Original Article

Pension reform in Israel under mandatory pension law

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ABSTRACT This study proposes pension reform in Israel under legislation of a mandatory pension law covering all workers by funded pension plans. Referring to a mandatory pension coverage law rather than a national pension implies that pensions are paid by private entities and are not part of the government system. The rate of ageing of Israel's population is slower than most of the Western world, and this opens a demographic window of opportunity to savings for funded pensions. The proposed reform aims to promote greater social equality as well as transparency. New data and actuarial calculations are presented, as well as estimates of the budgetary expenses, to substantiate the claim that such legislation is needed.

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INTRODUCTION

This paper discusses the advantages of legislation of a mandatory occupational pension law in Israel. The Israeli context is interesting as the population of Israel ages more slowly than developed countries, providing a demographic window of opportunity for savings for funded pensions. As the population gets older, the aim is to achieve sufficient accrual of capital without having to

increase the tax burden on the shrinking population of workers, as is already occurring in several European countries. This being the case, in macro-economic terms there is a need for all employees to be covered by pensions, meaning that additional sources need to be established to enable payment of pensions.

We present a method to achieve pension reform under legislation of a mandatory pension law, and explore changes that would be required regarding how the new pension funds would operate so that they could be integrated into the capital markets. Notably, referring to a mandatory pension coverage law rather than a national

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pension implies that pensions would be paid by private entities and would not be part of the government system. Recent studies on pension reform have begun to address the privatisation issue based on evidence from pension reforms in a few Organisation for Economic Cooperation and Development (OECD) countries such as the UK,¹⁻³ Sweden⁴⁻⁶ and Switzerland.⁷⁻⁹ To date, however, most of the evidence with respect to the impact of shifting from pay-as-you-go (PAYG) schemes to privatised alternatives comes from Latin America.¹²⁻¹³

The proposed reform outlines a two-tier pension system for two wage levels of fund members. The first tier reflects wages that do not exceed the national average wage, and the second tier reflects wage levels higher than but not exceeding twice the national average wage. At each of these salary levels, member contributions are invested differently. In the first tier, members' accrued funds are invested entirely in bonds with preferred yield to maturity. In the second tier, accrued funds are invested freely in the capital market. This method promotes greater social equality as well as transparency. This paper provides actuarial estimates of the benefits for retirees and estimates of the costs to the state.

The paper proceeds as follows. The next section presents demographic data on the ageing process and economic data on the standard of living of the elderly in Israel from an international perspective. The subsequent section

discusses the problems of the new pension plans, which are an amalgam of Defined Benefits (DBs) and Defined Contributions (DCs), and the need to create a framework with greater transparency. The principles for mandatory pension presented in the further section stem from the empirical and practical considerations described in the previous sections. Another section outlines the structure of the proposed pension system and the further section discusses the cost of shifting to mandatory pension. In the last section summary and conclusions are given.

AGEING AND STANDARD OF LIVING OF THE ELDERLY IN ISRAEL FROM AN INTERNATIONAL PERSPECTIVE

The population of the Western world is ageing, and the population of Israel is no exception. In Israel, the ageing process is slower, as high fertility rates have reduced the impact of the increase in longevity. Table 1 indicates that the median age in Israel is rising at a lower rate relative to OECD countries. In fact, by 2020, the population of Israel is expected to be more than 10 years younger than that of most developed nations.

Table 2 indicates that over the past 40 years, life expectancy in Israel has risen by 6 years, approximately 1.5 years per decade, similarly to developed countries.

Fertility rate in Israel is higher than most of the OECD countries. Comparing, for example, to

Table 1: Median age in selected OECD countries

	1960	1980	2000	2020	2040	2050
Israel	24.4	24.8	27.9	32.7	37.8	40.4
Italy	31.3	34	40.2	48.5	52.7	52.4
United States	29.6	30.1	35.2	37	39	39.7
Great Britain	35.4	34.6	37.7	41.4	43.7	43.8
Germany	34.7	36.4	39.9	46.7	47.7	46.8
Denmark	33	34.3	38.7	44.1	44.5	45.3
The Netherlands	28.8	31.3	37.6	43.6	44.5	44.9
Japan	25.5	32.6	41.3	48.2	53.3	53.2
Norway	34.4	33.3	37.2	42.7	45.1	46.1
Finland	28.2	32.8	39.4	43.8	46	45.8
France	33	32.5	37.6	42.2	44.4	45.1
Canada	26.4	29.2	36.9	43	46.1	45.8
Sweden	36.2	36.3	39.6	44.3	46.5	46.3

Source: United Nations Population Division, World Population Prospects.

Abbreviation: OECD, Organisation for Economic Cooperation and Development.

Table 2: Life expectancy in selected OECD countries

	Male			Female		
	1960–1965	1995–2000	2045–2050	1960–1965	1995–2000	2045–2050
Israel	70.6	76.3	81.4	73.1	80.2	85.6
United States	66.7	73.4	79.2	73.4	80.1	84.1
Great Britain	67.9	74.5	80.6	73.8	79.8	85.6
Germany	67.4	73.9	80.6	72.9	80.2	86.3
Denmark	70.3	73.0	79	74.4	78.3	83.9
The Netherlands	71.1	75.0	79.6	75.8	80.7	84.9
Japan	66.5	76.8	83.7	71.6	82.9	92.5
Norway	71.1	75.2	80.8	75.9	81.1	86.7
Finland	65.4	73.0	79.8	72.5	80.6	86.1
France	67.6	74.2	80.6	74.5	82.0	87.3
Canada	68.5	76.1	80.8	74.6	81.8	85.7
Sweden	71.6	76.3	82.1	75.6	80.8	87.1

Source: United Nations Population Division, World Population Prospects.

Abbreviation: OECD, Organisation for Economic Cooperation and Development.

United States with fertility rate of 2.1 or France with 1.9, in Israel it is 2.7. The result is that the rate of elderly of the general population is significantly lower in Israel, and it is expected to decrease over the next two decades (Table 3). Notably, this difference between Israel and OECD countries is expected to further decrease over longer horizon.

The demographic data presented above is highly significant in terms of possible pension policies in Israel. It should be emphasised that if Israel were to project the same number of elderly people in the general population as in Europe – approximately 20 per cent – in 2020, it would be impossible to solve the economic problem of caring for the elderly through funded pensions, as is proposed in this paper. Israel thus has a demographic window of opportunity to reform pension policy using funded pension method.

A recent survey of the Israeli Central Bureau of Statistics found that 40 per cent of the adult population of Israel does not have any pension plan coverage. Also, 57 per cent of the elderly (age 65+) population of Israel does not receive any pension annuity except for the National Insurance Institute (NII) pensions. This is a low rate of coverage that results in poverty among the elderly. The data further show that income levels for individuals without pension coverage fall by more than 50 per cent upon retirement, and that poverty rates among the elderly far exceed those of the general population. Specifically, one-third of the elderly live below the poverty line as

Table 3: Rate of elderly (65+) out of total populations of selected OECD countries

	1960	1980	2000	2020	2040
Israel (%)	5	9	10	13	17
Italy (%)	9	13	18	24	34
United States (%)	9	11	12	16	20
Great Britain (%)	12	15	16	19	23
Germany (%)	12	16	16	22	29
Denmark (%)	11	14	15	21	26
The Netherlands (%)	9	12	14	19	26
Japan (%)	6	9	17	28	34
Norway (%)	11	15	15	20	26
Finland (%)	7	12	15	23	26
France (%)	12	14	16	20	26
Canada (%)	7	9	13	19	25
Sweden (%)	12	16	17	23	27

Source: United Nations Population Division, World Population Prospects.

Abbreviation: OECD, Organisation for Economic Cooperation and Development.

compared to one-sixth of the general population.¹⁴ Another indicator is the ratio between post-retirement income and pre-retirement income, generally referred to as ‘income replacement rate’. An overly large drop in income after retirement indicates an undesirable decrease in the standard of living. Income replacement rates in developed countries range between 72 per cent and 84 per cent. In Israel, the replacement rate before tax for men who receive pensions is 63 per cent, whereas the replacement rate for men who do not receive pensions is only 43 per cent.¹⁵ Thus, one of the factors causing inequality is pension coverage.

Table 4: Sources of income for the elderly population in Israel

	No. of people	NII allowance	Pension and pension funds	Income from work	Other income from domestic sources	International income	Total
Do not receive pensions	494 783	1020	46	941	236	115	2358
Receive pensions	209 127	1065	2739	495	126	109	4534
Average	703 910	1034	846	808	203	114	3005

Source: Elderly Survey, 2007.

Abbreviation: NII, National Insurance Institute.

Table 4 shows that, on average, an elderly individual with a pension has twice the income of an individual without one. People who do not receive pensions attempt to compensate for this through work or other income. The additional sums, however, far from close the gap.

In theory, when savings for pension coverage is mandatory, individuals can offset this sum by reducing the amount of their voluntary private savings. Table 4 indicates that individuals not covered under pension plans did not compensate through increased savings from other sources. Lavi and Spivak (1999)¹⁶ find that the offsetting coefficient of private savings is at most $\frac{1}{2}$, meaning that for each dollar of pension savings there is a decrease of half a dollar in private savings. It is thus possible to infer that in terms of the economy as a whole, mandatory pension savings will increase total savings, and poverty among the elderly will diminish.

THE NEED FOR COMPLETING PENSION REFORM AND LEGISLATING MANDATORY PENSION

A former pension reform in Israel, initiated in 1995 and completed in 2004, did not address the coverage lack, but rather concentrated on the actuarial deficit of the pension funds. The first step of the reform was to bar the old pension funds from accepting new members, and to open new pension funds for them, as of January 1995. The government also promised to guarantee the pension benefits of the old pension fund members. The new pension funds had to be actuarially balanced. If they accumulate a deficit higher than 5 per cent of the member's promised benefits, the benefits must be reduced so as to rebalance the funds. In that sense, the funds have the characteristic of DC and not DBs.

Figure 1: Pension coverage rate according to deciles of salaried employees.

As of January 2008, all salaried workers must be covered by a pension fund, following a collective agreement between the labour union and the employers' representative organisations that were extended to all workers by a government decree. The total contributions of employers and employees will rise linearly from 2.5 per cent of pensionable wage in 2008 up to 15 per cent in 2013 (10 per cent paid by the employer and 5 per cent by the employee). In our opinion, this is a positive development, but the process is too gradual and the total contributions at the end are too low to provide for a reasonable pension.

Looking into the future, it is clear that without a change in policy, the economic position of the elderly population will not improve. Figure 1 illustrates the current pension coverage of salaried employees. It implies that a mandatory pension law would be significant in terms of the inequality of income distribution among the elderly; individuals not covered while employed are the weak segment of the workforce, with low incomes and generally lacking education and professional training.

A possible solution to the poverty problem could lie in strengthening the first pillar – old age, survivors' and disability pensions granted by the NII. This would put Israel in the situation of many

OECD countries, where pensions are paid by taxing the working population, putting a heavy fiscal burden on the government and creating disincentives to work. The United States and Europe will have to grapple with this problem in the near term, given the accelerated ageing of the population and the wide scope of social security programmes. In these countries, attempts are being made to shift from a PAYG financing system to an accrued financing method, and to increase the weight of occupational pensions.¹⁷

We suggest that a funded pension, which utilises the demographic window of opportunity, is better suited to the needs of Israel. Instead of increasing the replacement rate of the first level, that is the benefits paid by the NII, this paper supports the well-known model of the World Bank (1994).¹⁸ We propose to establish a mandatory coverage pension law (as opposed to a national pension scheme) where pensions will be financed by private entities and will not be part of the government system. Our suggestion is to strengthen the second and the third private pillar for retirement provision, similarly to many Latin American and eastern European countries. Formally, we do not suggest the privatisation of a public pension system, because such a system does not exist yet. It does, however, show a preference to limiting the role of PAYG public system.

GUIDELINES FOR MANDATORY PENSION COVERAGE

As presented above, there are many reasons for mandatory pension coverage in Israel, including the current coverage of only 60 per cent of salaried employees and a lower rate of coverage of those who are self-employed; the low standard of living of the elderly population and worsening of the problem in the future as the population ages; and the need to create sources at the national level in order to finance this burden.¹⁹

Furthermore, in terms of mutual insurance, it is optimal for the young generation to carry the insurance burden of the older generation. These factors led us to develop the following principles:

- (a) Mandatory pension coverage of all workers and salaried employees, including individuals

whose work is stopped for a defined period of time, whether during maternity leave or when unemployment benefits are being received.

- (b) Self-financing of the funded pension system, in contrast to the NII, which uses a PAYG system. Funded pensions increase the rate of savings and lead to a corresponding increase in investment in the economy. This, in turn, increases future economic sources (in real terms) in order to finance the elderly population.²⁰
- (c) Actuarial balancing of the system at the individual and pension fund level. Actuarial balance at the fund level represents the practical significance of accrual financing. Balance at the individual level guarantees a proper incentive for savings. Mutual insurance by non-actuarial pension rates provide an incentive to break open savings at a young age, as its contribution to benefits is much lower than alternative returns in the market.
- (d) There is economic justification for a partial guarantee of pensions for the elderly and thus it is logical that their part of the pensions will not be subject to market risks.
- (e) Protection of pension rights through property laws, meaning that the pension is the property of the pensioner, and it cannot be modified by a decision of the pension fund and/or the Ministry of Finance.²¹
- (f) Ability to choose and mobility of individuals and groups of workers between pension funds. The ability to choose and move is derived from the principle of competition and consumer sovereignty. When switching to a different fund, the individual severs existing ties with the previous fund and receives the entire amount accrued according to calculation formulas that have been defined by supervising agencies. Since the publication of guidelines for switching funds issued by the Capital Markets, Insurance and Savings Division of the Ministry of Finance, this has been the situation in Israel.²² According to this directive, a single employee can switch between funds once every 2 years and a group of employees may switch once every 3 years.²³
- (g) Conversion of dedicated non-traded bonds to negotiable bonds with subsidies on the yield.

This provides the capital market with depth and enables funds to profit from their ability to make long-term investments. Alternatively, a scheme to guarantee the same yield may be implemented.

- (h) Increasing transparency of the benefit method by dividing the benefits between two tiers, as described below.
- (i) Restrictions on management fees. Possibility for lower management fees at the first pension tier.

PROPOSED STRUCTURE OF PENSION SAVINGS

Proposal²⁴

- Mandatory pension coverage will include all wages in the domestic market over one-third and up to a cap of twice the national average wage, for individuals aged 25 and over.
- The pension fund will be closely regulated by the government; also, the management and the investments of the pension funds will be subject to specific conservative rules.
- For amounts not exceeding the national average wage, the funds will benefit from full coverage of the deposits in negotiable government bonds that will receive preferred yield, either through discount on purchase or other methods.²⁵ This is the 'first tier' of pension benefits.
- The income that ranges between the national average wage to twice the national average wage will be invested in the capital market in a manner similar to a provident fund and according to the investment guidelines for provident funds.²⁶ This being said, there will be additional restrictions on their operation, which are detailed below. This is the 'second tier' of the pension.

Advantages of the proposal

An important advantage of our proposal is the abolition of designated bonds and the integration of pension funds into capital markets. Additionally, the proposal terminates the current situation, which is a combination of DB and DC lacking transparency.

The fund guarantees rights in the first tier, up to the national average wage. The yield guaranteed by the designated bonds enables the accrual in the member fund for a given salary profile to be precisely projected. The use of dynamic mortality tables enables the projection of the mortality table that will be valid at the time of retirement.²⁷

The interest rate for government bonds used to finance the first tier pension plan must be fixed, in order to guarantee first tier benefits. Marketability can be maintained with a fixed interest rate using preferred bonds with a preferred yield at time of issue, to be determined by decision makers, and then traded regularly. For example, if the preferred yield is 5.05 per cent and the yield set at time of issue is 4.5 per cent, the preferred bonds are sold to the funds at a discount (*disaggio*) that is equal to an interest increment of 0.55 per cent and is dependent on the duration of the bond. From here on out, bonds are fully negotiable as part of the regular agreements regarding the issue of linked bonds.

For the second tier, we propose an accrual-based fund between the national average wage and twice the national average wage. The amount accrued in the fund through retirement age will be used as the sole source for the allowance, which is calculated according to actuarial tables that will be effective upon retirement. Individuals will be able to capitalise a portion of the allowance in order to take a one-time payment from the fund. Should individuals not want to bear the risk of the stock market, they may request that investments be made in lower-risk assets, such as government or corporate bonds that will hedge against a drop in yield. According to the investment guidelines, it is proposed that the second tier be granted full pension tax benefits, as is currently customary.

As can be seen, in the first tier the risk in pension savings is born solely by the government, meaning the taxpayers – primarily the young working population. In the second tier, pensioners bear the entire risk. This method promotes greater social equality; it ensures that the subsidy is directed towards the section of the population with low wages and provides them with

reasonable pension rates despite the implementation of new mortality tables. Furthermore, this method has the advantage of transparency: benefits in the first tier are fully defined, as they are not dependent on free market yield, and the future increase in longevity is already accounted for. In contrast, in the second tier the accrued amounts are defined as a sort of provident fund and its final value determines the pension benefits. Thus, the first tier reflects pure DB, whereas the second tier reflects pure DC. Later in the paper, typical profiles of occupational income and the attributable distribution rate are presented. The subsidy involved in preferred yield is given in a manner that gives preference to those earning a salary that does not exceed the national average wage. Under the current system, the subsidy is distributed equally between all incomes up to twice the national average wage.

A question then arises: why not implement the first tier with the help of the NII? A number of reasons may be provided: (1) in order to maintain the principles of accrual funding and property rights. That is, if the first tier managed by the NII, it will not be clear that it belongs to the members and will become akin to another element in the tax system, as opposed to the case with a pension fund where the account managed belongs to the member and is recorded in the member's name; (2) to ensure that the obligation of the state to pensioners is transparent and (3) to enable trading in bonds and to cancel designation.

Actuarial calculations

This section analyses proposal impact for a two-tier system on the rights of pension fund members as compared to the current situation. For the sake of convenience, the comparison is performed through two scenarios:

- *Scenario 1* describes the current situation, in which 30 per cent of member funds are invested in earmarked (government) bonds. The remaining 70 per cent and the balance of funds that exceed twice the average national wage are invested in the free market.
- *Scenario 2* describes the proposed distribution between the two tiers. In the first tier,

member funds are invested in funds up to a cap of an amount that does not exceed the national average wage, at a rate of 100 per cent in designated bonds. In the second tier, used for salaries exceeding the national average, but not higher than twice the national average, the funds are invested in the free market.

In our comparisons, we distinguish between members by their gender and the age at which membership began. Note that all of the following calculations have been made for members who are currently at the ages listed in the tables. Also, these actuarial calculations refer to members of the new pension funds.

Definitions used and assumptions of calculations

- (a) Management fee of the fund – 8 per cent annually (including 2 per cent actuarial reserves).
- (b) Rate of payments – 17.5 per cent of the wage guaranteed to the member.
- (c) Rate of increase in salary – taken at a rate of 2 per cent a year, in keeping with the most recent instructions issued by the Ministry of Finance.
- (d) National average wage – NIS 7000.
- (e) Interest rate on designated bond – 4.8 per cent (linked) annually.
- (f) Interest rate on surplus investment – 3.5 per cent (linked) annually. It should be stressed that the interest rate of 3.5 per cent is the interest rate that can be secured over the long term in the market for investments in regular government bonds, and with virtually no investment risk. It may be possible to secure a higher return on investments in the market with greater risk. Thus, all calculations are made using the interest rate for surplus investment of 3.5 per cent.²⁸
- (g) Members join funds in January of the calendar year. For the sake of simplicity, it is assumed that the members were born at the beginning of the calendar year.
- (h) Ages at which members join the fund – according to the scenarios. Retirement age – 67.

- (i) Month in which accrual begins is January, at the age membership begins.
- (j) All calculations for gross salary before tax deductions.
- (k) Pension benefits – the rate of pension received by the member of the fund upon retirement because of age, beginning upon retirement and through death.
- (l) Replacement rate – the ratio from replacement of the NII benefits the member would receive to the portion of his salary guaranteed by the fund before retirement. It should be noted that this ratio does not include income from other sources, as opposed to the total distribution rate presented in previous sections.

The calculations presented in Tables 5–8 show that transition from scenario 1 to scenario 2 increases the replacement rate. Notably, in the transition from scenario 1 to scenario 2, the benefits for the members at low wage levels rise at a higher extent than high wage levels. We conclude that the proposal for mandatory pension coverage is beneficial for members with low salary levels, the weakest elements of society. Thus, implementing the proposed reform is advantageous in Israel, as well as in other countries.

COST OF PLAN

The annual cost of a mandatory pension coverage plan amounts to the number of bonds with

Table 5: Men – age upon joining fund 25

Member salary	Salary upon retirement	Scenario 1		Scenario 2	
		Pension benefit	Replacement rate (%)	Pension benefit	Replacement rate (%)
3000	6891	3172	46	4377	63.5
5000	11 486	5288	46	7296	63.5
7000	16 080	7403	46	10 215	63.5
10 000	22 972	10 576	46	12 965	56.4
15 000	34 458	15 723	45.6	17 548	50.9

Member salary is the salary of the member when joining the fund. Salary upon retirement presents member's income and adjusts it at a rate of salary increase of 2% annually. Scenario 1 – the pension benefits and the replacement rate of the member upon retirement in scenario 1, as described above. Scenario 2 – the pension benefits and the replacement rate of the member upon retirement in scenario 2, as described above.

Table 6: Men – age upon joining fund 35

Member salary	Salary upon retirement	Scenario 1		Scenario 2	
		Pension benefit	Replacement rate (%)	Pension benefit	Replacement rate (%)
3000	5653	1772	31.3	2334	41.3
5000	9422	2954	31.4	3890	41.3
7000	13 191	4136	31.4	5446	41.3
10 000	18 845	5909	31.4	7015	37.2
15 000	28 268	8796	31.1	9631	34.1

Table 7: Women – age upon joining fund 25

Member salary	Salary upon retirement	Scenario 1		Scenario 2	
		Pension benefit	Replacement rate (%)	Pension benefit	Replacement rate (%)
3000	6891	3152	45.7	4350	63.1
5000	11 486	5253	45.7	7251	63.1
7000	16 080	7355	45.7	10 151	63.1
10 000	22 972	10 507	45.7	12 888	56.1
15 000	34 458	15 621	45.3	17 437	50.6

Table 8: Women – age upon joining fund 35

Member salary	Salary upon retirement	Scenario 1		Scenario 2	
		Pension benefit	Replacement rate (%)	Pension benefit	Replacement rate (%)
3000	5653	1763	31.2	2322	41.1
5000	9422	2939	31.2	3871	41.1
7000	13 191	4115	31.2	5419	41.1
10 000	18 845	5879	31.2	6981	37
15 000	28 268	8751	31	9583	33.9

preferred yields multiplied by the difference between market interest and preferred interest. The inventory of bonds changes over time, calling for simulation that reflects the dynamics of bond development. Such simulation is employed in Lavi and Spivak (1996).²⁹ It indicates that the annual cost of mandatory pension for the years 1995 through 2035 is, on average, about 1 per cent of the GDP, implying the feasibility of such a plan. Dahan (2003)³⁰ estimates the addition of annual bonds in the realistic range of NIS 2.553–4.746 billion. In order to secure holdings of bonds with preferred yields in the long term, there is a need for an annual increase of this proportion. This type of expense must be budgeted. The source suggested here is a reduced tax credit on pension savings. Currently, contributions made by employers and interest earned on investments are tax exempt, up to four times the average wage. The cap on the exemption on employer deposits can be reduced to twice the national average wage. Our calculations (not tabulated) indicate that the Treasury may even gain from the two changes.

SUMMARY AND CONCLUSIONS

This paper proposes pension reform in Israel under legislation of a mandatory pension coverage law. It outlines a two-tier pension system for two wage levels of fund members. In the first tier – wage levels that do not exceed the national average wage – members' accrued funds are invested entirely in bonds with preferred yield to maturity. In the second tier – wage levels higher than but not exceeding twice the national average wage – accrued funds are invested freely in the capital market.

The pension reform presented in this paper incorporates the subsidy to pension funds as a given and offers for it to be granted solely to the portion of the salary that does not exceed the national average wage, thus reducing elderly inequality. This, in turn, will enable a reasonable distribution rate for pension based on the last salary, even when factoring in rising life expectancy. We show that the subsidy to pension funds does not contradict the integration of pension funds into the capital market.

The data presented in this paper indicate that mandatory funded pension is the primary tool available to policymakers to reduce poverty among the elderly. Given that the population of Israel is young, Israel has a demographic window of opportunity in which it can see to the needs of the future elderly population through savings made today. This window of opportunity, however, will not remain open long. In light of the above, the weight of the second tier should increase and be made mandatory for all employed individuals.

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- 15 This replacement rate is based on income and consumption surveys. The replacement rate of consumption, which is actually what determines standard of living, is even higher: 92 percent. The data from the survey of the elderly cannot be compared to international figures because it lacks statistics for population younger than 60. A comparison of this data with other sources for populations in the same age range yields significant differences.
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- 17 In recent years there has been an increase in the literature on this subject. One of the basic and influential books in this area was written by the World Bank: *Averting the Old Age Crisis: Policies to Protect the Old and Promote Growth* (1994). It recommends basing pensions on a limited first tier and a significant second tier which would be mandatory.
- 18 World Bank. (1994) *Averting the old age crisis*. A World Bank Policy Research Report. Oxford University Press.
- 19 Terkel, E. and Spivak, A. (2001) Towards mandatory pension coverage in Israel. *The Economic Quarterly* 41(3): 317–334.
- 20 Lavi and Spivak (1999)¹⁶ show that mandatory pension coverage increases national savings by at least half the amount of the pension supplement.
- 21 At present, the Capital Markets, Insurance and Savings Division of the Ministry of Finance can unilaterally change the rights of members of new funds. The same is true in the American Social Security system, where the individual does not have property rights to his/her allowance, as set forth in the ruling of the Supreme Court in the case of Flemming vs. Nestor.
- 22 Pension memo 2003/1 dated 1 January 2003: Transfer of funds between new pension funds.
- 23 For the sake of comparison, previously an employee had to be insured by the fund selected by the employer and the workers association. When changing places of work with different funds, the rights of the individuals were saved according to a succession rights agreement and only upon retirement were the amount transferred between the funds.
- 24 The parameters of the proposal, such as entry age or wage cap, may be modified in the political process. The preferred yield may be implemented by a different technique, using e.g. structured papers bonded by the government.
- 25 This arrangement may be replaced by a safety net assuring a minimum return on investment.
- 26 Investment guidelines issued by the Capital Markets, Insurance and Savings Division of the Ministry of Finance.
- 27 However, in contrast to the new pension funds, a mechanism for actuarial balance will not be implemented to adjust benefits for a change in the rate of return, as such changes do not exist.
- 28 Current interest on linked government bonds is much higher, about 4.4% annually. The assumption is that interest rates will fall in the long term. To remain conservative, the interest rate assumed here is 3.5%, similar to that used by pension funds in their actuarial calculations.
- 29 Lavi, Y. and Spivak, A. (1996) The impact of pension reform on saving and the capital markets in Israel: Alternative scenarios. *The Economic Quarterly* 43(1): 202–235.
- 30 Dahan, M. (2003) Mandatory pension: Estimate addition of designated bonds. *The Economic Quarterly* 50(3): 511–528.