Kav Mashve* is currently running a pilot career counseling program in 20 to 50 Arab high schools.

Classrooms and School Hours

A sum of 1.8 billion NIS was invested during 2007-2011 in 3,025 new classrooms in Arab schools (approximately 39% of all new classrooms added during this five-year period). However, no budget has been allocated to new classrooms in the ensuing five-year period. In the meantime, the Arab Monitoring Committee reports a shortage of 9,000 classrooms in the Arab sector.

A sum of 475 million NIS was invested during 2009-2011 in reducing the average number of pupils per classroom to a maximum of 32. The number of Arab classrooms with more than 35 pupils plunged by 20% between 2007/08 and 2010/11, down to a level of 15% (compared with 11% in Jewish schools).

To reduce inequality between Jewish and non-Jewish schools, 36% of all supplemental schools hours offered in Israel in 2010/11 were offered in Arab, Bedouin, and Druze schools.

Technological Education for Female Pupils

A plan adopted in 2012 sought to admit 400 female Arab pupils to technological and vocational schools. The plan was not implemented in the school year 2012/3, however, because the Ministry of Education failed to complete preparations before the start of the school year. Full implementation was postponed to 2013/4, with an annual budget

of 16 million NIS in 2013. By 2016 the annual budget is planned to rise to 53 million NIS, with 2,100 students. The total budget for 2012-2016 is 153 million NIS.

Adult Education Programs

Following the Trajtenberg Committee's recommendations and Government Resolution 4193, the Ministry of Education is putting together an adult education program for Arab women over 18 who have no matriculation diploma. The program will also include career counseling and placement services post-graduation. The plan is for 300 women to participate in 2013/4, and for 450 women to participate by 2016, with an annual budget of 9 million NIS. The total budget for the years 2012-2016 is 36 million NIS.

The Ministry of Education also runs an adult education program (leading to the matriculation diploma) in the Bedouin sector, with an emphasis on women. The program has a budget of 11 million NIS for the years 2011-2015.

Higher Education

The Planning and Budgeting Committee of the Israeli Council for Higher Education has allocated 305 million NIS over five years (2011-2015) to encourage Arab enrollment in high-demand academic fields. Participating students receive mentoring before, during, and after their studies. Pre-enrollment support includes academic preparation programs, Hebrew language courses, and academic counseling to help participants choose their field of study. Post-graduation support includes career counseling. Two pilot preparation programs for Arab students opened in 2012, with need-based tuition waivers and monthly 700 NIS stipends.

In 2012, the Council for Higher Education invited minority doctoral students to apply for ten stipends at a total sum of 52,000 NIS. All higher education institutions in Israel were urged to join the program in order to increase accessibility to higher education among minorities.

The Authority for Economic Development of the Arab, Druze and Circassian Sector is advancing a multiannual pilot program to prepare 500 outstanding female pupils for academic studies in economically valuable fields. Government Resolution 2289 has

allocated 4 million NIS to the program. The program will assist the students before, during, and after their studies, including career counseling services.

Under Government Resolution 4193, the Ministry of Health is developing a program to encourage Arab women to join the nursing profession and other medical-related professions. Participants in the program will be given full tuition waivers and stipends to cover living expenses. Participants will have to commit to working in the public health system. The program opened in 2013 with an initial annual budget of 3 million NIS. The total budget for 2012-2016 is 18 million NIS.

Under the Trajtenberg Committee's recommendations and Government Resolution 4193, the Ministry of the Economy will offer higher education preparation courses through its career counseling centers located in Arab towns. The projected budget for 2012-2016 is 22 million NIS. Up to 1,500 participants will be offered English language courses, preparation courses for the Psychometric Entrance Exam, and academic counseling.

Issues that have yet to be addressed include high drop out rates from higher education, an oversupply of students in certain fields, and the fact that 8,000 Arab students from Israel study each year in Jordan.

Vocational Education and Training

A total of 187 vocational course vouchers were distributed in 2011 with value of 1.05 million NIS. Approximately 1,000 women participated in 65 courses to promote female entrepreneurship.

Housing

Various housing projects are promoted as part of a five-year plan, with a total budget of 94 million NIS. The projects include new construction, building extensions, land development, and the marketing of around 2,600 new apartments.

Job Centers

The Ministry of the Economy plans to open 21 job centers by 2015 at a cost of 200 million NIS (out of which 160 million NIS are government

funding). Out of these, 8 centers target the Bedouin population in Southern Israel, 4 the Bedouin population in Northern Israel, 3 the Druze and Circassian population, and 6 the general Arab population. Already active are 14 centers and 7 more are slated to open with support from the Ministry of the Economy, the Prime Minister's Office and JDC-Israel. Government Resolution 4193 has already expanded the activity of these centers, with a budget of 5 million NIS for 2012-2016. In 2013 a public company (named Elfandar) was established to operate these centers. In addition, the non-profit organization Kav Mashve offers career counseling services to Arab university graduates. A plan to distribute vocation training vouchers within this framework has met with partial success.

Transportation

The Ministry of Transportation has allocated 700 million NIS over five years (2011-2016) to develop and upgrade transit infrastructures in Arab population centers (with 180 million NIS earmarked for the Druze and Circassian sector, 366 million NIS for the Bedouin sector). A sum of 500 million NIS has been allocated in 2012 to a multiannual plan (2012-2016) to develop transit infrastructure in East Jerusalem. Following Government Resolution 1539, local and regional transit services were made available in 2011 in 13 Arab towns at a cost of 74 million NIS. The objective of this development effort is to connect all Arab towns and villages (with the exception of unrecognized Bedouin settlements).

Enforcement of Labor Laws

Only 14 or 15 workers in the Ministry of the Economy are in charge of enforcing labor laws. The Equal Opportunity Employment Law of 1988 prohibits discrimination based on age, religion, race, nationality, ethnicity, sexual orientation, or family status. The burden of proof in discrimination lawsuits lies with employers. The law applies to all stages of the employment cycle, from application to termination, with the exception of cases where "differentiation is required by the very nature of the job."

An Equal Opportunity Commission was established in 2008 at the Ministry of the Economy to handle lawsuits by employees,

file lawsuits against discriminating employers (with authority to obtain information of employers), and raise public awareness. The commission's strategic plan for 2012-2013 has three major goals: to promote diversity in the public sector, to help Arab job candidates integrate in the private sector, and to reduce gender pay inequality. The commission's efforts include legal and constitutional action, research, and public awareness campaigns. The commission's strategic plan for 2012-2013 includes a publicity campaign and an employers' training program to raise awareness of employees' rights. The commission's efforts included the publication of legal position papers, distributing informative brochures (in Arabic, among other languages) to employers and workers, and organizing various conferences and events, including an event to promote employment among Arab women.

In a survey among employers, the commission found that 39.4% of private-sector executives and managers believe that Arab job candidates suffer from discrimination in the labor market. However, in 2011 only 2.4% of all complaints to the commission were about discrimination on grounds of Arab ethnicity, lending further support to the claim that awareness of workers' rights and of the commission's work is still low among Arab employees.

Employment Subsidies for University Graduates

Three programs currently offer subsidies:

- a. The Investment Center at the Ministry of the Economy offers 5 million NIS in subsidies.
- b. Since 2011, a pilot program run by the Israeli Employment Service offers employment vouchers to Arab university graduates. The program targets (1) graduate job seekers who are not currently employed and (2) employers who wish to hire such workers in jobs that are not minority-oriented. Participating job seekers are offered career counseling and assistance in their job search. Participating employers are offered incentives of up to 9,000 NIS, disbursed in three lump amounts over 9 full months of employment. A total of 500 vouchers will be given throughout the pilot period.

- c. The Ministry of the Economy subsidizes 20 percent of pay of employees' pay for a period of 30 months. A sum of 500 million NIS has been allocated to subsidize Jewish ultra-Orthodox and Arab employees.

Public Sector Employment

According to a Civil Service Commissioner report (Markowitz (2012)), the share of new Arab workers out of all new government workers has increased significantly since the government passed resolutions 2579 and 4436, from 6.6 percent in 2006 to 14.2 percent in 2012. The overall share of Arab government workers was still low in 2012, however, at only 8.4 percent (an increase of 1.3 percent from 2009). The Ministry of the Interior, the Ministry for the Development of the Negev and Galilee, and the Ministry of Welfare have the highest percentages of Arab workers (16.3 percent, 38.5 percent, and 10.1 percent, respectively). The percentage of Arab workers is still very low, however, in the larger government ministries, e.g. Finance (2.7 percent) and Foreign Affairs (1.5 percent). In addition, local municipalities employ very few Arabs in senior positions.

The Initiatives of the President of Israel

In 2011 the *Ma'antech* program was launched by President Shimon Peres, jointly with Cisco CEO and Chairman of the Board, John Chambers. This program seeks to promote Arab engineers employment in hi-tech firms. The background to the program is the fact that many Arab university graduates in the Exact Sciences do not find employment in their subjects of studies. The program is funded mostly by Cisco, and is in partnership with *Kav Mashve, Tsofen* and 35 high-tech firms. Arab university graduates get support in job search and in training as well as in other assimilation processes in firms. As of 2013, 800 such graduates have been placed and there is a commitment by the participating firms to continue the recruiting and placement process.

2.2. Major Non-Governmental Programs

Most of the government programs listed in the previous sub-section target the general Arab population as a whole. In addition to these

programs, various non-governmental organizations offer programs which encourage employment among particular segments of the Arab population, especially among Arab and Bedouin women. For reasons of space, we will mention only some of the organizations and programs (fuller accounts can be found in Almog and Lotan (2009), Lis (2010), and the Ministry of Industry, Trade and Labor's (now Ministry of the Economy) Report on the Implementation of the OECD's Recommendations (2012)).

JDC-Israel's TEVET Employment Initiative offers several small-scale programs:

- The *Eshet Chayil* [Women of Valor] Program aims to promote self-confidence and improve language and computer skills among female job seekers. It also offers career counseling and job placement services to help the participants overcome the shortage of suitable jobs. As of December 2013, about 1050 women participate and the current placement rate is 53 percent. The program is offered to Jewish as well as Arab women: in 2011, for example, 630 of the 1,400 participants were Arab. The program is currently offered in 22 Arab localities, with 25 women participating in each locality at a cost of 144,000 NIS a year. Government Resolution 4193 allocated an additional budget of 9 million NIS to the opening of 36 new groups. The aim is to ultimately operate 54 groups.
- The *Ma'avarim* [Transitions] Program runs community employment centers serving the Bedouin population in Southern Israel. The program is based in Be'er Sheva and has centers in the towns of Hura and Segev Shalom. To date 1,600 individuals have been served, with a 30 percent-50 percent placement rate. An assessment report by the Myers JDC Brookdale Institute (King and Raanan (2010)) found the centers to have a positive effect on education and employment among the local Bedouin population.
- The *Reshut* [Allowance] Program assists first-time job seekers. The program is currently offered in the towns of Tamra, Sakhnin, and Umm al-Fahm. A share of 70 percent of its budget comes from JDC-TEVET, the rest from the local municipalities. Since 2011, the program is run by the Ministry of the Economy.

- The Excel HT Program aims to encourage employment in the hi-tech industries among minority university students and graduates. To date 200 individuals have participated with an 80 percent placement rate.
- Other programs include incentives for Bedouin entrepreneurs in Southern Israel; an employment and business initiative program for Bedouin women in the Galilee; an economic initiative project for Bedouin women in the town of Kseife; the WEP technological training program for youth; and more.

Sikkuy (the Association for the Advancement of Civic Equality in Israel) aims to promote full civic equality between Israel's Jewish and Arab-Palestinian citizens. The association collaborates with other non-profit organizations. Its projects include a program to help Arab university graduates and teachers find teaching jobs in predominantly Jewish schools (in collaboration with *Kav Mashve*) and a Jewish-Arab center for economic development to promote the employment of Arab university graduates in both the private and public sectors.

Kav Mashve (The Employers' Coalition for the Advancement of Arab University Graduates) offers career counseling courses which assist job seekers on an individual basis and in groups of 15-25. The organization also offers diversity workshops to employers (in groups of 15). The organization aims to expand some of its programs to high school students.

The Abraham Fund Initiatives runs a number of projects and publicity campaigns to promote equality between Jews and Arabs in Israel. Among its most notable projects is the Arab Women's *Sharikat Haya* [Employment Initiative] which aims to encourage labor force participation among Arab women in order to improve their social status and economic well-being. The program is currently offered in four villages in the Galilee (Shaghur [Majd al-Krum, Deir al-Asad, and Bi'ina], Sakhnin, Arraba, and Nahf) and is slated to expand to two towns in the Negev (Laqia and Abu Basma). About 200 women take part in the program every year in groups of 30, at a cost of 200,000 NIS per group. The program has a high placement rate of 70 percent.

The Trajtenberg Committee has recommended increasing the percentage of minority national service volunteers to at least 20 percent by 2014 (doubling the present percentage of 10 percent) in order to meet the objective set by Government Resolution 3564 (July 2011). Government Resolution 4193 recommends opening a Hebrew language program in order to help national service volunteers find employment. The recommended budget for 2012-2016 is 46 million NIS. A budget of 7 million NIS has been approved for 2012, covering 2,300 participants. As of December 2013 it met difficulties in implementation.

3. The Rationale for Government Policy Intervention and Its Aims

Why is government policy needed to handle the problems facing Israel's Arab citizens, especially in the labor market? We believe the question has several answers, all of which may serve as appropriate objectives for government policy.

(a) Israel's Arab population ranks comparatively low on every labor market outcome—participation, productivity, pay, etc.—and is especially poor as a result. A government concerned for the well-being of its citizens and with the reduction of economic inequality must act to change these circumstances, especially given their prolonged duration. Economic poverty often brings with it social disadvantage and psychological distress; emergence from poverty often improves these problems as well.

(b) The free market cannot correct the above problems on its own. Discrimination, cultural gaps, and various market hindrances to employment (job search costs, low accessibility, inadequate human capital among job seekers, etc.) may be offset, alleviated, or resolved by government action.

(c) Not only the Arab sector but the entire Israeli economy stands to benefit from higher employment and productivity of Israel's Arab citizens. The resultant growth in GDP is likely to lead to improvements in other respects as well—greater welfare, freedom, leisure, etc. Higher economic equality will also contribute to Israel's social cohesion and national resilience.

Government efforts to solve these problems will have to contend, however, with several obstacles:

(a) The Arab sector suffers from years of neglect. Rapid improvement is therefore unlikely. To achieve long-term results, government policy will need to be comprehensive, consistent, and unremitting.

(b) Israel's Arab and Jewish populations are separated by considerable cultural differences. Cultural differences also exist within the Arab population. The government must exercise great caution when attempting to subject this population to the norms

and values of the Jewish majority, e.g. with regard to labor force participation and employment patterns.

(c) Jewish attitudes towards the Arab minority are marked by cultural norms and prejudices. Government policy has often reflected these, albeit unofficially and unconsciously. According to Smooha (2010), these attitudes have deteriorated in recent years, especially since the events of October 2000. To note just one example, the percentage of Jews expressing reluctance to work under an Arab employer has increased sharply between 2003 and 2009. New government policies must take into account these attitudes and the realities they both reflect and create.

(d) Successful government action within a minority population depends on the presence of an effective minority leadership keen to find solutions and on the availability of strong community organizations and associations. Israel's Arab citizens have weak community organizations, which need encouragement to cooperate with the government.

Given these obstacles, we propose the recommendations listed in the following section. Limiting our purview to economic and labor force issues, we recommend these policies in order to achieve the following objectives:

- Raise employment and labor force participation rates among Israel's Arab citizens.
- Increase productivity and pay.
- Increase mobility and expand the range of job opportunities open to Arab individuals.
- Reduce poverty and increase income.

4. Policy Alternatives

Abstract

We propose policy measures in eleven areas of government policy, specifying the desirable budget for each recommended policy over three time horizons.

We then propose policy when only a limited budget is available, listing priorities with reference to different groups within Israel's Arab population.

Finally, we offer simulations of future women labor force participation and GDP increases as a result the proposed policy. To analyze the return, we compare the costs with the benefits in terms of GDP increases. The internal rate of return on policies promoting employment among Arab women is considerable even according to conservative assessments, around 7% annually.

The following recommendations aim at increasing employment and labor force participation, but they also have bearing on broader aspects of economic and social life, including education, family life, career choices, the geographical location of firms, etc. The recommended policies are comprehensive and far-reaching, yet their aim is to expand the range of opportunities available to Arab individuals rather than force any particular choices. Their overall objective is to remove both demand- and supply-side barriers to employment.

4.1. Increasing the Demand for Arab Workers

Increasing the demand for Arab workers should be an important part of government policy. Most of the recommendations in the following sections address the supply of workers; but a real barrier to employment is often deficiency in demand among potential employers.

Two government resolutions adopted in recent years (Resolution 2579 dated November 11, 2007 and Resolution 4436 dated January 25,

2010) have recognized the importance of increasing the number of Arab workers in the public sector but have hardly been implemented. The number of Arab applicants has remained very low. To encourage applications, it is crucial both to implement the existing resolutions and to increase awareness of available jobs among potential Arab workers.

The demand for Arab workers in the private sector can be increased using a number of “classic” measures. The government can:

- a. Set up infrastructure for industry in relevant geographical areas, e.g., by building new industrial parks (including hi-tech industries) near Arab towns with a supply of potential workers.
- b. Develop the unrecognized Bedouin settlements in the Negev, especially by planning commercial centers and industrial parks. At present, infrastructure suitable for these purposes is almost non-existent.
- c. Offer Arab entrepreneurs training and counseling on such topics as setting up a business, worker recruitment and management, financial management, sales and purchase forecasting, etc.
- d. Help borrowers obtain loans (i) by helping them submit credit applications to banks and other lenders and (ii) by expanding the availability of government funds, especially in the form of loan guarantees.
- e. Make government assistance to employers conditional upon their willingness to hire Arab workers at a rate proportionate to the share in the population, subject to adequate skills.

4.2. Welfare-to-Work Programs

A welfare-to-work program entitled Lights to Employment (“*Orot le-Taasuka*”; previously “*Mehalev*”) was offered in Israel until April 2010. The program was a standard welfare-to-work program initially modeled after a program implemented in the state of Wisconsin in the U.S. Its scope was limited, however, and it was offered for a relatively short period of time. A study published in July 2009 by the Brookdale Institute and the National Institute of Social Security points to several achievements, including high placement rates for Arab men. The program was widely criticized, however, for alleged

features such as inefficiency, distorted incentives for the private contractors, fictitious placement, high attrition rates, etc. Some problems were fixed in the transition from “*Mehalev*” to “*Orot le-Taasuka*,” but the program was eventually cancelled. Since then, the Finance Ministry and the Ministry of the Economy have devised a new program which is still pending approval by the Knesset. The proposed program was discussed a number of times in the course of 2013. Renewal of the program must be subject to comprehensive research, however, in order to examine the program’s advantages and disadvantages. Thus any attempt to renew the program must consider the following facts:

- The program was run on an experimental basis in some parts of Israel. It should be expanded to cover the entire country, as originally planned. The program’s success in the Arab sector suggests that the program should open special centers and programs targeting the Arab population, with preference for Arabic-speaking staff members, familiar with the social and cultural features of the Arab sector.
- Attempts to target the Arab population must take into account the program’s experience in Nazareth, in particular the extent to which the program’s placement was sustainable over time (i.e., the degree to which workers persevered in their new jobs).
- The renewed program may have to undergo modifications based on the program’s implementation in other countries (see, e.g., the recommendations of the Tamir Commission). In particular, it may be advisable to run the program in collaboration with the public Employment Service, to monitor the participating workers more closely, etc.
- Any attempt to renew the program must consider its possible effects on individuals and groups other than the participating job seekers. The same caveat applies to other government resolutions, for example, the five-year plan of 2010 and to the recommendations of the Trajtenberg Committee of 2011.

4.3. The Negative Income Tax

The negative income tax is in effect in Israel since 2012. The take up rate in the Arab sector has been relatively low, probably due to lack of information. The benefit for eligible working parents was increased in 2013 following the recommendations of the Trajtenberg committee, yet it remains low relative to comparable benefits in the U.S., the U.K., and other countries. These deficiencies make the program less effective. To increase its effectiveness, the benefit needs to be increased to its level in the U.S. The wider repercussions of such a step need to be considered, as increasing the negative income tax is likely to increase subsidies for the entire eligible population, not only in the Arab sector. It is important to raise awareness of the benefit among the Arab population, preferably in collaboration with local leadership.

4.4. Education

Education is a significant determinant of labor market performance (participation, occupational status, productivity, etc.) and is therefore crucial to improving the economic standing of Israel's Arab population. The Israeli-Arab education system suffers from underinvestment, resulting in rundown infrastructures, low pupil achievement, and high drop-out rates. The "effective" education of Israeli-Arab pupils is probably at a lower level than their formal education. Improving the effective level of education would increase skills, productivity, and pay and help diversify Arab employment, which, especially for men, is currently heavily concentrated in a handful of occupations and economic sectors.

Various policy steps can be taken to achieve these aims. Budgets should be increased at all levels of education, with emphasis on preschool and elementary education. Greater integration of Arab pupils in Jewish schools would help Arab job seekers find employment later in life. Such integration can be achieved by encouraging regular contact between Jewish and Arab pupils and teachers and by having Jewish teachers teach at Arab schools and vice versa. These steps

would do much to reduce the cultural barriers and prejudice that afflict both populations.

The following recommendations are partial and may be supplemented by others. We distinguish between short-, medium-, and long-term recommendations:

Short-Term Recommendations

- a. Job matching centers would match university graduates and teaching jobs in Arab schools.
- b. A task force would characterize the main problems of the Arab education system, prioritize Arab schools on the basis of need, determine the required budget for each school, and choose a limited number of concrete issues on which to focus at each school.
- c. Larger budgets should be allocated to the lowest achieving schools (i.e., schools scoring lowest on the matriculation, *Meitzav*, or *Mashov* exams). Schools receiving assistance should be monitored and assessed by specially appointed committees to recommend how the supplemental budgets should be best used (e.g. for teacher recruitment, purchase of outside programs, computer and communications infrastructure upgrades, physical renovations, added school hours per pupil, etc.).
- d. Curricula should emphasize helping pupils and students join the labor force upon graduation, with a focus on Hebrew fluency.
- e. Schools should make greater efforts to prevent attrition.
- f. Most education budgets are allocated by the government through local municipalities. Due to the inefficiency of many Arab municipalities, the budgets do not always reach the pupils in full. It is thus important to find alternative routes of budget allocation.
- g. The education system should fund and encourage informative activities among parents to reduce school drop-out rates and obtain information on their economic and transportation-related causes.

Medium-Term Recommendations

Two major problems can be addressed in the medium-term: inadequate resources and low teaching quality. To address these problems, the aforementioned task force must define them clearly and set well-defined goals. Resources should be increased using

the approach described above: on a school-by-school basis, based on need, with an appointed committee to monitor and assess the process. It is crucial to set clear objectives, allocate a well defined budget to achieve them, and periodically monitor the program's effectiveness using measurable parameters. Assessment teams can include representatives from the Ministry of Education, the Brookdale Institute, JDC, etc.

Improving teaching quality is a harder and longer-term task. In the short-term, teacher training programs must be improved and expanded, and teacher placement in schools must be made more efficient. In the medium-term, teachers can be offered financial incentives, for example for participating in advanced teacher training university programs and for being willing to teach at low-achieving schools. In addition, schools may be encouraged to purchase external teaching programs, especially in areas of weakness.

Another possible course of action is to set up new learning centers in major urban areas (modeled for example after the Scientific Education Center in Tel Aviv) and provide busing services from Arab schools. The teachers at such centers would be highly paid university graduates. The centers would provide supplementary education in math, physics, chemistry, biology, English, etc.

In addition, a new subject can be added to the high school curriculum the Labor Market. Pupils would become acquainted with the basics of the labor market: the possible range of careers and occupations, the education relevant to each, career and compensation tracks, etc. The goal would be to encourage participation in occupations with a low concentration of Arab workers and provide information on the career-related returns on education. High school counseling services may direct the graduates to jobs and/or to higher education. Such centers could provide diagnostic career counseling and assistance on such topics as choosing an occupation, applying and interviewing for jobs, etc.

Long-Term Recommendations

In the long term, the Arab education system should undergo fundamental reform at all levels, from childcare to higher education.

Reforms should include the establishment of new institutions, additional support for existing institutions, and improvement of teaching quality at all levels. Comprehensive reform of this sort would require a budget of around 5 billion NIS. We propose 3 billion NIS in cumulative annual budgets and a one-off expenditure of 2 billion NIS.

New institutions

- Specialized schools, e.g., schools for the sciences, the arts, special education, etc.
- A college or university in the Galilee, with an early focus on certain fields (e.g. physics, biology and chemistry in the natural sciences; psychology, social work, business administration and economics in the social sciences).
- Vocational and professional training centers (e.g. a center for scientific education).

Further support for existing institutions

- Physical renovation of schools, including new classrooms (to decrease the number of pupils per class) and new infrastructure for computer labs.
- A comprehensive campaign to renew textbooks and curricula in Arabic.
- A comprehensive campaign to update the curriculum in Arab schools, with emphasis of math, language, computer skills, and acquaintance with the labor market.
- A support system for Arab university students to help them cope with the language barrier and with inadequate preparation for higher education.

Teaching improvements

- A comprehensive assessment of all teachers.
- 1-week to 1-month teacher training courses for all currently employed teachers, with emphasis on new curricula and textbooks.
- Career counseling centers should refer suitable university graduates to the school system in order to meet the growing

demand for teachers of math, physics, biology, and English in both Arab and Jewish schools.

- Lectures by guest experts on innovative teaching methods, experience in other countries, etc.
- The Ministry of Education should set up a new information center for teachers to disseminate information on innovative teaching methods, internet sources, etc.

It should be noted that many programs are already in place and budgeted by the Israeli government. However, the road to full implementation of the above recommendations is still long.

4.5. Vocational Training and Counseling

Several steps should be taken to achieve a more diverse occupational distribution of male Arab workers and to reduce their concentration in manual occupations with a high rate of early retirement. To achieve these aims, the government should increase its investment in elementary, secondary, and higher education; offer career retraining programs to help manual workers find non-manual jobs; and provide training courses to help skilled Arab workers adjust their skills to employers' needs.

Professional training and retraining programs have been shown to be ineffective without proper attention to content and to the identity of the participants. To succeed in practice, such programs must be designed with great care—a difficult task given the dearth of relevant experience in Israel.

Other programs should help skilled workers find jobs, e.g. by helping job candidates write resumés, prepare for interviews, etc. Employment centers at the micro-level modeled after the “Lights to Employment” centers may also be considered.

4.6. Replacing Foreign Workers with Israeli Arabs Workers

Foreign and Palestinian workers often compete for the same jobs with Israel's Arab citizens. This is especially true of male workers in construction, agriculture, and certain branches of manufacturing. The substitutability of these groups has been evident in construction,

where Israeli Arabs were largely replaced by foreign workers during the 1990s but enjoyed a partial “comeback” in the 2000s with the decline in the number of foreign and Palestinian workers permitted to work in Israel.

The government can encourage the replacement of foreign with local Israeli-Arab workers by:

- a. Implementing government resolutions concerning foreign workers, especially with regard to taxation.
- b. Boosting enforcement against the illegal employment of foreign workers.
- c. Subsidizing the employment of Israeli Arabs in certain sectors of the economy, and/or making the employment of foreign workers more costly to employers.

Two committees headed by Prof. Zvi Eckstein (former Deputy Governor of the Bank of Israel) published a series of recommendations concerning foreign workers in September 2007 and in January 2010. The Israeli government adopted the recommendations. Most relevant to our topic are the recommendations to reduce the number of foreign construction workers to zero and to limit the number of seasonal foreign agricultural workers to 18,900 by 2015. Another important recommendation was to introduce technological changes in order to increase productivity and reduce the labor-intensive nature of these sectors of the economy.

Recommendations are one thing, implementation is another. Two major problems hinder implementation at present: (i) Palestinian and illegal foreign workers are still employed in construction in significant numbers; (ii) implementation in agriculture is slow and has been postponed for years. In 2011, Government Resolution 3453 postponed to January 2016 the projected reduction of the quota for foreign construction workers from 8,000 to 5,000. A projected reduction in the quota for agricultural workers, from 26,000 to 24,500, was also postponed by a year, and was eventually replaced in 2012 by a plan to reduce the quota to 18,900 by 2015. Then, in 2013 the government decided to increase the quota from 21,600 to 25,000.

It should be noted in this context that technological changes in construction and agriculture may have serious implications for the

employment of Israeli Arabs. To help them cope with such changes and keep up with technological innovation, further investment in education is crucial.

4.7. Promotion of Employment of Arab Women

Arab women in Israel are characterized by low employment and labor force participation rates. To promote their employment in the short and long run, the government may:

- a. Set up employment centers in Arab towns and villages. Some towns already have employment centers. Such centers can provide information, refer job seekers to employers, and offer transport services to work. In doing so, such centers can help job seekers overcome two significant and interrelated types of barriers to work, cultural and geographical.
- b. Reduce the costs of taking up a job, e.g. by subsidizing childcare. As noted above, the Israeli government has recently increased its funding of such programs.
- c. Incentivize work, for example by subsidizing workers' pay or increasing the negative income tax for eligible workers.
- d. Increase awareness of the importance of labor force participation, women's rights, etc., e.g. through high school curricula targeting both male and female students. Collaborating with local leadership may increase the success of educational programs of this sort.

4.8. Improving Workplace Accessibility

Geographical concentration and limited transportation are a major problem for Israel's Arab population. Many Arab towns and villages suffer from underdeveloped infrastructures: the road system is deficient, and public transportation is inadequate, both within the Arab towns and from the towns to Israel's major urban areas. The resultant geographical inaccessibility is a major factor explaining the low labor force participation rate among Arab women. Improving workplace accessibility requires major investment in adequate transportation infrastructures. In the short run, government subsidies to employers, potential workers, and transportation companies

may help. In the long run, major infrastructural improvement is indispensable to the effort to bring down the costs to potential workers.

As delineated above, a plan to increase workplace accessibility has been implemented in recent years. The plan has specific provisions for various towns and includes both infrastructural investment (within and between towns) and cost subsidies. According to the plan, all Arab towns in Israel will eventually be connected to the public transportation system. This plan must be supplemented, however, by additional investment in roads.

4.9. Removing Geographical Barriers

Much of the Arab population is concentrated in relatively peripheral geographical areas. As a result, Arab job seekers live far from Israel's major centers of employment. To help solve this problem, the government should:

- Develop transportation to existing centers of employment.
- Help create jobs in Arab population centers, e.g. by encouraging firms to move to locations accessible to Arab job seekers. Preference should be given to hi-tech and/or knowledge-intensive firms, but even firms in less advanced sectors of the economy may play an important role. Such steps are especially important given the fact that land shortage and poor physical infrastructure often present the main barriers to firms' relocation.
- Encourage a wider geographical spread of Israel's Arab population. This is a complex, long-term goal achievable by establishing new Arab towns or by encouraging Arabs to live in "mixed" or Jewish-dominated cities.

4.10. Anti-Discrimination Legislation and Enforcement

Most developed countries legislate and enforce anti-discrimination laws and strive to raise public awareness of the related issues. Israel can follow their lead and rely on their considerable experience in order to fight discrimination against Arab workers and job seekers. The following steps, among others, should be taken:

- a. Anti-discrimination legislation and enforcement:
 - Discriminating employers should be penalized by fines, de-licensing, or imprisonment, depending on the gravity of the offense and their prior record.
 - The government needs to set up an effective enforcement mechanism, including inspectors, prosecutors, and fine collectors to enforce new or existing laws.
 - Affirmative action policies should be adopted, especially for Arab women.
- b. Raising public awareness of discriminatory practices and anti-discrimination legislation and enforcement, the government can:
 - Advertise the available data on discrimination, e.g. comparable employment and pay data for Arabs and Jews. The government can also encourage relevant research to collect the data.
 - Launch publicity and information campaigns designed to raise awareness among employers. For example, the government can advertise its anti-discrimination laws and the relevant penalties.
 - Distribute codes of conduct (e.g., proper recruitment and management practices) to employers.
 - Inform workers of their rights, e.g. by placing ads in Arab newspapers, launching publicity campaigns in Arab population centers, etc.
- c. Encouraging workers to battle discrimination, the government can:
 - Provide free legal assistance (including legal counseling, investigative support, and legal representation) to workers interested in suing or filing complaints against discriminating employers.
 - Simplify and shorten the relevant legal procedures.
 - Increase compensation in case of successful lawsuits.

In many OECD countries, such steps were taken as recently as the last decade. In the U.S. and the U.K. such legislation is longer-standing. In the U.S., equal opportunity laws were legislated during the 1960s (equal pay laws in 1963, the Civil Rights legislation in 1964); in the U.K., they were legislated mostly during the 1970s (e.g., laws against racial discrimination in 1976). Legislation in other countries (for

example in the former Soviet Block) has been more recent, much of it under the influence of the European Union. Israel can rely on these valuable precedents when adopting the legislation, penal codes, and publicity campaigns recommended above. A team with representatives from the Ministries of Justice, Finance, and the Economy should study legislation and enforcement efforts from other countries and apply them to the case of Israel's Arab population. Legislators, cabinet members, and government officials should then base their legislation and budgeting decisions on the team's work.

Such steps would require considerable budgets. For example, adding ten inspectors to help enforce the laws would require an annual budget of 1.2 million NIS to cover employment costs alone (not including training and administrative costs). Dozens of teams with the requisite administrative infrastructure would easily require a budget of several dozen million NIS. Additional costs to cover legislation, publicity campaigns, legal assistance and further enforcement would require upward of 100 million NIS.

4.11. Employment of University Graduates

As noted above, Arab university graduates often find it difficult to find jobs in their fields of study. Policies designed to increase the fit between educational credentials and occupational attainment will increase both productivity and worker satisfaction. Other side-benefits may include greater educational opportunity for the children of gainfully employed Arab individuals.

One firm that employs Arab university graduates in significant numbers is the Israeli branch of the American hi-tech company Intel. The company has a policy of diversity in employment and actively promotes Arab employment. It does so by placing job ads in Arab media and newspapers, by including Arabic-speaking interviewers in job interviews, by fostering ties between the firm's Arab workers and their local communities, etc. Intel's example shows that where there is a will, there is a way. Intel's experience with its Arab workers has been positive, and other firms should be encouraged to follow its lead. The government can provide such encouragement in the form of informative programs and financial incentives.

5. Population Heterogeneity and Policy Objectives

Government policy tends to be more effective the more narrowly it targets specific population groups. This is especially true of labor market policy. In our case, special attention should be given to the differences between (a) men and women and (b) different religious, ethnic, and geographical groups within the Arab population (Muslims in Northern Israel and the “Triangle” area; Muslims and Bedouins in Southern Israel; Druze and Circassians in Northern Israel; Christian Arabs).

Below we prioritize the above-recommended policies along these gender, religious, ethnic, and geographical dimensions.

Table 9: Policy Proposals, by Gender

Men	Women
1. Manufacturing infrastructure development; increased firm subsidies	1. Employment Centers
2. Subsidies for workers to substitute foreign workers.	2. Providing better accessibility to workplaces
3. Firm employment incentives for university graduates	3. Day Care Centers
4. Anti-discrimination legislation and enforcement	4. Increase of the Negative Income Tax

Table 10: Policy Proposals, by Religious Group

Bedouins in the South	Muslims in the North and in the Triangle Zone, Druze and Circassians	Christians
1. Infrastructure development, esp. in unrecognized localities	1. Manufacturing infrastructure development; increased firm subsidies	1. Firm employment incentives for university graduates
2. Employment centers	2. Employment centers	2. Anti-discrimination legislation and enforcement
3. Improved workplace accessibility	3. Improved workplace accessibility	3. Transportation infrastructure
4. Educational infrastructure, policy to prevent dropping out	4. Firm employment incentives for university graduates	

6. Budget Breakdown

In this section we provide a breakdown of the short-term, medium-term, and long-term budgetary implications of the above recommendations. We delineate both annual budgets and one-off expenditures. The recommended annual budgets are designed to permanently augment budgets; the proposed one-off expenditures are designed to bridge existing gaps. The recommended budgets are not small, yet we believe they are necessary for producing the requisite change. The current problems are the result of chronic underfunding; correcting them cannot be done on the cheap.

We do not discuss possible sources for our proposed budgets. Our aim is simply to budget the various programs and policies we recommend. If the recommendations are adopted, it will of course be necessary to determine their importance relative to other priorities and whether they should be funded by cutting other expenditures or by raising taxes. Let us emphasize, however, that our recommendations do *not* imply an increase in the government deficit or debt.

Table 11 presents the expenditures required by the programs proposed in the two previous sections.⁸ We provide a budget range (in billion NIS) for each of several time spans: “short-term” refers to permanent annual budgetary increases over a period of 2-3 years; “medium-term” refers to permanent annual budgetary increases over a period of 5 years; “long-term” refers to permanent annual budgetary increases over a period of 10 years. The sums are inclusive; that is, the budget for each time span includes the budgets specified for the shorter time spans. This means the increases in the budget are phased-in gradually. “One-off” refers to one-off, non-renewed expenditures. The numerical ranges (in billion NIS) specify lower and upper limits for each type of expenditure.

8 No budget is delineated for the issues of geographical dispersion.

**Table 11: Fiscal Summary
Budget Breakdown of Policy Proposals
Billions of NIS**

Policy Measures unique to the Arab sector

	Short Term	Medium Term	Long Term	One-Off
1. Demand for Workers	0.1-0.2	0.2-0.3	0.4-0.6	0.4-0.5
2. Employment Centers	0.1-0.2	0.2-0.3	0.3-0.4	
3. Education	0.2-0.3	0.8-1.0	2.5-3.0	1.5-2.0
4. Professional Training	0.1	0.2	0.3	
5. Promotion of Women Employment	0.1	0.2	0.3	
6. Transportation Infrastructure		0.1	0.1	0.3-0.5
7. Anti-discrimination Legislation and Enforcement	0.1	0.2-0.3	0.3-0.4	
8. Employment of University Graduates	0.1	0.2	0.2	
TOTAL	0.8-1.1	2.1-2.6	4.4-5.3	2.2-3

Measures not unique to the Arab sector

	Short Term	Medium Term	Long Term	One-Off
1. Negative Income Tax	0.2-0.3	0.5-0.7	0.5-0.7	
2. Subsidies for technological changes				0.8-1.0

The total budget for the measures unique to the Arab sector reaches 5.3 billion NIS in the highest evaluation for the long term, which is approximately 1.5 billion USD at current exchange rates or 0.7% of GDP. The highest evaluation for the one off expenditure is 3 billion NIS, roughly 0.8 billion USD or 0.4% of GDP.

Additionally, measures not unique to the Arab sector reach 0.7 billion NIS in the highest evaluation for the long term, which is approximately 0.2 billion USD at current exchange rates or 0.09% of GDP. The highest evaluation for the one off expenditure here is 1 billion NIS, roughly 0.3 billion USD or 0.12% of GDP.

In case only a limited budget, of 1.5-2 billion NIS, is available, how is it to be allocated? Where would be the highest payoff for the government investment? Table 12 elaborates on the allocation across different items for such a limited budget.

**Table 12: Breakdown of a Limited Budget
1.5-2 Billions NIS**

	Limited Budget	Distribution
	(billions NIS)	(percentage)
Demand for Workers	0.2-0.3	15
Negative Income Tax	0.2-0.3	15
Employment Centers	0.2-0.3	15
Employment of University Graduates	0.2-0.3	15
Transportation Infrastructure	0.2-0.3	15
Education	0.5	25

7. The Policy Payoff

One major issue of interest is the payoff to the proposed policy measures. The previous sections outlined the government expenditures needed, so it is natural to ask what will be the return on those government investments. In this section we simulate alternative scenarios of this payoff in terms of increases to Israel's GDP. The essential idea is to look at Arab *women* and simulate the potential increase in employment and therefore in output, under the assumption that policy promotes labor force participation and employment over and above any increase that may arise due to non-policy factors.

This simulation exercise is fraught with uncertainty, with questions such as: what is the expected working age population growth? What would be the policy induced increases in employment vs. non-policy induced increases? How would demographic, cultural, social and political factors, as well as economic incentives influence the latter? How much more output will be produced by the additional workers?

In what follows we make the following assumptions in order to deal with some of this uncertainty. These are intentionally conservative assumptions designed to get a relatively low rate of return on the investment. Thus the results constitute a lower bound on the return.

We assign half the costs delineated in the plan above to Arab women and assume that the increase in their participation rate is a multiple of 1.05, 1.06 or 1.07 of the expected, non-policy-related future rise in participation. We assume unemployment among Arab women remain as it has been since 1995 and that output per worker grows at the rate it has grown since 1995.⁹ Moreover, we assume the output produced by an Arab woman is lower than that of a Jewish woman by a factor that reflects the ratio between Arab and Jewish wages. The latter is a strong assumption whereby wages reflect productivity and Arab women get lower wages because they produce less and not because of discrimination. This, too, biases our results towards low returns.

⁹ We refer to data since 1995 as these data have formed consistent series since a major revision in CBS surveys undertaken in 1994.

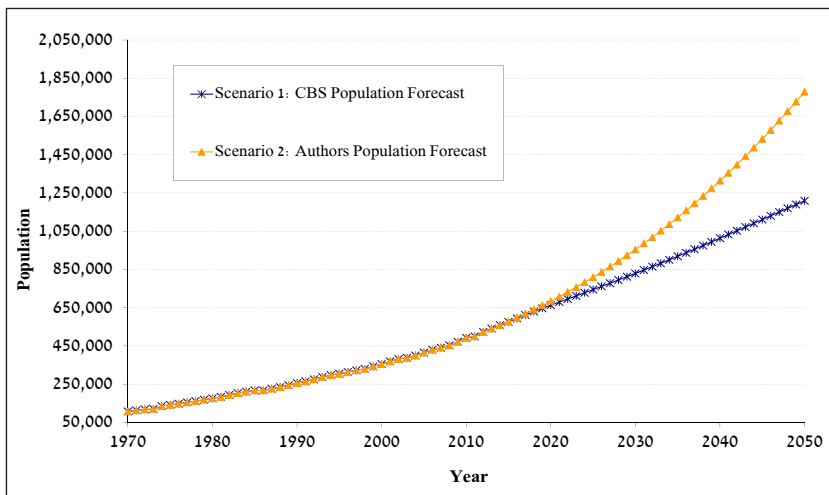
The following discussion presents the simulation, step by step, using figures and tables.

7.1 Population and Participation Rates Over Time

In order to simulate future Arab women participation rates we do the following:

- a. Project future working age population. This is shown in Figure 8a, plotting CBS projections (their so-called “medium scenario”)¹⁰ and our own projections,¹¹ as well as the actual, past working age population series from 1970.

Figure 8a: Working Age Population Forecast, Arab Women¹



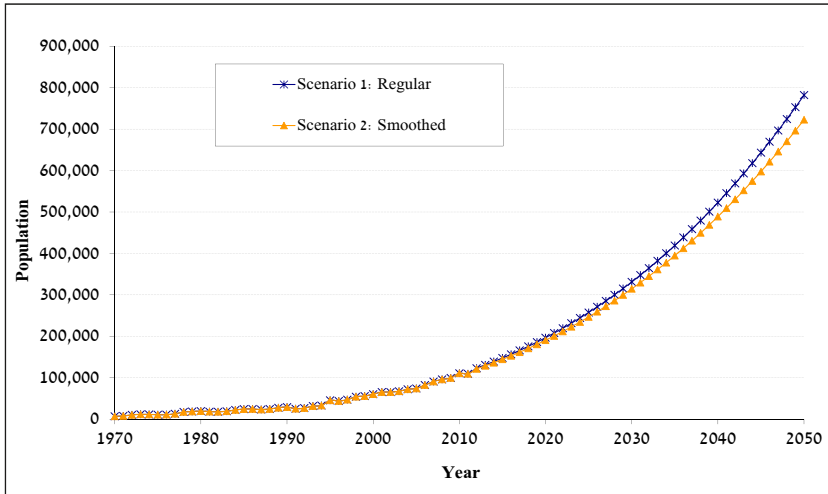
¹ Using the CBS medium scenario population forecast and the authors forecast.

¹⁰ This scenario envisages a growth rate of 3.5% in 2010-2015, 3.1% in 2015-2020, 2.6% in 2020-2025 and 2.3% in 2025-2040.

¹¹ This projection is based on a regression of population on a cubic time polynomial and envisages a growth rate of 3.3% in 2010-2015, 3.4% in 2015-2020, 3.4% in 2020-2025 and 2.8% in 2025-2040.

- b. Project future Arab women participants. This is shown in Figure 8b, using two, alternative future scenarios.¹² It also shows the actual participants series from 1970.

Figure 8b: Labor Force Participation Forecast, Arab Women

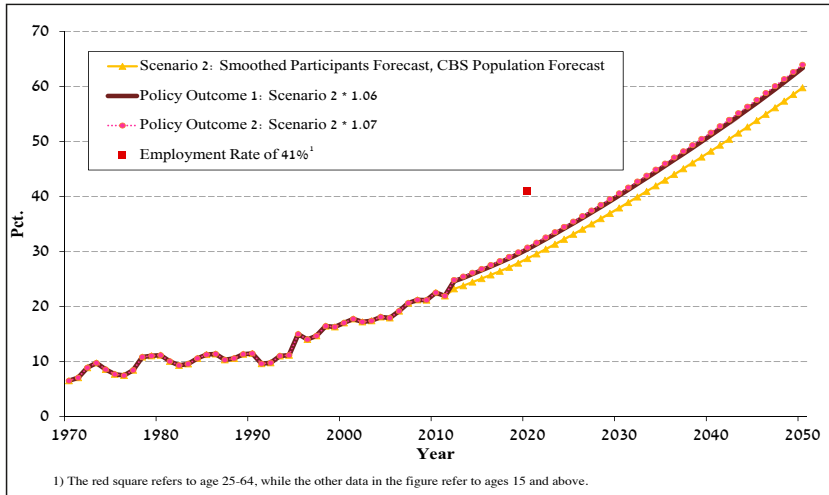


- c. Project the future rates of labor force participation of Arab women by dividing each of the alternatives in Figure 8b by each of the alternatives in Figure 8a. As a result we get four simulated projections. In order not to present a figure which is too cluttered, in Figure 8c we show one of these four series – the smoothed projection (scenario 2) from Figure 8b divided by the CBS population projection (scenario 1) from Figure 8a. The figure also shows two policy scenarios: in one we multiply the projected rate by 1.06 and in the other we multiply the projected rate by 1.07. Table 14 below reports results also for the series that were omitted here. In addition we mark by a red square the government employment target for 2020 which is an employment rate of 41%.

¹² The two scenarios are based on a regression of Arab women participants on a cubic time polynomial. In scenario 1 the dependent variable is the number of women and in scenario 2 the dependent variable is the Hodrick-Prescott filtered number of participants.

It is clear that our projections are conservative as the red square lies well above the projected schedules.

Figure 8c: Labor Force Participation Rate, Arab Women, Forecast and Simulation



The basic picture that emerges from the three figures is that over a 40 year horizon the rate of Arab women participation is expected to grow by roughly 10 percentage points every decade from a baseline of almost 22% reaching 60% by mid-century. Our very conservative policy estimates indicate that policy-induced participation will raise these numbers by 2 to 4 percentage points.

7.2. Output Gains

We now use the assumptions outlined above and apply the following equation to compute how much more output (ΔY) the added participants are going to produce:

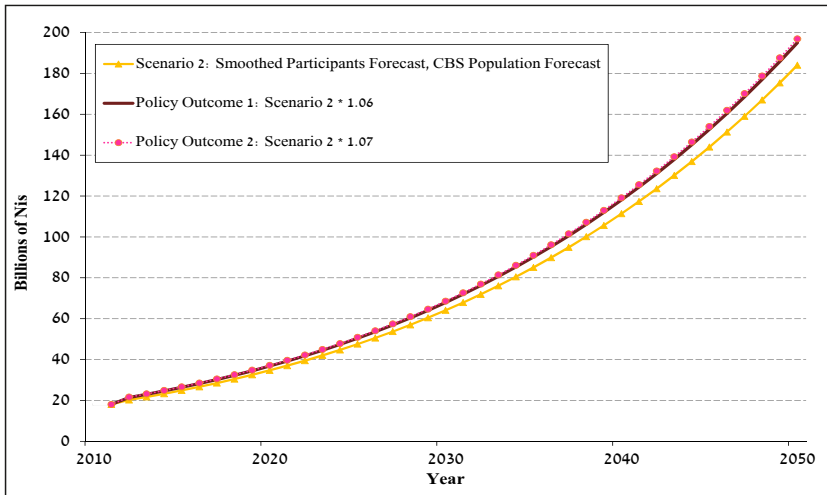
$$\Delta Y = \Delta L * (1-u) * (F/E) * k * (1+g)$$

Where, ΔL are the added women participants; $(1-u)$ is the fraction of the added participants who will not be unemployed (u) i.e., who will be employed; (F/E) is output per worker; k is the factor that we use to account for the assumption that Arab women produce

less than the average worker;¹³ $(1+g)$ is one plus the growth rate of output per worker.¹⁴

Figure 8d shows annual GDP produced by Arab women computed using the above equation. The figure shows the same three scenarios outlined in Figure 8c.

Figure 8d: Annual GDP of Arab Women, Simulation, 2011 prices



The figure uses constant, 2011 prices so there is no confounding here of the effects of inflation. Figure 8e shows the same but now expressed in NIS per capita so this is total annual GDP of Arab women divided by the entire population of Israel.

13 We use the ratio of hourly wages of Arabs to that of total workers for 2011 to derive the factor.

14 Thus, we use the data-based values of $u=0.105$, $k=0.7$ and $g=0.011$.

Figure 8e: Annual GDP of Arab Women per capita, Simulation, 2011 prices

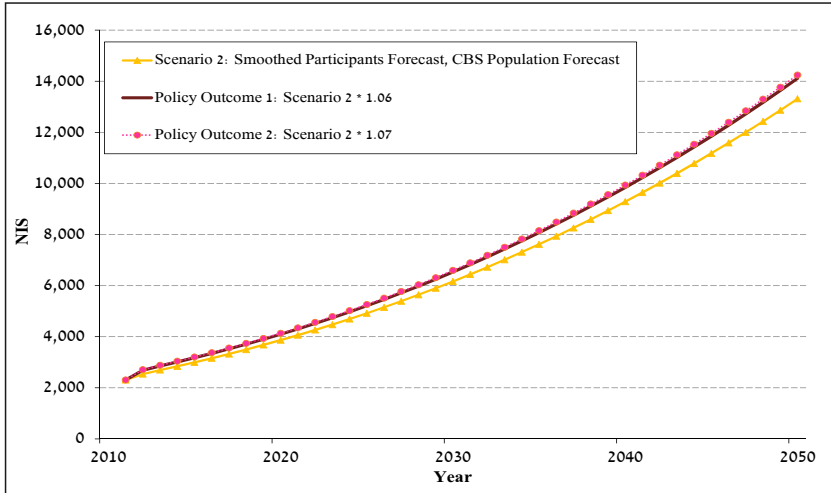


Table 13 shows the data of Figures 8b-e in numbers; it also shows total cumulative GDP.

Table 13: Simulation Results

Base Year Data			
	Participation rate of Arab women	Total GDP (NIS, billions)	GDP per capita (NIS)
2011	21.9	871.8	111,251
	Total GDP of Arab women (NIS, billions)	Total GDP of Arab women, per capita (NIS)	
2011	18.1	2,304	
Participation Rate (pct.)			
	Basic scenario	Policy scenario 2	Difference between policy and basic scenarios
2020	29	31	2
2030	38	41	3
2040	48	52	3
2050	60	64	4
Total Annual GDP of Arab Women (NIS billions, 2011 prices)			
	Basic scenario	Policy scenario 2	Difference between policy and basic scenarios
2020	35	37	2
2030	64	69	4
2040	111	119	8
2050	184	197	13
GDP of Arab Women, per capita (NIS, 2011 prices)			
	Basic scenario	Policy scenario 2	Difference between policy and basic scenarios
2020	3,864	4,135	270
2030	6,164	6,595	431
2040	9,285	9,935	650
2050	13,312	14,244	932
Total Cumulative GDP of Arab Women (NIS billions, 2011 prices)¹			
	Basic scenario	Policy scenario 2	Difference between policy and basic scenarios
2020	243	260	17
2030	739	791	52
2040	1,623	1,736	114
2050	3,112	3,329	218

1) The cumulative GDP of Arab women is computed starting from the beginning of 2012.

The basic picture that emerges from Figures 8 d-e and Table 13 is that over a 40 year horizon the annual contribution of Arab women to GDP is expected to grow from 18 billion NIS to 35 billion NIS in 2020, 64 billion NIS in 2030, 111 billion NIS in 2040 and 184 billion NIS in 2050. Cumulatively this is an addition of 3.11 trillion NIS over four decades. Our very conservative policy estimates indicate that policy-induced participation will raise these GDP numbers, starting by 2 billion NIS a year in 2020 and reaching an additional 13 billion NIS per annum in 2050. Thus, cumulatively, output will increase by close to 3.3 trillion NIS (rather than 3.1 trillion NIS) by 2050.

7.3. Rates of Return

Table 14 presents the payoff for this policy. It shows 6 rates of return which cover the 3 possible policy effects we had considered (1.05, 1.06, 1.07 multiples of the projected participation rates) and the two participation forecasts (shown in Figure 8b). In computing the internal rates of return, the revenue is the added GDP computed as explained above; the costs are half of those delineated in Table 11 (as the simulation refers to women only). In computing the costs we allow for productivity growth and take into account the time schedules outlined in Table 11.

Table 14: Rates of Return

Policy Effect	Number of Participants Growth Rate * 1.05	Number of Participants Growth Rate * 1.06	Number of Participants Growth Rate * 1.07
Option 1 - Regular Forecast of Participation	3.5%	7.7%	12.6%
Option 2- Smoothed Forecast of Participation	2.2%	6.5%	11.0%

Even though the simulation uses very conservative estimates, most of the rates of return are sizeable and indicate a high payoff. Note that other economic gains, such as reduced benefit payments and higher tax revenues for the government, additional income

to households or additional profits for firms, are *not* part of this computation. Table 14 considers just added total GDP as compared to total costs. The median and average return in the table are a little over 7%, a sizeable lower bound.

Conclusions

Arab participation in the Israeli labor market should be a cause for concern. Israeli Arabs make up one-fifth of Israel's population. Their labor force participation rate is relatively low; those who do participate have difficulty in finding suitable jobs and suffer from high unemployment; and most workers are concentrated in a narrow range of low-paying occupations. As a result, Israeli Arabs suffer from economic hardship and high poverty rates. Their limited participation in the labor market exacerbates their sense of alienation from Israeli social and political life, makes Israel's GDP grow below potential, and impedes the Israeli economy in general.

The difficulties experienced by Israeli Arabs in the labor market have severe implications, then, not only for their own socioeconomic standing, but also for Israeli society at large. To solve these difficulties, the Israeli government needs to assist Israeli Arabs in their efforts to join the labor force and find employment. This paper has characterized the main labor-related problems facing Israeli Arabs and has recommended government policies to help solve them. The magnitude of these problems calls for major steps and considerable investment in education, transport infrastructure, childcare, job creation in certain geographical regions, labor law enforcement, and more. Only a comprehensive program could bring about the desirable change and help Israeli Arabs integrate successfully in the Israeli labor force. The benefits would be immense, not only for Israel's Arab citizens, but for the Israeli economy as a whole.

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