Samuel Neaman Institute
for National Policy Research

The Carob Tree

A Radical Evolutionary Systemic Solution to the Pension Crisis

Moshe Gerstenhaber
Shlomo Maital
Tsipy Buchnik

June, 2015

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Photo credit: Amos Ben Gershom - GPO

Jerusalem, March 20, 2013: President Obama, with President Peres, plants a magnolia tree from the White House garden and quotes the Talmud: "This is the work of generations," Obama said about peace. He framed that quote with a story from the Talmud about Honi and the carob tree. The tree yields carobs 70 years after it's planted. So what's the point of planting one, if you may never eat its fruits, Honi asks a man. The man tells him that when he came into the world, his father and grandfathers had planted carob trees for him to enjoy. The man said he was planting carob trees for his children and grandchildren.

Source: http://www.vosizneias.com/126689/2013/03/20/jerusalem-obama-plants-tree-at-peres-residence-refering-to-choni-hamaagal-and-the-carob-tree/

Talmud Bavli, Masekhet Ta'anit 23a: "One day he [Honi] was walking down the road when he saw a man planting a carob tree. Honi said to the man, "How many years will this tree need to produce fruit?" the man answered, "70 years". Honi said, "Is it so clear to you that you will live 70 years?" The man answered, "I found carob trees in the world. Just like my ancestors planted for me, I plant for my children." Honi sat down to eat some bread and fell asleep. A pile of rocks and dirt arose around him, and he slept for 70 years. When he woke up, he saw the same man picking (carobs) from the tree. Honi said to him, "Are you the man who planted this tree?" The man answered, "I am his grandson".

The Research Team

Moshe Gerstenhaber

In 1978 Dr. Moshe Gerstenhaber founded Kall Kwik Printing UK Limited, Europe's largest print, copy and design franchise. He has published over 100 articles and has lectured at many venues, including London Business School, Judge Institute Cambridge, London's City University, Durham University, and Middlesex University. Gerstenhaber studied Economics at Columbia University and postgraduate in Business Administration at the London School of Economics, and holds a doctorate from Middlesex University. He is the author of the 2009 book *Have You Ever Seen a Retired Tiger in the Jungle?*

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Maital is an emeritus Technion professor, author of nearly 100 articles in peer-reviewed journals and 15 books, including Mapping National Innovation Ecosystems (Elgar, UK, 2014) and Cracking the Creativity Code (SAGE, 2014). For a decade, he was Academic Director of TIM Technion Institute of Management, and in this capacity worked with over 200 high-tech companies, including many startups, and over 1,000 senior managers. He teaches innovation at Shantou University, Shantou China, as part of Technion's joint venture there. He is a senior research fellow at the Technion think tank S. Neaman Institute for National Policy Research.

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Buchnik is a researcher at the Samuel Neaman Institute. Mrs. Buchnik holds a B.A in Economics from Haifa University and a M.Sc. in QA&R from the Technion-Israel Institute of Technology. Her current research at SNI focuses on the Israeli Science and Technology Indicators - The goal of this project is to create datasets and indicators of scientific, technological and R&D activities taking place in Israel over time, in order to evaluate and monitor these activities on an internationally comparable basis. Mrs. Buchnik was involved in other projects such Science & Technology Labor Force in Israel, and Innovation in the Service Sector.

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Executive Summary

The Challenge

Israel's elderly poverty problem is among the worst in OECD nations. One in every five persons 65 and over (totaling 185,000 persons) is poor. Many are Holocaust survivors. For them time is rapidly running out, as 1,000 of them die each month. The National Insurance Institute's reserve fund, managed by the Bank of Israel, will begin declining in a decade and will be depleted by 2042. Longer life expectancy, low returns on pension assets, high investment risks and fiscal constraints, combine to endanger future pensions for those now retired and those still working. By 2040 or earlier, low and inadequate state-provided pensions will be available only at age 75 and will likely be available only to age 90. Pensioners will need their own pension assets for another decade or more; many or most will lack them. As the working population shrinks, relatively, and the population over 65 (and especially over 90) grows rapidly, intergenerational strife between those who have to support the elderly out of wages and those who need that support will be inevitable, with disastrous consequences for the individuals concerned and social cohesion.

The Proposed Solution

Our proposed radical, systemic solution is based on a simple formula: Future pension assets = S x R x T, (savings times rate of return) times time. Higher domestic saving *now*, times higher returns, for 70 years, can offer a solution. The power of compound interest is the key. There is no other option. There is no time to lose.

Global economic growth is facing chronic long-term decline. Israel, an export-driven economy, must spur its own growth, to target 5% annual GDP growth instead of the current 3%. This, in turn, will require accelerated productivity growth, driven by higher domestic saving and capital formation. We propose a four-part solution (the Four Pillars): (1) Special Levy, equal to 0.5 per cent yearly of GDP, funding a (2) Grant-at-Birth for every child, invested at 5% net for 70 years, by (3) Super Trust funds, a new one established every three years, that invest in Israeli infrastructure and businesses (while today over 40 percent of pension funds are invested abroad, offering no benefit to Israeli industry and economy in general). In addition, (4) a Maxi-Life program, including website, will help concerned citizens track their pension assets, manage their savings and better understand and prepare for their future needs, especially the process of work skills updating and upgrading.

The Future

With 5 per cent annual GDP growth, enabled by our Four Pillars, driven by higher domestic saving and capital formation, the pension crisis can be resolved without intergenerational friction. With 3 per cent growth, there is no solution, other than painful and unfair resource transfers from young to old, or relegation of pensioners to abject poverty. Democracies are chronically inept at dealing with long-term challenges. On this issue, Israel must prove an exception.

Chapter One, The problem

Introduction

Barack Obama, President of the United States, and Shimon Peres, former President of Israel, have both used the famous Talmudic story of Honi HaM'agel and the carob tree, to stress the crucial importance of saving and investing now for the future. The two men are deeply symbolic. Obama, now completing his second term as President, was hampered by a split partisan gridlocked Congress in implementing his vision of the future. Peres, a true visionary, had no executive powers, but only rhetorical ones, as President. Both men served nations that had, and still have, inadequate saving.

Israel and the other 33 OECD nations comprising the developed world face a deep and ongoing crisis. The symptoms of the crisis are: increasing poverty among the elderly, (who are growing both in number and in proportion to the population), a growing concern that funds reserved for pensions and national insurance will be inadequate - while the burden falling on the working population for pay-as-you-go pensions will become intolerable. But these are only symptoms. The crisis itself is far deeper and more complex; it involves slow economic growth, inadequate saving and capital formation, capital flight, low returns on pension

investments, sluggish job creation, massive speculation in capital and commodity markets and the very slow recovery from the 2008 global crisis. A basketful of trouble for a basket case economy.

According to Israel's National Insurance Institute, one in every five persons over 65 is poor or 185,000 people. This ranks Israel 24th out of 34 OECD countries, with an incidence of elderly poverty 11 times higher than the Netherlands. Many of the poor are Holocaust survivors, which makes their penury doubly sinful. …Demography, dated economics, greed and politics are conspiring to deplete the National Insurance Institute's actuarial reserve fund, managed by the Bank of Israel, from which old-age benefits are paid.. In less than a decade, payments from the fund will exceed income, and by 2042 or earlier, the whole fund will be gone.

Pensions can be extremely complicated, involving actuarial mathematics and financial engineering. But in the end, the issue is very simple. We invoke the 1/3 1/3 1/3 principle to explain it. In general, people study for a third of their lives, work for another third, then retire for the last third. If they wish to maintain their living standard, after retirement, with only their own resources, they need to save roughly half their income during the third of their lives that they work, or have to rely on others to support their retirement. This saving rate is impossible for most, because in part working people support children. The problem seems nearly insoluble, especially when life expectancy is growing by three years every decade, and when the rate of return on pension saving is at an all-time low.

In this report, we offer an analysis of the underlying causes of the crisis, and propose a radical, sweeping evolutionary solution that is systemic and long-run in nature. We propose to take immediate action, today, to deal with a problem that will become severe (if not overwhelming) only in a decade or two. The carob tree is a perfect metaphor. To enjoy its fruits, in 70 years, we need to plant the seeds today. The problem is, modern society, in Israel and elsewhere, has become myopic. When children are myopic, corrective eyeglasses are prescribed. When whole societies become myopic, there is no such easy cure.

Our proposed radical solution is admittedly complex. Yet it can be described in terms so simple non-experts can understand it. Resources for the growing retired population are equal to ***S x R x T: (Savings times Rate of Return) multiplied by Time***

Namely, the retired population will draw on resources that depend on the amount of savings set aside and the rate of return those savings produce over time. Any true solution to the problem of elderly poverty and pensions must both significantly boost the amount, and proportion, of savings and significantly increase the overall rate of return (or growth) those savings produce when invested over the long term. When all three factors increase, the impact is multiplicative, or what in management is known as a 'force multiplier'. Our proposal shows how to boost S, increase R and harvest time independent of how long Central Banks continue with their quantitative easing and low (in Switzerland, negative) interest rates.

The democratic system deals very poorly with long-run problems, because elected officials know they will be long gone before then. Politicians embrace Keynes' dictum "in the long run we are all dead" or at least, out of office and prefer to deal with short-term issues and policies that will immediately impact their re-election prospects. This myopia is particularly severe in Israel, which has recently seen national elections about every three years – in 1999, 2003, 2006, 2009, 2013 and 2015 (six disruptive and costly elections within a period of 16 years).

In this chapter, we show how three major trends – demographic, social and economic – are combining to exacerbate poverty among the elderly in Israel, and show how piecemeal partial efforts to resolve the pension crisis have been inadequate – to say the least. We examine the pension crisis in other OECD nations and compare efforts there to tackle it. We show why the pension crisis in Israel is far deeper than simply the inadequacy of current pension and retirement fund arrangements, and relates to the inadequacy of national saving and capital formation and the flight of capital from Israel abroad. We provide some case studies of countries that have managed the debt and pension problem somewhat better, and end with a brief description of our proposed radical solution.

The problem and its deeper roots:

Many of Israel's elderly poor are Holocaust survivors, which makes their penury doubly sinful. And time is running out; a thousand Holocaust survivors die each month, and one dies every 45 minutes. Many of them die in poverty. For them, any solution will be too late. [1]

[1] "According to a report published by the Foundation for the Benefit of Holocaust Victims in Israel, there are some 189,000 Holocaust survivors in Israel, two-thirds of them female. On average, 14,200 die

True, there has been some progress. In 1997 one senior in every four was poor (now one in every five). But a major crisis looms. Demography, dated economics, greed and politics are conspiring to deplete the National Insurance Institute's actuarial reserve fund, managed by the Bank of Israel, from which old-age benefits are paid. In less than a decade, payments from the fund will exceed income, and by 2042 or earlier, the whole fund will be gone.

In a nation where the long run is defined as tomorrow, it is nearly impossible to draw attention to a crisis that will occur (in full bloom) in more than two decades. The problem is, if we do not fix the slowly-ticking (but growing) pension time bomb now, it will be altogether impossible to defuse when it is about to explode.

Israel is not alone in facing this dilemma. Nearly the entire world faces a crisis in supporting its elderly. According to the Washington think tank Heritage Foundation, America's Social Security fund will be insolvent by 2033, and probably much sooner.

So far, various nations have made very limited, partial efforts to deal with the pension crisis. Some of these 'solutions' are shockingly inadequate. Here are a few case studies of pension reform incompetence:

Incompetence galore

Here are four brief case studies about how the crisis in funding future income for the elderly is being very badly handled everywhere:

United Kingdom

In the UK, "pensioners are indeed worse off than working-age people: in every decile other than the first, pensioners have less disposable income [and] pensioners do much better out of the state, for a given private income." [The Economist, "Britain's elderly: Jan. 23, 2015]. The problem will worsen, as post-WWII baby boomers retire, while state benefits decline.

The State of Illinois

"Illinois is like Greece: it overpromised and under delivered on pensions and has little appetite for dealing with the problem. This large Midwestern state, with a population of 13m has the most underfunded retirement system of any state and the largest pension burden relative to state revenue. It also has the highest number of public-pension funds close to

each year – nearly 40 per day. Some 45,000 have an income of less than 3,000 shekels ($760) per month, putting them below the poverty line, the report says. That marks a slight improvement from the 50,000 impoverished survivors that were counted last year [2014]." .Ariel David, Haaretz, April 13, 2015, http://www.haaretz.com/jewish-world/holocaust-remembrance-day/.premium-1.651572

insolvency, such as the one looking after Chicago's police and firemen. According to the Civic Federation, a budget watchdog, Illinois has piled up a whopping $111 billion in unfunded pension liabilities…. in addition to $56 billion in debt for health benefits for pensioners. The state devotes one in four of its tax dollars to pensions, which is more than it spends on primary and secondary education." While extreme, many others of the 50 American states similarly struggle with pension burdens." [The Economist. "America's Greece?" Dec. 20, 2014]

European Union

A new report from the European Federation of Financial Services Users reveals how bad things have been. It finds that, for many savers in Belgium, Britain, France, Italy and Spain, the real (after inflation) returns from private pension schemes have been negative for much of this century. In Spain, for example, pension plans lost 1.2% a year in real terms between 2000 and 2013, while in Britain, they lost 0.7% a year between 2000 and 2012. The effect of charges on returns is substantial: one French equity fund returned just 16% after charges over ten years, compared with a gain for the index it was tracking of 73%." [The Economist, "European savers have suffered terrible returns from pension funds". Oct. 4, 2014]

United States

"US Congress has agreed on a way of funding the highway trust fund. The "money" is to come from a technique known as "pension smoothing"; companies will have longer to repair their pension deficits. Since companies' pensions contributions are tax-deductible, lower contributions means more tax revenue for the government; this will fund the highways. … [but] If companies pay lower contributions now, they will pay higher contributions later, on which more tax relief will be claimed; no new tax revenue will be raised at all. And …when companies go bust with underfunded pension scheme, the PBGC (Pension Benefit Guaranty Corporation) steps in; any measure that stops pensions from being properly funded makes life more risky for the PBGC, which already has a deficit of around $36 billion." [2]

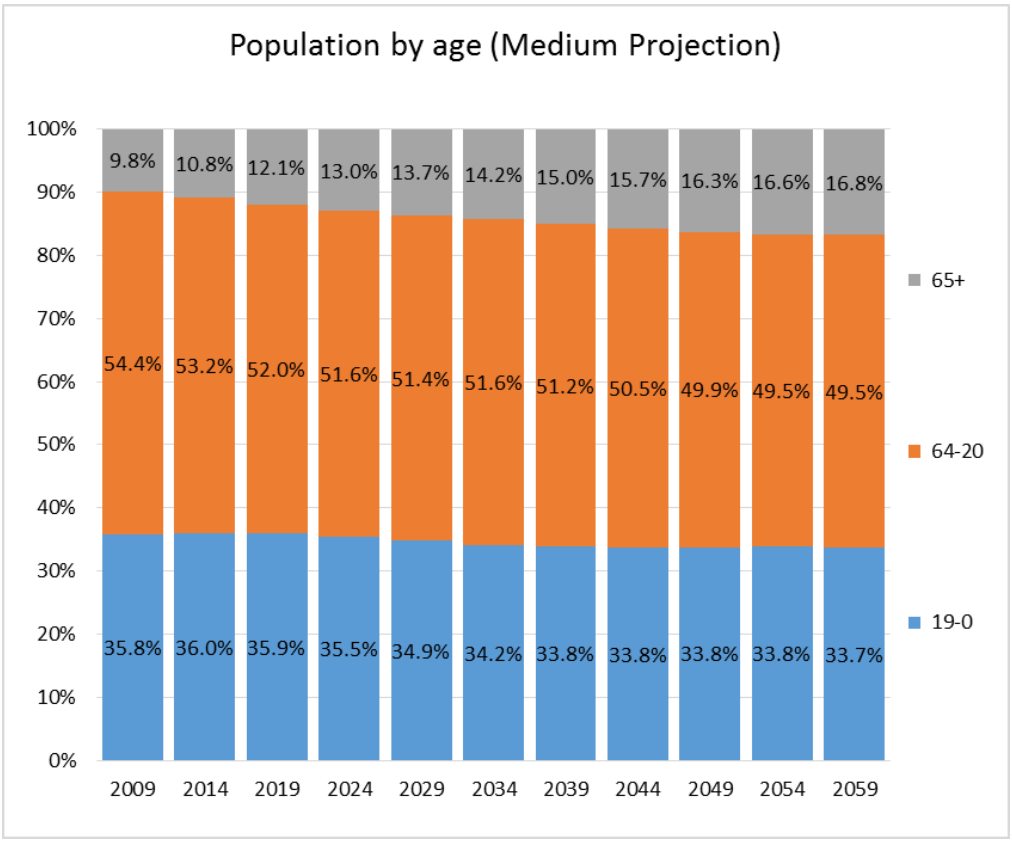
[2] http://www.wsj.com/articles/house-forces-senates-hand-on-highway-funding-bill-1406833826

Causes of the global pension crisis:

There are three main reasons. First, fiscal. After overspending liberally for decades, governments are slashing spending and deficits, and with them elderly benefits. Moreover, by battling the 2008 global economic crisis by lowering interest rates, governments have forced pension funds to earn far lower returns on their investments (whilst assuming greater risk).

Second, demographics. People are simply living longer, the baby boomers are retiring and the baby bust generation is too few in numbers to support them with a 'living wage' pension. When the Prussian Chancellor Otto von Bismarck invented old age pensions in 1889, he set the retirement age at 70 (later reduced to 65) because few people lived that long. Today, in Israel those aged 65 can expect to live for at least 20 more years. Today, there are five persons of working age for each person over 65. By 2050, there will be only three. (See Figure 1: Population by Age).

Figure 1: Israel, Population By Age Group: 0-19, 20-64, 65+ (Medium Projection)



Source: Israel Central Bureau of Statistics

Basic Data: At the end of 2013, there were almost one million (to be exact, 865,600) people aged 65 and over, or 10.6 per cent of the population. When Israel was born, this proportion was only 4 per cent. Now, half the over-65 group are over 75. The over-65 population will reach 1.67 million by 2035, just two decades away i.e. an increase of 193% (doubling!).

In 2013 only 18 per cent of the over-65 population was in the labor force (about one man in five, and one woman in 10). Of those working, about half worked part time.

Fully a third of those over 65 were enrolled as 'needy' in social welfare departments; and nearly half of those over 75 were enrolled.

Third, psychology. Young people in the West do not save enough, and even in high-saving Asia, saving rates are falling. It's easy to understand why. Young people are raising families and enjoying life. Retirement seems far off. By the time people are able to save, after raising their families, it is simply too late to accumulate enough resources to retire safely. Subtly, a spend-then-save mentality now replaces the save-then-spend mentality that dominated for many centuries.

The arithmetic of the pension crisis is very simple. Suppose you work for 40 years, from age 25 to 65. Suppose you save 20 per cent of your net income, including your employers' pension contributions – a benchmark very few people attain. That means you have saved eight years' income altogether (1/5 times 40). That sum has to pay for 20 years of retirement, on average, and for some 'lucky' pensioners 30 years or more. Even if it earns interest, this amount of saving will not be enough.

In the United States, the baby boomers thought their houses would save for them, as the property bubble inflated housing prices. When the bubble burst in 2008, many of them could no longer afford to retire. Pensions are not just a governmental problem. For years Israeli universities paid "defined benefit" pensions directly out of the university's coffers, with no contributions from employees or faculty. As a result the Hebrew University now has a total pension obligation amounting to 12.6 billion shekels (3.2 billion dollars). Annual unfunded pension benefit outlays are over 600 million shekels (about 150 million dollars). This is a

crippling burden on an annual budget of 2.5 billion shekels (600 million dollars), half of which comes from the Treasury. Spending on research and equipment will suffer as a result.

A comparison of relevant data in Israel, Canada, Germany and Denmark (See Figure 2) reveals the following:

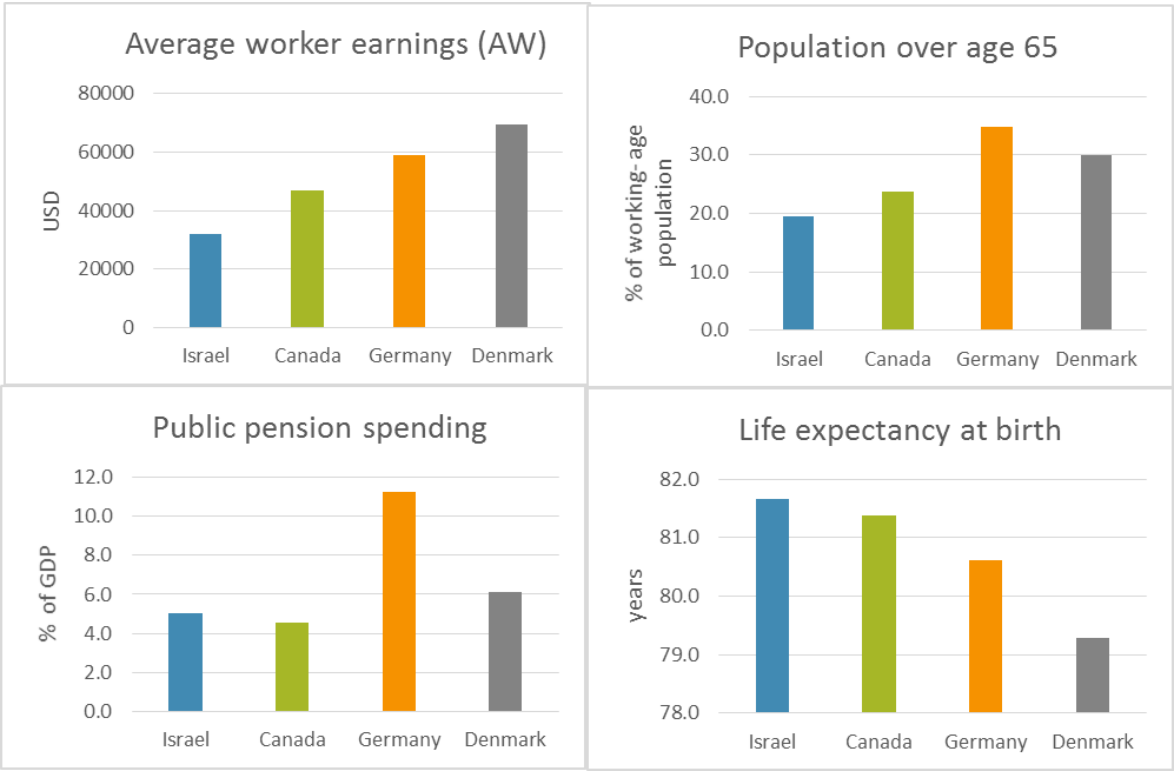
i. Israeli workers' earnings are substantially below those of workers in Canada, Germany and Denmark;

ii. Israel's over-65 population is proportionally less than that in the other three nations, partly because Israel has long had a higher birth rate;

iii. Israel's current spending on public pensions, about 5 per cent of GDP, is similar to that in Canada and Denmark, though half that in Germany;

iv. Israel's life expectancy is **higher** than the other nations, and among the highest in the world. Overall, the news is good and bad. Israeli society is not aging as fast as it is in, say, Germany, but Israelis live longer. Israel's defense spending, about double that of the other nations as a proportion of GDP, leaves fewer resources for civilian purposes.

Figure 2: Average earnings; Population over 65; pension spending/GDP; and Life expectancy, in four nations: Israel, Canada, Germany, and Denmark.



Source: OECD (2013), Pensions at a Glance 2013: OECD and G20 Indicators, OECD Publishing. http://dx.doi.org/10.1787/pension_glance-2013-en

Generational conflict?

Boston University Prof. Laurence Kotlikoff has studied the problem for years. Like many academics, his findings are usually understated and qualified. But here is what he told Credit Suisse's magazine, The Financialist, last November:

"We're waging a war against our own children. It's a war of funding shortfalls and ever-increasing consumption by older people at the expense of coming generations. We've turned retirement into a well-paid long-term occupation. It's extremely unfair to our children, grandchildren and great-grandchildren. We're burdening them with massive government debt in order to pay for that generosity. Those unfunded bills will stretch into eternity and our children won't be able to pay for them."

In other words, if governments maintain retirement benefits at current levels, the burden on the younger generation will be intolerable - even for minimal levels of support for the elderly that perpetuate poverty among them. If they slash retirement benefits, they cause many of the elderly to sink into deeper poverty. Both outcomes are unacceptable.

The population of retirees is growing. They will vote to protect themselves and their pensions. The young will demonstrate and storm Parliaments proclaiming that the old are stealing their dreams. This war between the generations is deplorable. In the past the older generation tried to make sure to hand over to the younger generation a stronger economy than that it itself received. Today, this is being reversed; the older generation will demand to be supported, in the style to which it is accustomed, by a shrinking number of younger people who find it increasingly hard to secure well-paying jobs.

Action to deal with this crisis is desperately needed.

The only reasonable solution is that of the carob tree model. Only by saving and investing today, the needed resources will be available in 70 years time.

But how?

We believe that a fundamental shift (a paradigm change) in social and cultural values must occur. To deny or ignore this urgent need is to sweep the problem under the carpet. This dramatic change will require top-down leadership and legislation. It will require our society to transform itself from 'grasshoppers' into 'ants'. That familiar Aesop's Fable is, we believe, a good way to describe and explain the underlying problem. (See Box 1: The Ant and the Grasshopper).

Box 1: The Ant and the Grasshopper

Aesop was a slave who lived in ancient Greece, 2,600 years ago. Little is known about his life; romantic versions claim his story-telling abilities won him his freedom. To this day, his Aesop's Fables are told and retold.

Aesop did not enjoy an old-age pension. But one of his many stories could help Israeli society understand how it must change, so that the elderly can live in dignity.

In a field one summer's day a grasshopper hopped about, chirping and singing. An ant passed, carrying a heavy ear of corn to its nest. "Come and frolic with me," said the grasshopper, "why are you working so hard?" "I am laying up food for the winter," said the ant, "and I recommend you do the same." "Why bother about winter?" said the grasshopper. "We have plenty to eat right now." The ant went away and continued to store up food. Soon the winter came. It was cold and fierce. The grasshopper found itself dying of hunger, while it saw the ants dining on corn stored up during the summer. The grasshopper realized, too late, that it is best to prepare in advance for days of necessity.

The systemic societal crisis:

One proven approach to getting to the bottom of a problem is known as the method of seven why's. It is not unlike how very young children, by asking a series of related "why" questions, sometimes annoyingly, as they seek to learn about the world.

Table 1: The Seven "Why" Questions of the Pension Crisis

1. Why Are so many elderly pensioners in Israel today, poor?
Because their own saved resources, and those provided to them by society, are inadequate.
If our analysis ends here, our understanding of the problem will be shallow and inadequate, and hence so will be any proposed solution. To understand the systemic, societal nature of the problem, more 'why' questions must be asked.
2. Why are saved resources inadequate?
Because average income in Israel is low the rate of saving in Israel, too, is low; it is insufficient to meet the needs of growing businesses in the economy and infrastructure investment.
3. Why do we need to save more?
In order to boost capital formation and in turn raise the rate of economic growth and with it increase the average salary and the rate of return on saved assets, of which a part is set aside for retirement benefits.
4. Why do we need to raise the rate of return on saved assets?
The current rate of return on the (inadequate) pension funds set aside for retirement is very low, in part because governments and central banks have chosen to battle the recessionary impact of the global financial crisis that began in 2008, by a policy of 'quantitative easing' (i.e. printing money). This has brought interest rates down to near-zero levels; in fact, two Central Banks, those of Switzerland and Sweden, have imposed negative interest rates (depositors get less at the end of the year than they deposited at the start of the year). The result has been for pension fund managers to send a large proportion of the money they manage abroad, away from Israel, seeking higher returns, which means that the capital does not benefit directly Israel's economy nor its citizens. This in turn increases the risk that those precious pension funds will not in fact be available when needed, partly because risk and return are not positively correlated and because investing abroad in less-familiar capital markets always incurs a higher risk.
5. Why will higher rates of return result from a change in policy?
Pension funds today are invested in financial assets, mostly bonds or equities. The bond market globally has become riskier, as even national governments skate toward default. Stock markets in turn have become speculative casinos – especially in the short term.

Investing pension funds in the real economy will bring a double benefit – higher returns, and greater benefit to the real economy, parts of which (e.g. small and medium sized businesses) are starved of credit.

6. Why will increased funding and investing in the real economy spur economic growth?

There is a proven long-run stable relationship between the rate of growth of the economy and the proportion of Gross Domestic Product invested in capital formation. (See Figure 4). Israel's gross fixed capital formation is only 19.7 per cent of GDP, which gives it a rank of 35 among the 60 globally competitive nations participating in the IMD World Competitiveness Yearbook 2014.

National accounts figures are greatly misleading, because they provide data only for gross capital formation, which includes capital consumption (i.e. economic depreciation, the capital that is used up or that becomes obsolete and hence needs replacement). (This is why Gross Domestic Product is called Gross; far more relevant is Net Domestic Product). The relevant concept is 'net capital consumption'. But that would require an estimate of total capital consumption for the economy, which is generally not available.

We have a back-of-the-envelope method for computing capital consumption that we believe is reasonably accurate. When this is done, net capital formation for Israel becomes only 5 per cent of GDP, a level that is grossly inadequate. The problem of insufficient saving and investment is disguised by using gross capital formation and the 19.7 per cent figure.

7. Why will higher economic growth help resolve the problem of pensions and elderly poverty?

In several ways. First, by generating higher returns on savings and pension assets. Second, by generating more tax revenues and reducing budget deficits, reducing pressure on governments to slash benefits for the elderly. And third, by generating employment and wage increases that help working people provide more adequately for their own retirement. In addition, there will be lower unemployment rates, reduced welfare costs, diminishing government budget deficits and greater cascading of prosperity within the citizenship.

Calculating Capital Consumption

The manner in which "gross national saving" and 'gross capital formation" are computed and presented is highly misleading. Gross national saving and gross capital formation include economic depreciation, or capital consumption. But because national accounts statisticians find calculating capital consumption difficult, they avoid doing so; this is why we use the term Gross Domestic Product – it includes capital consumption. A far more useful indicator would be Net National Product, because that would show the amount of resources available to society annually, AFTER restoring the capital stock to its condition at the start of the year. We

believe there is a way to pierce the veil of 'gross capital formation' and to compute 'net'. When this is done, the situation is far less reassuring. (See below: Gross and Net Capital Formation).

Gross and Net Capital Formation

According to the Central Bureau of Statistics, Israel invests 19.7 per cent of its GDP in gross capital formation. Assume a capital-output ratio of three to one; that is, it takes about three dollars of capital to generate an additional dollar of GDP. This ratio is widely accepted. Assume also an average lifetime of capital of 20 years. This implies a depreciation/obsolescence rate of 5 per cent annually. Hence, 5 per cent of capital needs replacement yearly, or as a proportion of GDP, 5 % x Capital / GDP = 5% x 3 = 15%.

Thus, fully 15 percent of Israel's 19.7 per cent, capital formation/GDP, is simply replacing obsolete and worn-out capital. Only 5 per cent is the net increase in capital stock. This is far from sufficient.

Table 2. Gross Capital Formation & Gross Domestic Saving as % of GDP, Israel and Selected Nations, 2013

	2013	
Country	**Gross Capital Formation (as Per Cent of GDP)**	**Gross Domestic Savings (as Per Cent of GDP)**
China	46.6 %	49.5 %
Korea	29.7 %	34.0 %
India	28.5 %	30.7 %
Canada	23.7 %	24.0 %
ISRAEL	19.7 %	20.9 %
United States	18.9 %	16.5 %

Source: IMD World Competitiveness Yearbook 2014 (Lausanne, Switzerland)

Compared with Asian nations, Israel's capital formation and saving rates are clearly inadequate. This is especially true, when the back-of-the-envelope deduction of capital consumption (15 per cent of GDP) is done. This reveals that Israel and the United States barely save and invest at all.

Gross domestic saving provides resources for a) domestic investment and b) foreign investment. The data for the United States are remarkable. America saves less than the resources it needs for its minimal capital formation, and so is dependent on foreign borrowing

to make up the difference. The paradox of poor nations (e.g. China) lending to rich (but highly indebted) ones (on a massive scale) is virtually unprecedented in history, and is only one of many pieces of data that reveal global imbalances and sources of instability.

A vestpocket (concise) history of pension reform in Israel:

According to the OECD, Israel has performed 'well', above the other OECD nations, in tackling its pension crisis. In terms of the frequency of pension reform, this is true. Israel has been tackling the pension crisis piecemeal for years.

- Legislation in 1995 made it compulsory for all workers to contribute to a pension plan.
- In 2003, old-line pension funds mismanaged by unions (Histadrut, Israel Electric Co. and Israel Aircraft Industries) were bailed out and taken over by the government. This action cost the Israeli taxpayer billions of shekels.
- Benjamin Netanyahu, then Finance Minister, enabled pension funds to invest in high-yield corporate bonds – a decision that later caused huge losses when some of those bonds defaulted, in what has become known as 'tycoon haircuts' (bond write-offs, mainly by Israeli billionaires who control large holding companies that issue bonds – which do not carry group loss underwriting).
- In 2004, the mandatory retirement age for men was raised to 67, making Israel one of the first countries to take this step. Women can retire at age 62, but have the choice of continuing to work until 67.
- Between 2005 and 2008, workers were enabled to shift their pensions among competing funds.

But none of these measures even began to solve the underlying problem. If the crisis is regarded solely as a pensions crisis, no solution will address the core issues. And Israeli society will remain firmly in the grasshopper camp, when it needs to join the ants, as soon as possible.

According to the business daily Globes, the total amount of long-term savings assets under management for the general public (mostly pension funds) exceeds one trillion shekels

(about 250 billion dollars), equal to a whole year's GDP. The problem is, as Prof. Sheshinski defined it three years ago, is that "low interest does not allow pension funds sufficiently high yields…[while] investing in stocks and corporate bonds exposes the saver to high risk." Tycoons' "haircuts" (bond defaults) have hurt bolder pension funds that invested in their bonds, while cautious funds struggle with low and falling yields. Today, 10-year Israel Government bonds pay two percent annual interest, barely enough to cover inflation; and five-year bonds pay only one percent, less than inflation.

The global financial crisis, 2008-2012

On Sept. 15, 2008, the bankruptcy of the once venerable investment bank Lehman Brothers signaled a deepening global financial crisis. One result of that crisis was serious deflation in the West. Prices in Europe, Japan and elsewhere have actually declined. During deflation, debt burdens become very heavy. In times of inflation, debt is paid back with inflated currency, easy to acquire. In times of deflation, debt currency that was 'revalued' i.e. costs more at present than when the money was initially borrowed, (for example the Swiss Franc) can increase the burden (cost) of repayment substantially. So in times of deflation, companies, individuals and governments seek to 'deleverage', i.e. reduce their debt burdens. The problem is, it is not logically possible for *everyone*, globally, to reduce their debt burden, because to do so, someone has to agree to hold or buy the debt, the opposite of deleveraging. If no one is willing or able to do so, simultaneous deleveraging is impossible.

Faced with stagnating economies, growing unemployment and excessive public debt, governments everywhere have sought to cut their budget deficits. This has further weakened economic growth. In response, central banks have acted aggressively, even uncharacteristically, to expand the money supply, with policies known euphemistically as 'quantitative easing', initially done by the U.S. Federal Reserve and lately by the European Central Bank, which had been a bastion of conservative policy. QE, quantitative easing, is simply the massive expansion of the money supply through purchase of bonds, which puts high-powered money into the hands of commercial banks and facilitates expanded lending.

Money supply in the U.S., Europe, Japan and China has grown enormously. This bulge of money has inevitably brought down bond yields and interest rates and knocked out the return on the invested pension funds. Many experts believe that this 'solution' to the global deflation could itself sow the seeds for the next financial crisis, caused by the aggressive and perhaps excessive increase in money and credit – further fuelling the speculative tendencies of human greed.

The moral of this story is simple. Debt in itself is not a problem, provided the debt is used to finance creation of real assets whose productive yield makes it possible to pay off the debt

when it matures. But much of the huge expansion in debt, especially public debt, was used to finance public and private consumption, leaving no real assets available to pay off the debt. Any solution to the so-called pension crisis must also address this issue – namely how to control the massive financial services industry that has been enjoying near-zero interest rates to earn speculative profits in the enormous, volatile bond market. This industry has powerfully resisted any effort on the part of the monetary authorities to raise interest rates. At some point, globally, economies must return to normalcy, cease huge expansion of the money supply, raise interest rates to normal levels, and stop creating debt that funds consumption rather than capital formation.

Save, then spend:

A fundamental problem exists in Israeli society (and elsewhere), regarding spending and saving. The expansion of credit card use has encouraged a 'spend, then save (to pay off the debt)' mentality. Today, credit cards mean that unlike in the past, one need not have sufficient funds to enable a purchase; overdrafts will take care of it, and in Israel exorbitant interest rates on overdrafts are highly profitable for credit card companies.

In the past, the logical sequence was "save, then spend". Individuals and families saved, and when they had accumulated sufficient resources, used them to make the desired purchase (house, car, education). (See Box 2: Tsipy's Parents Story and Box 3: Shlomo's Mother's Story). Resolving the pension crisis will be greatly facilitated by a shift in mindset, a return to 'save then spend', the Carob Tree mindset. But this alone is not enough. There must be major incentives for such saving, and significant public assistance in creating them. To get enough people to boost their saving, major changes in how pension funds are managed and invested must occur.

Box 2: Tsipy's Parents' Story

In 1973, a week before the Yom Kippur War began, I immigrated to Israel with my parents and two brothers, from the U.S.S.R. My father began to work at once at IMI (Israel Military Industries) as an ordinary worker. My mother worked as a seamstress. Through 20 years of hard work, my mother and father managed to marry off three children, pay for their education (including college) and help them buy apartments. My father retired on a pension at age 60 and lives on it, and supports himself with it, in dignity – and of course, he continues to help his children and grandchildren financially.

My husband and I, in contrast with our parents who were blue-collar workers, both have higher education and in terms of our incomes we belong to the upper middle class. As parents of three children, some of whom are in their 30's, I see no possibility that my husband and I can provide to our children what my parents gave me. The standard of living that my husband and I enjoy is far higher than what my parents enjoyed, but we are barely able to save for our retirement pension. To my sorrow, apart from paying for our children's higher education, so that they can provide for themselves adequately during their lives, I am unable to help them as they build their lives. My parents lived according to the principle: Live within your means and your budget, and spend a bit less than that; my husband and I live according to the principle, live a bit beyond your budget and your means.

Box 3: Shlomo's Mother's Story

My mother, Sally Malt, passed away on October 4, 2012. She was 105 years old. Nearly 19 years earlier, my father passed away, on Feb. 20, 1994. After she was widowed, my mother lived the remainder of her life in dignity and in comfort, in her own condominium. For many years she had 24/7 caregivers, loving Philippine caregivers who cared for her day and night. They were her companions, her nurses, her friends and her helpers. These caregivers were quite costly. My father had wisely saved during his whole life, and these savings enabled my mother to live out her life as she wished, independently (though with help), in her own home. When she passed away, essentially all the resources and savings were gone, except for the condominium. My father's wisdom and foresight made this possible. None of us know how long we will live. None of us plan to live to age 105. But these days, it may be wise to set aside resources, just in case our lives are indeed prolonged, as my father did for my mother.

- Shlomo Maital

If it is to seriously address elderly poverty and the pension crisis, society will need to shift its collective mindset, from spend then save (to pay off debt), to save then spend. It will not be easy. But there are role models. We can learn much from two small, wise countries: Estonia and Norway.

Estonia: How to Avoid Debt

Not all countries have become excessively debt-ridden (highly leveraged).

Estonia has refrained from issuing government bonds, since 2002. Instead, the Estonian government took loans from the European Development Bank, which lends ONLY for infrastructure and approved investment, not to finance current government spending (or overspending). Maris Lauri says, "We can't afford to borrow to finance current spending; such borrowing becomes a habit and we saw where that landed Greece and Russia, in 1997/8". Some Estonian economists are opposed. They think Estonia should leap at the low interest rates and borrow. But it won't happen.

"Estonia is a strange bird in the Euro zone," says Frederick Erickson, who heads the European Institute for Political Economy in Brussels. "No other country has such a strong instinct for understanding the way macroeconomic problems are rooted in the real economy."

Estonia's Prime Minister says Estonia has to save its borrowing capacity and access to Euro capital markets, for the time when Estonia's GDP reaches 75 % of the Euro average (it is now 73%), at which time European aid money dries up.

Strong wise leadership can keep a small country like Estonia out of hot water. As the Hebrew saying goes, 'wise leaders avoid crises that smart leaders know how to escape from'.

Norway: Prototypical "Ant"

Norway exports 87 per cent of its oil and gas. But every dollar of state revenue from its energy resources is locked into a sovereign wealth fund set aside for future generations and

mostly invested abroad (to avoid creating inflationary pressures in Norway, take advantage of good investment opportunities and spread overall risk). With wise investments, Norway's fund is today the largest in the world, surpassing that of Abu Dhabi last year and worth $890 billion as of June 2014, or well over two-and-one-half times Norway's Gross Domestic Product (measured in exchange rates that reflect purchasing power). Both the people of Norway and its governments seem perfectly happy to set aside every oil and gas dollar for the future.

The shrinking middle class:

The pension crisis takes place against a backdrop of a sea change in job creation. The well-paying middle class jobs in manufacturing, that made it possible for workers to pay for old-age pensions, have in the West migrated to Asia. No longer is it easy to find $27/hour wages on auto assembly lines. The middle class, once the splendid tax base on which social programs were based, is disappearing. No longer can the middle class fund the pay-as-you-go pension system, in which today's workers pay for the pensions of today's retired persons.

Nearly all nations today employ a largely pay-as-you-go pension system. That is, working people pay taxes to fund the retirement benefits of the elderly. This approach, pioneered by the United States when it implemented a revolutionary Social Security system in the wake of the Depression of the 1930's, is in deep trouble today, for several reasons.

First, in the U.S. and Europe, the bulge of babies (the so-called baby boom) after World War II, and subsequent sharp decline in births after 1965, means that the baby bust generation will have to fund retirement of the more numerous baby boomers. Second, economic forces have led to a decline in the middle class, traditionally the main pillar of tax revenues. Third, today's young people will find it increasingly difficult to find employment at good wages; the digital economy creates wealth but not employment.

The video-streaming startup Twitch, bought by Amazon for almost $1 billion, employs only 170 people. In the past a $1 billion company would employ many times that. Google has annual revenues of $66 billion, and employs only 53,000. IBM, with roughly similar revenues, employs 8 times that (431,000 in 2013). Dell employs 108,000. When IBM went into crisis, 1993-5, and fired 250,000 people, Dell hired many of them. Today, that will not happen.

And Facebook? Facebook employed only about 9,500 employees in 2014, with $8 billion in revenues. When Internet companies like Google, Twitter and Facebook can generate a million dollars in revenue per employee, the founders and shareholders rejoice, but ordinary folks who seek employment do not. (Note: These companies do not pay dividends. Pension funds invested in them rely for value on the share price – which fluctuates. Lack of dividends from the hi-tech highflyers is also a factor in the changing economy).

Research by economist Karl Frey reveals this fact: only 0.5 per cent of the U.S. labor force was employed, in 2010, in industries that did not exist 10 years ago. And there are quite a few such industries.

How will society deal with innovation that creates wealth, products, services, and in general 'wellbeing' without actually producing many new jobs? Will we have to accept a divided and disillusioned society, where a fortunate handful become millionaires and the rest of us scrounge for handouts? How will a pay-as-you-go pension system function, when entrants to the labor force have difficulty finding well-paying jobs and struggle to support themselves, let alone carry on their backs a number of elderly retirees?

The growing gap:

A recent best-selling book by Thomas Piketty uses official income-tax data to reveal how and why the gap between rich and poor is large and growing.

Piketty observes that if you have great wealth, you can earn on average 6.8 per cent annual return (above inflation). This doubles your wealth every decade, without your having to really do anything. And you can keep the profits, because the wealthy easily find tax havens. The wealthy benefit from low interest rates, borrowing at rates that ordinary people have no access to. By leveraging their wealth, they more than double it each decade.

But for those who have little wealth, they earn perhaps 1 per cent on their savings, or less, and often that is taxed. When the wealthy double their wealth every decade, in 30 years, it is 8 times what it was at the start. When those saving for retirement earn low returns, their saved assets are inadequate to sustain a dignified standard of living after retirement. Moreover,

insurance companies take pension contributions and charge a whole range of fees that enrich the top managers but cut into the final pension substantially. It is said that invested pensions would be 40 percent higher without the fees. And with the insurance industry the pensioner has no way of knowing whether the company will still be around when retirement time arrives.

New data show that 80 billionaires hold more wealth than the poorest half of the world's population, and the wealthiest one percent of the world's population will hold fully half the world's wealth. Why should pension funds get zero or negative returns while the wealthy earn 8 per cent or more?

Part of our solution to the problem of pensions and elderly poverty is to find a way to enable pension assets to enjoy rates of return similar to those that the wealthy alone now enjoy. Some political leaders are beginning to understand this. Here is what the leader of a small left-wing party in Israel recently said: "The low interest rates have indeed hurt pension funds and require us to re-examine the existing models. But the damage done to pension savings and assets in recent years [by low interest rates] is not solely because of low interest but also because of a conflict of interest in capital markets and mismanagement. There is a clear need for adopting new models; in other countries, like Canada, Holland, and California, pension assets are managed by the pension savers themselves. Such funds are regarded by some experts as more stable, and less risky, than pension funds under private ownership."[3]

We regret that in the elections that took place in Israel on March 17, 2015, even political parties that have focused on cost-of-living, poverty and social reforms largely ignored the pension crisis. True pension reform will not occur, until the issue is placed high on the political agenda and finds a place in the awareness of ordinary citizens and voters. Helping this occur is one of our goals in writing this report.

[3] http://www.themarker.com/misc/article-print-page/1.2096693

There are four pillars.

In what follows, we will explain each of these four 'pillars' carefully. Each pillar is crucial; all are needed, in order to achieve a full systemic radical solution to the pension crisis. We will show that when implemented, these four 'pillars' will generate accelerated economic growth that itself will ease the burden of pension funding and create jobs that will make it easier for the working population to save for retirement. We will show that greater financial 'literacy' will help individuals make better decisions for their future. We will show how 'save then spend' can create stronger, more stable economic conditions over the long run and reduce or eliminate the blight of elderly poverty.

We believe that our proposal can be adapted to the needs of each country facing a pension crisis (and nearly all are). The prophet Isaiah proclaimed that Israel could be, should be "a light unto the nations". Our hope is that in the area of elderly poverty and pension reform, this will indeed come true.

Our proposal in brief:

a Special Levy

a tax collected one-third from households (excluding the poorest) and two-thirds from employers per employee. This capital allocation will be hypoticated to pay the cost of the Grant-at-Birth.

Grant-at-Birth.

Each child gets a pension account at birth. During 70 years the person will not have access to the money; it will be used intensively to rebuild the economy and the infrastructure, producing real jobs, real products, real prosperity. The cost? For Israel, just under 0.5 per cent p.a. of Gross Domestic Product. From age 70 the individual will receive a basic pension to his or her last day. By age 95 the Grant-at-Birth capital will have multiplied 50 times at 5 per cent per annum net compounded.

Super Trust funds

invested to earn 5 per cent per annum (net of tax and inflation), which compounded doubles the capital every 14 years; from birth, that makes nearly 5 doublings by retirement at 70. And management fees will be 1/10 of 1 per cent, not 1 to 1.5 per cent, as some funds charge. The Super Trusts will become the engine for the revitalisation of the economy and the rebuilding of the infrastructure assets of the nation.

MaxiLife

a one-stop Internet gateway, software designed to become each individual's "secret garden". Free to all, it will help each person maximize his or her own life potential, and help generate enough income to assure its continuing development. It will accumulate data to help each individual navigate more successfully the challenges and opportunities of life, **including** lifelong learning and pension saving.

Chapter Two. Planting the Carob Tree

Introduction

The carob genus, Ceratonia, belongs to the Fabaceae (legume) family; it grows well in warm temperate and subtropical areas, and tolerates hot and humid coastal areas. As a drought-resistant species, carob is well adapted to the ecological conditions of the Mediterranean region with 250 to 500 mm of rainfall per year. Carob trees can survive long drought periods but to grow fruit they need 500 to 550 mm rainfall per year. The term "carat", the unit by which precious metal and stone weight is measured, is also derived from the Greek word kerátion alluding to an ancient practice of weighing gold and gemstones against the seeds of the carob tree by people in the Middle East. The system was eventually standardized, and one carat was fixed at 0.2 grams.[4]

We have structured this report, along the lines of a traditional business plan: The Need (Chapter One), The Solution (Chapter Two); the Impact & Future Developments – Macro (Chapter Three), and the Impact on the Individual (Micro) (Chapter Four). We do this, to emphasize the practicality of our proposal, despite its radical nature. It is vital to stress that like all long-run solutions to pressing social problems, our 70-year action plan demands that action be taken tomorrow, today, at once. The implementation requires the same urgency and

[4] This passage, and following ones, about the carob tree and its fruit, are taken from Wikipedia.

intensity of focus that high-tech startups invest in the launch of their innovations: Just as the grandfather planted the carob tree seeds, doubtless with a sense of urgency, just because of the 70-year gestation period that the carob needs to fruit. There is no time to waste.

We begin this chapter by defining the need for a systems approach to elderly poverty and the pension crisis. A "deep dive" into the issue reveals that Israeli society and economy have deep-rooted structural problems that are neither being addressed nor even, for the most part, discussed and debated. Resolving elderly poverty demands that these structural issues be tackled, in a comprehensive and systematic manner. They include crumbling infrastructure, abysmally low productivity and negligible productivity growth.

Next, we outline our practical solution, built on four interlocking 'pillars', each of which is necessary and jointly sufficient for solving the problem: 1. Super Trust funds, 2. Grant-at-Birth; 3. Special Levy Tax; and 4. MaxiLife Development. We provide the framework for the draft legislation required to implement the four pillars In Chapter Five, at the end of the Report.

The projected impact of our radical solution is discussed in the next chapter, Chapter Three, using simple but well-founded macroeconomic projections.

Finally, in Chapter Four we provide a discussion of the impact of our radical proposal on individuals, comparing the current set of policies with our systemic solution, comparing the expected state of Israeli society and economy if current trends continue unaltered, with the projected situation if our solutions are fully implemented in a timely and effective manner.

We have chosen the carob tree as our metaphor, or allegory, because like our proposed solution, it requires substantial effort and resources at initial planting, and like our Super Trust Fund solution, when given sufficient time and care it yields a bounty of benefits. The carob tree, like the Super Trust Fund, is well suited to Israel's (social) climate. And like our Super Trust Fund the carob tree proliferates, as animals eat its sweet fruit and spread its seeds widely. An enormous crop of carob fruit can, in time, emerge from a single well-husbanded tree: Just as a wide range of future benefits can emerge, over time, from a single well-founded Super Trust fund that, like the carob tree, proliferates itself and its capital. The tiny carob seed needs a good start – proper planting, fertilizer, water, just as our plan requires a Grant-at-Birth to launch the individual's pension saving right from birth. The carob seedling needs resources – the planting labors and care – just as our plan needs a Special Levy Tax to get our plan rolling. And as it grows and flourishes, the carob tree needs constant expert attention, just as our MaxiLife Personal Development program educates and enlightens individual pension savers, nourishing them with vital knowledge so that they can take responsibility for their work skills and savings, and nurture and grow them through good times and bad.

The Need

The Perplexed Individual: It's All About People, NOT Just Numbers

Before plunging into the macroeconomics of pension allocation and accumulation, we choose to recall that in the end, this is a human problem, in which people, many of them senior citizens, are forced to grapple with complex financial decisions for which they have inadequate knowledge or preparation: All the while they are offered bad choices and worse ones, while governments make the issue into a political football and zigzag repeatedly. Governments in Israel and in many other countries have chosen to privatize the pension crisis, as a convenient way to 'offload' a costly and growing budget line item. The result has been to place the burden of difficult and complex financial decisions on the citizenship, many of whom are ill-equipped to make such 'life-threatening' decisions. Here is the story of co-author Moshe G., founder of a large franchise business, yet himself a witness (almost a victim) of the zig-zag political football nature of Britain's pension policy:

Moshe G.: My Own Story of Annuity Pensions

As a 73-year (young) retired person it was mandated in the UK that I hand over my private pension nest egg (capital) to an independent insurance company in exchange for a (paper) commitment to pay me a certain pension for the duration of my life.

Until a couple of years ago, the UK pensioner had no choice in the matter. The UK insurance companies had a built-in very profitable captive market. In 2014 I was told I needed, for an administrative purpose (although I now reside in Switzerland), to buy a UK annuity. The offers made were so outrageous that I refused to proceed and somehow got lucky because the UK government decided to listen to their frustrated public, and freed the pensioners to do their own pension investments as they wished. (The fact that a general election was imminent has probably nothing to do with the pensions' 'free-for-all' which had been declared. But this is a subject for another story).

What I wanted to share with the reader were the bizarre annuity offers which were made to me. Basically, the rate provided – for a simple annual pension (no widow benefit and no inflation protection) – meant that I would have to wait a *full twenty years* before I would be able to collect the capital amount paid over.

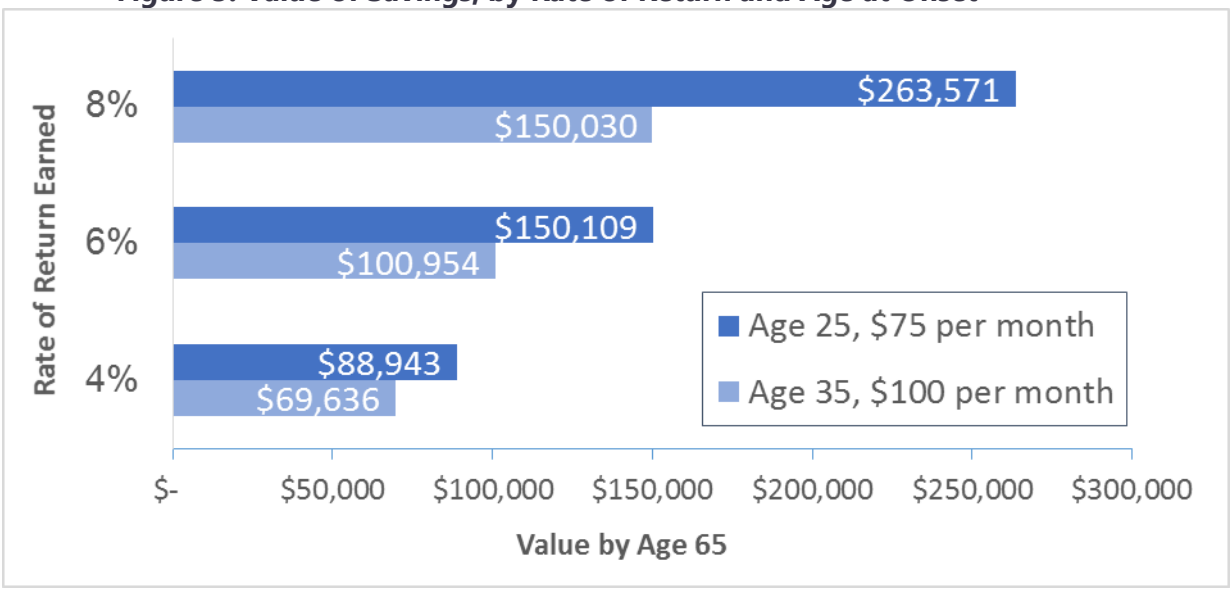
This meant I would have to celebrate my 93rd. birthday before recouping my own money! What would actuarial tables have to say about the number of years (on average) that were likely to be available to me beyond age 93? In addition to the bad income deal, I would also have taken on the risk that the insurance company itself might fail during those long years and that the balance of my 'investment' would be a total write-off. My personal experience was another example of the inadequacy of the current pension system of the Western world.

And so is the pensions' 'free-for-all' which the British government is launching in April 2015.[5]

Bank of America's Wisdom: Well, Thanks! But How???

Bank of America offers sage advice to Americans, on how to ensure their pensions will be adequate to cover an average of 20 years of retirement. The essence of its advice: Start young, invest regularly and at high returns. At 4 per cent return, starting at age 25 rather than 35 is not much help. At 8 per cent return, it can almost double the asset value on retirement – while investing monthly a third less! (See Figure 3).

Figure 3: Value of Savings, by Rate of Return and Age at Onset



Source: www.BankofAmerica.com

[5] *"The change in pension regulations which 'freed' me from the 'robbery' of the annuity industry was most welcome. However, the fact that UK pensioners as of April 2015 can withdraw their entire pension capital and use it according to their own wisdom (to invest or spend!) is just as bizarre as the previous situation regarding annuity yields. One could wonder how quickly after the May 2015 general election matters might change once again?" (Moshe G.)*

The problem is, that the 8 per cent figure (as an example) is highly ironic. It represents the global rate of return earned on average by the very rich, as established by economist Thomas Piketty.[6] At this rate of return (net of expenses), wealth doubles every nine years. For the most part, individual savers who are not blessed with great wealth do not come close to achieving that rate of return (over time) on their pension assets, and the handful who do accept unreasonable levels of risk in order to attain it. Hence, any solution to the pension crisis must somehow find a reasonable practical way to permit ordinary working people to access the rates of return now exclusively reserved for the wealthy. We believe the outcome of our proposal does this.

Israel's Piecemeal Pension Reform:

Israel's pension reform separated the provident funds from the major banks. One goal of this reform was to allow the banks to serve as the public's pension advisers. Here is the result:

"Pension counseling never took off. The little advice the banks provide is given mostly to the clients who have the most money to put in. In a country in which pension decisions are completely up to the savers and the only explanations they receive are provided by insurance agents – biased salespeople, since they receive their salaries from the insurance companies -- the lack of pension counseling is a major economic and social failure."[7]

As we write this, today's (April 16) headline describes the Bank of Israel's "solution" to Israel's pension crisis: Raise the retirement age to 69 (for both men and women).[8] The Bank of Israel and its stellar Research Department are voices of reason and professionalism, in the realm of economic policy. But its pension accumulation 'solution' is inadequate, partial, politically prickly [in the 2006 national election, a hastily formed pensioners' political party won seven Knesset seats] and fails to resolve the problem of those who at senior ages are simply unable to work or whose employer rejects them in favor of lower-wage entry-level workers.

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[6] *Thomas Piketty, Capital in the 21st C. Harvard: Belknap Press, Boston MA: 2014.*
[7] *M. Arlosoroff, "Filling a giant hole in Israel's banking reform", Haaretz, The Marker, June 17, 2014 [www.haaretz.com]*
[8] *M. Arlosoroff, "Raising the retirement age will save the state and its citizens billions of shekels". Haaretz, The Marker. www.haaretz.co.il*

Lack of savings, lack of capital formation, low productivity

One of the fundamental misunderstandings regarding the pension crisis is that it is perceived as solely a pension crisis. But its roots go far deeper, and a 'deep dive' into the economic system reveals the following -- Israel has for decades been under-saving and under-investing. The result has been to 'create' inadequate, crumbling infrastructure of all kinds (transportation, communication, education) and abysmally low and stagnating labor productivity. *Beneath the smoldering embers of the pension crisis and elderly poverty lie three burning inter-related structural challenges: inadequate domestic saving and capital formation, causing (in part) low and stagnating productivity, in turn partly owing to shoddy aging infrastructure for transportation, communication, and education.*

According to Arslanalp et al. (2011)[9] , a scatter plot of the average GDP growth, public investment rate, and public capital growth during 1960–2000 for all countries in their sample (48 advanced and developing countries) shows that "**cross-country differences in public capital growth explain much of the difference in long-term GDP growth during this period**". In particular, the correlation between average public capital growth and average GDP growth is much higher than between the average public investment rate and GDP growth.

When the researchers plot the average GDP growth, public investment rate, and public capital stock for advanced and developing economies from 1960 to 2000, they find that the public investment rate has been on a downward trend since the early 1970s in advanced economies. In contrast, the public investment rate increased significantly in developing countries in the 1970s, although it returned to its earlier levels in the 1980s. Public capital stock, as a percent of GDP, peaked for advanced economies in 1983 and for developing economies in 1985. The peak levels were 60 percent of GDP for advanced economies and 61 percent of GDP for developing economies. There was a downward shift in real growth of almost 1 percentage point on average around the time capital stock peaked.

We chose to study the 30 globally-competitive nations with GDP per capita (PPP) equal to or higher than that of Israel.[10] We gathered data on domestic savings and capital formation

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[9] *Arslanalp, S., F. Bornhorst and S. Gupta, "Investing in Growth", Finance & Development, 48 (1), March 2011.*

[10] *World Competitiveness Yearbook 2014. IMD: Lausanne, Switzerland.*

and GDP per capita and GDP growth. Presumably Israel aspires to boost its per capita GDP at least to the average level of this group, i.e. $45,000 p.a.The results are shown in Table 3.

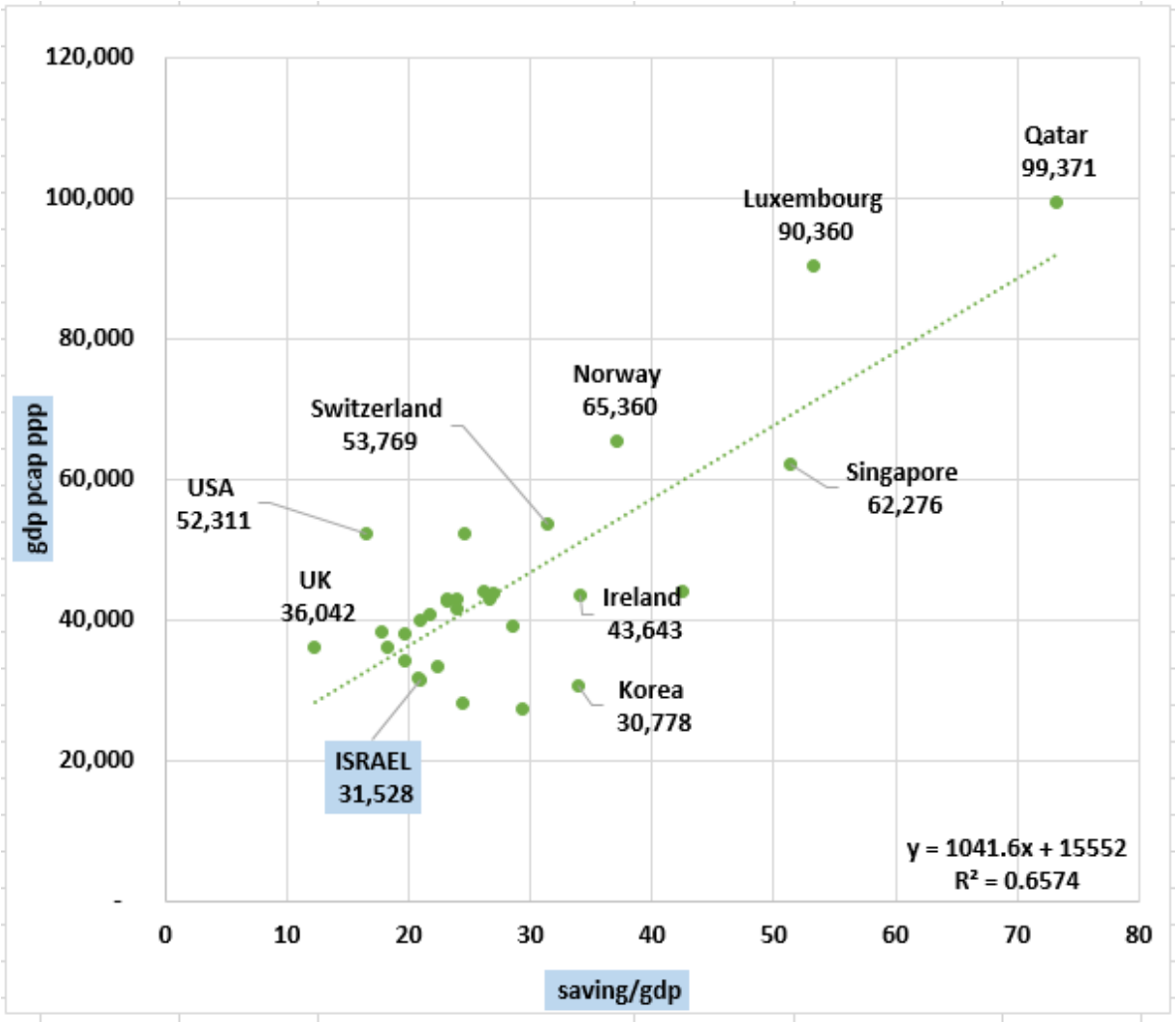
Table 3: 30 Globally Competitive Nations With Highest GDP Per Capita: GDP per capita, Domestic Saving/GDP, Gross Capital Formation/GDP, GDP growth

	GDP p cap PPP	Saving/ GDP	Gross Cap/ GDP	Real GDP%	ANT *
Country	US $	%	%	%	
Qatar	99,371	73.2	29.2	6.5	1
Luxembourg	90,360	53.2	18.5	2.1	1
Norway	65,360	37.1	22.7	0.6	1
Singapore	62,276	51.3	23.1	4.1	1
Switzerland	53,769	31.4	20.1	2.0	1
China Hong-Kong	52,340	24.6	23.7	2.9	0
USA	52,311	16.5	18.9	1.9	0
United Arab Emirates	44,205	42.5	21.9	4.8	1
Austria	44,092	26.2	21.1	0.4	1
Australia	43,710	27.0	27.7	2.4	1
Ireland	43,643	34.1	11.2	-0.3	1
Sweden	43,115	24.0	18.3	1.5	0
Netherlands	42,923	26.6	16.1	-0.8	1
Denmark	42,861	23.1	17.3	0.4	0
Germany	42,799	23.1	17.2	0.4	0
Canada	41,489	24.0	23.7	1.6	0
Belgium	40,752	21.7	19.7	0.2	0
Iceland	39,854	20.9	13.6	3.3	0
Taiwan	39,176	28.6	19.4	2.1	1
Finland	38,445	17.7	18.9	-1.4	0
France	38,027	19.7	19.5	0.2	0
Japan	36,259	18.2	21.7	1.6	0
UK	36,042	12.3	14	1.7	0
Italy	34,195	19.7	17.3	-1.9	0
NZ	33,406	22.3	20.5	2.5	0
Spain	31,764	20.7	17.7	-1.2	0
Israel	31,528	20.9	19.7	3.4	0
Korea	30,778	34.0	29.7	3.0	1
Average	45,008	28.28	20.08	1.40	0.433

Source: World Competitiveness Yearbook 2014: IMD, Lausanne
** an "ant" is defined as a country with domestic saving/GDP above the average (26 percent) for the 30 nations included in the IMD World Competitiveness Yearbook database, 2014. 43% of the 30 globally competitive nations have domestic savings exceeding 26 per cent of GDP.*

We used this cross-section data for the 30 globally-competitive nations with the highest per capita GDP, measured by true (purchasing power parity) exchange rates for the year 2013, using data from the World Competitiveness Yearbook (IMD, Lausanne, 2014). We fitted a least-squares regression line to the data, with GDP per capita as a function of domestic saving as a % of GDP. The results are shown in Figure 4.

Figure 4: GDP per capita (Purchasing Power Parity), as a Function of Domestic Saving/GDP, 30 Nations with Highest GDP per capita: 2013

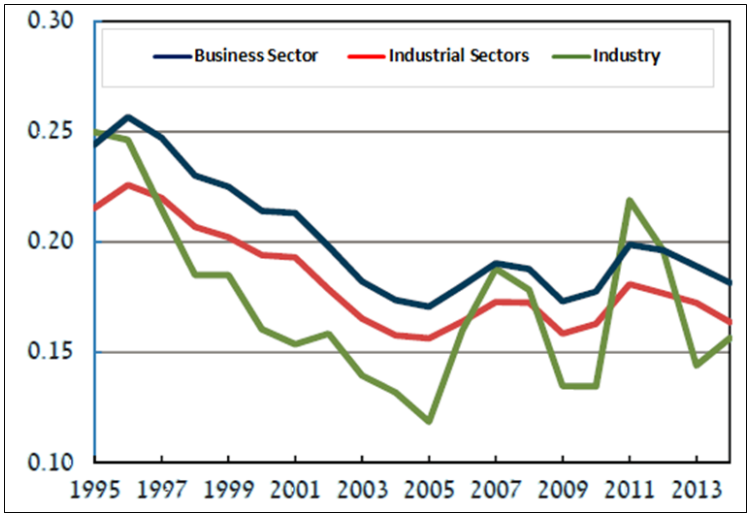


Two-thirds of the variance in GDP per capita is accounted for by domestic saving/GDP, (which includes government saving, business saving and household saving), for the 30 globally-competitive nations with the highest per capita GDP (PPP).

The results indicate clearly that for Israel to increase its per capita GDP by, say, $10,000 or 33 per cent, **it will need to raise its savings ratio by some 10-percentage points, from about 21 per cent to around 31 per cent.** (Each one per cent of saving/GDP adds $1,000 to GDP per capita). *Yet the precise opposite is occurring*. For nearly 20 years, overall, Israel's gross capital formation as a percent of GDP (which closely correlates with domestic saving/GDP) has been in secular decline, losing over five percentage points. (See Fig. 5 below). This alarming decline has been hidden, or downplayed, by the media 'buzz' over Startup Nation and massive

startup cash exits that create new billionaires monthly. Such exits produce individual wealth but have contributed little to jobs, exports and middle-class wellbeing.

Figure 5: Israel: Gross capital formation as a % of GDP: 1995-2014



Source: Bank of Israel Annual Report, 2014, fig. B8, p. 41.

Productivity and Productivity Growth:

"The most critical challenge the new government faces is raising the growth rate of labor productivity and increasing the earning power of workers. Israel's productivity rate…is relatively low for a developed economy, and the gap between Israel's rate and those of the most productive countries is widening." [11]

The Bank of Israel has led efforts to focus attention on Israel's low labor productivity. In its 2012 annual report, the Bank noted:

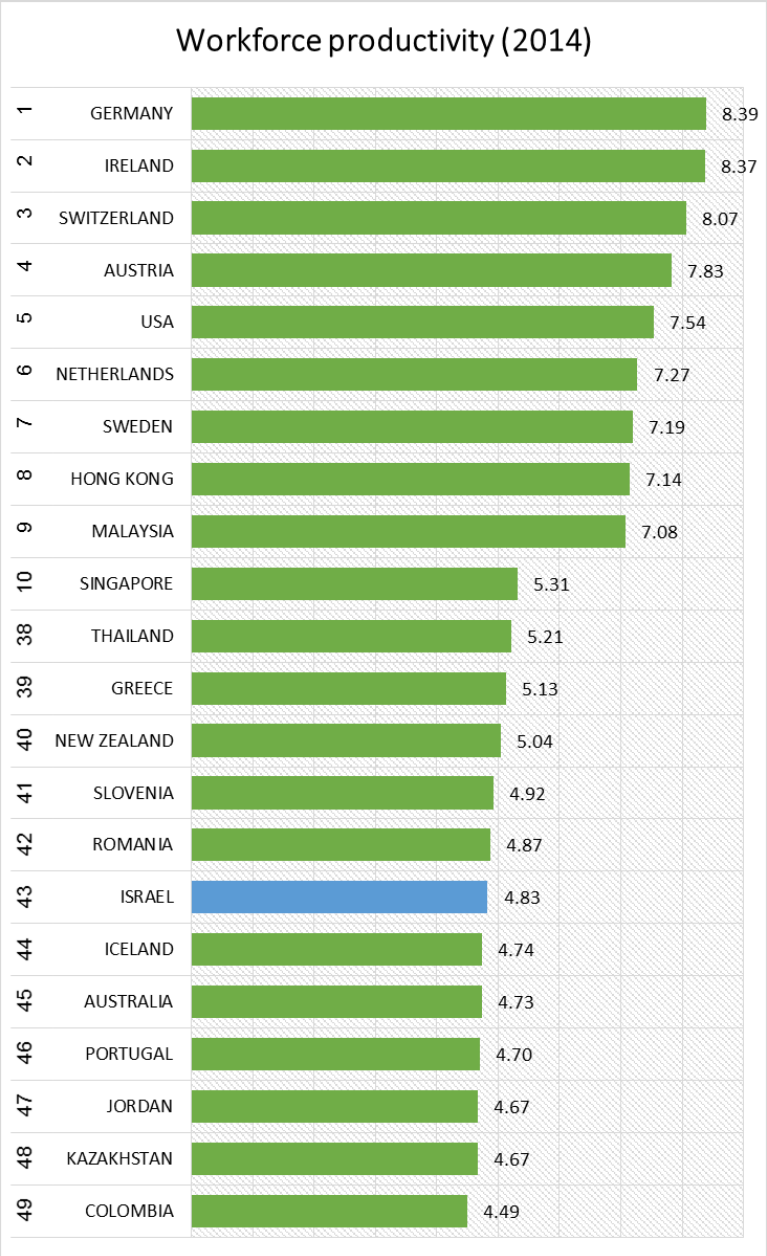
- Labor productivity in Israel is 24 percent lower than that of all the OECD countries. Its growth rate between 1995 and 2011 was lower than the OECD average…
- Between 2000 and 2011, the rate of investment in Israel was one of the lowest among advanced countries, which may explain about half of the gap in the productivity level between Israel and the OECD. The investment rate in Israel is low in all sectors, **other than industry which is characterized by external competition that requires companies to adopt foreign technologies**.[12]

[11] *Bank of Israel Governor Karnit Flug, announcing the Bank of Israel's 2015 Annual Report, quoted in Haaretz, Wednesday April 1, 2015, p.7 www. Haaretz.com*

12 "Bank of Israel, "Labor Productivity in Israel from an International Perspective" Annual Report for 2012, Jerusalem, March 2013.

Figure 6 shows the results of a survey of a panel of experts, who respond to the statement: Workforce productivity [in Israel] is (is not) competitive by international standards, on a scale of 1 to 10, where 1 indicates agreement with the "is not" statement. *Israel ranks only 43rd among the 60 nations in the database.* In fact, productivity in Israel (4.83) is no more than 58.4% of the productivity average of the three top performing countries in the survey (8.27) i.e. Germany, Ireland, Switzerland.

Figure 6: Workforce Productivity: Subjective Evaluation



** Note: A panel of experts ranks each nation, on a scale of 1 to 10, according to: "workforce productivity is (is not) competitive by international standards", where 1 is lowest, 10 is highest. Source: World Competitiveness Yearbook: IMD, Lausanne, 2014.*

Table 4: Annual Rate of Change in Total Factor Productivity: By Branch: Israel 2011-14

	2011	2012	2013	2014
Water& Electricity	-17.60	-37.20	50.60	-14.10
Construction	11.10	5.70	-8.70	-8.90
Industry	-1.40	0.50	2.10	0.00
Trade & Services	5.40	-2.00	0.40	1.30
Agric.	11.70	4.20	-12.70	2.50
Transpt. & Communic.	-6.30	2.90	0.60	4.60
Overall	2.00	-0.60	0.70	0.30

Source: Bank of Israel, Annual Report 2014, Table B-C15.

Table 4 shows the rate of change in total factor productivity (TFP) overall, and for economic branches, for 2011-2014. Total factor productivity growth is the increase in the output per labor hour that is NOT related to higher physical capital investment. **The results are desperately poor.** For a nation facing a housing bubble, the figures for construction are troubling. For a nation that aspires to produce locally at least some of the inventions its entrepreneurs create, the TFP growth figures for industry are unacceptably low.

Table 4 occurs against a backdrop of the rising economic power, China, *and its average annual growth in labor productivity of 11 per cent in the past five years*.[13] China's economic ambition is a challenge to the rest of the world – including little Israel.

Lack of Infrastructure Investment

Labor productivity depends in part on the ability of workers to create and/or transport goods and services, knowledge, information, data, and people, through its infrastructure. Israel has woefully inadequate infrastructure and it is getting worse, according to the experts. Here is some evidence.

- One of Israel's major export industries is its high-tech companies, specializing in ITC (information technology and computers).A basic requirement for this industry to continue to thrive is modern communications infrastructure. Yet Israel ranks 33rd in the

[13] . [McKinsey, a global consultancy, found that labour productivity increased by 11% a year in China from 2007 to 2012]. Source: The Economist, "A tightening grip", March 14, 2015.

world in "download speed", averaging 29.3 megabits per second, equal to the level in Russia, and one-third the level of world-leaders Singapore and Hong Kong (118 mbs and 100 mbs, respectively).

- According to an infrastructure engineer: It will cost NIS 250 billion to bring Israel's backward infrastructure up to standard, money the government doesn't have. Israel's transport infrastructure is inadequate for the load placed upon it by a modern economy, and countless road, interchange and railway projects planned years ago have not been carried out. …. Ministry of Finance and Ministry of Transport own figures show that the average investment per resident in transport infrastructure in Israel is just one seventh of the average investment in the OECD. The result is that use of public transport in Israel accounts for only 20% of total journeys, while in the OECD countries the figure is 30-50%. The average speed of a journey by public transport in Israel is 16 kilometers per hour, compared with 25 kilometers per hour in the OECD. Israel lags not just the OECD, but other, less developed countries as well. The comfortable and pleasant 1,300 kilometer train journey from Beijing to Shanghai takes just five hours; the 230 kilometer journey from Naharia to Beer-sheva takes three hours.

According to Ministry of Finance own figures, the infrastructure deficit in relation to the OECD average costs the Israeli economy lost work hours to the tune of **NIS 25 billion annually**, in addition to severe cumulative damage to the quality of the air and the quality of life, and the huge social damage caused by living in a country without developed public transport, reflected in unemployment in the periphery and the high cost of housing in the center.

… Closing the gap will cost NIS 250 billion, 75% of the Israeli government's annual budget. This money cannot come entirely from the state budget. Other sources of finance are required, and the government must bring in the private sector to assist. The bottom line is that the State of Israel can, within a decade, become a normal Western country, in which morning traffic jams finish by 9:00. Half its residents will use rapid public transport, and many will be able to work in the big cities and live in remoter places where they will benefit from a higher quality of life

and reasonable housing costs. For this to happen, the state and the private sector need to join forces and cooperate.[14]

What emerges from this analysis is that the shortfall in savings for retirement pensions, widely discussed, is *in addition* to an enormous shortfall in capital and savings for infrastructure investment. ***Only a massive, urgent program to boost domestic savings can address the problem.***

The good news, however, is that infrastructure investments pay enormously high returns, like planting carob seeds. According to an American expert:

> *"Investing in infrastructure is the ideal way to shift resources and labor from the bubble sectors of housing, finance, and luxury services and into areas that have the potential to boost the long-run rate of American economic growth. Public investment in infrastructure "crowds in" private investment: every dollar spent on infrastructure has a multiplier effect of $1.59, according to a widely-accepted estimate by Mark Zandi, the chief economist at Moody's Economy.com[15]". In the case of Israel infrastructure investments of NIS 250 billion are expected to deliver NIS25 billion p.a. in savings which translates to a healthy 10% p.a. return. Not a bad investment!*

Bubble Economy

The global financial and economic crisis that began in 2008 has not yet been resolved. Under pressure from capital markets, governments continue to impose austerity programs and slash their budgets. This has left the battle to stimulate growth entirely to the central banks, which in the U.S. and Europe have engaged in QE, "quantitative easing", a euphemism for MB "money bonanza" – massive amounts of credit creation used by banks and financial services companies to engage in financial speculation, rather than by industry (or government) for real capital formation.

[14] Avi Pantorin, Globes [online], Israel business news - www.globes-online.com, March 10, 2015
[15] *Michael Lind. The right way to invest in infrastructure, McKinsey Quarterly, McKinsey & Company, 2009*

Banks and businesses have become addicted to near-zero interest rates. It has enabled many of them to make profits through financial speculation; it's hard to lose when you borrow money almost for nothing. But low interest rates have done little for the real economy, to spur real investment, infrastructure and capital formation. They simply benefit what the world's smartest investor, Warren Buffett, calls the "money shufflers". The main idea of cheap money was to spur investment. But why would businesses build more factories when the current ones can make more output than they can sell? Even companies that make real products, instead of shuffling money, benefit. This is, of course smart finance; but it is worth noting that small investors and households do not have the same opportunities. According to Mike Dolan, writing in the New York Times, "companies have made a killing by borrowing for next to nothing just to buy back their own shares, boosting the equity prices further in the process"[16] (and earning large bonuses for top management).

Ironically, the world was shown a different, far more successful approach by China. Facing the global slowdown, China maintained its high rate of economic growth by massive infrastructure investments. According to Bloomberg:

"China is accelerating 300 infrastructure projects valued at 7 trillion yuan ($1.1 trillion) this year (2015) as policy makers seek to shore up growth that's in danger of slipping below 7 percent. [17]

Roads, bridges, high-speed trains, modern ports, all have contributed to China's phenomenal rate of growth in labor productivity (11 per cent per annum). Yet few Western countries seem to have taken notice of the program, or realized that there may be a different, more effective policy than QE (or MB).

[16] *S. Maital. Addicted to Cheap Money. Jerusalem Report, April 20, 2015.*
[17] *http://www.bloomberg.com/news/articles/2015-01-05/china-said-to-accelerate-1-trillion-in-projects-to-spur-growth*

The Solution

- Subsistence on carob pods is mentioned in the Talmud: Berakhot reports that Rabbi Haninah subsisted on carob pods. Use of the carob plant dates back to Mesopotamian culture (modern day Iraq). The carob pods were used to create juices, sweets, and were highly prized due to their many applications. The carob tree is mentioned frequently in texts dating back thousands of years, outlining its growth and cultivation in the Middle East and North Africa.
- The carob pod consists of two main parts which have very different composition and are separately used to produce different goods: The pulp accounts for 90% and the seeds for 10% of the pod weight.
- The pulp contains about 48 - 56% of sugars and 18% of cellulose and hemicellulose. Carob pulp is sold as flour or chunks. It can be also consumed directly from the dried (and sometimes roasted) pod.
- The embryo (20-25% of the seeds weight) is rich in proteins (50%) and its flour can be used in human and animal nutrition. Carob pod meal is used as an energy-rich and palatable feed for livestock, particularly for ruminants, though its high tannin content may limit its use.

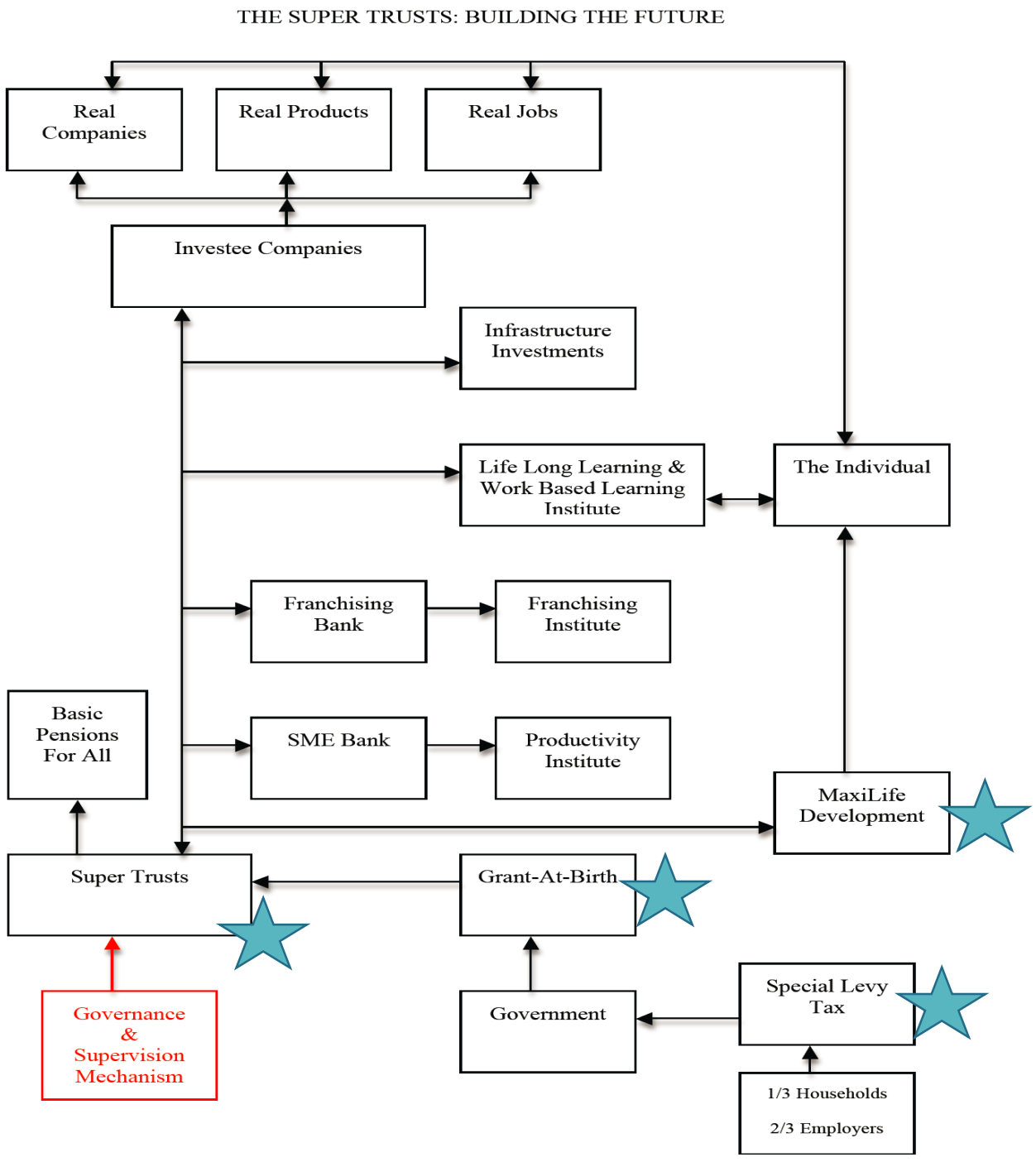
We propose a radical, sweeping solution to the challenge of elderly poverty and the pension crisis, one that addresses deep-rooted structural challenges as well.Our proposal has four main elements, or "pillars". In this chapter we describe these four inter-related 'pillars' in general. In Chapter Three we will provide concrete quantitative numbers, regarding costs, etc., and simulations of the impact of implementing the four-pillar proposal.

The four pillars are:

- First: a hypothecated annual levy, or tax, to get the proposed solution rolling. The exact amount will reflect the number of births. This will be funded 1/3 by households, and 2/3 by all employers.
- Second: a one-time per child 'Grant-at-Birth' program that gets every citizen's basic pension saving started, right from birth, in order to reap the benefits of compound interest over the long-term (like planting carob seeds, to harvest the bounty of carob fruit 70 years later).
- Third: establishment of the 'Super Trust' funds, that invest in steady-yield real investments. Such funds are privately managed, with low management fees, but carefully regulated to ensure integrity, and are competitive: competing with each other for assets and yield (All investments will be made in Israel, in real companies, seeking to earn no less than 5% net compounded p.a.).
- Fourth: MaxiLife, a web based AI guided life resources counselling system that will help individuals understand and master the complexities of managing their life potential to include: lifelong learning, work based skills, wise career choices, socialization and optimizing their pension and other financial responsibilities.

Our radical solution is shown in the systems diagram, Fig. 7.

Figure 7: A Schematic Systemic View of the "Four Pillar" Solution



Our objective is to initiate a *major, sweeping cultural and behavioral change in Israeli society*. It is to replace a moderate part of ongoing personal consumption (0.5% of GDP p.a.) with net capital formation. Saving, by definition, is refraining from consuming. Interpreted narrowly, higher saving should mean lower consumer demand and hence lower economic growth. But, if saving is wisely directed to real investments, not only does demand

not decline but in fact it increases, owing to the high "multiplier" impact of capital investments. Personal consumption (by definition) evaporates in the year it occurs. Capital formation continues to yield benefits for many years. Higher saving and capital investment boosts productivity, which in turn, increases per capita income and ultimately, enables higher personal consumption. But equally important, the capital gains accruing to the Super Trust funds will enable retired persons to live in dignity, enjoying the fruits of their savings, and their high-growth investments. It might enable them to retire, if they wish, at age 65, and to live in dignity even as life expectancy extends well beyond its current level of about 85 (subject to overall capital growth over the long-term).

What follows is a more detailed account of each of the "four pillars". Each of the pillars is essential, and together they form a systemic radical solution. While they require carefully-drafted legislation, they are completely feasible politically and most desirable socially and economically.

Government Grant-at-Birth

A personal pension-savings and accumulation account will be opened for every newborn in the first month of his or her life. The Finance Ministry will deposit in this account a fixed and agreed-upon sum. This capital contribution could be funded by a special tax to be imposed on the taxpayer and employers. (See below: Special levy).The money that accumulates in this personal account over the person's lifetime will be invested in productive economic activity by new dedicated institutions that will be established for this purpose (see below: Super Trust funds). Over the course of 70 years of dedicated investment and accumulation, the modest initial sum will be able to grow to a respectable capital amount (estimated growth 50 times to age 95) that could provide a solid foundation for a basic pension for twenty-five retirement years. The underlying idea is that a principal sum deposited at the beginning of a person's life will yield the greatest returns over the life time of the individual and **underpin** a new rolling process of pension-funding and accumulation to allow the pensioner to live respectably in his long retirement years.

The initial government grant for every new-born will also be calculated differentially according to gender and socio-economic level. Baby girls will receive a grant that is 33 per cent higher than the grant for boys.

There are two good reasons for this. The first is that women will spend on average seven years or approximately 33 per cent longer than men in retirement — according to a calculation of an average of 5 years longer life-span for women, in addition to a retirement age starting 2 years earlier. (This is likely to change in the near future). The other reason is so that when women take time off to give birth, they will be able to extend somewhat the period of their maternity leave beyond the legal allowance without their employers having to transfer their full pension contribution into their personal pension account.

The children of the poorest in society, whose relative number will not exceed 20 per cent of all the children born in any given year, will receive a much greater grant, e.g. for poor boys a grant which is 67 per cent higher than the rest of the male children born in the same year. Poor girls will receive a grant greater by 50 per cent than the rest of the female children. Studies in developed countries have shown that the children of poor people have a six times higher risk of being poor at age 30 than those in the middle and upper class. Therefore, it is much more cost-effective for society to set aside a higher sum for the children of the poor from the outset. Since all these capital sums are meant to be efficiently and effectively invested in the productive economy they will also bring about, in time, a meaningful drop in overall unemployment and encourage the children of the poor to find a productive place for themselves in the job market.

In this proposal, we seek to address not only disruptive social and economic inequality, but also the lack of adequate mobility across income classes. By favoring the poor, such mobility is encouraged and strengthened. (The additional cost at birth is negligible).

Special Levy

One-third of the amount needed to open pension accounts for every single child born every year could be funded by the nation's households,(with the 20 per cent poorest households exempted), and two-thirds of the tax could be funded by employers, on a differential basis, according to the number of employees. The total amount that will be collected by the nation every year from this tax will likely be around 0.5 per cent of GDP per annum.

Super Trusts investments

All of the retirement capital accumulating in the Government Grant-at-Birth pension accounts will be managed and invested by new non-governmental investment organizations called Super Trusts that neither will be under government jurisdiction nor will they constitute part of the existing Pension Funds management system. The current pension funds are generally invested in government bonds, corporate bonds and in stock markets. This system ensures neither proper returns nor the necessary growth of the principal. In the new Four Pillars paradigm, *all of the pension funds will be invested directly into the economy through the purchase, establishment, and management of productive companies*. The money will be committed to long-term investments in the country itself with the goal of attaining at least five per cent compounded annual net growth. The retirement age will be updated when necessary by actuaries in each country, but every individual will be entitled to begin receiving the monthly allowance from age 70 onwards, *even if they choose to continue to work*.

From age 70 onwards the individual will be entitled to receive from his personal account an amount that will be calculated individually and will take into account the amount that has accumulated thus far (based on the original Grant-at-Birth), divided by the number of months that the average person lives in retirement. The number of months will be adjusted every five years as life-span estimates are updated. Taking into consideration the rate of increase in life-span, the individual may have to lower his monthly stipend so that enough money will remain for her/him for those years. (Private pension plans will be used in tandem with the Super Trust pensions to maximize the benefit for each individual)

MAXILIFE: A Virtual Personal Advisor for each individual

The Four Pillars Program recognizes the ever increasing complexity of daily living — especially the process of earning a 'living wage'. The rapid expansion and constant change in technology coupled with fierce global competition, which is bound to gather pace in the years to come, make it very difficult for the average individual to stay the career course which they may have wished to set for themselves. Therefore, the Four Pillars Program proposes the creation of *a new AI based software package* which will have the capacity to understand the individual, his or her goals, means and needs, and accumulate a personal database of their specific needs and preferences. The software will be designed to serve the needs of the specific individual, not the interest of the insurance agent or pension fund. The program will never disclose data to third parties other than with the clear instruction of the individual. MaxiLife will be able to help the individual navigate more successfully his or her current and future economic and life skills challenges. MaxiLife will also contain all the necessary information for the individual to be able to track the performance of their various pension plan investments including the Government Grant-at-Birth.

Conclusion and Summary:

- Carob syrup is also used in Crete, Greece as a natural sweetener and considered a natural source of calcium. It contains three times more calcium than milk. It is also rich in iron, phosphorus and natural fibers (Due to its strong taste, it can be found mixed with orange or chocolate).
- Crushed pods may be used to make a beverage; compote, liqueur, and syrup are made from carob in Turkey, Malta, Portugal, Spain and Sicily.
- Several studies suggest that carob may aid in treating diarrhea in infants.
- In Malta, a syrup (ġulepp tal-ħarrub) is made out of carob pods. This is a traditional medicine for coughs and sore throat.
- A traditional sweet, eaten during Lent and Good Friday, is also made from carob pods in Malta. However, carob pods were mainly used as animal fodder in the Maltese Islands, apart from times of famine or war when they formed part of the diet of many Maltese.
- In the Iberian Peninsula, carob pods were used mainly as animal fodder, especially to feed donkeys.

The basic economics of a sustainable systemic solution to the global pension crisis is very simple: **Patchwork, partial solutions, adopted out of political expediency, inevitably fail.** When they do, they worsen the problem, because valuable time has been lost that should have been used to implement more lasting solutions. Such partial inadequate policies have characterized pension policy in every single Western country in the past decade or two.

What is the key feature of a lasting solution? It is simple.

- The standard of living in every society – consumption of goods and services per capita – ultimately depends on the productivity of its workers – average output per hour of labor. The aspiration for rising standards of living demands that productivity should rise. Rising per capita personal consumption (standard of living) can be sustained only if productivity rises at roughly an equal rate.
- This gain in productivity, in turn, occurs only when workers are supplied with skills and adequate amounts of modern technology and capital, in turn a function of the resources available for supplying such capital and driven by national savings. When savings, capital formation and productivity grow, ultimately so will the resources that can be provided for those who no longer supply their labor: namely the retired and disabled.

Our argument can be summed up in a single simple sentence. Higher savings, smartly invested in real businesses, generate the higher productivity and higher return on capital that ultimately enable the elderly to retire and live in dignity, and enables all of society to enjoy high and rising living standards.

Like many good ideas, ours is simple to elucidate, and fairly simple to implement. The only complex factor is that implementation is subject to government recognizing the need and the great opportunity to take the individual and the national economy on a grand journey of success at a sustainable cost.

In Chapter Three, we provide more detailed analyses, regarding the cost of our four pillars and their economic and social impact.

Chapter Three. Harvesting the Fruit

"Nothing that is worth doing can be achieved in our lifetime; therefore we must be saved by hope. Nothing which is true or beautiful or good makes complete sense in any immediate context of history…. Nothing we do, however virtuous, can be accomplished alone…"

Reinhold Neibuhr [1952], The Irony of American History (U of Chicago Press, 2008), p. 63

Introduction

In this chapter, we complete the business plan begun in Chapter Two, adding our account of the impact of our radical solution to the pension crisis, on the economy, including quantitative projections, and a discussion of future scenarios.

Background: We are writing this chapter on May 7. Today, in the business daily The Marker, buried on page 37, there is a disturbing article by a respected professor, Shlomi Shov, Head of Accounting and Vice Dean at the Herzliyah Interdisciplinary Center Business School.

The headline (written by the editors) again refers to the pension "time bomb".[18] Here is a brief summary of the one-page article:

"The amount of a retired person's pension, paid by the new pension funds [established in the past 15 years after pension reforms], is computed according to Finance Ministry regulations…on the assumption that the real (inflation-adjusted) rate of return on pension savings is 4 per cent a year. This assumption determines the…monthly sum paid to the pensioner on retirement. … The actual real interest rate is 0.1 percent. This deficit [between actual and assumed rates of return] is recorded only on the day a person actually retires. The deficit is paid for by the pension savers who have not yet retired. Since the number of retirees today is small [because these are new pension funds], for the four largest new pension funds, 90% of all the new pension funds, the [recorded] deficit is small. The real impact will be felt in future years, as the number of retirees grows."

Let us translate this into simple language: Future Pensioner! You know the pension you planned to receive, 70 percent of your salary, what today's retired persons receive? Well, forget it. By the time you retire, the money will be long gone. You had better start saving now on your own, or you will be destitute in your old age. Why? Because today's retirees are being paid a pension far beyond what the pension assets earn.[19]

A study by Asaf Geva (Bank of Israel) projects that "**the aging of Israel's population will add NIS 22 billion [in today's prices] to government expenditures annually**".[20] Of that about one per cent of GDP will be added health expenditures, and national insurance payments to the elderly, which will rise by 1.4 per cent of GDP. At the same time, government pension payments will decline by about 0.7 per cent of GDP as 'defined benefit' government pensions disappear. These projections show heavy additional public expenditures, *even at the current completely inadequate levels of support and pension income for pensioners*. In other

[18] Shlomi Shov. "Will Kachlon dare to defuse the time bomb hiding in the new pension funds?" The Marker, May 7, 2015, p. 37.
[19] In 2008 Israel's Knesset enacted a law requiring all workers to be provided with a pension plan. Because no system (like the one we propose, the Four Pillars) was put in place, here is the result: "…there may be as many as a quarter-million 'frozen' pension accounts, containing tens of billions of shekels, money that is being held for workers who have never claimed it. (E.g., Workers who leave their jobs after a short period)." Source: David Shammah, Times of Israel, April 20, 2013 (online).
[20] Asaf Geva. Bank of Israel (2013)

words, even the existing inadequate incomes of senior citizens, already causing poverty and destitution, will be hard to sustain, if nothing is done. (See Box 4: Inside Israel's National Insurance system).

Box 4: Inside Israel's National Insurance System

Prof. Shlomo Mor-Yosef, an M.D., is the CEO of Israel's National Insurance Institute. Prior to this position, which he has held for three years, he was the CEO of Jerusalem's Hadassah Medical Center. The National Insurance Institute is a massive bureaucracy, handling 6 million phone calls annually, 4 million client visits, 35 million pension payments, and has 3,800 employees and 73 branches, with a NIS 100 billion annual budget (including health insurance premiums). Here is what Prof. Mor-Yosef said in a recent frank and open interview with the business daily The Marker: "The government ignores the fact that the [current] pension scheme is going to create elderly poor. We have to provide more help to pensioners, whether by dedicated government bonds [that pay guaranteed subsidized returns], or by defined pension benefits, and government guarantees. We have to increase old age pensions by at least NIS 1,000 a month. The annual cost: NIS 10 billion. This is a lot of money. But the State of Israel must think about pensioners who will live off their pensions in the future. The State needs to deal with the pension [issue] before they become aged and poor…. The retirement age must rise gradually, one month every year, and be equal for men and women…. It is impossible [to deal with the problem] when people retire at age 62 and live to age 95. The system will collapse. If we start now, we can do this gradually." (Source: Meirav Arlossorof, The Marker, May 11, 2015, p. 10-12).

Israel joins a long list of countries that are 'dealing' with the pension crisis by depleting pension assets at an alarming rate, presumably by political leaders who know they will be long gone by the time the "carob tree" is suffocated by criminal neglect.

Here is the essence of the problem, as we see it. ***This is not a pension crisis***. It is a social crisis, arising from a capable society, Israel, that nevertheless under-saves and under-invests. The result is low productivity and low growth in productivity, which translates into low GDP growth.[21] This in turn dictates low return on capital. If low GDP growth continues, and if

[21] "..as of 2011 …Israel's labor productivity is lower than most OECD countries, consisting of only 75% of the OECD average, 63% of the average in the G7 countries and only 56.3% of the labor productivity in the United States. This gap is further widening as Israel's labor productivity is diverging from the rest of

productivity remains low and stagnant, there can be no solution to pensions or other deep and structural social problems. No technical solution – sometimes referred to as 'rearranging the deck chairs on the sinking Titanic' – will suffice. *If the pool of resources from which social needs (such as pensions) are paid fails to grow sufficiently, there will inevitably be sharp conflict among the diverse groups with justified claims on those meager resources. The inter-generational wars will erupt*. The present situation contains within it a clear path to violent social conflict, between senior citizens who live on pension income and working citizens who currently fund it. This is unacceptable. In the past, the older generation conferred stronger, wealthier economies on the younger generation, through their saving and thriftiness. Today, senior citizens, for many reasons, are bequeathing weaker, debt-ridden economies on to their offspring. This must not be treated with complacency.

Our proposal calls for some present pain to reap much future gain. Pain now, gain later is a formula most politicians shun like the plague.

The European politician Jean-Claude Juncker (EU President) famously said, "We [elected politicians] all know what to do, we just don't know how to get re-elected after we do it." What he meant was, that in a politician's eyes, any effort to solve long-term structural problems (like elderly poverty and pensions) that involves present sacrifice will lead to resounding defeat at the ballot box. This may or may not be true. But the fact that most politicians perceive it to be true, and always seek to be re-elected, implies that any policy that requires short-term sacrifice will never be implemented, no matter how crucial the change or massive the long-term gain.

In this chapter, we provide some simple projections, showing under conservative assumptions that the initial reduction in personal consumption (standard of living) our radical proposal costs, to generate the jumpstart in pension savings, the 'seed' to plant the carob trees, is quickly recouped by the higher economic growth such saving and capital formation generates.[22]

We recall our simple formula: S times R times T. Higher Savings (S), earning higher rates of return R (owing to higher productivity of labor and capital and higher GDP growth), over a longer period of time, T, 70 years. We will show, in our projections, that the initial 'pain' owing to lower private and public consumption (0.483 per cent of GDP per annum - in total) is soon overwhelmed by the greater gain accruing from faster economic growth generated by growing stocks of capital (both private, and public [infrastructure]) and higher productivity growth.

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the developed countries." Gilad Brand, "Israel's Growth Paradox", Milken Institute, Dec. 2013, p. 2 In 2014 labor productivity (GDP per labor hour) rose by only 0.6 per cent.

[22] A key element of our proposal is simply this: Savings will be invested in Israel, not abroad. According to the Bank of Israel, quoted in The Marker, "Soon, half your pension will be invested abroad" (19.4.2015, p. 4). Currently, 13% of 'old' (pre 2008) pension fund assets are invested abroad, and 29% of 'new' (post-2008) pension funds are invested abroad.

Projections for GDP and GDP growth, 2015-2085

Theory of GDP growth:

Our model of GDP growth is that of Nobel Laureate Robert Solow, who used a production function approach (Solow, 1957):

[1] Q' = α L' + (1- α) K ' + A'

Where Q' is the year to year change in real GDP, L' is the year-to-year % change in labor hours, K' is the year-to-year change in net capital stock, α is the weight of labor in GDP output (measured as labor's share of national income), 1 – α is the weight of capital in GDP output (measured as capital's share of national income), and A' is the rate of change in total factor productivity, defined as the year-to-year rate of change in GDP output per 'package' of labor and capital.

For example, the calculation of GDP growth for the year 2014 is[23]:

[2] 2.82 = 0.6 * 1.6 + 0.4 * 3.9 + 0.30,

showing that 0.96 per cent of GDP growth was due to increased labor hours, L' (0.6 x 1.6), 1.56 per cent of GDP growth was due to increased net capital stock K' (0.4 x 3.9), and the remainder of GDP growth, calculated as a residual, 2.8 – 0.96 – 1.6, was by definition growth in total factor productivity (0.30).

Another way to present these results is this:

[3] 2.82 - 1.6 = % change in GDP per labor hour = 1.22 %

= 0.4* [3.9 – 1.6] + 0.30 = 0.92 + 0.30 = 1.22%

In other words, labor productivity in the overall economy in 2014 rose by 1.22 per cent with about three-quarters of the increase attributable to higher capital per labor hour, and one

[23] Source: Bank of Israel Annual Report 2015. The share of labor in national income is 0.6 and has been relatively stable, though it declined slightly. (Adva Institute 2015).

fourth attributable to 'everything else' (technological change, etc.). This is an unacceptably low rate of productivity growth, a chronic structural problem in Israel's economy that has received too little attention except from research economists (whose voice is rarely heeded). If this lamentable trend continues, it implies that Israel's GDP per capita will take nearly three generations, or 65 years, to double. In contrast, China's growth of labor productivity in its manufacturing sector has averaged 11 per cent per annum in recent years. At present, in Israel, over half of the public's asset portfolio is held in either cash and currency deposits or in government bonds, which pay either zero return or very very low, minimal rates of return. Unless the rate of return on saving rises significantly, there can be no solution to the pension crisis.[24] The same conclusion applies to the total volume of new capital formation generated annually.

An IMF study shows clearly the link between net capital stock growth and GDP growth. "Many studies look at the investment rate – the percentage of GDP devoted to adding to the capital stock. We find that the more important focus is the rate of growth of the capital stock itself".[25] A significant rise in economic growth in Israel, a vital key for its future, requires, as a necessary, but not sufficient condition, a significant rise in the rate of growth of net capital. **It is not sufficient, because the added savings must be invested wisely and productively in the real economy.**

[24] See Bank of Israel, "The public's financial assets portfolio in 2014", March 10, 2015 (Press release).
[25] S. Arslanalp et al., "Investment in Growth", Finance and Development, March 2011, p. 34.

Projections:

A. Baseline:

Our time horizon is that noted by the Talmud, for carob trees to bear fruit, seed to fruit – 70 years. (In practice, this time span varies quite a lot). So we examine the 70 year period from 2015 through 2085.

We first project annual GDP growth and GDP per capita, under these assumptions, for our baseline (things continue as they are, without changes in policy):

- Total labor hours increase by 2 per cent per annum (this is the average rate of increase for labor hours during 2009-2014); this is based on population growth projections of 1.6 per cent per annum (Central Bureau of Statistics, 'medium' projection, with some modest rise in labor force participation): net capital stock increases by 3 per cent per annum, consistent with gross capital formation of about 20 per cent of GDP, and net capital formation of 7.5 per cent of GDP; [26]
- Total factor productivity increases between 0.6 per cent annually (the average annual rate of increase during 1995-2008), and 0.9 per cent p.a. (the average annual rate of increase during 2009-2014). Based on these assumptions, steady-stage annual GDP

[26] We assume, based on data, that the ratio between GDP (Q) and net capital stock (K), the capital-output ratio, K/Q, is 2.5; this is a 'stylized fact' widely used by, for instance, the World Bank and International Monetary Fund. We assume an average lifetime of physical capital of 20 years (longer for buildings, shorter for machines, computers and vehicles), or a 5% annual capital consumption rate. Capital consumption/GDP is thus 5% times K/Q or 5% times 2.5 = 12.5%. Thus 12.5% of GDP is annual capital consumption. Deducting 12.5% from 20% (the ratio of gross capital formation to GDP) gives 7.5%, net capital formation as a fraction of GDP. 7.5% divided by 2.5, or K/Q, gives 3%, the rate of increase in K, net capital stock. According to the Bank of Israel, the value of the public's asset portfolio is NIS 3 trillion; about a third is cash, the remainder (bonds and stocks) can be regarded as reflecting underlying physical capital, or about NIS 2 trillion; and we estimate that another NIS 500 billion represents physical capital not traded in financial markets and hence not included; 2.5 trillion in assets / GDP of 1 trillion gives a 2.5 capital-output ratio. See the Table below: (source: Bank of Israel: as of Dec. 31/2014)

	Total Assets	Cash & Deposits	Govt. Bonds	Private Bonds	Makam	Shares Inv	Abroad	Other
NIS Billion	3,168	1,021	705	306	95	494	451	94
%	100.0%	32.2%	22.3%	9.7%	3.0%	15.6%	14.2%	3.0%

growth is between 3.0 per cent and 3.3 per cent. We chose to adopt the 3.0 per cent growth baseline, partly because we fear Israel's growth engine, high-tech ICT (information and computer technology), has largely run out of steam, because startup companies are engaged in massive 'exits' (acquisition by foreign third parties rather than long-term sustained independent local growth), and because the current rates of saving and capital formation are seriously deficient for modernizing Israel's economy and transforming its global competitiveness.

Note that this is not a forecast! It is a projection, to show how the Israeli economy will look, and the future structure of GDP, if current trends continue unchanged. It serves as a baseline against which we compare the impact of our radical proposal. In other words: We compare doing 'nothing' (or doing cosmetic changes) with implementing radical policies that deal with the nation's core problems most effectively.

B. The Four Pillars:

In May 2015, as we write this, Israel's 33rd Cabinet (government) was narrowly approved by the newly-elected 20th Knesset, elected on March 17/2015. The margin was 61-59. It may sound fanciful to assume that this government, and Knesset, will embrace our radical systemic solution to the pension problem. But, we believe it will. The reason is that both Left and Right in the political spectrum have an abiding interest in supporting our proposal. The Left, because it will be effective in improving the relative situation of low-income groups such as the elderly; and the Right, because it strengthens the private sector, through enhanced capital formation and productivity.

We assume that on implementation of the Four Pillars program, beginning in 2015, comprising the Grant-at-Birth, Special Levy tax, Super Trust funds, and the MaxiLife website, the following process of change will be set in motion, right away:

Each year for 20 years, an additional one-half of one per cent of GDP (0.005 of NIS 1.059 trillion, or NIS 5 billion) is allocated to capital formation, at the expense of private and public consumption, through taxation and other measures, including expanded incentives for saving. In other words, gross capital formation rises (over the two-decade period) from about 20 per

cent of GDP to about 30 per cent of GDP (20 times 0.005, or 0.10, 10 per cent). This generates an increase in gross capital formation of some NIS 100 billion in 2015 prices (NIS 5 billion times 20). [Super Trust accumulated assets after 20 years at 5 per cent net p.a. compounded growth estimated at NIS 227 billion].

The sums we propose for boosting domestic saving and capital formation can be placed in context in comparison with the demands for extra consumption type spending that were part of the agreements that formed the 34th coalition government of Israel, amounting to over NIS 10 billion per annum.

The beneficial impact of the Four Pillar plan:

- A gradual 20-year rise in the rate of increase in net capital stock, from the initial 3 per cent to 7 per cent per annum in 2035; [27]
- The rate of growth in total factor productivity, as a result, rises modestly from 0.6 per cent per annum to between 1.0 and 1.5 per cent per annum. This is because much new technology is embodied in new capital; higher capital formation therefore boosts total factor productivity, directly and through infrastructure investment.

The result is that by 2035, the annual rate of increase in GDP will become:

[4] 0.6 * 2 + 0.4 * 7 + 1.5 = 1.2 + 2.8 + 1.5 = 5.5 %

OR

[4]' 0.6 * 2 + 0.4 * 7 + 1.0 = 1.2 + 2.8 + 1.0 = 5 %

[27] Gross capital formation/GDP of 30% implies net capital formation/GDP of 30% - 12.5 % (capital consumption) = 17.5%. Net capital formation/capital = 17.5% divided by 2.5, the capital output ratio, or 7%, the new rate of growth of capital stock. The capital consumption rate of 12.5% is equal to the average depreciation rate of capital, 5% times the capital-output ratio, 2.5 = 12.5 %. Evidence supporting the assumption of a capital-output ratio of 2.5 is found in Paul Evans, *U.S. Stylized Facts and Their implications for Growth Theory,* Dept. of Economics, Ohio State Univ., 2000. Evans also shows that the average capital consumption rate for the U.S. is 5 per cent of capital stock. Note that the *incremental capital-stock ratio*, that is, net capital formation divided by the increment in GDP, is assumed in general to be 3.0; this is because the marginal capital-output ratio is higher than the average.

Thus, after implementing the Four Pillars, GDP growth will rise gradually over the 20 year period from 3 per cent yearly to between 5.0 and 5.5 per cent yearly. *These projection assumptions are conservative*. We do not, for example, take into account that higher capital formation and increasing labor productivity will encourage higher participation in the labor force and greater job creation. Nor do we assume that the investment boom will generate an export surplus, as local businesses modernize and can compete successfully in global markets.

It may be asked: Will not the (modest) decline in personal and public consumption also lead to slower GDP growth owing to deficient demand? The answer is, that every shekel of reduced consumption is in fact replaced by an equal NIS of capital formation – and the GDP multiplier and employment multiplier of capital formation are substantially higher than their equivalents, with regard to consumption. [28]

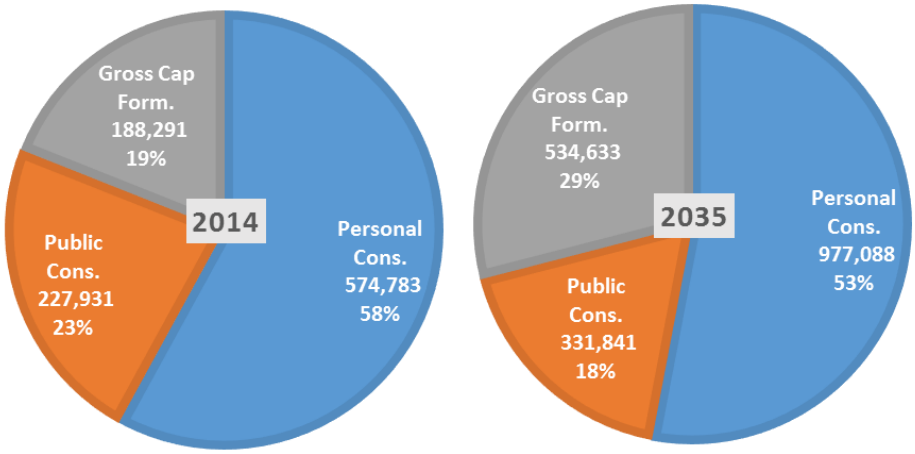
The results of this projection, showing the baseline projection vs. the Four Pillar projections, are shown in the various tables in the Appendix following Chapter Five.

The gradual transformation from 'grasshopper' to 'ant': Over two decades, from 2015 to 2035, with the implementation of the Four Pillar radical solution, the result of the Special Levy, Grant-at-Birth and Super Trust massive capital formation activity will be to shift annually 0.5 per cent of GDP out of personal and public consumption and into capital formation. (See Table 12, Appendix). We assume that this occurs in equal parts, with a 0.0025 decline (0.25%) in the proportion of GDP devoted to personal consumption yearly, for 20 years (amounting to a decline of 0.05, from 0.58 to 0.53 of GDP), and an equal 0.0025 (0.25%) decline in the proportion of GDP devoted to public consumption, including defense (amounting to a decline of 0.005 yearly, 0.5%, or 0.05 over the decade, from 0.23 to 0.18). In 2035, therefore, 53 per cent of GDP is devoted to personal consumption, 18 per cent to public consumption, and 29 per cent of GDP is allocated to gross capital formation.

[28] According to one estimate, a dollar of investment in infrastructure creates, in the short term, 1.56 dollars of added GDP. See Serkan Arslanalp, Fabian Bornhorst, and Sanjeev Gupta, "Investing in Growth", IMF Finance & Development, March 2011, Vol. 48, No. 1

Figure 8: The gradual transformation from 'grasshopper' to 'ant': Over two decades, from 2015 to 2035

	2014		2035		
Gross capital Formation	188,291	19%	534,633	29%	2.84
Public consumption	227,931	23%	331,841	18%	1.46
Personal consumption	574,783	58%	973,088	53%	1.69
Total	**991,005**	**100%**	**1,839,562**	**100%**	**1.86**



Money, money everywhere…

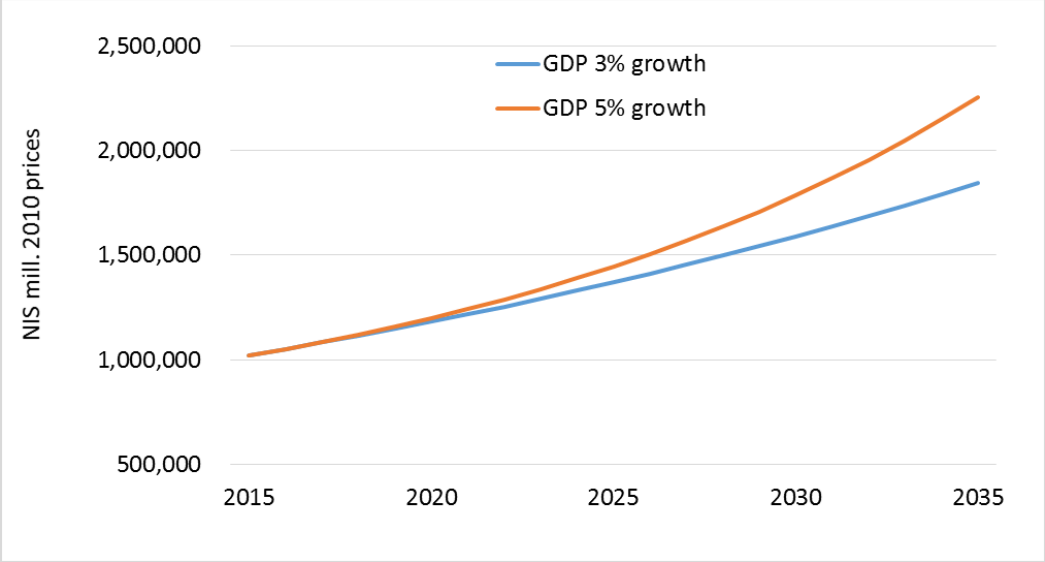
In Samuel Coleridge's famous poem, the Rime of the Ancient Mariner, there are these words: "water, water everywhere, but not a drop to drink." Israel, and most Western countries, face a similar problem. Money, money, everywhere … but not a drop (for capital formation).

Recently, one of the authors, Maital, spoke to a senior Israeli project engineer. Maital told him about the Four Pillars transformational pension project and claimed that there is at present a serious lack of capital formation in Israel. The engineer said, the opposite! Israel is drowning in capital. Maital explained that "we are both right". Israel indeed is drowning in capital – financial capital, or simply, money: much of it owing to the massive expansion in the money supply implemented by the Bank of Israel, supporting its zero-interest-rate policy. But it seriously lacks physical capital – the translation of liquid capital into productive high-yield physical assets. *The financial capital is largely invested in low-return financial assets, many of them somewhat speculative (including overseas), or simply held as cash (fully a third).* Money

money everywhere… except where it counts: namely large capital investments in infrastructure and the real economy.

Table 18 (Appendix) shows our projections for the 5% growth scenario, as the rate of growth of the net capital stock rises by 0.2 % yearly, for two decades, from 3% per annum in 2015 to 7 % in 2035. This accelerates GDP growth gradually, from 3% yearly to 5% yearly, a rise of 0.1 % yearly for 20 years.

Figure 9: GDP- Baseline (3% growth) vs. Projection (5% growth), 2015-2035



One reason for the two-decade period of adjustment, which appears rather slow, is that the additional domestic saving must be cautiously invested in the economy, to ensure that *the absorptive capacity on the supply side is able to rise in step with the rise in the demand for capital formation*. This is not a trivial problem and will require for instance, significant expansion in skilled construction workers, which will not occur overnight. (It will require concerted professional effort).

From 2036 to 2085, the remaining 50 years of our 70 year projection, the structure of GDP (proportions of GDP devoted to personal and public consumption, gross capital formation, exports and imports) remains stable.

The results shown in Table 13 (Appendix) are far from striking. After a gradual rise in the rate of growth of GDP from 3% to 5% per annum, in 2035 GDP is only 22.5 per cent larger than

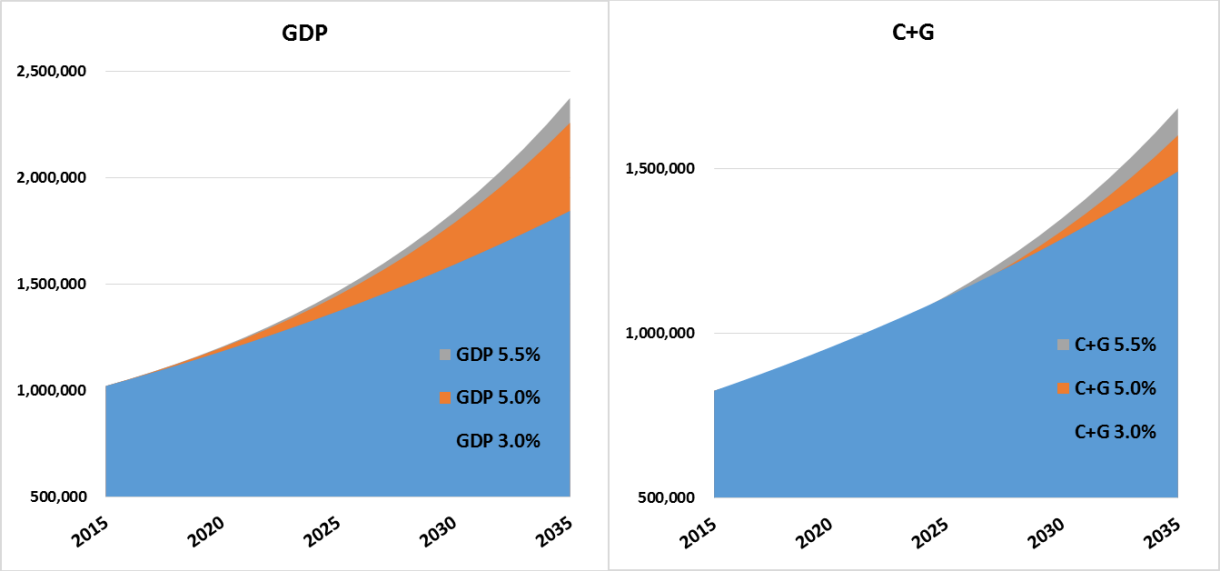
it would be if GDP remained at 3% per annum growth. This is a consequence of our cautious assumption that saving and capital formation rise gradually.

However, note that in absolute terms, the higher GDP growth will generate a 'growth dividend' of NIS 414 billion yearly (the difference between GDP in 2035 with 3% average annual growth, and average annual growth rising from 3% to 5%, averaging at 4%). This annual growth dividend represents resources that in 2035 would not otherwise exist, were it not for our radical proposal. In two decades, this growth dividend could well be employed to reduce elderly poverty, or at least part of it, and upgrade health care as the resources are sufficiently large to permit a full or near-full solution.

Table 14 (Appendix) shows the results of our projections, in the event that total factor productivity (TFP) rises, owing to the higher rate of saving and capital formation, from 0.6 per cent annually to 1.5 per cent annually, generating a steady-stage GDP annual growth rate of 5.5 per cent in 2035.

Tables 15, 16 and 17 (Appendix) provide estimates of projected GDP components for the 3 scenarios. With regard to the "pain vs. gain" issue -- under the scenario in which GDP annual growth rises gradually from 3% to 5% per annum, the period of "pain" (i.e. personal consumption is somewhat lower (0.5 percent) than under the 3% baseline scenario, with low saving and proportionately high consumption) is only 8 years! In other words, as GDP growth accelerates, faster GDP growth compensates for the lower proportion of GDP consumed (and the higher proportion saved). For the 5.5% growth scenario, the period of relative 'pain' is only 7 years, i.e. personal consumption in 2022 with higher saving already matches that in 2022 with the model of lower saving and growth.

Figure 10: GDP and C+G (personal + public consumption), under 3 scenarios, 2015-2035



For public and private consumption taken together, the 'breakeven' period (years until higher growth compensates for lost consumption) is 12 years (2027), for 5% growth; and 10 years for 5.5% growth. Suppose that most of the reduced public consumption comes at the expense of defense consumption. Within about a decade, if it is so desired, the higher growth accruing to higher saving and higher capital formation will permit defense budgets to attain the levels prevalent with low growth and no public consumption cuts (3% GDP growth). This emphasizes the strategic importance of strong economic growth and significant additional capital formation for security objectives as well as for civilian (e.g. pension) objectives.

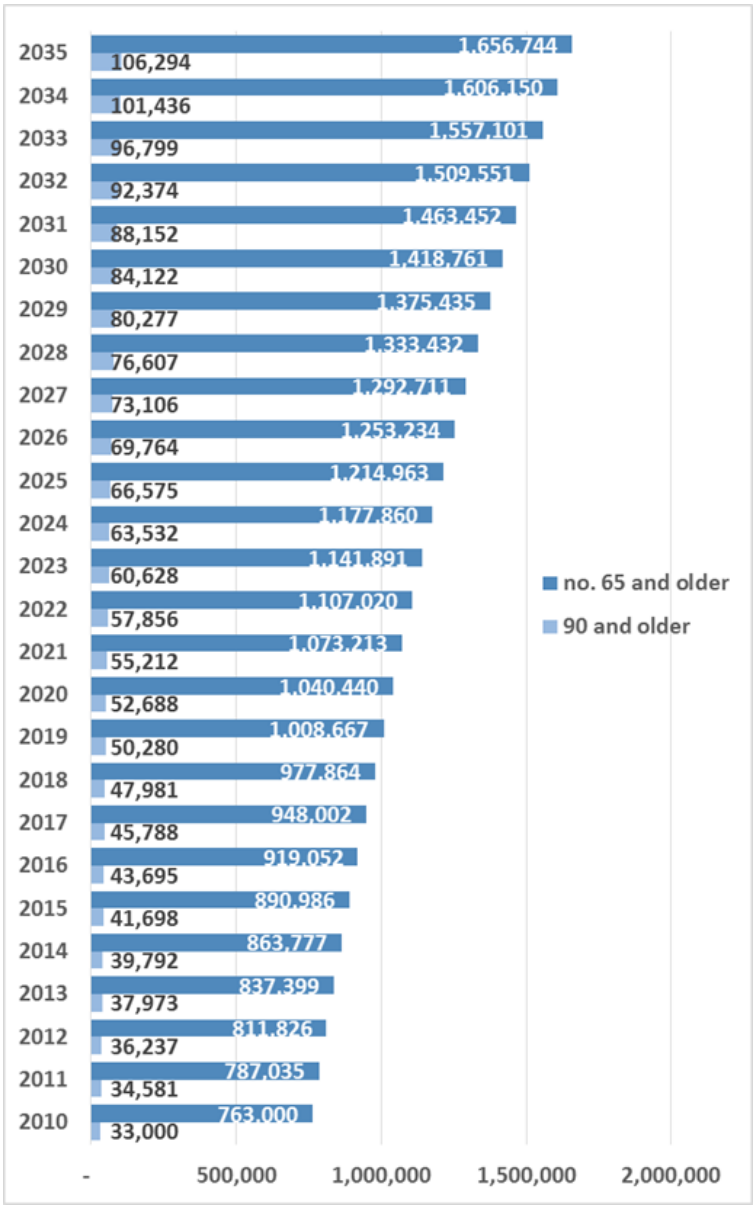
In terms of GDP per capita, in US Dollars, the 3% growth scenario will generate per capita GDP of about $42,000 in 2035, well below the level now prevalent in the United States. In contrast, 5% GDP growth will generate per capita GDP of $52,000, meaning that in two decades Israelis will attain the standard of living now prevalent in the United States. And at 5.5% GDP growth, GDP per capita will be $54,931, or above standards applicable today in the U.S. (See Table 19, Appendix). At present, according to the World Competitiveness Yearbook (IMD, Lausanne), Israel is about 30th (out of 60 globally competitive nations) in GDP per capita. Our proposal, when implemented, will move Israel significantly up in these ranks, and in Israel's overall competitiveness ranking (currently, 24th).

However, the main focus of this study is elderly poverty. Table 20 (Appendix) shows the Israel Central Bureau of Statistics' projection of the number of persons aged 65 and over, from 2010 to 2035. Their numbers will more than double, from 763,000 in 2010 to 1.7 million in 2035, (223 per cent growth) owing to longer life expectancy and the baby boom bulge.[29] This is a 3.15 per cent annual rate of increase, or nearly double the rate of growth of the overall population (1.6 per cent). And for those 90 years old and above, higher life expectancy will expand their numbers from 33,000 in 2010 to 106,000 in 2035, or more than triple, an increase of 4.8 per cent annually. In other words, the older a person is, and hence the less able to work, the faster is the rate of growth of their age groups, and the greater their need for adequate pension and health care assistance. *If Israeli society is to eliminate the terrible injustice and moral outrage of senior citizens, especially those of advanced age, living in extreme need and poverty, it will need significantly more resources than currently are available. The only way to provide such resources is to ensure that the economy grows fast enough to provide growth dividends that are adequate for the purpose.*

To repeat: *Our projections show that within no more than 20 years the Super Trust investments will generate additional resources (from increased productivity and increased capital formation) to better cope with the increased costs of the aging population. Continuing with the way the economy is performing at the moment is likely to mean a breakdown in the social fabric of our nation, owing to intergenerational conflict between those of working age who are asked by those in retirement ages to support them.*

[29] The Central Bureau of Statistics projects average life expectancy of 89.5 for women by 2035, and 85 for men. This estimate may be somewhat pessimistic, in view of dramatic developments in the treatment of age-specific illnesses such as cancer and diabetes.

Figure 11: Number of 65 and over and Number 90 and over, 2010-2035



Source: Israel Central Bureau of Statistics

When GDP grows at 5 per cent, or 5.5 per cent p. a. , the growth dividend will be able to cascade naturally throughout society in order to partially favor those in need, i.e. senior citizens, without reducing the standards of living of other groups. When GDP grows only at 3 per cent p.a., it is necessarily true that providing adequate standards of living for the elderly can come substantially at the expense of reduced standards for other groups – a recipe for certain social conflict and unrest.

With GDP growth of 5 per cent, well-managed Super Trust funds can achieve rates of return, adjusted for inflation, of at least 5 per cent p.a. net compounded. This implies that the

capital generated by savings doubles every 14 years. During the carob tree life span, 70 years, this implies five doublings. A shekel saved at birth becomes 2^5 = 32 shekels, in real terms, on retirement, in 70 years. This is the simple arithmetic underlying our proposal – harnessing the immense power of compound interest, right from birth, while generating sufficiently high returns and ensuring a long enough period of investment. S x R x T.

A Glimpse into the Future: Two Scenarios

So far, in this chapter, we have offered number-rich macroeconomic projections. Let us now zoom in and look at some of the human micro-economic details of things as they will be, if the current situation continues. By the year 2040, or earlier, only half a generation away, state provided pensions will be available only at age 75, as the age of retirement rises. Average life expectancy will be 90 years. Retired persons will have only 15 years of state pensions, and will need to live on private pension assets for a decade or more. State pensions will be low. Private pensions will be even lower, because low interest or investment rates will provide minimal rates of return. Economic inequality will continue to rise. There will be intergenerational strife, between the elderly who, lacking their own pension assets, must rely on 'pay as you go' contributions from the working young. National physical infrastructure will continue to be inadequate, and will decline further.

In 2015, the average monthly real wage is only NIS 9,865, as of June 2015. Labor productivity (net product per hour of work in the business sector) is only NIS 128. Both are growing very slowly. Less than two-thirds of working-age people actually participate in the labor force.[30] The added value of the work force is low due to inadequate skill levels and infrastructure deficiencies. Should this continue, there can be no viable sustainable solution to elderly poverty.

In place of this scenario, we offer a different one. Over a two-decade period, a national plan is implemented by government to raise domestic saving by one-half of one per cent a year, enabling a ten-percentage point increase in domestic net capital formation by 2035. At constant (2010) prices, and at 2014 GDP levels, 10 per cent of GDP is about NIS 100 billion

[30] Source: Bank of Israel statistics (2015) (www.bankofisrael.gov.il).

annually. This sum, when invested in Israel's real economy, will have the energy to spur economic growth, boost productivity, create jobs and build future pension assets. Through the power of compound interest, asset sums could double twice in each generation. Pension assets begin to accumulate at birth, not at age 40 or 45 when working persons begin to assess their retirement incomes and take belated action. Infrastructure (communication, housing, transportation, education) will be renewed massively. Israel's global competitiveness will rise. Small and medium size businesses, offered new injection of capital, will be revitalized and modernized. Higher domestic saving will restore the traditional relationship between the retiree generation and the working generation – retirees pass on to workers a stronger, more modern, more vibrant economy than the one they received. Today, Israel ranks very high globally in 'innovation' indicators, but fails miserably to reap the fruits of its innovation talent as measured by economic indicators.[31] We believe our proposal will offer much more than just the capital needed to remedy the current shortfalls.

The two most powerful words in the Bible are these: Choose life! [32] The choice is ours.

Conclusion:

"One kid, one kid…"

Passover Haggadah

The beloved song that ends the Passover Seder begins with a tiny baby goat, a kid, and ends with the merciful intervention of the Lord of the Universe. In the causal chain from the smallest to the biggest, we learn that one thing leads to another. Small things can lead to very big ones, step by step. Rebirth or destruction – the choice is ours to make!

This is the underlying logic of our radical systemic evolutionary proposal to resolve the problem of elderly poverty and inadequate pensions. Israeli society, and in general Western societies, do not save nearly enough, nor invest enough in the real economy for real growth, real jobs and value-added products.

We are all of us 'grasshoppers'. We collectively ignore the fact that a cold hard winter is just ahead, for all of us, and that it will last for many years: as medical science enables us to live longer and longer life spans. Governments dis-save, as they run large deficits. Business dis-save, or fail to save, when they fail to invest in capital stock and instead distribute bountiful cash dividends to their shareholders (and vast bonuses to top management), rather than

[31] See "Israel's Wheels of Life", S. Neaman Institute, Annual Report, May 2015.
[32] Deuteronomy 30(19)

reinvest profits and retain their earnings. And consumers, too, dis-save, when they consume beyond their means and accumulate costly debt.

There can be no meaningful solution to the pension crisis, until Israeli society finds a way to transform itself from low-saving 'grasshoppers', ignoring the impending winter, to high-saving 'ants', right from birth. Our proposal seeks to do this by mandating 'Grants-at- Birth', creating capital funds carefully nurtured through investment in real businesses. As individuals see their capital grow, in their personal pension accounts, they will find further encouragement to increase their saving and reduce wasteful consumption, incentivized by visible added-value returns.

Our version of "one kid, one kid" is this: Higher saving generates higher capital formation, generates higher GDP growth, generates growth dividends, generate more resources for social justice (including pensions and the elderly) without generating fierce social friction and dissension. This is not science fiction. There are societies that have achieved this.

It is often said that socialism is the equal distribution of poverty, and capitalism is the unequal distribution of wealth. We propose a third way – a more equal formation and distribution of wealth. This is done by harnessing the magic of creativity and the power of free markets, enterprise, entrepreneurship, innovation and individual energy, while building a system that enables everyone, rich and poor, to enjoy adequate returns on their Grant-at-Birth pension savings, and not just the Piketty "8 per cent per annum" for the rich.

We hope and trust that leaders of courage and vision will set Israel on the path to giving senior citizens long years of dignity at low cost and without undue burdens on the young. In one sense, it is already too late. Daily, Holocaust survivors pass away, having ended their lives in poverty and destitution, because Israeli society could not find a way to support them in a manner that they deserve. For them, any solution is too late. For the rest – there is still time. The time for action is now.

Chapter Four. Micro: It's All About People

"Sustainability is to leave future generations as many, or more, opportunities as we have had. Growing opportunity requires an expanding stock of capital".

Understanding and Measuring Social Capital, The World Bank, April 2001

Introduction

In business, violating a signed contract is a serious matter. The resulting litigation and destruction of mutual trust and respect have been known to destroy large organizations.

In society, violating an unsigned contract, a social contract, is far more serious. For many generations, perhaps for as long as humans settled on the land, formed social groups, towns, cities, and countries, there has been a central unwritten social contract between young and old: The older generation commits to leaving the younger generation, an economy that is stronger, more dynamic, offering more opportunities, than the one they themselves received from their ancestors.

The commitment is not always fulfilled. Those born after World War I inherited the Great Depression, a decade of hardship and unemployment. Those born in the mid-19th C. inherited a 23-year Depression, 1873-1896. But these episodes of 'contract violation' were unintentional, unplanned.

Today, perhaps for the first time, the older generation passes on to the young, a global economy that is crisis-ridden, debt-laden and with far less potential than the one they received. And the worst part is, it seems intentional.

The elderly, having failed to save sufficiently (the baby-boomers' appetite for spending and consumption is legendary) for their retirement, now expect a shrinking working population to support them. The potential for inter-generational conflict is enormous, as a result.

The economics of this quandary are simple. As the World Bank notes eloquently, "growing opportunity requires an expanding stock of capital". And an expanding stock of capital requires significant domestic saving. To confront the problem in a serious manner, a way must be found to boost domestic saving, channel the resources productively into capital formation, and create strong productivity growth, thriving businesses, equity, wealth, jobs, exports and hence opportunities arising from economic growth.

This is why, we stress, *the pension problem is not primarily about pensions*. It is about a society that has under-saved and failed to set aside resources it will need for those who no longer work productively. Saving is defined as not consuming. No sustainable solution to underlying economic problems that drive elderly poverty will be possible, without a major shift from consumption to investment. This will require what psychologists call "deferred gratification" – the figurative planting of a carob tree, whose fruit emerges decades hence. In most democratic societies, the existing political system seems unable to implement any policy that involves even minimal present sacrifice for future gain. (See Box 5: Bloodletting as a Solution).

Box 5: Bloodletting as a Solution

Bloodletting (or blood-letting) is the withdrawal of blood from a patient to cure or prevent illness and disease. Bloodletting was based on an ancient system of medicine in which blood and other bodily fluid were regarded as "humors" that had to remain in proper balance to maintain health. It is claimed to have been the most common medical practice performed by surgeons from antiquity until the late 19th century, a span of almost 2,000 years.[33] Today we understand that bloodletting, withdrawal of blood, is extremely harmful to ill persons. Often, doctors do the opposite and give blood transfusions. Yet in the realm of pension reform, we continue to practice it. This is what is currently being done to Greece.

According to journalist Mary Walsh, Pennsylvania faces a shortfall of $50 billion in its state pension fund. Governor Tom Wolf's proposed solution? Issuing $3 billion in 'pension obligation bonds'. This, despite the fact that excessive debt continues to wreak havoc with state finances in the U.S. Dealing with pension shortfalls by borrowing is like bleeding a sick patient, who needs more blood, rather than less.

According to Walsh, "since 1971 Illinois state lawmakers had ignored expert warnings and diverted pension money to other projects." The State Supreme Court rejected the state's attempt to overhaul its depleted pension system by slashing pensions. "Pension obligation bonds look appealing as a stopgap measure. *They are, in fact, illegal in Pennsylvania*, but proponents say that is not a problem because the statute can be amended", Walsh notes. She quotes a retired state worker, who did a one-person vigil at the Pennsylvania State Capitol, Harrisburg, with a sign reading: "Borrowed money is not a fix. It kicks the can down the road and steals from our children and grandchildren". It was understood long ago that the claim "we owe the debt to ourselves" is fallacious. Debt creates huge immoral transfers between current and future generations. It is the modern equivalent of bloodletting. [34]

It is time to stop kicking the can down the road. Israel's fiscal position with regard to pensions is not much better than that of the struggling American states.

[33] Source: Wikipedia
[34] Mary Williams Walsh, "Borrowing to save pensions often ends badly", International New York Times, Friday May 29, 2015, p. 17.

A study by the Ministry of Finance reveals this: Public debt today is two-thirds of Israel's GDP. This is a reasonably healthy level. The target for Bank of Israel and the Finance Ministry is 60 per cent. However, it will never be reached. Israel's public debt will begin to rise in 2030, reaching 88 per cent of GDP in 2059. The reason: Aging population, growing Arab and Haredi population many of whom do not join the labor force, and growing pension liabilities. [35] The gap between the growth of tax revenues, 0.4 per cent yearly, and the growth of spending obligations, 1.2 per cent a year, will boost public debt annually[36].

It's About People:

It is easy to get lost in a sea of numbers. Actuarial mathematics is complex, and many analyses of pension crunch massive amounts of numbers. We want to stress that this intergenerational conflict is about *people*, not about numbers. So we begin this chapter, which focuses on individuals and "before" and "after" scenarios, before our proposed radical solution and after it, by examining the prospects of four generations: a new-born baby, a 25-year-old, a 50-year-old and a 70-year-old pensioner. The authors themselves bracket those four groups, either in person or in their children and grandchildren.

For us, this report is very personal. Here is our friend Uri's story, not atypical of the retirement-age generation. It shows that any structural sustainable solution to the pension crisis must also involve transitional elements to aid those who, like Uri, find themselves today virtually without pension assets.

Uri's Story

I have been working since the age of 14, and soon will be 68. I continue to work, and have no pension. I have only one kidney, after an ailing kidney was removed. I served my country, in the Six Day War, Yom Kippur War, Litani Operation (1978), and First Lebanon War (1982).

35 Assaf Geva, Ministry of Finance, Israel, cited in Merav Arlosoroff, The Marker, June 1 2015.
36 Government payments of interest on the public debt have fallen sharply, from 10.1 per cent of GDP in 1980 to only 2.9 per cent in 2014. However, when interest rates rise in future, as they will, interest payments on the debt will rise sharply.

The fact that I have no pension is the result of my decision, 22 years ago; at the time I cashed in my pension funds, after I heard a rumor that the pension funds were going bankrupt, and I bought a Taxi License, so that I would have income for my retirement. It was a reasonable decision at the time. But that investment did not turn out well, because the government later issued massive numbers of taxi licenses and so my license today is worth little or nothing.

I have no special rights to Social Security, except for the standard sum of NIS 2,200, so I am forced to work, after pension retirement age. I am frankly tired, but I am forced to continue to work, since I do not have any source of pension income, except from my last place of work – where, if I retire, I will get NIS 564 shekels a month.

At our age, it would be preferable for those who wish, to stay at home and to spend time with our grandchildren and help educate them. But I don't have that option.

"Y", 33, a "Gen Y"

"Y" is a member of Generation Y, or 'millenials', those born between 1980 and 1995. Here is how Haifa University scholars, Prof. Oz Almog and Dr. Tamar Almog, characterize this generation: "Gen Y likes money, likes to live well, like its predecessors [but] they are less willing to sacrifice or work hard for it. The older generation enters a restaurant, sees a bottle of wine on the menu for 200 shekels ($57) and forgoes it. Gen Y buys the wine – and usually, we, Gen X, pay for it, and gladly. They reject 'time is money.' They have 'yuppie fatigue.' Social gaps bother them a lot. They don't want to be like us, the older generation. They are a generation of pleasure seekers." Is this a wild generalization? Even if it contains only a kernel of truth, it indicates the enormous social friction that waits us, when Gen Y is asked to sacrifice, to support a massive number of elderly people.[37]

Z, 50, Gen X

Generation X followed the baby boomers, born 1967 to 1980. Perhaps influenced by the baby boomers, Gen X was hard working, but fell victim to rising aspirations and used nearly all its resources to support a high and growing standard of living. Z recalls her parents' ferocious

[37] See www.neaman.org.il; also www.peopleil.org. Oz and Tamar Almog lead the Israeli Generation Y Project, described as follows: Generation Y is a stratum of secular young people born in the 80s and 90s of the 20th century. They grew up and were shaped in an era of commercial channels, the PC revolution, the Internet and the mobile phone, the development of cultural feminism, civil rights and individualism, the Iraqi missile attack, the Rabin assassination, the economy of abundance and entrepreneurship, suicide attacks and the war on Muslim terror, leadership crisis, leisure and entertainment revolution, the normalization of travelling abroad, and the development of the broad Ashkenazi-Mizrahi middle class (reducing ethnic disparities). The impact of this generation on the Israeli society is enormous and its cultural profile raises many questions. Their extensive research will soon be published.

saving habits, laments the lack of them in her own family, and wonders how she will provide for her children as her parents did for her and her siblings.

Z.M., 2 months old, Gen Z

One of the authors' grandsons, a newborn, brings indescribable delight, as grandchildren always do for grandparents. But also great concern. He will live, hopefully, well into the 22nd Century. What opportunities will he have? What challenges will he face? Have we, his grandparents, and his parents, truly handed Z.M. a better world than we ourselves inherited? The only way to do so, is the traditional way previous generations, for millennia, have done it – by setting aside resources to build capital and transfer it to their descendants. But we of Gen X in Israel have not done so. We believe our radical proposal will help achieve this. But there is not a moment to lose.

A Vest-pocket History of the Israeli Economy: 1948 to 2015

To adequately address the future of Israel and its people of all ages, a clear historical perspective is vital. In its 68 years, Israel has gone through three separate phases:[38]

- **1948-1972**: The 24 "fat" years - 10 per cent average annual GDP growth, absorption of massive numbers of immigrants, vast investment in infrastructure and industry, doubling Israel's GDP three times. From a poor country of 600,000, Israel evolved rapidly into a viable dynamic nation of 2.8 million in 1968. The economic gap between Israel and wealthy nations diminished rapidly.
- **1973-1990**: The 17 "lean" years - Israel's lost decades, with declining productivity growth, investment and economic growth. GDP growth fell from about 10 per cent annually to 3.5 per cent yearly, on average. Productivity growth fell from 5 per cent annually to 1.2 percent; this period included a period of disastrous hyperinflation, culminating in 1,000 per cent annual inflation in 1984, before it was brought to an end. From 1975, the gap between Israel's per capita GDP and that of the U.S. has remained constant.

[38] See Merav Arlosoroff, The Marker, June 2, 2015, p. 5. Her article is based on the Ministry of Finance research report by Assaf Geva and Lev Drucker, Economic Growth in Israel: From Developing Economy to Modern Economy. May 2015.

- **1991-present**: Relatively rapid economic growth was restored, but it was driven by growth in the population and labor force, in turn driven by massive immigration from the former Soviet Union. Productivity (output per hour) stagnated or grew slowly, and remains half that of the U.S. This is the main reason Israel's GDP per capita is roughly half that of the U.S.

The main cause of Israel's low productivity and low productivity growth? According to experts: low investment in capital formation among the lowest of all the developed nations. This is the fundamental problem our radical proposal addresses. The only way to deal with poverty, inequality, low productivity, low global competitiveness, and pension liabilities, is to restore the economic growth of 1948-1973. And the only way to achieve this, is by a sustained rise in domestic saving and capital formation as a percentage of GDP.

Case Studies: Italy, Germany, Greece, United States

Because other Western nations' populations have aged faster than Israel's, they have faced a pension crisis much earlier. Much can be learned from their experience, and failure to confront the problem systemically and structurally.

Italy: "Italy has a toxic mix of a generous government-funded pension system, an aging population and slow economic growth. The European Commission (EC) estimates that pension costs will consume 15.5 per cent of Italian Gross Domestic Product in 2020, the second-highest after Greece." [39] A 2011 reform raised the retirement age for most current workers; but Italy's constitutional court ruled part of this reform illegal and restored full pension payments for some high earners. This could bring Italy's deficit to 3.6 per cent of GDP, above what the EC requires.

Germany: This country is regarded as having Europe's strongest economy by far. Yet a study by the World Economy Institute in Hamburg notes that the so-called "Pillenknick" (double effect of the baby boom, followed by a countervailing baby bust) will cause this: "the crucial 20-65 age group will drop from 61 per cent of the population to 54 per cent by 2030,

[39] Neil Unmack, "A lurking enemy in Italy's pension overhaul", International New York Times, May 22, 2015, p. 17.

pushing the dependency ratio towards 1:1 and calling into question the solvency of the public pension program. 'We want people to face up to the enormity of the problem', Dr. Andres Wolf, one of the report's authors, said. 'It is a long-term danger to the ability of German companies to innovate and develop new products."[40]

Greece: Here is how Bloomberg News describes Greece's ongoing fiscal crisis, in terms of one real person named Maria Kounani. We recount Greece's story at length, 900 words, because it is a scenario that faces many other countries, including Israel, in the near future, if they fail to address the pension issue at once. Greek Prime Minister Alexis Tsipras cited John Donne's poem, warning "Ask not for whom the bell tolls. It tolls for thee." Greece has been placed, by the IMF and EC, in a disastrous downward spiral, where austerity causes recession, higher unemployment, reduced government revenues and higher deficits, leading to calls for even further austerity and further pension cuts. And ordinary working people are paying the price:

"To find out why Greece's pension system is tying negotiators up in knots, look no further than Maria Kounani, 59, a mother of two, single parent and early retiree. The maker of sewing patterns applied for a reduced pension last year, when the business where she'd worked for 20 years struggled with unpaid orders. To qualify for a full pension she needed to work another 10 years. She opted for early retirement, the only real choice she says she had, and one Greece's creditors say is undermining the pension system. *"I did it because no one is hiring me," Kounani said. "They're not even hiring my daughter who's 39."* As Greek pensions remain a key sticking point in talks with creditors, cases like Kounani show why there are no simple ways out. For creditors, the pension system is still too generous. For the Greek government, it's a system struggling to cope after five years of recession and dwindling contributions in a nation with the European Union's highest unemployment. In the first quarter, the rate was 26.6 percent overall and 30.6 percent for women. An aging population and an $9 billion hit to pension finances because of the largest sovereign debt restructuring in history in 2012 hasn't helped. "If you have a new contribution system and a new system of calculating pensions and a person loses her job, she falls out of the system," said Jens Bastian, an economist and a

[40] Source: Ambrose Evans-Pritchard, "Germany dominance over as demographic crunch worsens", Daily Telegraph, June 1 2015.

former member of the European Commission's Greek task force. "That's a macro issue that no number of pension system reforms can fix." The government of Alexis Tsipras came to power promising to roll back cuts to pensions. Creditors want Greece to slash even more. Italian Prime Minister Matteo Renzi said on June 4 that it was "unthinkable" that Italians should help pay for a Greek pension system that's more generous than their own. Creditors are asking Tsipras to implement reforms agreed to and deliver additional savings of 0.5 percent of gross domestic product this year and 1 percent next year in part by immediately clamping down on early retirees. They also want supplementary pension funds — lowered about 5 percent last year — to be financed by contributions, not the state budget. Greece's creditors are leaning on the prime minister to deliver a package of economic reforms and budget fixes to get the country's finances on track. Tsipras has until the end of the month (June 2015) to qualify for the release of a payment of as much as $7.7 billion from the country's rescue package before the agreement expires. In parliament on June 5, Tsipras called the proposals from creditors "unrealistic" and said no lawmaker could agree to demands such as removing a stipend from the lowest-paid pensioners. Tsipras has agreed to merge funds to cut costs and close loopholes that allow early retirement. He blamed five years of austerity for weakening the system, saying pension fund reserves fell by $27 billion through the 2012 debt swap and high unemployment. In the last five years, pensions fell as much as 48 percent, Tsipras said, while 45 percent of recipients get pensions that are below the poverty threshold. Kounani gets a provisional payment of $449 a month and will get a final pension disclosed to her next year. She hopes it will be a little more than what she gets now, so that there's a bit left over after paying her rent of $385 a month. "Of course this pension system is not sustainable," Finance Minister Yanis Varoufakis said in Berlin on June 8. "Any butcher can take a cleaver and start chopping things down. We need surgery. We need to find ways of eliminating early retirements, of merging pension funds, of reducing their operating costs, of moving from an unsustainable to a sustainable system, rationally and gradually." In 2012, Greece spent more relative to GDP on pensions than any other EU nation. The 17.5 percent of GDP it spent compared with the EU average of 13.2 percent, according to the most recent Eurostat figures. That's in part because the Greek economy has shrunk by a quarter since 2008. An aging population isn't helping — Eurostat predicts Greece will have one of the highest dependency ratios in the EU, with fewer than two working adults per dependent by 2060. The wave of reforms begun in 2010, in the months after Greece agreed the terms of its first bailout with

the European Commission, International Monetary Fund and European Central Bank: it scaled back payments, introduced means-testing, raised the statutory retirement age and calculated pensions over the entire working career. [41]

Running the Numbers:

While we stress that it is people not numbers that matter in social and economic policy, still, viable policies have to get the numbers right. In this section, we 'run the numbers'.

Some 171,440 babies are born yearly, in Israel, a birth rate of over 2 per cent. Our radical proposal begins with the Grant-at-Birth. (See Table 5)

Table 5: Pensions paid 300 months age 70 - 95

	Boys	Girls	Low-Income Boys	Low-Income Girls
Grant	30,000	40,000	50,000	60,000
Monthly Pension (NIS) 70 - 95	5,813	7,751	9,688	11,626
Annual Pension	69,756	93,008	116,261	139,512
Total Payment (25 years)	1,743,912	2,325,210	2,906,520	3,487,800

Table 6: The cost of this Grant-at-Birth will be as follows:

	Number	Total Cost (NIS billion)
Boys	88,195	2,645,850,000
Girls	83,245	3,329,800,000
	Total:	5,975,650,000
	GDP (2014 prices)	1,289,000,000,000
	Cost as % of GDP:	0.46%

This is the 0.5 per cent restructuring of GDP noted in Chapter Three. (We allow for some minimal costs in administering the Grant-at-Birth). After investment by the Super Trust funds at 5 per cent net annual return compounded, after tax, the pension assets available on retirement will be sufficient to provide a basic living-wage pension for all. This is simply due to the power of compound interest, operating for an extended period of 70 years (declining balances continue to be invested).

We of course must consider a variety of different family structures. This is shown in the Table below. These numbers may appear fanciful. But they are not. They are the direct result

[41] "Greek pension tangle shows no easy way out" Maria Petrakis Bloomberg News, June 12/2015.

of harnessing the power of compound interest, capital formation, higher productivity and higher growth, for a long period of time.

Table 7: Monthly Pension, by Various Family Units

	Monthly Per individual	Monthly Sharing (NIS)	Annual (NIS)
Two men	5,813 X 2	11,626	139,512
Man & Woman	5,813+7,751	13,564	162,768
Two Women	7,751X2	15,502	186,024
Man &'Low Income' Man	5,813 + 9,688	15,501	186,012
Man &'Low Income' Woman	5,813 + 11,626	17,439	209,268
Woman & Low Income Man	7,751+ 9,688	17,439	209,268
Woman&' Low Income' Woman	7,751 + 11,626	19,377	232,524
Two 'Low Income Men'	9,688 X 2	19,376	232,512
Two 'Low Income Women'	11,626 X 2	23,252	279,024

How do we propose to pay for the Grant-at-Birth?

This is shown in the Table below.

Table 8: The Cost of the Special Levy (about 0.5 per cent of annual GDP), proposed allocation of the projected cost

	NIS per day	NIS per month	total responsible of the overall cost
per household	**3.26**	**97.8**	**33%**
by employers	**5.89**	**108**	**67%**
The overall cost p.a. is about NIS 6 billion (Subject to the number of children born every year).			

Table 9: Comparing the Special Levy Cost to the Monthly Income Categories (2013)

	Households	Employers
Special Levy Cost NIS per month	97.8	108
Compared to Monthly Wage	**% of income per month**	
Minimum NIS 3,985	2.45%	2.71%
Median NIS 6,541	1.5 %	1.65%
Average NIS 9,212	1.06%	1.17%

Complexity as a Moral Crime

Governments everywhere, including Israel, could be said to have committed a great immoral act, by privatizing pension funds. In doing so, they are telling their citizens: Pensions? It is now *your* problem.

Here is what Nobel Laureate Robert Merton recently wrote about this issue:

"…Putting relatively complex investment decisions in the hands of individuals with little or no financial expertise is problematic. Research demonstrates that decision making is pervaded with behavioral biases. More dangerous yet is the shift in focus away from retirement income to retirement investment….the risk and return variables that now drive investment decisions are not being measured in units that correspond to savers' retirement goals and their likelihood of meeting them."[42]

Merton may well have reminded us that the proximate cause of the disastrous 2008 global financial crash was credit default swaps, a complex financial innovation that many pension funds and global banks invested in but few understood, including the leadership of Citigroup and AIG (and the Federal Reserve Bank – by their own admission: Alan Greenspan).

A person very close to one of the authors recently opted for retirement. She is faced with a baffling array of pension funds accrued by several different employers, and decisions about how and when and what to do with her pension assets. She is highly intelligent, with a doctorate. One can only imagine how those with less education face these decisions. And virtually all of them have, or will. This is utterly irresponsible on the part of government and the academic community.

We stress that our radical proposal focuses single-mindedly on the monthly and annual income that retired persons receive, on retirement, because it is this single number that most interests, and concerns, pensioners – will we be able to live in dignity? Is their question. Any pension solution must enable them all to answer, yes.

[42] Robert Merton, The crisis in retirement planning", Harvard Business Review, July August 2014.

Our Maxi-Life website proposal will (amongst many other important benefits) create a simple, one-stop-shop site at which pensioners, and working people, can get clear straightforward information on their pension assets and can get straight honest answers to their questions. It will gently help educate savers, describe the opportunities available to them, and cut through the sometimes-purposeful complexity used by financial services companies to disguise and hide risk and mislead their clients. (See Point 10, Chapter 5: Draft Law).

Before we discuss some of the objections raised by knowledgeable critics, we choose to provide the reaction of an ordinary working citizen – Moshe's barber. (See Box 6: Aviram – "It will eradicate poverty!")

Box 6: Aviram: "It will eradicate poverty!"

Yesterday my hair (what's left) was being cut. I knew from a previous visit that the barber was looking to buy an apartment. So I enquired politely about progress. The man was a bit depressed: the prospect of a 20% purchase tax on 'second' apartments proposed by new Finance Minister Moshe Kachlon was not a pleasant thought for him. As a small self-employed person without a pension plan, the purchase of an apartment for rental income is an attractive option for a better future for the family. The borrowed money will be repaid over 20 – 30 years mostly from rental income, leaving him with a valuable asset and regular income in retirement. Good thinking, I thought -- especially in the knowledge that substantial numbers of the self-employed population do not have a pension plan. Therefore, I progressed with explaining to him the Four Pillars Vision for the individual and the nation.

The reaction of the barber was amazing. It made me a happy man. I described to Aviram the concept of the Four Pillars. *"It will eradicate poverty",* was his immediate reaction. My heart skipped a beat. The cost of NIS 97.8 per month per household (20% poorest exempted) "is not an issue – it will be lost in the budget", was the reply. When I said that the total annual funding overall for the Super Trust is expected to be NIS 6.67 billion, he was duly impressed. Aviram was even more impressed when I told him that all the investments will be made in Israel in the real economy: to create economic value-added, jobs, careers and greater prosperity which will cascade naturally throughout society. At some point, Aviram said, "The pension will be about NIS 6,000 per month". I have no idea how he

guessed. He said it as statement, not as a question. I shared with him that the initial grant amount at birth will take into account the greater number of retirement years which females are expected to enjoy (on average) and the fact that 20% of the children (the poorest) will receive a larger Grant-at-Birth so that when their time to retire comes they will have a greater monthly pension. Aviram knew that the children of the poorest are more disadvantaged in income earnings terms (on average) because of the more difficult circumstances of their childhood.

Finally, Aviram almost knocked me off my barber's chair. "Is there a reason for government to reject the vision?" he asked, leaning on his elbows on his reception counter. "Why should they", I answered. "Didn't you just say that 'the vision will eradicate poverty'?" "Yes", he said, "but, come election time – is not poverty an important election factor?" I looked at him with growing admiration.

I would like to believe that the people will understand, like Aviram, the message of the Four Pillars regarding the renewal/reinvention of the national economy which is failing so many of them, including the defunct system for the allocation and accumulation of pension capital. I would like to believe that the people will send a clear message to the politicians that "poverty" is not a weapon to win elections with. The reduction and eventual elimination of the harsh pain of the lack of individual opportunity is what the people want. The people do not want 'handouts' from politicians. They want the individual skills and an economy where they can earn a 'living wage'. Politics is in the service of the people – not the people in the service of politicians.

- ***Moshe Gerstenhaber***

Some Objections:

Here are some of the objections we have heard, and discussed:

- "The numbers are simply not feasible; you cannot impose the Special Levy, even for a good cause". (NIS 98 / 108 per month, see table 8)

Consider Singapore. The wealthy city-state imposes compulsory saving on its citizens. Wage-earners pay 16 per cent of their salary into the Central Provident Fund, and employers pay 20 per cent of the gross monthly wage (according to economic theory, if workers are paid their marginal product, then both worker and employer contributions

come out of the workers' pockets). This means that more than a third of all wages are placed in compulsory savings escrow. This plan began a decade before Singapore's independence. Our numbers are very far indeed from Singapore's.[43] The proposed annual Special Levy is about two-thirds of one percent of all compensation paid to labor.

- "The idea is old. Zionist Camp Leader Yaakov Herzog proposed a version already, known as Baby Bonds."

Our Four-Pillar proposal is to Baby Bonds, what a Maserati is to a bicycle. Here is Moshe Gerstenhaber's account of the background:

Baby Bonds Anyone?

In 2001 the UK Labour Party, in their election manifesto, promised to establish The Child Trust Fund Scheme. The idea was to create a "long-term savings- and investment account for children". It was designed so that this account would ensure that "every child has savings at the age of 18". It was hoped that the program would help "children get into the habit of saving whilst teaching them the benefits of savings and helping them understand personal finance". The program was launched in the UK in January 2005: "with children born after 1 September 2002 eligible". Eligible children received an initial subscription from the government in the form of a voucher for at least £ 250. "In 2010/11 the Child Trust Fund policy was expected to cost around £ 520 million, less than 0.5 percent of the £84 billion UK education budget". In January 2011 "Creation of new funds and government payments into them were ended".

Investing £ 20 per month for eighteen years will add up to £ 4320 in total contributions. On the basis that the capital is able to earn 5% per annum net compounded the total accumulated over 18 years will be £ 7,000 (interest earned half yearly). Although £7,000 is a nice amount to have at age eighteen, it is unlikely to change the life prospects of the youth of the nation. At the same time the message is quite clear: Regular savings invested wisely for growth from birth and over the long term become significant. (Source: Wikipedia)

[43] The Central Provident Fund is a compulsory comprehensive savings plan for working Singaporeans and permanent residents primarily to fund their retirement, healthcare, and housing needs. It is administered by the Central Provident Fund Board, a statutory board under the Ministry of Manpower. The employer has to contribute 16% of the employee's monthly gross salary while the employee contributes 20% of their monthly gross salary. The CPF was started on 1 July 1955

I would like to add a personal note to this story.

In about the year 1998 I handed a paper describing my ideas for a long-term plan for a new pension allocation and accumulation paradigm to an acquaintance named Dr. Henry Drucker. Henry had a lovely, bubbly personality. I can't recall how we met but we enjoyed each other's company from the start. Henry had been part of Oxford University – including a period in charge of their fundraising program. His achievements were impressive, £340 million raised! When we met he was running his own consultancy for charitable fundraising. ("Henry Drucker, widely recognized as one of the founding fathers of modern fundraising", www. fundraising.co.uk)

The reason I 'gave' Henry my ideas had to do with the fact that I was at a loss how to promote the concept. I spoke to the actuary who helped our company with our own pension plan. His response was "The government will never undertake such a project" (or words to this effect). When I mentioned my frustration to Henry in conversation, his reply was astonishing. "Give it to me and I'll give it to Gordon Brown" (at the time Chancellor of the Exchequer – i.e. the UK Finance Minister and the power behind the Tony Blair throne). To tell the truth I wasn't exactly sure that I believed my friend Henry about his direct contact with Gordon Brown – but since it was too good an opportunity to miss I wanted to believe. Of course, I trusted Henry to be honest and sincere.

In 1999 I left my employment and lost contact with Henry after a while. In 2001 I was unaware that the Labour Party Election Manifesto included a promise to establish a Child Trust Fund Scheme (see above). I only learned about it when it was established in 2005. Of course, the first thought that came to my mind was whether Gordon Brown had received my paper from Dr. Henry Drucker? Unfortunately, Henry was no longer with us. He had passed away, a relatively young man, in the year 2002. Curious to verify whether Henry was in fact known to Gordon Brown, I checked out what he had told me at the time: that they had published a book together. The information was spot on: In 1980 Dr. Henry Drucker and Gordon Brown jointly

published a book titled "The Politics of Nationalism and Devolution".[44] It seems dear Henry was as good as his word. May he rest in peace.

The moral of the story? Miracles do happen when you persevere. Unfortunately, the UK government took only part of my vision to heart. My vision, then as now, is to use the power of compounded growth over the 'real' long term. Eighteen years is too short a period. Also, small monthly contributions do not have the same growth power as a capital sum which has a seventy years run to compound whilst building the real economy. I am hoping that the government of Israel will be willing to take the path to greater prosperity. [45]

--Moshe Gerstenhaber

- "In future, people will live much longer than 20 years after retirement – perhaps even forever".

Our plan will deliver the full basic pension to each individual, for as long as they live – even to 100 or 105. While life expectancy may indeed reach 100, sooner than we expect, this is an average. Some, alas, die sooner. Funds accumulating in their name, and unused (as the pension terminates on death), will be 'transferred' back to the Super Fund and reinvested, to support those whose lives are longer than the average. If life expectancy does rise, pension disbursements will be adjusted accordingly, without seriously impairing the dignity or living standards of pensioners. We have done sensitivity analysis on this point.

- "Many will want to tap their pension savings well before retirement at age 70; your proposal is too rigid and does not allow for that".

The Four Pillars Pension was designed to produce a mighty tree from a relatively small acorn planted at birth. In order for the acorn to grow and multiply it needs time and an environment friendly to investment in the real economy. The Four Pillars Pension was

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[44] H.M. Drucker & Gordon Brown. The Politics of Nationalism and Devolution. Prentice Hall: 1980, 144 pages.

[45] See התוכנית של הרצוג למלחמה בעוני: חיסכון אישי לכל ילד. Tomer Zeltser. Calcalist, Dec. 9, 2010. Herzog said: למרות התנגדות שנתקלתי בה במשרד האוצר, אני מתכוון להמשיך ולדחוף להפעלת תוכנית חיסכון אישי לכל ילד וילדה בישראל. כך נצליח להטמיע את תרבות החיסכון מגיל אפס" - כך אמר היום (ה') שר הרווחה והשירותים החברתיים יצחק (בוז'י) הרצוג בוועידה המרכזית לחיסכון פנסיוני של "כלכליסט" ו"מגדל". It is likely Herzog got the idea from the Labor Party proposal. Even though he was Minister of Welfare at the time, Herzog was unable to implement his idea.

structured to boost the total resources available to the individual from age seventy onwards. From age fifty-six to age seventy the total capital accumulating doubles. This means that in the last fourteen years the capital growth will equal the growth of the first fifty-six years i.e. exactly four times the return (four hundred percent). The Four Pillars Pension will commence distributing monthly income to its beneficiaries only once they have reached their seventieth birthday. We anticipate that following behavioral changes induced by our plan (i.e. higher saving behavior), individuals will initiate their own, second pension plan, lifelong as well, for other needs. These funds can be tapped at, say, age 40, if vitally necessary.

- "The Carob Tree, your own metaphor of choice, yields fruit only after 70 years. What happens during the transition years, 2015 through, say, 2045, while the Super Trust funds are still growing and accumulating? How will we meet the immediate needs of the growing numbers of pensioners in the coming decade or two?"

It is true that the first person to receive Super Trust pension funds will live 70 years from launch. Most people now alive will have passed away by then. Yet they will gain immediate benefits. The higher domestic saving and capital formation resulting from our plan will spur economic growth and productivity, driving GDP per capita up for all and enabling rising living standards. With 5 per cent growth, in place of 3 per cent growth, in just a few years, private and public consumption will be higher under the Four Pillar program (despite higher saving) than under the 3 per cent growth scenario. So indirectly, all will benefit. The economy will undergo a continuous process of invigoration: Twenty years later the economy will be 'light years' ahead of the 'slow lane' economy of the moment.

- "What happens when one or more of the Super Trust funds needs to liquidate (sell) its assets, to pay for its pension obligations?"

Every three years, a new Super Trust fund is launched. These new funds (and all twenty plus others) will be keen to purchase the assets of the older funds, when the latter need liquidity.

Conclusion: The Future of Israel and the World

"Well, in our country, said Alice, still panting a little, you'd generally get to somewhere else – if you ran very fast for a long time as we've been doing."

"A slow sort of country!" said the Red Queen. "Now, here, you see, it takes all the running you can do, to keep in the same place. If you want to get somewhere else, you must run at least twice as fast as that!"

"I'd rather not try, please!" said Alice. "I'm quite content to stay here...."

Before zooming in on Israel, we choose to zoom in on the U.S. economy, and then zoom out on the future prospects of the world economy.

Any long-term, or very long-term, policy proposal must make assumptions, or projections, regarding the future. The key variable for our projections (in Chapter Three) is productivity.

Former Vice-Chair of the U.S. Federal Reserve Board of Governors, Prof. Alan Blinder, makes the point that while enormous attention is focused on the job market (e.g. monthly job creation), "another variable [productivity] is being almost completely ignored".[46] The subtitle of his article: "Since 2010 U.S. productivity has grown at a miserable rate. And no one, not even the Fed, seems to understand why." This sentence applies to Israel with equal force.

Blinder notes that over the past 143 years, the U.S. averaged about 2.3 per cent annual labor productivity gains. This raised living standards more than 25-fold. In the quarter century following WWII, labor productivity growth rose by 2.8 per cent yearly. Then, "surprisingly and still somewhat mysteriously, productivity growth plummeted in 1973-95. The 1.4 per cent annual average gain was the worst in recent history. ...We were surprised again when in 1995-2010, productivity growth leapt back up. ..But so far in this decade productivity has grown only at half its rate during the productivity slowdown period.... While the Fed is forecasting something near 2 per cent productivity growth over the next several years, it really has little basis for choosing that number."

[46] Alan S. Blinder. "The unsettling mystery of productivity", Wall Street Journal, Nov. 24, 2014.

Blinder notes that if productivity grows at its historical average, U.S. potential GDP (GDP at full employment) will grow by 2.5 per cent yearly. If productivity "crawls along at 0.7 per cent a year instead, potential GDP will grow less than 1 percent a year." The difference is enormous. It is crucial for the pension crisis issue, because the pension problem has no solution at 1 per cent GDP growth, and difficult solutions at even 2.5 per cent GDP growth.

Now, zoom out to the global economy. McKinsey Global Research Institute recently reported that in the face of aging populations and slower labor supply growth, "the rate of GDP growth is set to be 40 per cent lower than its rate over the past 50 years." The numbers are daunting.

Global employment growth of 1.7 per cent between 1964 and 2014 will drop to just 0.3 per cent a year. Even if productivity were to grow at the (rapid) 1.8 per cent annual rate of the past 50 years, the rate of GDP growth would decline by 40 per cent over the next 50 years – "slower than the past five years of recovery from recession".[47] The falling prime-working age population alone implies a nearly 20 percent fall in per capita income growth over the next five decades.

This implies that Israel, an exporting nation, where some 40 percent of its GDP growth is driven by exports and foreign demand, will face increasingly stagnant world markets.

McKinsey, however, does have an upbeat recommendation. Three-quarters of slower labor growth can be offset, globally, if nations simply catch up to best practice in five key sectors -- agriculture, food processing, automotive, retail and health care. Israel has some comparative advantage in three of those five -- agriculture, food processing and health care.

The Table below lists 10 key enablers of growth that can boost productivity.

[47] James Manyika et al. "Global growth: Can productivity save the day in an aging world?" McKinsey Global Institute, January 2015.

Table 10: Ten Key Enablers of Productivity, Growth McKinsey Global Research Institute

Require substantial capital investment
1. Invest in physical and digital infrastructure
2. Foster R&D demand and investment
3. Boost labor-force participation among women, young people and older people
4. Improve education and skill matching and labor-market flexibility
Require significant regulatory reforms
5. Remove barriers to competition in service sectors
6. Focus on public and regulated sector efficiency
7. Exploit data to identify transformational improvement opportunities
8. Open economies to cross-border economic flows
9. Harness the power of new actors through digital platforms and open data
10. Craft regulatory environment, incentivizing productivity and innovation

Now, zoom in to Israel.

Israel's higher-than-average birth rate serves to conceal fundamental underlying problems. Europe's rapidly-aging populations require immediate action for pension reform. For Israel, the problem SEEMS less urgent. But it is not.

A Finance Ministry report, authored by Assaf Geva, [48] draws attention to the fact that the fast growing segments of Israel's population, and the major cause of its relatively youthful age structure, are in the Arab and Haredi (ultra-religious) minorities, where labor force participation is relatively low. The Finance Ministry projects that if the retirement age remains as it is at present, 67, for men and women, and if these minority groups are not better integrated into the labor force, Israel's public debt as a percentage of GDP will soar to an unsustainable 170 per cent by 2059 (taking only forty-four years to scale to these heights). That figure, incidentally, is slightly below that of Greece (175 per cent, at present) – and as we discussed above, Greece is in a state of economic and social collapse. Even if the two minority groups do achieve much higher labor force participation, the retirement age of 69 implies public debt/GDP of 135 per cent, by 2059, which is dangerously high, as governments borrow to pay pension obligations. And the optimistic scenario, with full integration of minorities into the

[48] Cited in Merav Arlosoroff, "Finance Ministry warns: Integrate Haredim and Arabs – or bankruptcy for Israel in future decades". The Marker, June 1, 2015, p. 1.

labor force, still brings the public debt to a rather high but manageable 88 per cent of GDP by 2059.

There is no time to lose. Israel must undertake a crash program to spur productivity growth. This will take enormous resources. Our radical proposal will, we believe, provide those resources. There is a long and promising 'shopping list' of capital projects awaiting funding; implementing many or most of them can transform Israel's economy and accelerate its growth. (See table 11).

Table 11: Investment Projects Awaiting Funding

Infrastructure	Industry
Smart electricity grid	SME investments
Solar power generation plants	Natural-gas-based industry
Intercity rail (electric)	Advanced manufacturing systems
National road grid	Cyber investments
New towns	Biotech investments
Sewage reclamation	Nano investments
Water desalination	Agricultural innovations
School complexes	Productivity innovations
Affordable housing	
University R&D	
New ports	
Fast broadband	
Negev airport	

But capital formation alone will be insufficient. Red tape and bureaucracy that strangle business initiative must, and easily can, be eliminated. [49] Israel ranks only 40th in the World Bank's global "Ease of Doing Business". There is no justification for such poor performance.

The flight of pension capital abroad must end. It can only end when investment opportunities at home, in Israel, outshine those in the U.S. Europe and Asia. And this can happen, if Israel benchmarks global best practice and embraces it quickly and pervasively.[50]

[49] See S. Maital, "Crossing Death Valley", Jerusalem Report, July 5 2015.
[50] In 2006, Georgia, a Soviet-style socialist red-tape factory, ranked 98th in the world in ease of doing business. The President of Georgia understood that this could not go on. He sent experts to benchmark

Part of achieving 5 per cent annual growth depends on foreign markets. But much depends on what Israel does internally, in its labor force skills, education, businesses and public sector practices. With 5 per cent GDP growth, enabled by our Four Pillars, the pension crisis can be managed without intergenerational friction. With 3 per cent growth, there is no solution, other than painful and unfair resource transfers from young to old, or relegation of pensioners to abject poverty.

It is the nature of long-term, or very long-term, policies, that they project desired results decades into the future, but demand immediate action, today, tomorrow, in order to achieve them.

Carob trees bear fruit in 70 years – but according to the Talmud, only if they are planted today. But – perhaps not.

Prior to our presentation of our draft report at the S. Neaman Institute, on June 17, we began by planting a small carob tree in the entryway garden. Because of modern grafting technology, our little carob tree will bear fruit next year, in 2016.

If implemented well, (in full), we trust and believe our Four Pillar plan will also bear much fruit immediately, not just in 70 years. We also believe that facing the challenge of a faltering economy and elderly poverty, Alice in Wonderland's contentment with remaining where she is, as she is, is not an option. We must live in reality, not Wonderland. Faced with sweeping changes in Israel and the world, we have no choice but to opt for the advice of the Red Queen -- to run very much faster, even to maintain what exists at present, and to run even faster yet, if we are to progress to a lasting and satisfying solution.

Singapore (ranked #1) and copied what they do. Result? Georgia rose to 8th in the world in 2012 and attracted much foreign capital as a result. Israel is no less clever than Estonia or Georgia. It is simply a matter of will.

Chapter five: DRAFT LAW PROPOSITION

1. **The Super Trusts:**
   - Every 3 years a new Super Trust will be established. Each Super Trust will receive each month the Government Grant-At-Birth for each child born in the respective country during the respective 3 years.
   - Each Super Trust will be contained in a uniform, pre-designed, specially constituted not-for-profit vehicle.
   - Each child will have his/her own individual pension account with the respective Super Trust. The Government Grant-At-Birth money will be placed there. This amount will represent the specific percentage of the total assets of the respective Super Trust which this child will have a pension claim on – after 70 years.
   - All the funds received for the children's pension account will be transferred to the investment account of the respective Super Trust. All investments will be done for the account of the Super Trust, not apportioning a percentage for each child. This means that the overall investment risk is averaged and shared equally by all children. Considering that in Israel there will be over half a million of 'children / pensioners' for each Super Trust (3 years 'crop'), the averaging of risk offers significant value to each child and the State.
   - The Super Trusts will acquire investee companies. The vision is for 100% ownership, no gearing and no stock market holdings. This also means no conflict of interest with outside shareholders and reduced overall risk (no debt).
   - The Super Trusts will charge 0.1% per annum of the annual income. Earned by all its investments. The team at HQ will be very small but highly professional. The 0.1% as above will cover all operating costs of the HQ team including bonuses (real performance related – and nothing like what is going on today in financial services and elsewhere).
   - The Super Trusts brief is to:
     - Invest in the country itself (the funds of the nation)
     - Invest in the real economy, not in financial instruments
     - Invest for profit and value alike

- Favour long-term investments
- Favour infrastructure investments
- Create jobs where appropriate
- Work with SMEs where appropriate
- Generate growth of at least 5% net p.a. compounded (on average) in order to eventually pay a living wage pension to all the children in whose name the Government Grant-At-Birth was provided
- Be a source of stability and sustainable economic prosperity for the nation: helping prosperity cascade down through society and the generations
- Through its successful investments in the economy (the multiplier effect) to reduce unemployment, increase productivity, reduce the need for transfer payments (welfare, social support, pension support) by government and therefore likely reduce the overall tax burden on the population. (Eventually the success may lead to smaller but smarter and more effective government).

- Paying pensions:
  - Starting to pay a pension (in proportion to the initial Government Grant-At-Birth) to each surviving individual / pensioner for life.
  - Surviving family (e.g. children, spouse) will not be entitled to claim survivors' pension income from this pension.
  - When medical science will be able to predict accurately the life expectancy of each specific individual the Super Trust could start paying a pension earlier – for a limited number of cases (but not before age 60). For each case of shorter life expectancy there will be a separate calculation made to ensure that the accumulation for the cohort is not being damaged (exact details need to be worked out).
  - When future pensioners die suddenly or after a short illness their accumulated funds would stay invested. The pension that they would have received age 70 onwards would be used to cover the pension cost of those expected to live to age 100 plus. Any additional funds would be paid to the State as beneficiary. These surplus funds could cover eventually some of the cost of the Government Grant-At-Birth. The same will apply to the pension of an individual who has

passed away before age 90 (i.e. for the balance of the years the respective pension may be paid to the State).

2. The Government Grant-at-Birth:

- Each child born in the country will be a beneficiary (as long as the parents are legally in the country).
- Each child will have a pension account in its own name with the respective Super Trust (the one receiving funds at the time).
- The children will not be entitled to receive any value (whatsoever) before age 70. At such time surviving adults will receive a pension for life based on the original Government Grant-At-Birth sum and the total growth of the funds over the years. (No government or other third party guarantee)
- The children / adults will not be able to borrow from the funds or borrow against the funds (offering them or the pension as security). This borrowing will be against the law (for lenders as well).
- As stated above, subject to medical science's ability to determine with accuracy individual life expectancy, individuals may be able to start receiving a pension at an earlier age – as long as the overall accumulation process is not affected.
- The suggested Government Grant-At-Birth is as follows:
    - Boys NIS 30,000
    - Girls NIS 40,000
    - Boys from poor families (20% poorest) NIS 50,000
    - Girls from poor families (20% poorest) NIS 60,000
- The Grant-At-Birth is a one-time grant: per child during their month of birth paid over by the State to the pension account of the child with the respective Super Trust.
- Once the funds are paid over to the Super Trust the State no longer may have any claim on them. These funds are hypothecated to the eventual pension to be paid to the specific individual and no one else – not the State either (except after their early demise – if affordable).

3. The Special Levy:

- The Government Grant-At-Birth funds will be paid by the State into the personal pension account of each individual (baby) with the respective Super Trust.
- The State could decide to allocate these amounts from general taxation.
- The State could decide to proclaim a new tax which would be hypothecated to fund the Government Grant-At-Birth.
- It is suggested that a Special Levy (tax) be legislated specifically to fund the Government Grant-At-Birth costs. The idea is to make all the population aware of the long-term very positive and productive process which will be launched by the Super Trusts vision.
- It is suggested that the Special Levy will be paid by all households – with the poorest 20% exempted.
- It is suggested that 33% of the Special Levy cost will be paid by the respective households and 67% of the Special Levy paid by all employers (including central and local government employers).
- It is suggested that employers will pay the cost of the Special Levy as follows: The capital amount representing the 67% of the Special Levy will be divided equally by all people in employment. Each employer will pay this amount per each employee on his or her payroll. The 33% remaining will be divided equally by the 80% participating households and each household will pay the same amount.
- The estimated Special Levy cost in Israel is as follows:
    - Per employee NIS 1,259 p.a. or NIS 5.89 per working day (220 working days per annum)
    - Per household NIS 1,189 p.a. or NIS 3.26 per day (365 days per annum) or NIS 99 per month
    - The total annual cost is estimated at NIS 6.665 billion or 0.483% of GDP

4. Pension account for each child born in the country:

- Each child whose parents are legally in the country during its birth will have the pension account established with the respective Super Trust in its own name. (This applies also to non-citizens).

- The rationale is that if the child will still be living in the country after 70 years, it means their situation has been regularised and that it would be useful for them and for the nation that they should have a basic pension irrespective of any other consideration at the time of their birth.
- In any case, for 70 long years these moneys would be invested and re-invested to build up the real economy of the nation. No dividends or other direct benefits will be collected by the individual in the interim years (i.e. before 70 years have elapsed).
- Should the child die, the money will be retained by the Super Trust and after 70 years the State could be the beneficiary (one option) of the pension income for 20 years (i.e. 70 to 90 years hence). The same will apply should the child leave the country. There is the possibility that the child will return and be integrated into the country and therefore it will be beneficial that it will be entitled to a pension.
- The emphasis has to be that the child is in the country legally. (What about children of foreign diplomats – for example)

5. The Investee Companies:

- The Super Trust will place its investments via independent investee companies (managed by their team).
- The Super Trust will own the companies 100% (outside shareholders would not have the same longterm and the responsible attitude of the Super Trust. (We don't want conflict of interest issues).
- Many of the investee companies' management will be incentivised by financial rewards (but not equity). Bonuses will be paid over the medium term and will always reflect responsible success (not 'flash in the pan' gimmicks). Managers will be paid well but not vast bonuses or flashy cars, large expense accounts, etc. Investee companies will have to compete for talent – but will also grow in-house talent i.e. people interested in the longterm and not in 'butterflying' from company to company – leaving a trail of havoc and destruction behind them. (There are too many such examples in today's environment).
- Investee companies will produce products the public needs and services the public wants. These products and services will have to be good in order to compete in the marketplace for the customers' spending power.

- Since each Super Trust will be owned by a few hundred thousand children/ adults (half a million) it could be possible for the Super Trusts to develop a 'loyalty' system for their future pensioners, encouraging them to buy from those companies owned by their 'own' Super Trust (a win-win situation).
- Investee companies will have to deliver at least 5% net per annum asset growth or income growth or both. This profit expectation can be averaged over a number of years to allow for investment and absorption of acquisitions.
- All surplus funds will be returned to the Super Trust for further investment. Investee companies will not hoard cash because they will be able to obtain further funding from the Super Trust whenever it is required for investment (business development needs).

6. Five percent net per annum compounded growth:

- Although interest rates are very low at the present time, it is expected that earning 5% net p.a. (net of inflation and taxes as well) compounded over the 70-year period is a reasonable endeavour.
- A business concept which is geared for the long-term, does not pay dividends and has ample cash resources, can invest for long-term growth, as well as, take advantage of acquisition opportunities – especially when the 'bust' part of the economic cycle is in full swing. Buying assets when the market is fearful and disposing of assets when the market is riding high, will allow the Super Trusts to build and adjust their portfolio to the benefit of the economy and their future pensioners (balancing assets, yields, risks and timing).
- Inflationary pressures on a business which has a portfolio of good products and/or services will not necessarily mean reduced net profitability (in terms of real value). The business will be able to raise its prices and thereby maintain its profitability (also in terms of real value to clients).
- Investee companies will not necessarily aim to obtain the highest prices in the market over time ('what the market will bear'), especially if the product / service is important for the weaker segments of the population (Cottage Cheese, for example). The long-term target is the 5% p.a. net compounded (as above).

7. Supervising the Super Trusts:

- It is recommended that a new Think Tank research center be created. This research center will be dedicated to the study of:
    - Pension funding throughout the world
    - Holding company structures
    - Economic concentration
    - Monopolies
    - Management systems for productive and responsible performance
    - Supervision and control of holding companies
    - Others
    - The idea would be to search throughout the world for best practice ideas / systems / performance so that the supervision of the Super Trusts and their investee companies would be done to the maximum practical effect possible.
- A structure has to be developed (independent of the research center) which would be constituted to supervise the 23 – 30 Super Trusts that might be active at any point in time (depending on the way Super Trusts will be terminating their life).
    - A system for reporting by the Super Trusts has to be developed (containing the consolidated reporting of each investee company).
    - A system for the selection, training, monitoring and rewarding each member of the supervisory team.
    - Much thought has to be invested in the development of the holistic Super Trust system to cover all possible infractions in the years to come.
    - Part of the supervision process would be to identify problems quickly, learn from the issue and devise ways to block the opportunity for mischief and take action to repair the damage.
    - The Super Trust system will be built around personal responsibility. Any infraction by an individual will have to carry personal damage and loss as well, not only corporate responsibility (unlike much of what is taking place today i.e. no personal responsibility by top managers and financial sector renegades).

8. Inflation:

- Protecting the value of the assets and income from all risks including the risk of inflation. 70 years to retirement is a very long time. There is a significant risk that during these long years inflationary pressures will take place. (We also have 20 – 30 retirement years to take care of!)
- The Super Trusts will have built experience how to deal with the cost of inflation. As stated earlier, a good product and a good service will be able to adjust their price levels to account for the cost of inflation – definitely over time.

9. Taxation:

- The investee companies will be subject to VAT in the normal way.
- The investee companies will be able to shelter their income from corporate taxation in the normal way (also as far as holding companies are concerned).
- How to structure the funding of the investee companies by the Super Trusts has to be decided. This will take into account the fact that all the investments are 'pension' dedicated investments. There are existing regulations regarding the taxation of such activity.
- The Super Trusts themselves must obtain a 'tax-free' status to the extent that 'temporary cash balances' will not be taxed nor cash transfers from and to the investee companies – which are earmarked for further investment. (There will be no dividends – only pensions after 70 years).
- The State will receive a hefty income tax boost once the Super Trust start to pay pensions. Future pensioners will be subject to whatever tax laws will be applicable on pension income at such time.

10. MaxiLife (ML):

- ML is a proposed software program.
- The concept of ML was designed with the vision (understanding) that each individual is capable of 'feeding' him/herself given the skills that are necessary to be an active and productive member of the working community (i.e. earn a 'living wage').

- ML is a complementary system to the Super Trust system. The Super Trust system will invest in the acquisition and development of assets and the ML software system will make it easier for each individual to integrate productively into the very competitive economy of the 21st century (acquiring up to date working skills).
- ML will make it easier for all activities in the economy (whether business or personally oriented) to be carried out successfully. ML will help the Super Trusts and the investee companies to recruit good people and over time build up their skilling to achieve a high level of productivity and value. Considering that the Super Trusts' investments are likely to become an important part of the national economy, the skill base of the population will be a very important factor in realising the Super Trusts' brief.
- It is proposed that each Super Trust will make funds available in order to develop the ML software. The amounts allocated will not be significant in relation to the initial funding of the Super Trusts (say max. NIS 10 million per Super Trust per annum).

11. Best practice:

- The Super Trusts will be obliged by their 'charter' to meet together on a regular basis to discuss management and investment issues. The Super Trusts will be competing with each other for the acquisition of assets and in the marketplace for the spending power of the citizen. Yet, they will be obliged to meet, share best practice and ensure that none of the competing Super Trusts ever gets into financial difficulties – which could jeopardise the 5% p.a. net compounded average return over the life time of the future pensioners.
- Each Super Trust will be responsible for a specific group of future pensioners and therefore the option that any Super Trust could get into trouble is simply not available (unimaginable).
- There has to be a strong governance mechanism for the replacement of the management of a Super Trust should a serious problem in matters of capital accumulation progress and how the business is controlled is discovered.
- Best practice means that all Super Trusts will be able to constantly upgrade their performance by sharing methods and systems.

- They may cooperate in the acquisition of assets and share ownership (with a clear understanding how conflicts are resolved between the parties).
- It is important to safeguard against the situation that one or more Super Trusts alone or in concert with others become a dominant monopoly exacting high prices for their products / services or creating unreasonable barriers to entry for others.
- It is hoped that since management will receive its bonuses on say a five-year time cycle that none of the current greedy practices which are so detrimental to the long-term prosperity of a business or the community will be employed.
- Best Practice means a never-ending quest for productivity improvements.
- 'More for same' means that by introducing some additional 'spice' one gets a much more effective product and/or production efficiencies.
- A mindset which is always curious, creative and full of energy is basically the main tool of the Best Practice process.
- 'Change for change' sake' is not the answer. The enterprise and the public need to learn to balance a desire to be the 'best' with the practicality of the process. At the same time, a philosophy of 'if its not broken – don't fix it' could turn out to be dangerous because it may offer the competition much needed time to gain distance and 'opportunity' to go much further and capture markets.

12. SMEs:

- Part of the brief for the Super Trusts would be to be conscious of the need to work with this sector (which is bound to grow in the years to come), so that it can stay strong and healthy.
- The SMEs' sector is a major factor in the national employment table i.e. in Israel some 50% of the working population is employed by small and medium size enterprises. Whilst large businesses 'downsize' regularly as a matter of principle, SMEs (subject to employment regulation) can add employees and therefore reduce unemployment and stimulate growth.
- The SME sector needs TLC in order to spurt forward. The 'new economy' with much shorter 'shelf life' for skills makes keeping a permanent job much more challenging. Many individuals are 'balancing' a number of jobs at the same time.
- The Investee Companies will be encouraged to consider the services of the SME sector and invite when appropriate smaller companies to bid for their business.

- The Super Trusts (together) will be encouraged to set up a high quality SME Institute with the purpose of focussing on the upgrading of skills and management knowledge and expertise to help the SMEs offer better value to their clients and subsequently be more solid and sustainable (cascading prosperity).

13. Infrastructure:

- The State of Israel is still the owner of a large number of vital businesses which are not managed to best international standards. In fact, most are badly mismanaged. These enterprises contribute to the high cost of living and the political influence of interest groups.
- Many of the enterprises owned by the Government are very large and vital for the economy.
- Many of the enterprises are in the infrastructure category and to re-engineer them for value to customers and decent return on capital will take a lot of time and money.
- It is unlikely that third parties would want to entangle themselves within the web of self-interest which dominates these entities. In any case, most would be investors (especially venture capital funds) would be interested only in a 'quick profit' without real regard to the interests of the nation and the citizenship (especially long term needs).
- The Super Trusts will constitute the ideal vehicle for finally addressing the issues of these major organisations. For example: The electricity company, the ports, the airports, the railway company, the water company, the road system, and more. The Super Trusts can take a longer-term view and take the time required to slowly change the culture dominating these enterprises: thereby creating less disruption to vital services.
- The Super Trusts could take even a 20 – 30-year view (so that the current generation of employees will have retired) as long as it can project overall for the 70-year the 5% per annum net compounded growth for the total investment.
- The Super Trusts will study each infrastructure investment opportunity in detail to understand what the challenges are and what amount of money (if at all) they would be willing to pay for the assets

- The extent of the beneficial impact upon the national economy and the living standards of the individual, which the Super Trusts could produce by making 'an effort' (still consistent with their 5% net per annum compounded growth) to rehabilitate the national infrastructure – is enormous.
- The current rate of net investment in the national infrastructure in Israel (and the USA and others) is dismal. A modern economy is desperately dependent on the 'background' services of its infrastructure. We must not underestimate the added-value which the Super Trusts system could generate in this respect. One could say that for this reason alone the Super Trusts could justify their existence.

14. Pensions:

- The funding of a 'living wage' pension for 20 – 30 years is a challenge the democratic Western world has yet to resolve.
- All existing pension systems are struggling to deliver an honest and transparent message about the state of their product(s).
- At present time due to lower interest rates, high speculation levels in the stock markets and high management fees / costs, pension accumulation for the majority of the population is far too low to be able to provide a 'living wage' pension for any length of time (definitely not for 20 – 30 years).
- Defined Benefits pensions provided by commercial enterprises to their retired (ex-employees) or pay-as-you-go pensions provided by the State are a 'blank cheque' commitment which is unsustainable. Believing in miracles will not be enough. Even the USA Social Security System is expected to collapse within twenty years or so (although the level of pensions which it promises is not high)
- The Super Trust pension is a totally new paradigm. It is able for the first time to offer to the Israeli public the following opportunity:
    - A basic safety net to <u>all</u> (every single person) at an annual cost of 0.483% of GDP (for the first time in human history every beneficiary will be able to participate in the wealth building power of compounding growth extending over a total of ninety plus years).
    - The Super Trusts' investments in the real economy over this extended life time can be expected to create real growth, real jobs and cascading prosperity: Projected at 5% net p.a. compounded.

- The generations' wars which are to be expected because of the growing pension burden upon the working population will be avoided. On the contrary, the greater prosperity of all pensioners will create more job opportunities.
- The Super Trusts are likely to succeed over time in acquiring and rehabilitating the moribund Israeli infrastructure sector. This alone could stimulate GDP annual growth by 1% p.a..

- The Super Trusts' design has the power to inject a mega engine for permanent, quality growth into the Israeli economy.

15. Jobs:

- The 'new economy' nationally and globally is very 'selective' about the type of skills it favours and its needs keep changing.
- The **bulk** of the population in Israel is earning less than a 'living wage'. For example: The Median income is less than NIS 7,000 per month. And 72% of the population earns less than the average wage which is less than NIS 10,000 per month. This means that 50% of the population earns less than NIS 7,000 and another 22% earn more than NIS 7,000 but less than NIS 10,000. This is not a sustainable state of affairs (definitely for the many people earning so little and therefore struggling daily with the high cost of living).
- An economic model which is based on the State employing 20% or so of the work force plus offering significant ongoing financial support to another 20% or so is an unsustainable proposition. The State's own pension obligations to their workforce (including the military) are another unsustainable element. Combining all these factors produces a poisonous recipe for disaster.
- The Super Trusts, because of their major economic role in the economy, will have a continuing interest in the skilling levels of the population and in maintaining a functioning level of employment. The Super Trusts contribution to cascading prosperity will be significant.
- Without reducing both the overt and covert unemployment levels through skilling and the 'poverty income' jobs to under 3% of the working population, the cascading of success within modern society will not be complete.

- The Super Trust pension will be able to change the living standards of all pensioners but especially have a tremendous impact on the 20% of adults (less attrition along the way) who are the 'children' of the poorest families. These adults will have an excellent pension income from the Super Trust pension distribution – especially if two of them choose to live together under one roof sharing household costs. The substantial joint income will allow these pensioners the option to buy goods they may not have been able to consider during their working career and hire the services of careers. The bottom line is that the greater pension availability (to every individual) will create many jobs. The Super Trust pension may materialise at a period when the development of new robotic technology may be the cause of further replacement / displacement (on a substantial scale) of human labour. Ergo: The Super Trust pension will help maintain human employment and support societal cohesion.
- SMEs' productivity through better skills, better understanding of the markets and customer needs, better tools, better manufacturing knowledge (where applicable), better selling skills, better employee management skills and better access to capital (at a sustainable cost) is key to SMEs' prosperity and SME prosperity will also help the process of cascading prosperity throughout society. Working with the Super Trust system will help the SME sector acquire greater competency.

16. **Productivity – "More from same"** –

- The single biggest secret to the sustainable success of the individual and society is whether or not 'all able bodied / minded' individuals are actually in an employment which provides them with a 'living wage' income. For the individual to be able to maintain employment s/he has to provide the employer with competitive advantage in the market place. All products / services are competing in local / national / global markets. Sometimes in all three. For the enterprise to remain competitive it has to invest in the skilling of its work force, in R & D, in equipment, in marketing, in sales, in its branding and more. At the same time the enterprise needs to deal with administration, pay taxes, make pension contributions and try to understand correctly where the future is leading us. On top of all that the enterprise has to cope with 'boom – bust' periods, inflation, deflation, weird currency movements, wars and more. For society to survive for any length of time

its politicians, the enterprisers and especially the entrepreneurial 'class' has to strive to create value through improved productivity, not via brutal financial speculation (the 'virtual economy').

- The design of the Four Pillars concept offers an unusually comprehensive opportunity to change the matrix of productivity in a nation's economic environment. For example:
    - The Super Trusts will be responsible for the amassing of a vast store of productive assets.
    - The MaxiLife software will have the ability to relentlessly guide each individual towards a personal journey of discovery and improved skilling.

17. The Super Trusts:

- Within twenty years the Super Trusts are projected to have accumulated some NIS 230 billion in assets (net of inflation) at the cost of 0.483% per annum of GDP (NIS 6.67 billion) on the basis of projected annual growth of 5% net compounded.
- After forty years the total asset accumulation is projected to have grown to some NIS 840 billion.
- After seventy years the total asset accumulation for all the 24 Super Trusts (a new one established every three years) is projected to have grown to some NIS 4200 billion.
- The Super Trusts will invest in real companies, produce real products or provide real services and employ real people (earning 'living wage' income).
- The Super Trust Investee Companies will be required to compete in the market place by capitalising on all the productivity tools available to professional and responsible management.
- The Investee Companies will be seeking to buy products and services in the local market and thereby encouraging other local companies to improve their systems and products.
- The Super Trusts will be injecting massive amounts of investment capital into the local market thereby facilitating the availability of reasonably priced finance for all.
- The Super Trusts are likely to invest an enormous amount of capital and attention in the infrastructure requirements of the nation. Infrastructure assets are local in

nature, long-term in focus and are essential to the productive development of the local economy.

- Infrastructure investments may not offer massive returns but they can offer good steady return for the very long-term, thereby supporting the income / growth requirements of the Super Trusts and helping all other national business enterprises to reduce their own operating costs and thereby become more competitive globally, but, also reduce 'living costs' for the population. (Reduction of 'living costs' improves the standard of living for the individual).

18. Innovation:

- The Austrian economist Joseph Schumpeter understood the inevitable process of progress and destruction which will always accompany the creative process of mankind. Only the forces of dictatorship (political and religious) are capable of slowing down the process – but they cannot put a stop to it. Schumpeter wrote "*The process of individual mutation that incessantly revolutionises the economic structure from within, incessantly destroying the old one, incessantly creating a new one*". Progress and destruction go hand in hand. A new industry may be built on the ashes of an old technology whose demise was decided by a new and hopefully better one.
- Capitalising on new technology and new marketing ideas and new distribution ideas costs money. Building a new production line to capitalise on a new and more advanced technology also requires investment. Sometimes, huge investments – like Intel in the production of computer chips. Unfortunately, in recent years the owners of the vast amounts of capital 'sloshing' about in the world are not really interested in committing their funds to long-term productive investments. Investor interests today focus on the short term and on the speculative product. The Hedge Funds industry has attracted vast amounts of capital – all of which is used to fuel the speculative mania of the 21st century. Easy money is the name of the game. The fact that the world economic model is no longer able to keep the human system going is beside the point. The story of King Midas comes to mind. The King loved gold so much that he wished upon himself the power to turn anything into gold simply by touching it. His wish was granted – unfortunately (for the King) his food, too, turned into inedible 'bling-bling'.

- The Super Trust concept is 180 degrees different to the mistaken King Midas Golden Touch Theory (speculation). The Super Trusts will invest in real industries, seeking products which will provide value to the consumer at an accessible price. The Super Trusts will focus on the long run and on value-added. The 'sparkle' of the Super Trusts will be the renewed energy of human society and the natural cascading of prosperity to all.
- The Super Trusts will encourage and support innovation. The Super Trusts will seek innovation in management technologies, in productivity ('more from the same'), in marketing, branding, customer relations and more.
- The Super Trusts will seek to innovate in many different ways – for example: Assuming that the Super Trusts will own an electricity generating business in Israel. Assuming that electric cars will further improve and extend their range without having to charge batteries frequently. (In Israel driving distances are on average quite reasonable therefore it is quite reasonable to assume that electric cars could work well here). Said electricity generating company could offer the public the following deal: Lease the car from us and within the lease price will be included a certain quantity of electricity (the average driving distance per annum): On condition that the car is charged between the hours say 1am and 4am (when demand is at its lowest even at the height of summer and depth of winter). The electricity company can buy (from itself) the electricity at low marginal cost and therefore could make the transaction attractive to the customer and society. The lease cost would be charged to the electricity bill. Nationally, less energy is used, less pollution is generated, the customer pays less, the electricity company earns more and could possibly reduce the overall cost of its electricity or alternatively invest more in further improving electricity supply to the nation (secure all electricity cables below ground, for example).
- The Super Trusts as a group will aim to set up a separate Super Trust whose sole role would be to stimulate innovation and invention – including to try to keep first stage innovation concepts in Israel rather than see it sold outright (abroad) at a fairly early stage. In some instances using an attractive formula this arrangement might be of interest to the young inventors, too.

19. The economy:

- The 'heart' of any sustainable society is the 'rule of law' and the ability of the individual to feed herself/himself. If these two basic elements are not sustainable all the rest does not count. Sustainability is about survival.
- The economic system today (21st century) is too speculative and not focussed on real investment. Without renewing dilapidated infrastructure and without adequate real and productive investment the average individual will not be able to earn a 'living wage' even when s/he finds employment. Technology, too, is replacing jobs at an ever-increasing rate. Technology is also reducing some specialised jobs into comparatively low paying menial functions.
- The economic model today is unable to:
    - Produce adequate pensions at a sustainable risk (both to the individual and society) and at an acceptable cost.
    - Produce a workforce with the renewing work skills which are required for now and the future. The world is very competitive – only the strong and adaptable will survive.
    - Produce the investment capital required for the long-term infrastructure investments without which the nation's wheels will come to a grinding halt.
    - Produce the employment without which the individual cannot feed himself and family. Welfare for all is an unsustainable nightmare, not a utopian panacea.

20. The Super Trusts – No Dividend Policy:

- The growing assets of the Super Trusts will be shielded from the requirement to pay dividends or make other payments to 'shareholders' until the day they start to pay pensions – basically at age 70.
- The ability to invest large sums in large value-added enterprises and real estate projects and compound the value over 70 years (and then to death) is something that has **never been available to the citizenship**. This was only available to a few very rich families. This opportunity is a revolution in opportunity itself.
- The long-term investment on a large scale is also a unique opportunity in the annals of human economics: The opportunity to inject new and unbelievable energy into

the economic process. Real investments in real companies will produce real jobs for the citizenship and real prosperity for the community.

- The Super Trusts were designed to be the 'responsible citizen' able to produce, over time, a tempering effect upon our current 'boom and bust' economic model. Too many busts will destroy society.

21. Super Trusts: Value Cascading through the Generations:

- Basically, all the 'value' in each Super Trust belongs to the children / pensioners in whose name the money was granted at birth.
- At the same time the funds were granted by the State on behalf of the citizenship (and may have been funded by the Special Levy). Therefore, over the 70 -100 years of the life of the individual (in whose name the money was provided), the investments made have to be made in the birth country in real companies so that the economy will be rejuvenated / reborn to the benefit of the whole community and the individual.
- In principle the idea is that from age 70 each Super Trust will start to unwind its investments (realise their value by sale) in order to pay the value to its pensioners.
- When individuals die the balance of their 'claim' will be kept in order for the Super Trust to be able to look after those who live beyond the 20 – 25 years projected (on average).
- The Charter of the Super Trusts has to take into account:
    - The need to protect the capital assets owned by the Super Trusts, as well as, the pensions, namely, to sell them on so that the new owners will continue to respect the needs of future generations (and not simply 'strip the assets' for a quick profit and quick exit).
    - To design a sustainable process to sell the assets – with a preference to sell Qumulistic Capital Stock to younger and successful Super Trusts. This process will help ensure that the momentum for renewal and sustainability will persist.

Appendix. Projections for the Radical Solution

Table 12: Relative Proportions of GDP Demand Components, 2015-2035

NIS mill. 2010 prices

GDP	**991,006**				
Year	**Personal Cons.**	**Public Cons.**	**Gross Cap Form.**	**Exports**	**Imports**
2014	572,315	224,431	189,400	337,609	332,749
			weights		
2014	0.580	0.230	0.190	0.340	0.340
2015	0.580	0.230	0.190	0.340	0.340
2016	0.578	0.228	0.195	0.340	0.340
2017	0.575	0.225	0.200	0.340	0.340
2018	0.573	0.223	0.205	0.340	0.340
2019	0.570	0.220	0.210	0.340	0.340
2020	0.568	0.218	0.215	0.340	0.340
2021	0.565	0.215	0.220	0.340	0.340
2022	0.563	0.213	0.225	0.340	0.340
2023	0.560	0.210	0.230	0.340	0.340
2024	0.558	0.208	0.235	0.340	0.340
2025	0.555	0.205	0.240	0.340	0.340
2026	0.553	0.203	0.245	0.340	0.340
2027	0.550	0.200	0.250	0.340	0.340
2028	0.548	0.198	0.255	0.340	0.340
2029	0.545	0.195	0.260	0.340	0.340
2030	0.543	0.193	0.265	0.340	0.340
2031	0.540	0.190	0.270	0.340	0.340
2032	0.538	0.188	0.275	0.340	0.340
2033	0.535	0.185	0.280	0.340	0.340
2034	0.533	0.183	0.285	0.340	0.340
2035	0.530	0.180	0.290	0.340	0.340
2036	0.530	0.180	0.290	0.340	0.340

Table 13: GDP: Baseline (3% growth) vs. Projection (5% growth), 2015-2035

LO projection
GDP baseline* Q'=3.0=0.6+0.6*2 + 0.4*3
TFP rises over 20 years from 0.6 %--> 1%

GDP (2014) 991,006

	TFP	K'	L'	Q'	GDP 3% growth	GDP 5% growth
2015	0.60	3.00	2.00	3.00	1,020,736	1,020,736
2016	0.62	3.20	2.00	3.10	1,051,358	1,052,379
2017	0.64	3.40	2.00	3.20	1,082,899	1,086,055
2018	0.66	3.60	2.00	3.30	1,115,386	1,121,895
2019	0.68	3.80	2.00	3.40	1,148,848	1,160,039
2020	0.70	4.00	2.00	3.50	1,183,313	1,200,641
2021	0.72	4.20	2.00	3.60	1,218,812	1,243,864
2022	0.74	4.40	2.00	3.70	1,255,377	1,289,887
2023	0.76	4.60	2.00	3.80	1,293,038	1,338,902
2024	0.78	4.80	2.00	3.90	1,331,829	1,391,120
2025	0.80	5.00	2.00	4.00	1,371,784	1,446,764
2026	0.82	5.20	2.00	4.10	1,412,938	1,506,082
2027	0.84	5.40	2.00	4.20	1,455,326	1,569,337
2028	0.86	5.60	2.00	4.30	1,498,985	1,636,819
2029	0.88	5.80	2.00	4.40	1,543,955	1,708,839
2030	0.90	6.00	2.00	4.50	1,590,274	1,785,737
2031	0.92	6.20	2.00	4.60	1,637,982	1,867,880
2032	0.94	6.40	2.00	4.70	1,687,121	1,955,671
2033	0.96	6.60	2.00	4.80	1,737,735	2,049,543
2034	0.98	6.80	2.00	4.90	1,789,867	2,149,971
2035	1.00	7.00	2.00	5.00	1,843,563	2,257,469

Table 14: GDP: Projection (5.5 % growth), 2015-2035

HI projection

TFP rises over 20 years from 0.6% --> 1.5%

	TFP	K'	L'	Q'	GDP
2015	0.60	3.00	2.00	3.00	**1,020,736**
2016	0.65	3.20	2.00	3.13	**1,052,634**
2017	0.69	3.40	2.00	3.25	**1,086,845**
2018	0.74	3.60	2.00	3.38	**1,123,526**
2019	0.78	3.80	2.00	3.50	**1,162,849**
2020	0.83	4.00	2.00	3.63	**1,205,002**
2021	0.87	4.20	2.00	3.75	**1,250,190**
2022	0.92	4.40	2.00	3.88	**1,298,635**
2023	0.96	4.60	2.00	4.00	**1,350,580**
2024	1.01	4.80	2.00	4.13	**1,406,292**
2025	1.05	5.00	2.00	4.25	**1,466,059**
2026	1.10	5.20	2.00	4.38	**1,530,199**
2027	1.14	5.40	2.00	4.50	**1,599,058**
2028	1.19	5.60	2.00	4.63	**1,673,015**
2029	1.23	5.80	2.00	4.75	**1,752,483**
2030	1.28	6.00	2.00	4.88	**1,837,916**
2031	1.32	6.20	2.00	5.00	**1,929,812**
2032	1.37	6.40	2.00	5.13	**2,028,715**
2033	1.41	6.60	2.00	5.25	**2,135,223**
2034	1.46	6.80	2.00	5.38	**2,249,991**
2035	1.50	7.00	2.00	5.50	**2,373,740**

Table 15: GDP and its Components: Baseline (3 % annual growth)

baseline projection 3% growth

NIS million

	GDP	C	G	Ig	X	IM
weights	**1.00**	**0.58**	**0.23**	**0.19**	**0.34**	**0.34**
2015	**1,020,736**	592,027	234,769	193,940	347,050	347,050
2016	**1,051,358**	609,788	241,812	199,758	357,462	357,462
2017	**1,082,899**	628,081	249,067	205,751	368,186	368,186
2018	**1,115,386**	646,924	256,539	211,923	379,231	379,231
2019	**1,148,848**	666,332	264,235	218,281	390,608	390,608
2020	**1,183,313**	686,322	272,162	224,829	402,326	402,326
2021	**1,218,812**	706,911	280,327	231,574	414,396	414,396
2022	**1,255,377**	728,119	288,737	238,522	426,828	426,828
2023	**1,293,038**	749,962	297,399	245,677	439,633	439,633
2024	**1,331,829**	772,461	306,321	253,048	452,822	452,822
2025	**1,371,784**	795,635	315,510	260,639	466,407	466,407
2026	**1,412,938**	819,504	324,976	268,458	480,399	480,399
2027	**1,455,326**	844,089	334,725	276,512	494,811	494,811
2028	**1,498,985**	869,412	344,767	284,807	509,655	509,655
2029	**1,543,955**	895,494	355,110	293,351	524,945	524,945
2030	**1,590,274**	922,359	365,763	302,152	540,693	540,693
2031	**1,637,982**	950,030	376,736	311,217	556,914	556,914
2032	**1,687,121**	978,530	388,038	320,553	573,621	573,621
2033	**1,737,735**	1,007,886	399,679	330,170	590,830	590,830
2034	**1,789,867**	1,038,123	411,669	340,075	608,555	608,555
2035	**1,843,563**	1,069,267	424,020	350,277	626,811	626,811

Table 16: GDP and its Components, 5% Annual Growth

Lo growth 5%

NIS million

	GDP	C	G	Ig	X	IM
2015	1,020,736	592,027	234,769	193,940	347,050	347,050
2016	1,052,379	607,749	239,416	205,214	357,809	357,809
2017	1,086,055	624,482	244,362	217,211	369,259	369,259
2018	1,121,895	642,285	249,622	229,988	381,444	381,444
2019	1,160,039	661,222	255,209	243,608	394,413	394,413
2020	1,200,641	681,364	261,139	258,138	408,218	408,218
2021	1,243,864	702,783	267,431	273,650	422,914	422,914
2022	1,289,887	725,561	274,101	290,225	438,562	438,562
2023	1,338,902	749,785	281,170	307,948	455,227	455,227
2024	1,391,120	775,549	288,657	326,913	472,981	472,981
2025	1,446,764	802,954	296,587	347,223	491,900	491,900
2026	1,506,082	832,110	304,982	368,990	512,068	512,068
2027	1,569,337	863,135	313,867	392,334	533,575	533,575
2028	1,636,819	896,158	323,272	417,389	556,518	556,518
2029	1,708,839	931,317	333,224	444,298	581,005	581,005
2030	1,785,737	968,762	343,754	473,220	607,150	607,150
2031	1,867,880	1,008,655	354,897	504,328	635,079	635,079
2032	1,955,671	1,051,173	366,688	537,809	664,928	664,928
2033	2,049,543	1,096,505	379,165	573,872	696,845	696,845
2034	2,149,971	1,144,859	392,370	612,742	730,990	730,990
2035	2,257,469	1,196,459	406,344	654,666	767,539	767,539

Table 17: GDP and its Components, High Growth (5.5 percent)

Hi growth 5.5%

NIS million

	GDP	C	G	Ig	X	IM
2015	1,020,736	592,027	234,769	193,940	347,050	347,050
2016	1,052,634	607,896	239,474	205,264	357,896	357,896
2017	1,086,845	624,936	244,540	217,369	369,527	369,527
2018	1,123,526	643,219	249,984	230,323	381,999	381,999
2019	1,162,849	662,824	255,827	244,198	395,369	395,369
2020	1,205,002	683,839	262,088	259,076	409,701	409,701
2021	1,250,190	706,357	268,791	275,042	425,065	425,065
2022	1,298,635	730,482	275,960	292,193	441,536	441,536
2023	1,350,580	756,325	283,622	310,633	459,197	459,197
2024	1,406,292	784,008	291,806	330,479	478,139	478,139
2025	1,466,059	813,663	300,542	351,854	498,460	498,460
2026	1,530,199	845,435	309,865	374,899	520,268	520,268
2027	1,599,058	879,482	319,812	399,765	543,680	543,680
2028	1,673,015	915,976	330,420	426,619	568,825	568,825
2029	1,752,483	955,103	341,734	455,646	595,844	595,844
2030	1,837,916	997,070	353,799	487,048	624,892	624,892
2031	1,929,812	1,042,099	366,664	521,049	656,136	656,136
2032	2,028,715	1,090,434	380,384	557,897	689,763	689,763
2033	2,135,223	1,142,344	395,016	597,862	725,976	725,976
2034	2,249,991	1,198,120	410,623	641,247	764,997	764,997
2035	2,373,740	1,258,082	427,273	688,385	807,072	807,072

Table 18: GDP, 2015-2035, and C+G (personal + public consumption), under 3 scenarios

	GDP			C+G		
	3.0%	**5.0%**	**5.5%**	**3.0%**	**5.0%**	**5.5%**
2015	1,020,736	1,020,736	1,020,736	826,796	826,796	826,796
2016	1,051,358	1,052,379	1,052,634	851,600	847,165	847,371
2017	1,082,899	1,086,055	1,086,845	877,148	868,844	869,476
2018	1,115,386	1,121,895	1,123,526	903,463	891,906	893,203
2019	1,148,848	1,160,039	1,162,849	930,567	916,431	918,651
2020	1,183,313	1,200,641	,205,002	958,484	942,503	945,927
2021	1,218,812	1,243,864	1,250,190	987,238	970,214	975,148
2022	1,255,377	1,289,887	1,298,635	1,016,855	999,662	1,006,442
2023	1,293,038	1,338,902	1,350,580	1,047,361	1,030,955	1,039,947
2024	1,331,829	1,391,120	1,406,292	1,078,782	1,064,207	1,075,813
2025	1,371,784	1,446,764	1,466,059	1,111,145	1,099,541	1,114,205
2026	1,412,938	1,506,082	1,530,199	1,144,479	1,137,092	1,155,300
2027	1,455,326	1,569,337	1,599,058	1,178,814	1,177,003	1,199,294
2028	1,498,985	1,636,819	1,673,015	1,214,178	1,219,430	1,246,396
2029	1,543,955	1,708,839	1,752,483	1,250,604	1,264,541	1,296,837
2030	1,590,274	1,785,737	1,837,916	1,288,122	1,312,516	1,350,869
2031	1,637,982	1,867,880	1,929,812	1,326,765	1,363,553	1,408,763
2032	1,687,121	1,955,671	2,028,715	1,366,568	1,417,861	1,470,818
2033	1,737,735	2,049,543	2,135,223	1,407,565	1,475,671	1,537,360
2034	1,789,867	2,149,971	2,249,991	1,449,792	1,537,229	1,608,743
2035	**1,843,563**	**2,257,469**	**2,373,740**	**1,493,286**	**1,602,803**	**1,685,356**

Table 19: GDP per capita (US $), under 3 scenarios, 2015-2035

	population	GDP per capita dollars		
		3%	5%	5.50%
2015	8,389,000	32,447	32,447	32,447
2016	8,523,224	32,894	32,926	32,934
2017	8,659,596	33,347	33,444	33,469
2018	8,798,149	33,807	34,004	34,053
2019	8,938,919	34,273	34,606	34,690
2020	9,081,942	34,745	35,254	35,382
2021	9,227,253	35,224	35,948	36,130
2022	9,374,889	35,709	36,691	36,939
2023	9,524,888	36,201	37,485	37,812
2024	9,677,286	36,700	38,334	38,752
2025	9,832,122	37,206	39,239	39,762
2026	9,989,436	37,718	40,205	40,848
2027	10,149,267	38,238	41,234	42,014
2028	10,311,656	38,765	42,329	43,265
2029	10,476,642	39,299	43,496	44,607
2030	10,644,268	39,841	44,737	46,045
2031	10,814,577	40,389	46,058	47,585
2032	10,987,610	40,946	47,464	49,236
2033	11,163,412	41,510	48,959	51,005
2034	11,342,026	42,082	50,549	52,900
2035	**11,523,499**	**42,662**	**52,240**	**54,931**

Table 20: Number of those 65 and over; Number 90 and over, 2010-2035

	no. aged 65 and older 3.15%	no. aged 90 and older 4.79%
2010	763,000	33,000
2011	787,035	34,581
2012	811,826	36,237
2013	837,399	37,973
2014	863,777	39,792
2015	890,986	41,698
2016	919,052	43,695
2017	948,002	45,788
2018	977,864	47,981
2019	1,008,667	50,280
2020	1,040,440	52,688
2021	1,073,213	55,212
2022	1,107,020	57,856
2023	1,141,891	60,628
2024	1,177,860	63,532
2025	1,214,963	66,575
2026	1,253,234	69,764
2027	1,292,711	73,106
2028	1,333,432	76,607
2029	1,375,435	80,277
2030	1,418,761	84,122
2031	1,463,452	88,152
2032	1,509,551	92,374
2033	1,557,101	96,799
2034	1,606,150	101,436
2035	1,656,744	106,294

Table 21: GDP per capita, 2015, 2035-2085, under 3 scenarios

US $ exchange rate 2010: 3.75

	population	GDP per capita dollars		
		3.0%	5.0%	5.5%
2015	8,389,000	32,447	32,447	32,447
2036	11,707,875	43,250	53,989	57,040
2037	11,895,201	43,846	55,795	59,229
2038	12,085,524	44,450	57,662	61,503
2039	12,278,892	45,063	59,592	63,863
2040	12,475,354	45,684	61,586	66,315
2041	12,674,960	46,313	63,647	68,860
2042	12,877,759	46,951	65,777	71,504
2043	13,083,804	47,598	67,978	74,248
2044	13,293,144	48,254	70,253	77,099
2045	13,505,835	48,919	72,604	80,058
2046	13,721,928	49,593	75,034	83,131
2047	13,941,479	50,276	77,545	86,322
2048	14,164,543	50,969	80,140	89,636
2049	14,391,175	51,672	82,822	93,077
2050	14,621,434	52,384	85,593	96,649
2051	14,855,377	53,105	88,458	100,359
2052	15,093,063	53,837	91,418	104,212
2053	15,334,552	54,579	94,477	108,212
2054	15,579,905	55,331	97,639	112,366
2055	15,829,183	56,094	100,906	116,679
2056	16,082,450	56,866	104,283	121,158
2057	16,339,770	57,650	107,773	125,809
2058	16,601,206	58,444	111,379	130,638
2059	16,866,825	59,250	115,107	135,652
2060	17,136,694	60,066	118,959	140,860
2061	17,410,882	60,894	122,940	146,267
2062	17,689,456	61,733	127,054	151,881
2063	17,972,487	62,584	131,305	157,711
2064	18,260,047	63,446	135,700	163,765
2065	18,552,207	64,320	140,241	170,051
2066	18,849,043	65,207	144,934	176,579
2067	19,150,627	66,105	149,784	183,357
2068	19,457,037	67,016	154,796	190,395
2069	19,768,350	67,939	159,977	197,704
2070	20,084,644	68,876	165,330	205,293
2071	20,405,998	69,825	170,863	213,173
2072	20,732,494	70,787	176,581	221,356
2073	21,064,214	71,762	182,490	229,853
2074	21,401,241	72,751	188,597	238,676
2075	21,743,661	73,754	194,908	247,838
2076	22,091,560	74,770	201,431	257,351
2077	22,445,025	75,800	208,171	267,230
2078	22,804,145	76,845	215,138	277,488
2079	23,169,011	77,904	222,337	288,139
2080	23,539,716	78,977	229,778	299,200
2081	23,916,351	80,065	237,467	310,685
2082	24,299,013	81,169	245,414	322,611
2083	24,687,797	82,287	253,626	334,995
2084	25,082,802	83,421	262,114	347,854
2085	25,484,126	84,570	270,885	361,206

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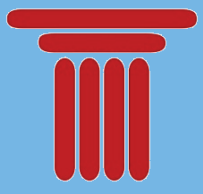

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