

# Social Finance Israel

## Benefits of a Social Impact Bond to Reduce the Level of Haredi Unemployment

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## Economic Benefits of the Social Impact Bond.

Social Finance Israel (SFI) will work together with the Ministry of Finance, the National Economic Council and the TAMAT, to agree on an Outcome Payment to be made for every male Haredi who has been placed into employment successfully, post-completion of their Training Program.

The Outcome Payment will be based on a combination of economic benefits which the above ministries enjoy once a male Haredi participant enters the work force. This Outcome Payment is based on a number of distinct, direct, economic advantages to the Government of Israel (GOI) and the Israeli economy when a male Haredi enters employment.

Outcome payments for the Social Impact Bond (SiB) will be justified in three ways

1. Reduction of benefit payments, which are currently paid as stipends, study scholarships and income support to many Haredi individuals who are in Yeshiva study programmes. This constitutes savings to the government, as there is no longer a need for the government to subsidize program graduates who are successfully placed in employment.
2. Increase in tax contributions, including (but not exclusively) income, healthcare and national insurance tax. This constitutes increased income to the government, as program graduates are taxed on their earned income.
3. Additive contribution to the national economic output, based on a dependency relationship between earned income and economic output. The salary of each Haredi who completes the program and is successfully placed in a job will be partially funneled back into the economy in the form of disposable income.

On the basis of this, the Outcome Payment is defined as the total economic advantage of the above, and is quantified over an agreed Benefit Period. The exact value of this is agreed upon between SFI and the GOI before commencement of the Service Provision.

## *Constituents of Outcome Payments*

### **Benefit Reduction**

The GOI currently pays stipends and scholarships to Haredi men who study in Yeshiva. Haredi men who graduate from the training program and are successfully placed in employment will no longer need to be subsidized, resulting in benefit reductions and subsequent savings to the government. The quantification of this figure is based on the expected values, per year, of the following and then scaled over the agreed Benefit Period:

- Reduction of Yeshiva scholarship that the Participant may receive while studying, but does not receive once they enter full time academic or vocational training, or employment. Government subsidies for Yeshiva participation from the Ministry of Education are 700 NIS per month<sup>1</sup> per participant.
- Reduction of national insurance that the participant may receive while studying, but does not receive while in employment, an average of 45 NIS per month per participant.

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<sup>1</sup> [http://en.idi.org.il/media/575457/Ultra\\_Orthodox\\_Employment.pdf](http://en.idi.org.il/media/575457/Ultra_Orthodox_Employment.pdf)

## Tax contribution

Program graduates who are successfully placed in jobs will be required to contribute income taxes based on his salary. The valuation of this future economic benefit is based on the expected tax contributions per year and then scaled over the agreed Benefit Period. Specifically this benefit is based on a quantification of:

- Expected income tax contributions from employment. As tax rates are known per given salary<sup>2</sup>, this calculation is based upon the expecting salary distributions of Haredi participants who successfully complete academic and vocational training programs. Expected income distribution of program graduates is based on historical evidence of earning distributions from similar employment programs such as those funded by The Kemach Foundation<sup>3</sup>. Average monthly tax contributions for program graduates is expected to be 1,425 NIS per month per participant.
- Expected municipality tax contributions from employment. Some program participants will receive discounts on municipal taxes<sup>4</sup> because of their family size, household income, or other factors. Using demographic data for the Haredi population, average municipal tax contributions for program graduates is expected to be 184 NIS per month per participant.

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<sup>2</sup> <http://www.israeltaxlaw.com/PAGE588.asp>

<sup>3</sup> <http://www.kemach.org/>

<sup>4</sup> [http://en.idi.org.il/media/575457/Ultra\\_Orthodox\\_Employment.pdf](http://en.idi.org.il/media/575457/Ultra_Orthodox_Employment.pdf)

## Contribution to national economy

Future Haredi employment from the SiB will have a macroeconomic effect on the national economy. Specifically, we must evaluate the relationship between the future salary of program graduates and economic output. We want to examine the *additive* effect of earning a salary as opposed to the "status quo" of receiving government subsidies.

Typically, "economic impact" studies like this utilize an Input/Output methodology<sup>5</sup> that tracks interdependencies between different sectors of the economy in order to evaluate how a change in one sector of the economy affects the entire economy. While this methodology is widely used, it is inappropriate for the purposes of the bond for two reasons. First, I/O models depict inter-industry relationships, from one sector to another, and are not applicable for wages and employment. Secondly, I/O models require consistent and reliable data, neither of which exists for the Haredi population of Israel.

The most recent literature regarding the economic impact of various minority groups in Israel uses a more simplified approach to estimate economic effects. The methodology involves "benchmarking" to GDP, typically based on a national average, and then making adjustment to the benchmark for the specific group or sector being analyzed.

One recent example of this methodology is Professor Eran Yashiv's paper, published by the Bank of Israel, entitled "Arab Women in the Israeli Labor Market"<sup>6</sup>. Professor Yashiv is a well-known and reputable name amongst macroeconomic stakeholders in Israel. In addition to his extensive academic record, Professor Yashiv has been a leading research consultant to the Bank of Israel since 2007, as well as a member of Macroeconomic Forum of the Director General for the Ministry of Finance since 2010<sup>7</sup>.

Yashiv's Model:

$$\Delta GDP = \Delta L \times \left( \frac{GDP}{E} \right) \times (1 + g) \times (1 - u)$$

Where

- $\Delta$  GDP = change in output
- $\Delta$  L = change in labor supply
- E = Number of employed people
- u = unemployment rate.

This simple model states that the increase (decrease) in output is equal to the increase (decrease) in labor supply multiplied by output per laborer, taking into consideration the

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<sup>5</sup> [http://en.wikipedia.org/wiki/Input-output\\_model](http://en.wikipedia.org/wiki/Input-output_model)

<sup>6</sup> <http://www.boi.org.il/deptdata/mehkar/papers/dp1205h.pdf>

<sup>7</sup> [http://www.tau.ac.il/~yashiv/yashiv\\_cv\\_march\\_2013.pdf](http://www.tau.ac.il/~yashiv/yashiv_cv_march_2013.pdf)

natural growth of the economy and the true unemployment rate. GDP divided by the number of employed people is the marginal increase in GDP from one additional employee.

Here, the benchmark is GDP per employee, which is the average contribution of one worker to country-wide output. This is adjusted by unemployment in the Arab Israeli sector in order to reflect the specific minority group of Arab Israeli women.

Another example is Dr. Gilad Malach's study of the effect of potential Haredi employment on Israel's GDP<sup>8</sup>. Dr. Malach's study, "Economic Aspects of Haredi Employment", published by the Israel Democracy Institute<sup>9</sup>, utilizes a similar methodology:

$$\text{Average GDP per Haredi} = \frac{GDP}{E} \times z$$

Where z is a factor that adjusts the average contribution to GDP from an employee to reflect a Haredi employee. Here the benchmark again is GDP per employee, which is adjusted by productivity in order to reflect the specific minority group of Haredim.

While this methodology may seem overly simplistic, it is used for three reasons.

1. Logical Approximation: Benchmarking to GDP serves as a logical starting point for quickly assessing the economic impact of a proposed change.
2. Simplicity and ease of use: There typically exists a trade-off between an easily understandable model that is less refined to a more complex model that is less understandable but possibly more explanatory. Using a simple benchmark allows researchers to adjust and adapt the model according to their specific needs.
3. Lack of reliable and consistent data. This is the most relevant issue for studies on minority groups in Israel, like the Haredi population or Arab Israeli women. Data is sparse and researchers have to rely on limited databases that are unreliable, which makes developing more complex models prohibitively challenging.

Ideally, for the purposes of measuring the economic effect of wages from program graduates, there would exist a model that would plot out GDP as a function of Haredi employment and salaries. Unfortunately, as stated above, *there is insufficient data for this purpose*, and the reverse methodology must be used, as in the examples above: whereby we create a starting point ("benchmark") of GDP per person (or employee), and make appropriate adjustments for the purposes of the SiB.

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<sup>8</sup> <http://www.calcalist.co.il/local/articles/0,7340,L-3577777,00.html>

<sup>9</sup> <http://www.idi.org.il/%D7%A8%D7%A1%D7%A9%D7%A2%D7%A4%D7%A5%D7%A8%D7%A9%D7%A7%D7%A1%D7%A8%D7%A4%D7%A9%D7%A7%D7%A1%D7%A8%D7%A4-2011-%D7%A9%D7%A2%D7%A0%D7%A2%D7%A9%D7%A1%D7%A9%D7%A8-%D7%A4%D7%A9%D7%A7%D7%A1%D7%A8-%D7%A9%D7%A2%D7%A0-%D7%A9%D7%A6%D7%A8-%D7%A9%D7%A3%D7%A9/>

### *Isolating Income Effects for SFI*

The model for evaluating the dependency relationship between earned income and economic output follows along the lines of the methodology and best practices presented by Yashiv and Malach, but with additional changes to better isolate the direct income effect from salary.

To isolate direct income from GDP, we begin with the general definition of GDP:

$$GDP = C + I + G + (X - M)$$

GDP equals private consumption, plus gross investment, government spending, and imports minus exports.

Private Consumption, "C" can be further separated into two components using the basic consumption function:

$$C = c_0 + (MPC \times Y^d)$$

Total Consumption is equal to "autonomous consumption", plus disposable income times the marginal propensity to consume.

"Autonomous consumption" represents consumption when income is zero, which is assumed to be positive.

Disposable Income is equal to income less taxes.

Marginal Propensity to Consume is the percent of income allocated to consumption.

Therefore

$$GDP = c_0 + (MPC \times Y^d) + I + G + (X - M)$$

This simple transformation isolates disposable income as a separate parameter to GDP, which allows us to successfully measure the effects of earned income on output.

We divide GDP by total number of employees to obtain a benchmark value of average contribution to GDP from each employee, similar to the methodology of Yashiv and Malach.

$$\frac{GDP}{E} = \frac{c_0}{E} + \left(\frac{Y^d}{E}\right) \times MPC + \dots$$

The parameter that is relevant for understanding the relationship between earned income and output is  $\left(\frac{Y^d}{E}\right) \times MPC$ : the average contribution of disposable income per employee to overall GDP per employee.



This benchmark value is now adjusted to reflect the specific Haredi minority group of the SiB, similar to the methodology discussed.

$$\left(\frac{Y^d}{E}\right) \times MPC_d \times k$$

$MPC_d$  is the marginal Propensity to Consume per Decile; measured as a percent. Parameter "k" is an adjustment ratio for Haredi graduates of the program to account for differences between Haredi employees and their non-Haredi counterparts; measured as a percent. The differences between Haredi and non-Haredi employees results from the projected jobs of program graduates, which will largely include entry level and junior positions based on a year of vocational training.

The term  $\left(\frac{Y^d}{E}\right) \times MPC_d \times k$  is the direct effect of disposable income on GDP for the average Haredi employee, and will be evaluated in order to understand the contribution of earned income on economic output. It is effectively the additional amount of economic growth as a direct result of income alone for one additional Haredi worker. In addition, this methodology utilizes reliable and consistent data that is publicly available from the CBS.

In order to assess the additive value of employment, we look at the difference between two states: employed and receiving salary, and unemployed and receiving government subsidies:

$$\left(\frac{Y^d}{E}\right) \times MPC_d \times k_e - \left(\frac{Y^d}{E}\right) \times MPC_d \times k_u$$

$k_e$  represents the adjustment ratio of disposable income when the Haredi graduate is employed and not receiving government subsidies, and  $k_u$  represents the adjustment ratio of disposable income when the Haredi graduate is unemployed and only receiving government subsidies. Together, this is the *additive amount of economic growth as a direct result receiving a salary as opposed to government subsidies for one additional Haredi worker*.

There are some notable differences between this model and the examples presented by Yashiv and Malach. First, Yashiv's model looks at changes in GDP and labor supply as percentages. In this vein, the model is ideal for simulating impulse responses to shocks in labor supply, or any other relevant parameter. For the purposes of the SiB, the change in labor supply is a known quantity (the number of program graduates per year), and therefore the model can be simplified to look at the direct absolute increase in GDP per person from employment.

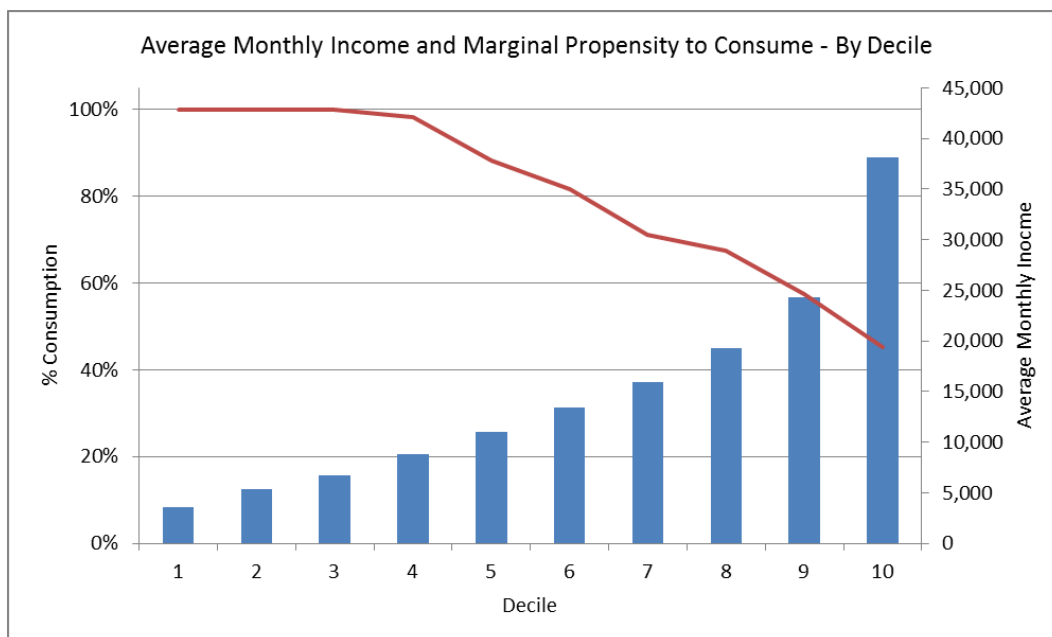
Secondly, we only consider private disposable income. This is the simplest and most straightforward way to quantify the direct effect of income on GDP. Both Yashiv and Malach use total GDP per employee, but in our valuation we are able to isolate the direct effect of disposable income on GDP using common practices and consistent data. It is important to note that tax is excluded from disposable income by definition<sup>10</sup>, which is ideal for the SiB,

<sup>10</sup> "Private disposable income is equal to national income less taxes on income, contributions

since the effect of income tax is already included as one of the three parameters for outcome payments to bondholders.

Third, we include an additional variable, "k", which accounts for the difference in average productivity between Haredim who graduate the program and the larger population in Israel, and is reflected in the salaries of program graduates as compared to the national average. This is similar to the factor "z" in Malach's model, and is based on the 2010 survey of Haredi employment from the Ministry of Industry, Trade, and Labor (TAMAT)<sup>11</sup> along with salary statistics from the Central Bureau of Statistics (CBS). *This variable effectively "normalizes" the average income effect for the Haredi population.* As previously stated, the discrepancy in average salaries between Haredi program graduates and Non-Haredis in Israel is a result of the predicted job placement of graduates given a year of vocational training.

Finally, we incorporate the marginal propensity to consume, based on deciles. Economic theory has shown that the percent of income allocated to consumption is negatively correlated to the nominal amount of income earned<sup>12</sup>. In other words, as a person's salary increases, a smaller proportion of his/her salary is allocation directly to consumption, and therefore their income has less spillover effects on GDP and a lower income multiplier. Data supporting this theory was obtained from the CBS's table of monthly consumption expenditure by decile<sup>13</sup> from 2011.



to national insurance and property income paid to the general government, plus interest payments and other transfers received by the private sector from the government and from abroad".

[http://www.cbs.gov.il/hodaot2008n/descriptions/gdp\\_intro\\_e.pdf](http://www.cbs.gov.il/hodaot2008n/descriptions/gdp_intro_e.pdf)

<sup>11</sup> <http://www.moital.gov.il/NR/rdonlyres/8E552650-235D-4EE1-8ABC-9D93C160E9AA/0/hushtalvut.pdf>

<sup>12</sup> [http://www.stanford.edu/~pista/ann\\_rev.pdf](http://www.stanford.edu/~pista/ann_rev.pdf)

<sup>13</sup> [http://www.cbs.gov.il/publications13/1517/pdf/t02\\_02.pdf](http://www.cbs.gov.il/publications13/1517/pdf/t02_02.pdf)

## Data and Results

Results of the valuation are based on figures from 2011, which is the most recent year where all relevant data points have been published from a credible source.

The basis for Consumption in 2011 comes from data from the CBS. Total GDP for that year is B834.7 NIS, and total consumption is B722.1 NIS<sup>14</sup>. Disposable income is B577 NIS and therefore autonomous consumption is B145.1 NIS<sup>15</sup>. The total number of employed persons, both full time and part time, for the same year is 3,038,100. Therefore annual average disposable income per employ is K189.9 NIS, or 15,826 NIS per month. It is important to note that this is already nearly twice the average monthly salary in 2011, (8,741 NIS per month), which gives us a general direction for income multiples.

The predicted average salary for Haredi graduates of the program with basic job training is 6,800 NIS/month, which is compared to the national average salary data from the CBS. For 2011, average monthly salary was 8,741 NIS/month<sup>16</sup>, which means that the ratio  $k_e$  is roughly 78%. Internal SIF measures predict average monthly subsidies, from both public and private sources, of 3,850 NIS/month, which means that  $k_u$  is 44%.

The marginal propensity to consume at a predicted average salary of 6,800 NIS/month is 100% based on deciles. The marginal propensity to consume at a subsidized income of 3,850 NIS/month is also 100%. Meaning, we expect the Haredi graduate, or his household, to spend all of his income on private consumption: clothing, food, toiletries, etc., without allocating any income to savings at this salary level. In addition,

We see that the average marginal effect on GDP from an additional Haredi worker who earns 6,800 NIS/month is 12,312 NIS/month. The average marginal effect on GDP from a Haredi who does not earn salary, but is subsidies at 3,850 NIS/month is 6,791 NIS/month. **Combined, we see that the additive effect to output of a Haredi male gaining a job and no longer receiving subsidies is 5,341 NIS/month.**

For comparison, Malach's model uses a "z" value of .75, which results in a marginal effect on GDP of 17,171 NIS/month and an additive effect of 10,200 NIS/month. Therefore, our approach, which isolates only the additive effect of disposable income, serves as a more conservative estimate of the effects of increasing Haredi employment.

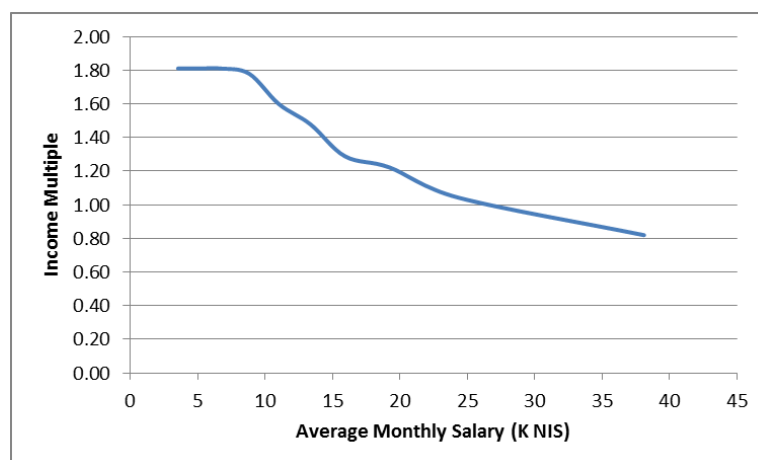
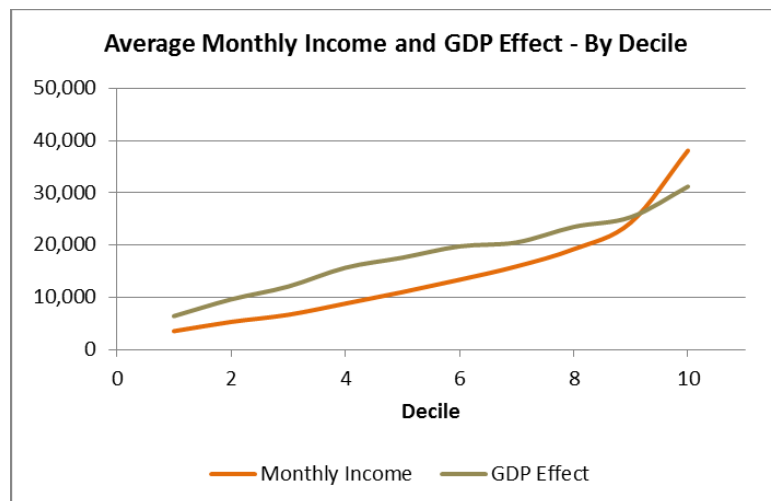
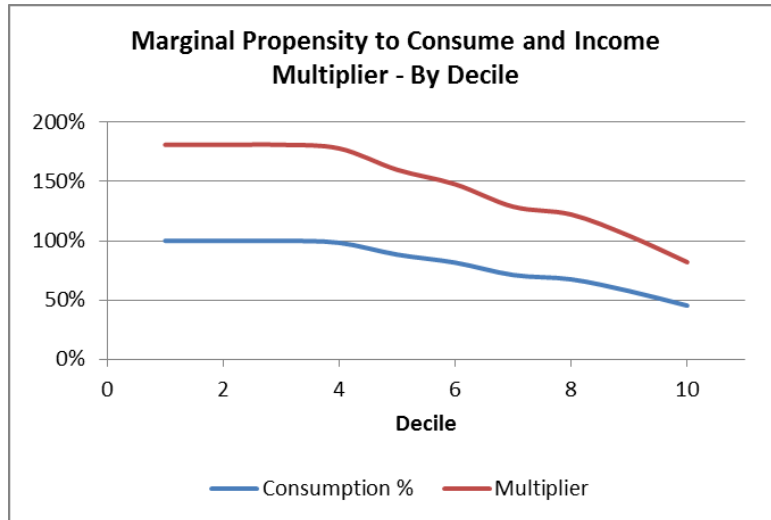
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<sup>14</sup> <http://www.cbs.gov.il/publications13/yarhon0513/pdf/f1.pdf>

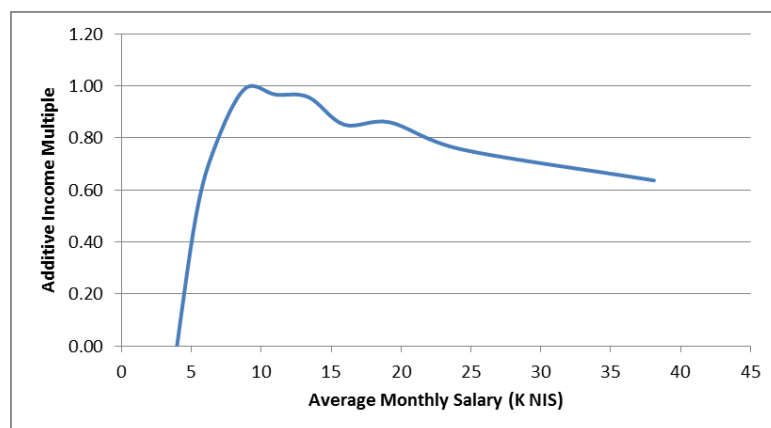
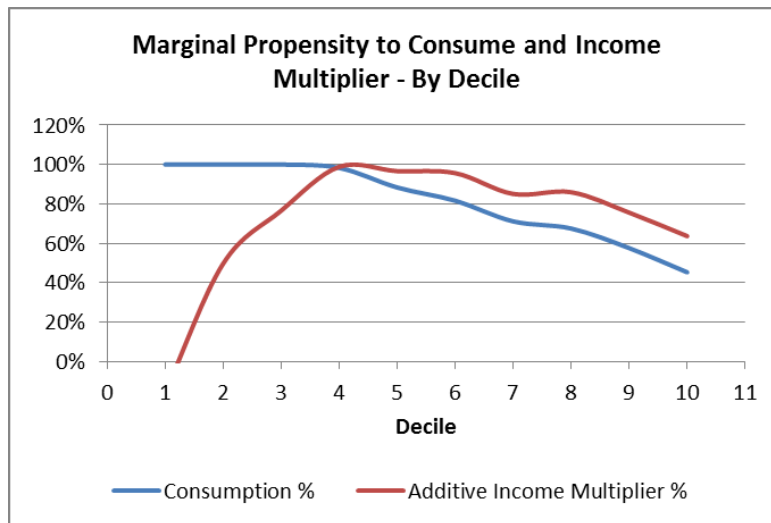
<sup>15</sup> <http://www.cbs.gov.il/publications13/1514/pdf/t26.pdf>

<sup>16</sup> [http://www.cbs.gov.il/shnaton63/st12\\_40x.pdf](http://www.cbs.gov.il/shnaton63/st12_40x.pdf)

Results of the model can be adjusted to reflect changes in the expected salary of program graduates. As expected income rises (falls), the marginal propensity to consume and the income multiplier fall (rise), which will lead to a subsequent change in how much each graduate contributes to GDP growth.



Similar results can be found for the additive income effect resulting from the difference between employment and subsidies.



## ***Summary of Economic Benefits***

Using the data and information contained herein, ***the total additive economic benefit of one additional program graduate who successfully is employed is equal to 7,785 NIS per month.***

745 NIS per month, about 9.5% of the total economic benefit, is a result of governmental saving from benefit reduction.

1,609 NIS per month, about 20.5% of the total economic benefit, is a result of direct tax contributions.

The remainder, 5,341 NIS per month, about 70%, is a result of contributions to the national economy.

## Labor Market Benefits

One question that should be addressed prior to the issuance of the bond is how program graduates will be integrated into the existing labor market. Specifically, will the Haredi men who enter the job market displace existing workers?

The bond will focus on job training in the high tech field, with an emphasis on computer skills that do not require a traditional long-term academic background. In order to assess the potential displacement of existing labor in this sector, we look at the latest data from the Central Bureau of Statistics. Early this year, the CBS released their findings on Supply and Demand in the Labor Market in Israel for 2011/12<sup>17</sup>, which is compiled from their monthly Labor Force Survey and Job Vacancy Survey.

According to the CBS press release in March of this year, "Supply to demand ratio of less than 1 (i.e., in these occupations the number of job vacancies surpasses supply) occurred among Systems analysts and related computer professionals (code 015), [and] Computer engineers (code 027)". For 2012, there were about 1031 job vacancies per quarter for "System Analysts and Related Computer Professionals", and 1688 vacancies per quarter for "Computer Engineers"<sup>18</sup>.

CBS Code	Occupation	Q1 2012		Q2 2012		Q3 2012		Q4 2012	
		JOB VACANCIES	SUPPLY TO DEMAND RATIO	JOB VACANCIES	SUPPLY TO DEMAND RATIO	JOB VACANCIES	SUPPLY TO DEMAND RATIO	JOB VACANCIES	SUPPLY TO DEMAND RATIO
015	Systems analysts and related computer professionals	1,024	0.1	940	1.4	1,153	0.8	1,009	0.1
027	Computer engineers	1,602	0.3	1,529	0.2	1,851	0.1	1,771	0.1

"Supply and Demand in the Labour Market in Israel in October-December 2012 and annual data of 2012", CBS, March 2013

These two occupations are the most relevant to the program and have ratios less than one, where vacancies are greater than the existing labor supply, indicating a shortage of laborers. In other words, over the course of the year employers had unfulfilled positions that could have been potentially filled by Haredi program graduates.

The CBS defines the Supply to Demand Ratio as following: "[The] Supply to demand ratio refers to the ratio between applicants to work in a specific occupation and job vacancies in this occupation". "Applicants" refers to job seekers. Using this definition and data from the CBS we can construct the following two tables:

<sup>17</sup> [http://www.cbs.gov.il/www/hodaot2013n/20\\_13\\_079e.pdf](http://www.cbs.gov.il/www/hodaot2013n/20_13_079e.pdf)

<sup>18</sup> [http://www.cbs.gov.il/hodaot2013n/20\\_13\\_079t1.pdf](http://www.cbs.gov.il/hodaot2013n/20_13_079t1.pdf)

		Total Job Applicants			
CBS Code	Occupation	Q1 2012	Q2 2012	Q3 2012	Q4 2012
015	Systems analysts and related computer professionals	102	1,316	922	71
027	Computer engineers	481	306	185	177
	Total	583	1,622	1,107	248
<i>Calculation</i>					

		Total Available Postions for Program Graduates			
CBS Code	Occupation	Q1 2012	Q2 2012	Q3 2012	Q4 2012
015	Systems analysts and related computer professionals	922	-	231	938
027	Computer engineers	1,121	1,223	1,666	1,594
	Total	2,043	1,223	1,897	2,532
<i>Calculation</i>					

The first table shows the total number of job seekers to job vacancies per quarter, as calculated according to the CBS definition.

The second table shows the number of positions per quarter that were left open entirely, which could potentially have been filled by program graduates. It would follow that in quarters where the number of job seekers exceeded the openings, like in Q2 2012, Haredi program graduates could be theoretically "locked out" of job vacancies for that period.

*We can see that at any time of the year there are more than enough open positions in the high tech sector to successfully absorb all of the Haredi graduates without displacing any existing workers. Similar results exist for 2011 as well (see appendix).*

In addition to these two occupations in the high tech sector, other occupations have a surplus of openings at various points throughout the year which can absorb Haredi program graduates without displacing existing workers (see appendix).

This further supports the aim of the bond and shows that *encouraging Haredi employment will be a net benefit to the Israeli economy and runs little risk of harming the current job market.*



## Qualitative Benefits

In addition to the considerations explained herein, there are qualitative benefits to encouraging Haredi employment.

This study reflects only the direct effect of addition workers on the economy, but does not take into consideration industry-specific spillover effects from employers. For example, the high tech sector is characterized by a very high level of productivity and compensates its employees with salaries that are at least twice as high as the national average<sup>19,20</sup>. Absorbing Haredi employees into a high tech company requires the company to increase expenditure, which flows directly into the economy and further increases the total spillover effect. This paper does not include this effect, and therefore the true benefit to the economy of increasing Haredi employment, for example in the high-tech sector, will be higher.

Finally, increasing Haredi employment in the high-tech sector decreases the chances that high-tech companies will choose to outsource their operations or relocate entirely. In addition to the CBS findings on the labor market, there is ample anecdotal evidence of an Israeli "brain drain", where high-tech firms have difficulty filling all of their job openings<sup>21</sup> and frequently are forced to look abroad to fill their labor needs. Qualified Haredi employees can fill these positions and strengthen the ties between the company and the country.

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[http://www.boi.org.il/en/NewsAndPublications/RegularPublications/Documents/Doch2011/pe\\_7.pdf](http://www.boi.org.il/en/NewsAndPublications/RegularPublications/Documents/Doch2011/pe_7.pdf)

<sup>20</sup> [http://www.cbs.gov.il/hodaot2013n/26\\_13\\_150t4.pdf](http://www.cbs.gov.il/hodaot2013n/26_13_150t4.pdf)

<sup>21</sup> <http://www.businessweek.com/stories/2008-05-13/high-tech-puts-israel-in-the-blackbusinessweek-business-news-stock-market-and-financial-advice>

## Appendix

### 1. Calculating Disposable Income

NIS M				
	GDP	Total Consumption	Disposable Private Income from Domestic Sources	Autonomous Consumption
2009	735,202	627,379	510,204	117,175
2010	779,365	675,612	538,777	136,835
2011	834,694	722,092	576,977	145,115

	Disposable Private Income from Domestic Sources (M NIS)	Number of Employees	Average Annual Disposable Income Per Employee (NIS)	Average Monthly Disposable Income Per Employee (NIS)
2009	510,204	2,815,882	181,188	15,099
2010	538,777	2,924,600	184,222	15,352
2011	576,977	3,038,100	189,914	15,826

### 2. Calculating Additive Income Effect for Haredi Employees

	Average Monthly Disposable Income Per Employee (NIS)	k (employed)	k (unemployed)	Monthly Income Effect from Salary	Monthly Income Effect from Subsidies	Additional Income Effect from Employment
2009	15,099	84%	47%	12,627	7,149	5,478
2010	15,352	81%	46%	12,407	7,025	5,382
2011	15,826	78%	44%	12,312	6,971	5,341

### 3. 2011 Labor Force Statistics for High Tech

CBS Code	Occupation	Q1 2011		Q2 2011		Q3 2011		Q4 2011	
		JOB VACANCIES	SUPPLY TO DEMAND RATIO	JOB VACANCIES	SUPPLY TO DEMAND RATIO	JOB VACANCIES	SUPPLY TO DEMAND RATIO	JOB VACANCIES	SUPPLY TO DEMAND RATIO
015	Systems analysts and related computer professionals	573	1.5	886	1.6	785	0.3	1,127	0.5
027	Computer engineers	1,303	0.8	1,822	0.0	1,734	0.0	1,624	0.0

"Supply and Demand in the Labour Market in Israel in October-December 2012 and annual data of 2012", CBS, March 2013

		Total Job Applicants			
CBS Code	Occupation	Q1 2011	Q2 2011	Q3 2011	Q4 2011
015	Systems analysts and related computer professionals	860	1,418	236	564
027	Computer engineers	1,042	55	52	65
	Total	1,902	1,473	288	629
<i>Calculation</i>					
		Total Available Postions for Program Graduates			
CBS Code	Occupation	Q1 2011	Q2 2011	Q3 2011	Q4 2011
015	Systems analysts and related computer professionals	-	-	549	563
027	Computer engineers	261	1,767	1,682	1,559
	Total	261	1,767	2,231	2,122
<i>Calculation</i>					

#### 4. 2012 Labor Force Statistics for other occupations

CBS Code	Occupation	Q1 2012		Q2 2012		Q3 2012		Q4 2012	
		JOB VACANCIES	SUPPLY TO DEMAND RATIO	JOB VACANCIES	SUPPLY TO DEMAND RATIO	JOB VACANCIES	SUPPLY TO DEMAND RATIO	JOB VACANCIES	SUPPLY TO DEMAND RATIO
13	Practical Computer Engineers and Technicians	1,963	1.5	2,012	1.4	2,158	1.3	2,214	1.3
130	Computer technicians and programmers	1,963	1.5	2,012	1.4	2,158	1.3	2,214	1.3
41	Wholesalers and Trade Dealers	4,270	1.5	4,702	1.0	3,908	1.2	4,003	1.5
411	Technical and commerce sales representatives	4,164	1.3	4,540	0.9	3,795	1.1	3,911	1.3
69	Builders and Construction Workers	7,100	0.8	6,542	1.1	6,528	0.9	5,484	1.1
691	Builders	3,327	0.7	3,526	1.1	3,151	1.0	2,491	1.6
692-697	Floor layers and tile setters, Stone cutters, Plasterers, Iron workers, Prefabricated elements assemblers and Scaffolders	3,453	0.6	3,023	1.0	3,214	0.7	2,819	0.6
930	Watchpersons	1,093	1.2	1,542	1.0	1,500	0.9	1,676	1.2

"Supply and Demand in the Labour Market in Israel in October-December 2012 and annual data of 2012", CBS, March 2013

CBS Code	Occupation	Total Job Applicants			
		Q1 2012	Q2 2012	Q3 2012	Q4 2012
13	Practical Computer Engineers and Technicians	2,911	2,728	2,852	2,975
130	Computer technicians and programmers	2,911	2,728	2,852	2,975
41	Wholesalers and Trade Dealers	6,582	4,709	4,713	6,075
411	Technical and commerce sales representatives	5,363	4,239	4,248	5,192
69	Builders and Construction Workers	5,373	7,331	5,992	6,195
691	Builders	2,364	3,708	3,259	4,075
692-697	Floor layers and tile setters, Stone cutters, Plasterers, Iron workers, Prefabricated elements assemblers and Scaffolders	2,091	3,077	2,110	1,589
930	Watchpersons	1,281	1,564	1,364	1,939
	<b>Total</b>	<b>28,876</b>	<b>30,084</b>	<b>27,390</b>	<b>31,015</b>

CBS Code	Occupation	Total Available Postions for Program Graduates			
		Q1 2012	Q2 2012	Q3 2012	Q4 2012
13	Practical Computer Engineers and Technicians				
130	Computer technicians and programmers				
41	Wholesalers and Trade Dealers				
411	Technical and commerce sales representatives		301		
69	Builders and Construction Workers	1,727		536	
691	Builders	963			
692-697	Floor layers and tile setters, Stone cutters, Plasterers, Iron workers, Prefabricated elements assemblers and Scaffolders	1,362		1,104	1,230
930	Watchpersons			136	
	<b>Total</b>	<b>4,051</b>	<b>301</b>	<b>1,776</b>	<b>1,230</b>