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Does Financial Regulation Unintentionally Ignore Less Privileged Populations? The Investigation of a Regulatory Fintech Advancement, Objective and Subjective Financial Literacy[1]

Maya Haran Rosen* and Orly Sade**

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* Haran Rosen: Finance Department, Jerusalem School of Business, The Hebrew University of Jerusalem, The Bank of Israel. Research Department - Email: Maya.Haran@boi.org.il
Phone: 972-6552694

** Sade: Finance Department, Jerusalem School of Business, The Hebrew University of Jerusalem, Email: orlysade@huji.ac.il.

האם הרגולציה הפיננסית מתעלמת בלא כוונה מאוכלוסיות מוחלשות? בחינה של הקשר בין הטמעת רגולציה בעזרת כלים דיגיטליים לבין אוריינות פיננסית אובייקטיבית וסובייקטיבית

מאיה הרן רוזן ואורלי שדה

תקציר

במהלך 2013—2015 יצא אגף שוק ההון, הביטוח והחיסכון במבצע שמטרתו לעודד אנשים בעלי חסכונות קטנים ובלתי פעילים למשוך אותם או לאחד אותם עם חשבונות פעילים. המחקר מוצא כי חרף מאמצי המדינה רוב החשבונות הבלתי פעילים לא נמשכו, וכי לא כל האוכלוסיות נחשפו לרגולציה החדשה במידה זהה. מידע מאחת מקופות הגמל מעיד כי החוסכים שמשכו כספים מחשבונות קטנים גרים במרכז הארץ, בערים בעלות ציונים גבוהים במדדים סוציו-אקונומיים, והם מבוגרים מהחוסכים שלא משכו כספים. סקר אינטרנטי בקרב מדגם מייצג של האוכלוסייה מצא מודעות פחותה למבצעים הרגולטוריים בקרב אנשים בעלי אוריינות פיננסית נמוכה, חסרי ביטחון בידע שלהם לגבי הפנסיה, ובלתי מועסקים. נראה שביטחון סובייקטיבי בידע הפנסיוני השפיע על נקיטת פעולה בעקבות המבצע יותר מהבנה פיננסית אובייקטיבית. עוד מראה הסקר כי על הצלחת המבצע השפיעו מאפיינים נוספים – מין, גיל, השכלה ושנת עלייה. אנו מסיקות שאוכלוסיות מוחלשות נהנו מהמבצע במידה פחותה – הן הציגו מידה פחותה של מודעות אליו, של שימוש בממשק האינטרנטי, ושל פעולה בעקבותיו – ועל הרגולטורים להביא זאת בחשבון כאשר הם מנהיגים רגולציה חדשה.

Does Financial Regulation Unintentionally Ignore Less Privileged Populations? The Investigation of a Regulatory Fintech Advancement, Objective and Subjective Financial Literacy

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Abstract

In 2013-2015, the Israeli insurance and long term savings regulator reached out to the Israeli population, recommending the use of a new centralized Internet portal created by the regulator to help individuals find inactive retirement plans and withdraw inactive funds. We find that the government's effort did not result in withdrawals of the majority of the accounts, and did not reach all subpopulations equally. Provident fund records indicate that those who took action and withdrew funds following the campaign live in central locations that have higher socioeconomic rankings, and they are relatively older. Using survey data, we found evidence that those with low financial literacy and confidence in their knowledge of retirement planning and the unemployed were less likely to have been aware of the financial regulatory campaigns. It seems that confidence in one's financial knowledge is more important for financial action than objective literacy. The survey further shows the importance of gender, age, education, and immigration status. We conclude that less privileged populations were less likely to have been aware of the campaign, to enter the Internet portal, and to have taken action based on the information.

1. Introduction

In recent decades, financial regulation around the globe has transferred financial responsibilities (e.g., long term savings) from the government and employers to individuals. There is an emphasis on transparency and disclosure, with the aim of individuals using this available information rationally and in their best interest. In addition, the advancement of technology has enabled regulators to use digital media and Internet portals as a platform for their financial action. The use of these portals is intended to promote efficient direct interaction or to provide aggregation of information in timely manner while bypassing intermediaries. However, this transfer of responsibility, combined with the increased use of technology, has been criticized in that it does not take into account the public's financial literacy and hence the regulation can be unsuccessful—people may not respond to the regulation as intended, and the regulation may not reach all subpopulations equally. This can also impact on public opinion of, and trust in, the financial sector and financial regulators.[1] This leads to the questions, which warrants empirical answers, of whether all individuals are receiving the needed information and whether they are acting upon it. The answer to these questions can be based on two channels: the first channel is information dissemination and comprehension, and the second is transaction costs and behavioral biases.[2]

This paper uses a natural experiment in Israel ("'Money Mountain'") and focuses on the information dissemination and comprehension channel, which can have a different effect on different sub-populations. In this paper, we explore who responded to a financial regulatory change in retirement savings and check whether the regulatory initiative unintentionally ignored certain populations, who may not have been cognizant of, understood, or acted upon the information provided.

Our work is related to literature documenting underprivileged populations that failed to receive benefits in designated programs such as the Earned Income Tax Credit and the State

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[1] Zingales (2015) and Campbell (2016).

[2] For a summary on issues regarding time preferences, risk preferences, social preferences, overconfidence, projection bias, framing, limited attention, menu effects, persuasion and social pressure, and emotions please refer to DellaVigna (2009).

Health Insurance Program[3], and indicates that an information channel is an important factor in explaining the uptake.[4]

In the Israeli pension system, there is a high percentage of inactive accounts (over 50% of accounts in some vehicles[5]), many of which are very small and savers are probably unaware of their existence. These accounts were created because employers opened new accounts for their workers, often deciding for the employees about many aspects of the plan including the institution that will manage it, and there is no automatic continuity of savings after a change in the workplace. This means that a new account, in a different vehicle or with a different service provider, can be opened when working in more than one job at a time or when starting a new job. Recent developments in technology enabled the regulator to (a) gather information about these accounts, and (b) build a digital platform that allows the population to access their personal information while upholding privacy standards. In 2014, the Israeli insurance regulator in the Ministry of Finance reached out to the Israeli public to inform them of a new service—an Internet portal intended to help individuals find inactive retirement plans. The campaign was named "Money Mountain" which implied the possibility of finding great sums of lost money. A year after the "Money Mountain" campaign, a tax exemption on small inactive plans in provident funds came into effect, to encourage individuals to withdraw funds and avoid new minimum management fees that would exhaust the funds over time.

The first campaign, the "Money Mountain" campaign, was used to try to raise the population's awareness of the fact that they may have inactive funds in retirement plans that they are not aware of, and to inform them of a new service—an Internet portal that indicates whether one has such an inactive fund and at which retirement plan provider. This first campaign was publicized via a commercial on television, radio and the Internet, and was aimed at a broad population. The second campaign, regarding the tax exemption, was not as broad, and focused on small inactive funds in provident funds, where there is a strong incentive to withdraw funds because of new minimum management fees that would

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[3] Currie (2006).
[4] Eg. Russel et al. (2014) Herd et al (2013), Riphahn (2001), Leventhal, Singer, and Jones (1965), Coe (1983) and Daponte et al. (1998). Coe (1983) emphasized lack of information as the most significant explanation for the unsatisfactory rate of uptake of the food stamps program, even though the program was heavily publicized. Ebenstein and Stage (2010) suggest that reducing application barriers alone may not be an effective tool for increasing program participation and that information barriers may still exist.
[5] The 2014 CMISD annual report shows that in 2014, 48% of accounts in the new pension system were inactive and about 80% of accounts in the old pension system were inactive.

exhaust the small inactive funds over time. The second campaign did not use a commercial, and its message was distributed via professional media and news and by a letter which the provident funds were obligated to send to eligible individuals. By the end of the second campaign, only 16 percent of eligible accounts were withdrawn[6], much lower than initially expected. In examining the effectiveness of the financial regulation, we investigate which individuals responded to the regulation—that is, were aware of the financial regulation, entered the Internet portal and/or took financial action. We define financial action as actually making withdrawals from retirement vehicles or contacting the retirement fund manager with the intention of withdrawing the account.

There are several advantages of using these financial campaigns as our case study: 1.They are relevant to the general adult population; 2. They were publicized nationally; 3. They are related to long-term retirement savings, a topic important to the public in Israel (Mugerman, Sade, and Shayo 2014); 4. Even though the actions required are simple, the long term financial "jargon" might deter individuals and affect information dissemination; 5. There is no stigma for people who act upon the regulation, as well as relatively low transaction costs, which allow us to focus on the information effect on take-up.[7] In additional, it is interesting to focus on the technological and digital aspect of the regulation—particularly, as there are no mediators or advisors when using an Internet portal, financial literacy and other socioeconomic characteristics might play a bigger role.

The Organization for Economic Cooperation and Development (OECD) describes financial literacy as the "...combination of customers'/investors' understanding of financial products and concepts, and their ability and confidence to appreciate financial risks and opportunities, to make informed choices, to know where to go for help, and to take other effective actions to improve their financial well-being" (Atkinson and Messy 2012). We will use the term "*financial literacy*" to describe *objective* financial literacy in this paper. The academic literature documents that financial literacy is connected to financial behavior—planning and saving for retirement[8], personal debt management[9], participation in

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[6] Data received by Capital Markets, Insurance and Savings Division representatives.

[7] Currie (2006) cites three channels that were found to affect less privileged populations: lack of information, as well as behavioral explanations: stigma and the cost of the transaction. Moffit (1983) provides an economic model of stigma and Baumberg (2016) shows a quantitative measure of the effect of stigma on benefit take-up in the UK.

[8] Hilgert, Hogarth and Beverly (2003), Bayer, Bernheim, Scholz (2009), Lusardi and Mitchell (2014) for a review, Clark, Lusardi and Mitchell (2015) and Uppal (2016).

[9] Lusardi and Tufano (2009).

the stock market[10], choosing mutual funds with lower fees[11] and wealth accumulation and management.[12] Financial literacy is correlated with sociodemographic characteristics such as gender, education, wealth, race and ethnicity.[13] In addition, financial literacy has a generational effect—it has been documented that parent's financial literacy affects the child's financial literacy and financial behavior.[14]

In this paper we investigate another aspect of the financial literacy definition; **subjective** financial literacy, which is confidence in one's own knowledge of financial issues. Confidence can affect a person's financial behavior, in addition to one's objective knowledge. Having confidence in one's own knowledge of the issue mitigates the perceived difficulty of the task (even more than actual knowledge) and hence overcomes the tendency to procrastinate and delay taking action.[15] Allgood and Walstad (2012) showed that both financial literacy and financial confidence are important when looking at financial behavior.[16] Individuals with high self-reported knowledge of economics or financial knowledge were more likely to plan their finances, have substantially more retirement wealth and to pay fewer management fees. Financial knowledge is also correlated with sociodemographic characteristics. It has been documented that older, better educated, and male respondents are more likely to have a subjective financial literacy.[17]

In order to investigate the effectiveness of the "Money Mountain" financial campaigns, we use two data sets. The first data set is from a provident fund provider, and contains information on withdrawals from tax exempt funds, totaling over 12,000 eligible accounts. The second data set is a nationally representative Internet survey sample of 504 people, which was distributed in 2015 after the end of the campaigns. It is complemented by an additional sample of 124 respondents from the same Internet survey who stated they were aware of the "Money Mountain" campaign. We begin our research first with an estimate of the percentage of accounts that were withdrawn. Then, using the provident fund data and

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[10] Van Rooij, Lusardi, and Alessie (2011).

[11] Hastings and Tejeda-Ashton (2012), Hastings et al. (2010), and Hastings and Mitchell (2011).

[12] Stango and Zinman (2007), Hilgert, Hogarth, and Beverly (2003) and Lusardi (2008).

[13] OECD (2005), Lusardi and Mitchell (2008), Atkinson and Messy (2012), Brown and Graf (2013), Lusardi and Mitchel (2014) and Bucher-Koenen, Lusardi, Alessie, and Van Rooij (2014). Financial literacy is also related to personal attributes such as cognitive ability and motivation, e.g., Fernandes, Lynch and Netemeyer (2014), Rooij, Lusardi and Alessie (2011) and Lusardi, Mitchel and Curto (2010).

[14] Lusardi, Mitchel and Curto (2010) and Mandell (2008).

[15] For additional discussion see Tversky and Shafir (1992) and Heath and Tversky (1991).

[16] Financial confidence was found to be important in Parker et al. (2011), Rooij, Lusardi and Asserdie (2011b), Lusardi and Mitchel (2007, 2009), Lusardi and Beeler (2006), Lusardi and Samek et al. (2014) and while using different measures, Hadar, Sood and Fox (2013).

[17] Lusardi and Mitchel (2014) for a review, Drolet (2016).

the survey, we try to find how and when financial literacy, confidence in retirement knowledge, geography, age and other sociodemographic characteristics of individuals affect the awareness and the actions taken by people following the financial campaigns. As administrative data from provident funds and survey data each have their own shortcomings, by using both data sources we receive a richer evaluation of the actual effect of the financial regulation on the population.

The proprietary data and the survey data indicate a low withdrawal rate of around 15 percent, which is consistent with the one received from the regulator (indicating that our samples are representative of the total population in this matter). In this paper, we show evidence from both data sources that having a higher socioeconomic ranking is correlated with being aware of financial regulation and taking financial action. The proprietary data from the provident fund show that individuals who withdrew funds come from localities with higher socioeconomic indices and are relatively older. The survey data show evidence that people with low financial literacy, low confidence in their financial knowledge, younger generations, people with low education and women experience difficulties in being aware of and understanding regulatory financial campaigns and have difficulties taking actual financial action in this context. As expected, financial literacy is correlated with the socioeconomic locality index. The fact that we find gender to be important in the survey data but not in the data from the provident fund can be explained by the fact that we do not know which family member actually carries out the actual withdrawal of funds, and that a male family member may be withdrawing funds for a female family member. Additionally, for entering the Internet portal, education seems to play a role. We also find that immigrants are less aware of widespread financial campaigns broadcast in mass media. When looking at entries to the Internet portal and financial action taken by individuals, confidence in one's own knowledge is more important than one's objective knowledge.

Our use of a survey in addition to the provident fund data enables us to investigate individuals who declared that they contacted the fund management with intent to withdraw funds, and not just the actual withdrawals. This helps us to disentangle the information channel from transaction costs and technical difficulties. We are also able to connect objective and subjective financial literacy as explanatory variables to the effectiveness of the financial regulation and zoom in on their effect on the success of the Internet portal.

Financial long term savings regulations that are aimed at the general public are expected to be widespread, as part of the transfer of responsibility to the individuals which makes this research and outcomes important for future regulations.

The paper is organized as follows. Section 2 provides institutional details on the two financial campaigns in Israel as well as an overview of the Israeli retirement savings market and demographics, and Section 3 describes the data. Section 4 discusses results for the provident fund data. Section 5 describes the main independent variables: how the financial literacy index is built, and how we defined subjective financial variables as well as results for the survey data. Section 6 concludes.
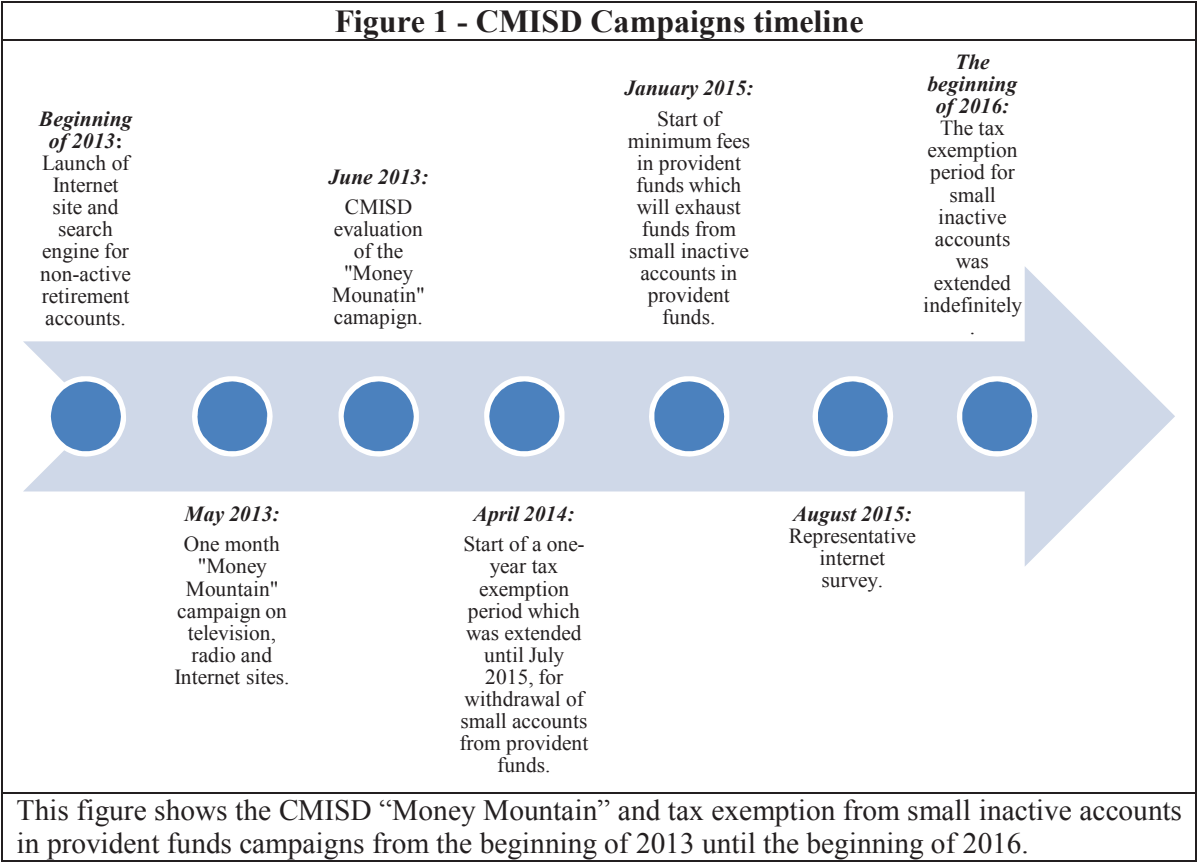
2. Setting

This section describes the two retirement financial regulations, with an overview of the broader context in Israel, including Israel's retirement savings market and a brief outline of Israel's demographics. The section continues with a description of two socioeconomic geographical indices and a summary of past findings regarding financial literacy in Israel.

2.1 "Money Mountain" campaign and tax exemption campaign

In the beginning of 2013, the Capital Markets, Insurance and Savings Division of Israel's Ministry of Finance (hereinafter, "CMISD"), which regulates retirement saving vehicles, launched an Internet portal and search engine allowing people to find inactive accounts (Figure 1). Inactive accounts are defined as accounts that have had no new deposits in the past two years, in old or new pension funds and in provident funds. In May 2013, the CMISD ran a campaign called "Money Mountain". The campaign was named "Money Mountain", implying the possibility of finding great sums of lost retirement money, and was publicized with commercials on television and radio, and on Internet sites. The campaign was aimed at promoting the simple action of entering the designated Internet portal, and it used retirement savings "jargon". The campaign did not have explicit information on the process and how to use the Internet portal although explicit information was found to be important in promoting action.[18]

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[18] Leventhal, Singer, and Jones (1965) show that a communication about tetanus shots was effective in changing beliefs and attitudes, but only 3% took the step of getting inoculated, compared with 28% of those who received a more precise explanation of how to get to the place where the inoculations were taking place and to schedule a time.

Figure 1 - CMISD Campaigns timeline

Beginning of 2013: Launch of Internet site and search engine for non-active retirement accounts.

June 2013: CMISD evaluation of the "Money Mounatin" camapign.

January 2015: Start of minimum fees in provident funds which will exhaust funds from small inactive accounts in provident funds.

The beginning of 2016: The tax exemption period for small inactive accounts was extended indefinitely.

May 2013: One month "Money Mountain" campaign on television, radio and Internet sites.

April 2014: Start of a one-year tax exemption period which was extended until July 2015, for withdrawal of small accounts from provident funds.

August 2015: Representative internet survey.

This figure shows the CMISD "Money Mountain" and tax exemption from small inactive accounts in provident funds campaigns from the beginning of 2013 until the beginning of 2016.

The portal uses information collected from all long term savings providers in Israel. The financial institutions were obligated by law to provide this information to the regulator. The Internet portal allowed individuals to enter the portal using data from their identity card and view all of their inactive funds (as long as they have inactive plans).[19] To move or withdraw the inactive funds, the individuals needed to contact the retirement plan provider and get further instructions that include either sending in forms or physically arriving at the provider's office or a bank branch.

In June 2013, the CMISD commissioned a survey in order to evaluate the success of the campaign, on a representative Internet sample of 504 non-ultra-Orthodox Jews between the ages of 30 and 60. The findings include: 67 percent were aware of the "Money Mountain" campaign, and the percentage was higher for older individuals and secular Jews. Fifty-four percent of respondents stated that they entered the "Money Mountain" Internet campaign site, and the proportion was higher for individuals aged 30–39, secular Jews and individuals with higher income. Of the people who were aware of the campaign, 66 percent indicated

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[19] As well as the providers where these accounts are held, and the providers' information (telephone number, fax number, email and street address).

that they used or intended to use the "Money Mountain" Internet portal. But, it is interesting to note that 51 percent of the people who were not previously aware of the campaign stated that they used or intended to use the "Money Mountain" Internet portal and that this number was higher for older individuals and secular Jews. Additionally the CMISD assesses that there were over 1.2 million entrances to the "Money Mountain" Internet portal during the month of May 2013.

At the same time as the "Money Mountain" campaign, the CMISD was working on passing a tax exemption for withdrawals of small inactive saving accounts (under 1,800 USD[20]) from provident funds for a short period of time (a year). The reason for the need for the tax exemption was that in the beginning of 2015, legislation from 2013 would come into effect and impose new minimum management fees in new provident funds. Provident funds have maximum fees that they can collect as a percentage of deposits and accruals. The new minimum fees regulation allows new provident funds to collect a fixed amount of 2 USD[21] per month, if they collect less than this amount using the maximum percentage fees. The new minimum management fees would exhaust small inactive funds over time. The regulator hoped that the tax exemption would encourage individuals to withdraw funds from small inactive accounts in provident funds and avoid losing their investment in the fund to fees. The tax exemption was put into effect in April 2014 for a year, but was then extended for another three months until the end of July 2015. The provident funds were also obligated to send owners of small inactive accounts a letter which describes their ability to withdraw their funds, tax exempt, for a short period of time, and the technicalities of how the funds can be withdrawn (via the fund or a bank). The CMISD assessed that there are about 1.8 million small inactive accounts, valued at a total of around USD 680 million.[22] During the first tax exemption period there was press coverage of the tax exemption in news and lifestyle content on television, radio, the Internet and in print media. In the first quarter of the tax exemption, until the end of June 2014, only 300 million accounts were withdrawn (11.5 percent of the accounts), and by the end of the period CMISD stated that only around 15 percent of the accounts were withdrawn, equal to approximately 19 percent of the total funds in these accounts.[23] During the tax exempt

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[20] Approximately NIS 7,000.
[21] NIS 6
[22] Over NIS 2 billion.
[23] Data received by CMISD representatives.

period, withdrawing funds from the provident fund was easier than in normal times and the funds published the procedure in the letter they sent to clients with eligible accounts.

The CMISD originally expected that the majority of funds would be withdrawn during the tax exemption campaign and were surprised by the relatively low withdrawal rate.

In July 2015, the CMISD extended the tax exemption again from the beginning of 2016 indefinitely.

2.2 Retirement plans in Israel

In Israel there are three retirement savings vehicles: provident funds, pension funds and insurance funds. These in general allow the withdrawal of funds as an annuity[24], except for money saved in provident funds up until 2008, which can be withdrawn as a lump sum after 15 years of savings. Because of this, historically, provident funds were used as a medium term savings vehicle as well as a retirement savings vehicle.

Since 2008, saving in an occupational retirement savings vehicle is mandatory for non-self-employed workers, and as of 2016 the minimum contribution level is a total of 17.5% of salary.[25] In 2014, there were 11 new (opened in 1995) defined contribution (DC) pension funds, 19 old (due to regulation, they were closed to new savers as of 1995) defined benefit (DB) pension funds, 12 insurance companies and 76 active provident funds.[26]

When workers in Israel change their place of work they do not automatically continue saving in their former occupational savings vehicles. This means that a large percentage of workers who change jobs have inactive accounts in former savings vehicles. The CMISD assessed at the time of the "Money Mountain" campaign that 40% of the accounts in all retirement saving vehicles are inactive and that there are more than USD 2.5 billion[27] in these inactive accounts. The 2014 CMISD annual report shows that in 2014, 48% of accounts in the new pension system were inactive and about 80% of accounts in the old pension system were inactive.

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[24] As of 2016, an amount permitting an annuity of at least USD 1,200 is needed in order to be able to withdraw sums as a lump sum without a fine.
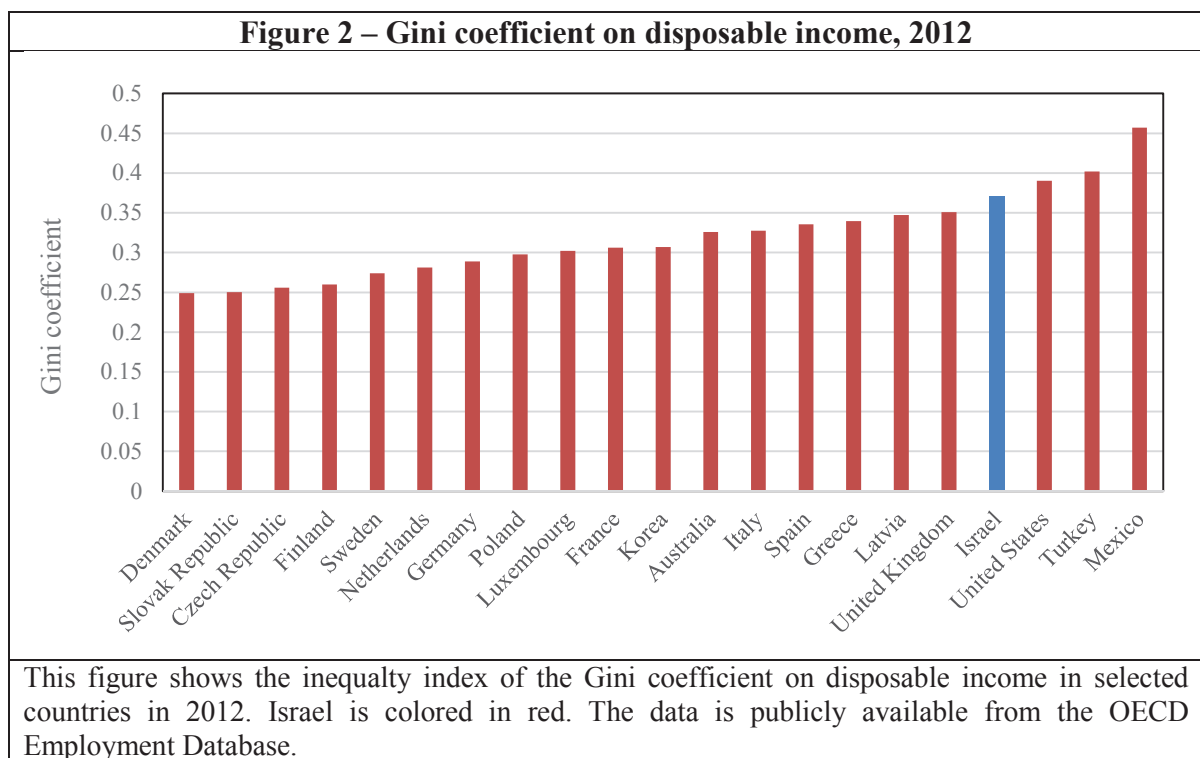
[25] This is another reason why the "Money Mountain" campaign is relevant to the general population as well as its appeal to inheritance from inactive relative's funds.

[26] Capital Markets, Insurance and Savings Division, Annual Report 2014.

[27] NIS 10 billion.

2.3 Israel: Demographics

Compared to other OECD countries, Israel is characterized by high income inequality (Figure 2). Nineteen percent of families in Israel live in poverty. Poverty rates are higher for ultra-Orthodox Jews and Arab families (both had a poverty rate of over 50 percent in 2014), families where the head of the household has less than 8 years of education, families where the head of the family is unemployed, immigrant families, and families living in the geographic periphery of the country.[28] The poverty rate for women in Israel (18.3% in 2014) is higher than for men (17.1% in 2014) and the gender gap for earnings in Israel is higher than the OECD average.

Figure 2 – Gini coefficient on disposable income, 2012

This figure shows the inequalty index of the Gini coefficient on disposable income in selected countries in 2012. Israel is colored in red. The data is publicly available from the OECD Employment Database.

Competence in a digital environment of Israeli adults from the 2014-2015 Program for the International Assessment of Adult Competencies (PIAAC) shows that Israeli adults have a slightly lower average grade (274) than the OECD average (279). The survey also shows a considerable difference between the Jewish population which has a grade slightly higher than the OECD average (280) and the Arab population which has a much lower grade (238).[29]

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[28] National Insurance Institute of Israel, Poverty and Social Gaps Report, 2014.
[29] The Israeli Central Bureau of Statistics.

2.4 Israel: Geographical indices

The proprietary data gives us information on individual's localities. We then match the locality data with geographical indices. Israel's Central Bureau of Statistics publishes two sociodemographic indices for Israeli local authorities—the socioeconomic cluster membership index and the periphery index. These indices can be used to characterize localities and their population, on average. These indices are noisy proxies for individual data because they use average characteristics of the localities, and there can be large internal differences in the conditions of the population in these localities.

The socioeconomic locality index is calculated using data from the 2008 national survey on demographic and standard-of-living features of the population in each locality, such as data on income, level of education, level of employment and national insurance allowances given to the population in each locality. Each locality is given a ranking between 1 and 10, where 1 is given to localities with very low socioeconomic conditions and 10 to localities that have very high socioeconomic conditions. Ninety percent of the localities with a low grade of between 1 and 3 are Arab localities.

The periphery index is based on data from 2004 and grades the localities' proximity to economic activity or potential for activity. The index is calculated using data of the proximity to the Tel Aviv district, the locality's size and the locality's proximity to other local authorities. Each locality is given a ranking between 1 and 5, where 1 is given to the most peripheral localities and 5 to localities that are the least peripheral. Scores of 4 and 5 are given to localities in the proximity of the Tel Aviv district and the Jerusalem district.

2.5 Israel: Financial literacy

In 2012, the Israeli Central Bureau of Statistics (hereinafter, CBS) published a financial literacy survey that included a representative survey of 1,200 people in Israel over the age of 20.[30] The survey showed that relative to the OECD average[31], the Israeli population has low financial literacy. The survey shows that 59% of the Israeli population understands how to calculate interest paid on a loan (versus an international average of 82%), 65%

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[30] Financial Literacy Survey: Knowledge, Opinions and Behavior in Financial Issues, November 2012, CBS.
[31] The average was calculated for the following countries: England, Germany, Norway, Ireland, Poland, Peru, Albania, South Africa, Estonia, Hungary, Armenia, the Czech Republic, Albania and the Virgin Islands.

know the definition of inflation (versus an international average of 80%) and 48% understand diversification (versus an international average of 71%).

The survey also indicated that the Israeli population has a very positive attitude toward long term saving. Only 18% stated that they would rather spend money today and not save for the long term versus a 45% OECD international average. This second finding may indicate that Israel's population might have a more positive attitude toward retirement saving than in other countries.

Meir, Mugerman and Sade (2016) analyzed financial literacy, general financial behavior, retirement planning and numeracy abilities in Israel, using an Internet survey taken in 2012 of 501 Israeli individuals between the ages of 46 and 61. The findings of financial literacy in Israel in their paper are higher than those in the CBS financial literacy survey. They document that their financial literacy index is positively correlated with being male, having higher education, having higher income and being a non-immigrant. Additionally, the paper shows that retirement planning is correlated with a higher financial literacy index.

3. Data description

The data was obtained from two sources: A large provident fund and two Internet surveys (a main survey and a complementary survey).

3.1 Provident fund data

The first data source is proprietary data obtained from a large provident fund in Israel, and contains data on 12,735 inactive accounts eligible for tax-exempt withdrawal beginning March 1, 2014, with an indication if these funds were withdrawn before the end of the tax exemption period that ended in July 2015.[32] For the provident fund, we have data on account holder's gender (does not have to be the person who actually withdraws the funds), age, value of funds, locality and if the account was withdrawn. Using the locality data we are able to identify if the locality is Arab, as well as the locality's CBS socioeconomic index and CBS periphery index.

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[32] We were not able to retrieve data from earlier periods of time.

In the provident fund there is a majority of females and the average population has stronger socioeconomic indices than the country's average—54% are female, 4% are from Arab localities, the average socioeconomic index is 5.7, which is above the country's average of 4.8, and the periphery index is 3.6, which is also above the country's average of 2.8. The average eligible fund size is around USD 450 (median USD 250).[33]

3.2 Internet surveys—Main survey and complementary survey

Our Internet survey consisted of questions regarding retirement savings, and included questions about awareness of the two financial campaigns and financial action taken because of the campaigns. The survey also included objective questions about financial literacy, subjective questions about how the respondent feels toward the issue of retirement savings, and several demographic questions.

The main Internet survey, based on a nationally representative sample of 504 people, was conducted in August 2015 using a professional survey company. This sample is supposed to represent the general population, even though, like all Internet surveys, it represents only the technologically skilled population and underrepresents certain parts of the population such as ultra-Orthodox Jews and Arabs.

Our sample is similar to the CBS Expenditure Survey of 2014, which is a representative sample of the Israeli population (percentage found in CBS survey in parentheses): 48% males (48%), 57% married (64%), 29% with traditional beliefs (29%), 15% with religious beliefs (13%), 6% retirees (5%) and 22% unemployed (25%). Our Internet survey seems to underrepresent immigrants, with only 16% (30%), ultra-Orthodox Jews who are only 3% (8%) and the Arab population which is only 1% (16%) in our sample. The survey data also indicates that only 26% of ultra-Orthodox Jews have a personal Internet subscription and the Arab population only has a 41% personal Internet subscription, compared with a 71% national average.

The nationally representative survey was complemented by an additional sample of 124 people who stated that they were aware of the "Money Mountain" campaign, so that we could have better statistics on this population. The complementary sample has more males, is more educated, more employed, more secular and older.

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[33] NIS 1,650 and NIS 990, respectively.

4. Provident fund withdrawals

The proprietary data from the provident fund has information on actual withdrawals. While we have each individual's choice, we have limited information about their personal characteristics or financial knowledge.

Informal inquiries with the provident fund indicated that during the campaign the withdrawal rate was much higher than the usual withdrawal rate and the campaign had an impact. The withdrawal rate from eligible inactive accounts from the provident fund was 16%, similar to the 15% stated by the CMISD.

Table 1 - Mean differences of withdrawn accounts during tax exemption campaign by different population subsets (Number, means, percent)						
Population subsets:	Age>60	Age<35	Periphery index above median[1]	Socioeconomic index above median[2]	From Arab locality	Woman
N	1,787	3,074	6,582	6,144	499	6,852
% Withdrew accounts	23%	15%	18%	18%	11%	16%
Population subsets:	Age<61	Age>34	Periphery index below median[1]	Socioeconomic index below median[2]	Not from Arab locality	Male
N	10,937	9,650	1,311	3,109	12,236	5,883
% Withdrew accounts	15%	17%	15%	13%	16%	16%
T-score of mean difference	7.38***	-2.16**	2.7***	7.2***	-4.09***	0.75

[1] Periphery index of local authorities in Israeli from the Israeli Central Bureau of Statistics (1 is for authorities in the outskirts of the country and 5 is for authorities in the heart of the country). The country median is 3 and the average is 2.8. Data is presented for subsets above or below the country median.
[2] Socioeconomic index of local authorities in Israeli from the Israeli Central Bureau of Statistics (1 is for low economic authorities and 10 is for high socioeconomic authorities). The country median is 5 and the average is 4.8. Data is presented for subsets above or below the country median.

*** p<0.01, ** p<0.05, * p<0.1

Notes: The table shows the number of withdrawn accounts out of eligible accounts during the tax exemption campaign, from the beginning of March 2014 to the end of July 2015, for different population subsets. The data comes from the large provident fund data.

In Table 1 we present differences between the population that withdrew funds and the population that did not withdraw funds from the provident fund. For the geographical indices—the socioeconomic index and peripheral index—we divide our sample based on

localities above and below the median score of the indices in the general population.[34] In Table 1, using T-tests, we can see that when dividing the population by socioeconomic conditions, the population with higher socioeconomic indices and older account owners are more likely to withdraw funds. The percent of people withdrawing funds who come from localities that have a high socioeconomic index is 18% versus a 13% rate of withdrawal by account owners who come from localities with a low socioeconomic index; this is a statistically significant difference. The withdrawal rate of account owners who come from peripheral localities is 15% versus 18% from non-peripheral localities. Additionally, the withdrawal rate from Arab localities is only 11%, significantly different from the 16% average from all other localities. As noted above, in Israel, higher poverty rates have been found in the periphery and in the Arab community. Older account owners have a statistically significant higher withdrawal rate (account owners over 60 have a withdrawal rate of 23% and account owners under 35 have a withdrawal rate of 15%). We do not find a difference in withdrawal rates between men and women based on the provident fund data.

When looking at withdrawals by account size and by a socioeconomic partition, we find interesting outcomes, which can be seen in Table 2. First, the larger the amount in the small inactive account the higher withdrawal rate for all socioeconomic populations. Additionally, for low socioeconomic attributes, the proportion of small funds withdrawn is less than half of the population average; 6% of small eligible funds withdrawn versus 13% of all eligible funds. The lack of withdrawals from small accounts is much stronger for the low socioeconomic population than for the high socioeconomic population. This is in reverse to an expected income effect that should make small funds more worthwhile for the poorer population. One possible explanation for this phenomenon is that the low socioeconomic population is more aware of accounts with larger amounts of money which usually derive from more long term jobs, and the regulatory campaigns had less of an effect on this population. For the high socioeconomic population, withdrawal from large accounts is much more significant than the population average; 24% of large eligible accounts versus 18% of all eligible accounts. This high rate of withdrawal from large accounts is much more significant for the high socioeconomic population than the relative higher rate of withdrawal for the low socioeconomic population. If the amount of money relative to

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[34] The partition was chosen taking into account two considerations: By looking at localities at the edges of the distribution we are able to have a better distinction of the populations, yet at the same time, the more one limits the index scores the less observations there are and the explanatory ability is diminished.

income would be the main factor, we would expect to see higher withdrawal rates from the larger accounts among the poorer low socioeconomic population.

Table 2 - Difference of accounts withdrawn from socio-economic population mean by account size

		Small account[2]	Medium account[2]	Large account[2]
Socio-economic index above median[1]	**Account size USD**	47	323	1,166
	Withdrawal rate	14%	18%	24%
	T-score of mean difference from population	**-4.79***	**-1.91**	**3.47***
Socio-economic index below median[1]	**Account size USD**	48	318	1,158
	Withdrawal rate	6%	14%	19%
	T-score of mean difference from population	**-6.19***	**-0.93**	**2.13****

[1] Socioeconomic index of local authorities in Israeli from the Israeli Central Bureau of Statistics (1 is for low economic authorities and 10 is for high socioeconomic authorities). The country median is 5 and the average is 4.8.

[2] Size of account calculated by dividing the accounts size to: small accounts are the first quarter, medium are the 2nd and 3rd quarter and large accounts are the 4th largest quarter

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Notes: The table shows percent of withdrawn accounts out of eligible accounts during the tax exemption campaign, beginning of March 2014 to the end of July 2015, by socio-economic index and size of the account (amount of money): small, medium or large. NIS to USD conversion rate of 3.8. The data comes from the large provident fund data.

One of the major advantages of the provident fund data is that they describe individuals' real choices. Using this data we were able to find an interesting geographical connection between Arab localities, a locality's socioeconomic index, and a locality's periphery index with actual financial action. The disadvantage of the provident fund data is that although we know that financial literacy is correlated with socioeconomic characteristics, we cannot infer if the individual's financial literacy is responsible for the connection or if the outcome was derived by other factors. Another disadvantage is that actual withdrawals can be affected by behavioral biases, literacy and technical difficulties combined. The survey data

presented below enabled us to investigate factors on an individual level and to focus on the information channel.

5. Survey Data

To examine the relationship between financial literacy and confidence in retirement knowledge with awareness of financial regulation or financial actions, we needed to construct measures to estimate these personal characteristics. The following section describes the financial literacy index and how we define and evaluate subjective financial questions.

5.1 Survey: Personal characteristics variables

5.1.1   Financial literacy index

The most comparable and widespread measure of financial literacy in the academic literature is made up of three questions regarding interest rate, inflation and risk diversification.[35] These basic questions are the same ones used in this paper and have been shown to differentiate well between naïve and sophisticated respondents. The responses can characterize peoples' levels of financial knowledge and are strongly correlated with financial behaviors. Lusardi and Mitchell (2009) found that when adding more questions to the three stated above, the additional questions did not change any of the conclusions or the major demographic characteristics of people with higher or lower financial literacy.

The index is calculated (in a similar manner to the literature) so that each question answered correctly gives the respondent a score of 1, and the index value is the sum of all three questions answered correctly.[36] Main statistics on these three questions appear in Table 3, where we can see that 76% correctly answered the interest rate question, 59%

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[35] An example of the status of these questions can be found in Hasting, Mandrian and Skimmyhorn's (2012) literature review, where these three questions are called the "Big Three". In Hung, Parker and Yoong (2009) they show that the three original financial literacy questions are stable over time and have a high correlation with other financial literacy measures. The wording of the questions is presented in Table 1.

[36] Unlike in Lusardi and Michell (2007) and in the Dutch DNB Household Survey (DHS) (Van Rooij, Lusardie and Alessie, 2011) the wording of the diversification question were not changed and we only presented one set of wording. We used in this paper the wording which had higher rates of response. The fact that wording matters provides evidence that respondents often do not understand the question or concepts, and some answers are simply the result of guessing. It also shows that answers to advanced financial literacy questions should not be taken at face value and the empirical work should take into account that these measures are often noisy proxies of the true level of financial literacy.

correctly answered the inflation question and 45% correctly answered the diversification question.

Name of question	Interest question				Inflation question				Diversification question		
Question	Suppose you had $100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow?				Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account?				Do you think that the following statement is true or false? "Buying a single company stock usually provides a safer return than a stock mutual fund."		
Answer	More than $102	Exactly $102	Less than $102	DK[1]	Less than today	More than today	Exactly the same	DK[1]	FALSE	TRUE	DK[1]
	correct answer	wrong answer		DK*	correct answer	wrong answer		DK*	correct answer	wrong answer	DK*
	76%	11%		14%	59%	14%		27%	45%	7%	47%

Table 3 – Financial literacy question and the distribution of answers

Do not know the answer.
Notes: The table shows the wording of the questions and answers of the three financial literacy questions with the percent of individuals that answered correctly, incorrectly or stated that they do not know the answer. The data comes from the representative sample survey data.

A comparison with previous studies and other countries is presented in Figure 3 and uses data from Hastings, Madrian and Skimmyhorn (2012). Our Israeli sample scored higher on the interest rate question (76% answered correctly versus a 66% average), slightly higher in the inflation question (59% versus 57%) and slightly lower in the diversification question (45% versus 47%). The overall index score we found in Israel was a bit lower relative to the average index score from Hastings, Madrian and Skimmyhorn (2012)—31% relative to 33%.

The findings in the main survey are very similar to those that the CBS found in the Financial Literacy Survey from 2012 and are presented above, even though the exact wording of the questions was different, and lower than the findings in Meir, Mugerman and Sade (2016).[37]

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[37] This survey was done on an older population which might explain the differences.

Figure 3 – Financial literacy answers, past research

Answered all three questions correct
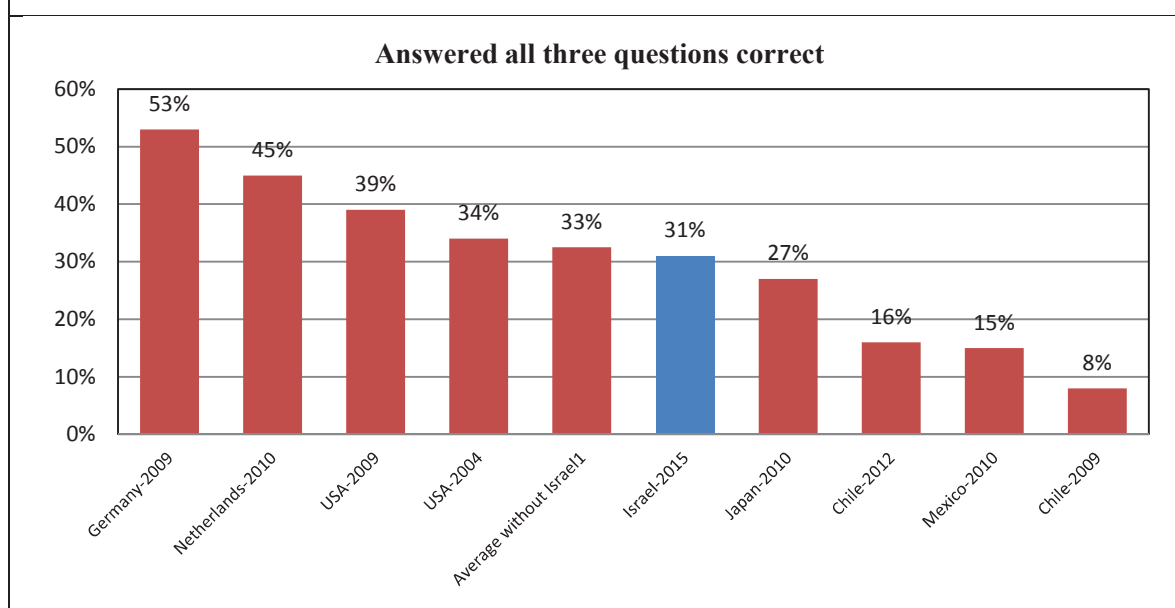
This figure shows the percent of individuals who answered all three financial literacy questions in past studies, named by year and country of survey. If a country has two observations only the later one was taken into account when calculating the average.The survey outcomes from our paper are presented in red. The data comes from Hastings, Madrian and Skimmyhorn (2012) and our representative sample survey data.

5.1.2 Subjective financial literacy

As stated in the literature, awareness and financial action can depend on subjective feelings and confidence that people have with regard to their financial knowledge.[38] In this paper we wanted to isolate financial confidence with regard to retirement and pension planning and not general financial literacy. In the question presented in this paper we specifically asked about understanding retirement savings. The wording of the question and main statistics are presented with the other subjective questions in Table 4.

We find that the percent of people answering that they more than moderately understand retirement saving (if coded between 1 and 5, all those answering 3 and above) is 29%, while in Lusardi (2011) the share of people who stated that their financial knowledge is 5 and above (5-7) is 70%. This indicates that there might be differences between subjective retirement literacy and subjective general financial literacy, with subjective retirement literacy being lower. It is also interesting to

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[38] In previous studies, Lusardi (2011), Lusardi and Tufano (2009) and Van Rooij, Lusardi, and Alessie (2011 and 2012) a general question of financial confidence in knowledge was used: "On a scale from 1 to 7, where 1 means very low and 7 means very high, how would you assess your overall financial knowledge?". In Lusardi and Mitchell (2009) the wording of the question was slightly different: The wording was: On a scale from 1 to 7, where 1 means very low and 7 means very high, how would you assess your understanding of economics?".

note that the correlation between the confidence in retirement knowledge variable and the financial literacy index is only 0.16.

Table 4 – Subjective questions and distribution of answers							
Question category		**To a very large extent**	**To a large extent**	**Moderately**	**Slightly**	**Not at all**	**DK[1]**
Confidence in retirement knowledge	**How much do you feel you understand pension savings /retirement savings /provident funds?**	1%	7%	21%	37%	29%	6%
Interest in retirement	**How much are you interested in pension savings /retirement savings /provident funds?**	9%	17%	33%	23%	14%	4%
[1] Do not know the answer							
Notes: The table shows the wording of the questions and answers of the two subjective questions with the percent of individuals that answered correctly, incorrectly or stated that they do not know the answer. The data comes from the representative sample survey data.							

5.1.3   *Interest in retirement issues*

Our question of confidence in retirement knowledge is not as validated as the financial literacy index. That is why we included another subjective question about interest in retirement issues in the survey. The wording of the question and main statistics are presented in Table 4. The correlation of confidence in retirement knowledge with interest in retirement issues is 0.35[39] and the correlation between interest in retirement and the financial literacy index is not statistically different from zero.[40]

5.1.4   *Descriptive statistics of personal characteristics variables*

Our survey results indicate (Table 5) that people with high financial literacy come from populations that are older, more male, have higher income, have a higher education and they most likely come from localities that have a high socioeconomic index. We can also learn from Table 5 that people with high confidence in their retirement knowledge are

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[39] Spearman non-parametric correlations and significant at the 1% level.
[40] Spearman non-parametric correlations 0.05.

older, more male, a greater percentage are Israeli born, most likely come from localities with high socioeconomic index and from central localities.

Table 5 - Demographic characteristics and mean differences for people who have high and low: financial literacy index score and confidence in retirement knowledge						
	Financial literacy[5]			**Confidence in retirement knowledge[6]**		
Demographic charact eristics	**Low**	**High**	**T-score of mean difference between Low and High**	**Low**	**High**	**T-score of mean difference between Low and High**
Age	37.19	41.97	**-2.45****	39.21	43.43	**-1.81***
Female	72%	35%	**5.78*****	59%	23%	**5.11*****
Immigrants	12%	17%	**-0.97**	18%	8%	**2.2****
Income level[1]	1.97	2.52	**-3.87*****	2.23	2.36	**-0.84**
Education level[2]	1.61	2.13	**-6.03*****	1.88	1.97	**-0.82**
Percent of people that have a socioeconomic index *above median*[3]	42%	62%	**-1.79***	60%	54%	**0.7**
Percent of people that have a socioeconomic index above 8[3]	13%	35%	**-3.96*****	22%	21%	**0.28**
Percent of people that have a socioeconomic index below median[3]	21%	12%	**1.57**	12%	13%	**-0.06**
Percent of people that have a socioeconomic index below 3[3]	1%	1%	**0.06**	1%	0%	**2.01****
Percent of people that have a periphery index *above median*[4]	63%	71%	**-1.19**	62%	67%	**-0.57**
Percent of people that have a periphery index *below median*[4]	13%	6%	**1.55**	8%	3%	**1.77***

[1] Income ranges between 1 and 3, where 1 is below average income, 2 is average income and 3 is above average income.

[2] Education ranges between 1 and 3, where 1 is high school education or below, 2 is above high school education and 3 is academic education.

[3] Socioeconomic index of local authorities in Israeli from the Israeli Central Bureau of Statistics (1 is for low socioeconomic authorities and 10 is for high socioeconomic authorities). The country median is 5 and the average is 4.8.

[4] Periphery index of local authorities in Israeli from the Israeli Central Bureau of Statistics (1 is for authorities in the outskirts of the country and 5 is for authorities in the heart of the country). The country median is 3 and the average is 2.8.

[5] People with low financial literacy received o in the financial literacy index and people with high financial literacy received 3 in the financial literacy index.

[6] People with low confidence in retirement knowledge stated that they do not understand retirement issues to a large extent and more, and people with high confidence in retirement knowledge stated that they understand retirement issues to a large extend or more.

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Notes: The table shows means and mean difference for individuals with high or low financial literacy and confidence in retirement knowledge. The data comes from the representative sample survey data.

5.1.5 *Descriptive statistics regarding awareness of the campaign and financial action taken*

The awareness of the "Money Mountain" campaign and of the tax exemption for small inactive plans in provident funds campaign is the same (42% and 40%, respectively). This is surprising because the "Money Mountain" campaign was publicized as a commercial in major media and we would expect that a wider range of the population would have awareness of the campaign. This might be because the survey was taken during 2015, only two months after the tax exemption period ended but more than two years after the initial "Money Mountain" commercial was broadcast. When comparing this outcome to the CMISD evaluation from June 2013, we see that after two years the awareness of the campaign is much lower (down from 67%) even though the issue remained in the public light, this could be because the effect of interventions decays over time (Fernandes, Lynch, and Netemeyer, 2014). In addition, most of the people who heard about the "Money Mountain" campaign were also aware of the tax exemption; 58% in the representative sample and 74% in the complementary sample. This is initial evidence that there might be some features of the population making people more perceptive of financial campaigns because most of those who were aware of one campaign were also aware of the other.

When looking at the representative sample, we find that a higher percentage of people visited the "Money Mountain" Internet portal than those that were aware of the campaign, 53% versus 42%, which means that some people were apparently aware of the campaign even though they answered differently. On the other hand, most of the people who visited the site were aware of the "Money Mountain" campaign or of the tax exemption (65% and 61%, respectively). This again can be explained by the time lag between the campaign and the surveys and it can also be because people do not fully differentiate between the two campaigns or their names. When comparing this outcome to the CMISD evaluation from June 2013, we see that the percentage of people who visited the "Money Mountain" Internet portal stayed the same—53% versus 54% in the CMISD evaluation. This may imply that the campaign's effect is short termed and that most of the people entering the Internet portal did so close to when the campaign aired in the media.

Contacts to the retirement savings fund provider with intent to withdraw funds due to the campaigns are much lower and stand at 14% for the main representative sample. Individuals who contacted the retirement fund manager with intent to withdraw funds could have done so for the intention of withdrawing tax exempt funds from provident funds or

funds from other retirement vehicles due to the "Money Mountain" campaign. Not all those that contacted the retirement fund manager actually withdrew funds. The survey data indicates that 70% of the individuals that intended to withdraw funds stated that they did so, while 25% left the funds in the accounts. Leaving the funds in the account could be because the individuals encountered technical difficulties or any behavioral biases. That is why we look at an individual's intentions, which are more relevant to information dissemination, and not at final outcomes.

It is worth noting that a high share of the people who had the intention of withdrawing funds were fully aware of at least one of the campaigns; 68% were aware of the "Money Mountain" campaign and 76% were aware of the tax exemption campaign. Fifty-one percent of the people who had the intention of withdrawing funds were aware of both campaigns.

In Figure 4A we can already see that people that have a high financial literacy index are more aware of the financial campaigns—awareness is around 55% for individuals with high financial literacy versus around 25% awareness for individuals with low financial literacy.[41] Individuals with high financial literacy are also more likely to have entered the "Money Mountain" Internet portal; 62% versus 41% of individuals with low financial literacy.[42] Yet at the same time, when looking at the intention of withdrawing funds, financial literacy does not seem to matter[43] and this may imply that other factors should be taken into account, such as confidence in retirement knowledge. Financial confidence seems to play a rule in awareness and in financial action as can also be seen in Figure 4B. Individuals with high confidence, compared with all other individuals, are more aware of the "Money Mountain" campaign, 73% versus 40%; are more aware of the tax exemption campaign, 78% versus 37%; were more likely to have entered the designated Internet portal, 85% versus 50%; and had more intention of withdrawing funds, 35% versus 13%.[44]

[41] This difference is statistically significant at the 1% level.
[42] This difference is statistically significant at the 1% level.
[43] Difference not statistically different from zero.
[44] All differences between individuals with high and low confidence in retirement knowledge are statistically significant at the 1% level.

Figure 4 – Financial regulation outcomes by financial literacy and confidence in retirement knowledge, representative sample

Figure 4A- Financial regulation outcomes by financial literacy
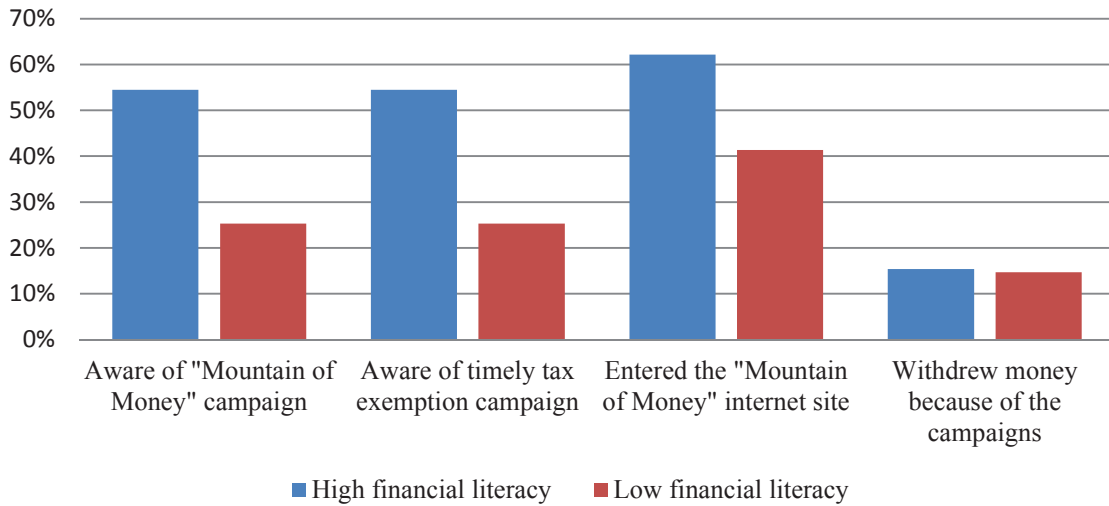
This figure shows the percent of individuals who answered that they were aware of the financial camapaigns or took financial action presented by the number of financial literacy answers they got correct. Individuals who have high financial literacy (answered all 3 questions correctly) are in blue, and individuals who have low financial literacy (did not answer correctly any question) are in red. The data comes from our representative sample survey data.

Figure 4B- Financial regulation outcomes by confidence in retirement knowledge
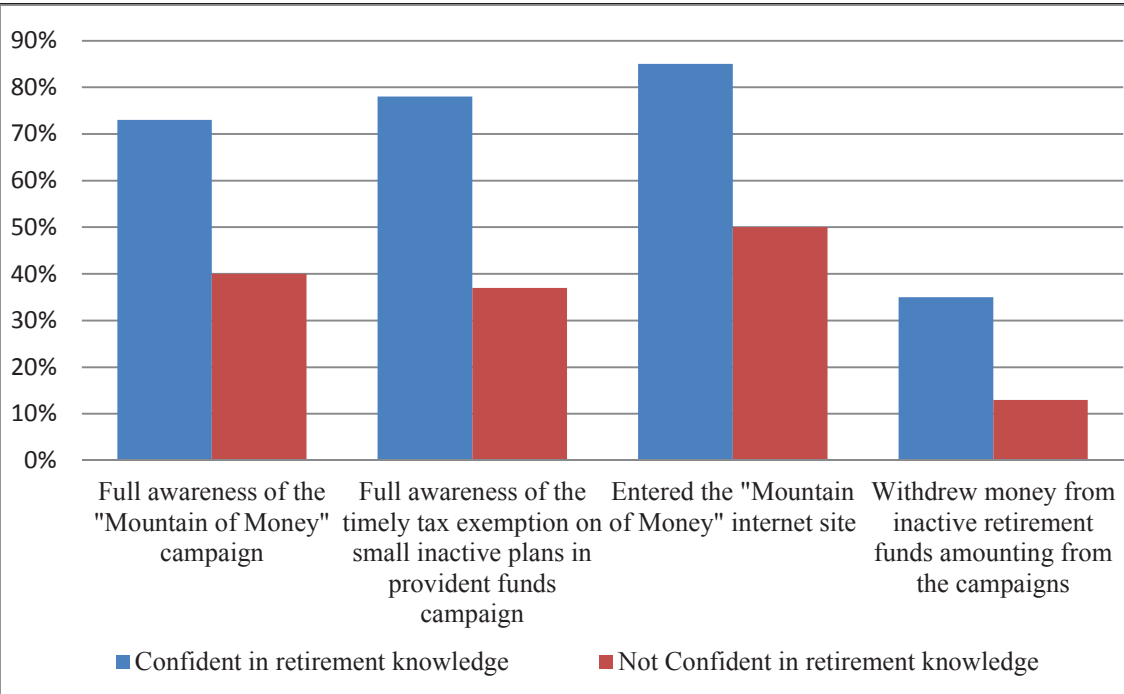
This figure shows the percent of individuals who answered that they were aware of the financial camapaigns or took financial action presented by their confidence in their financial knowledge. Individuals who stated that they understand retirement to a large extent or more, and have confidence in their retirement knowledge are presented in blue. Individuals who did not answer that they understand retirement to a large extent or more and do not have confidence in their own knowledge are presented in red. The data comes from our representative sample survey data.

5.2 Survey: Results

5.2.1 Empirical model

We investigated the relationship between financial outcomes and the personal attributes of individuals, financial literacy and confidence in retirement knowledge. Awareness of financial campaigns and financial action are dummy variables that can receive two possible values; 0 or 1. Awareness of financial campaigns and financial action can be affected by financial literacy[45], financial confidence and demographic characteristics.[46] Hence, the specification of the main regressions is the following[47]:

$$y_{ij} = \alpha_j + \beta_{1j} * financial\ literacy_i + \beta_{2j} * \text{Confidence in retirement knowledge}_i$$
$$+ \beta_{3j} * X_i + \epsilon_{ij}$$

Where y_{ij} is the outcome $j\epsilon(1,4)$ variable for individual i; either (1) awareness of the "Money Mountain" campaign, (2) awareness of the tax exemption on small inactive plans in provident funds campaign, (3) entrance to the "Money Mountain" Internet portal or (4) had the intention of withdrawing funds from inactive retirement funds amounting from the campaigns. X are individual i's demographic characteristics including age, gender, marital status, income, education, religious identity, work status and an indicator for whether the individual is an immigrant or not.[48] The variable description is presented in Appendix 1.[49]

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[45] When separating the financial literacy index the outcomes are consistent with former research as shown in Lusardi and Mitchell (2011-world review) and Alessie, van Rooij, and Lusardi (2011); it is the understanding of risk diversification (understanding of advanced financial knowledge) that matters most for retirement planning. Despite this, for the specifications presented above we still believe that the financial literacy index has better explanatory power because of former research that shows the stability of the index over time and the correlation with other financial literacy measures (Hung, Parker, and Yoong 2009).

[46] We believe that the correlations we find in the survey results section do not derive reverse causality, where being aware of financial regulations and/or taking financial action affects individual's financial literacy or confidence in the issue.

[47] When running the regressions for awareness of the campaigns and financial action taken without the "confidence in retirement knowledge" variable, the financial literacy index variable has a stronger and more significant effect.

[48] It should be stated that none of the demographic variables have a correlation higher than 0.3 with either the financial literacy variable or with the confidence in retirement knowledge variable.

[49] Results remain similar when using different specifications of the sociodemographic variables. Additionally, as expected by the structure of the variable, when using a dummy which indicates if you are above or under the survey financial literacy index median score the outcomes of the models are similar except for the fact that the financial literacy variable affects are stronger. Similarly, when adding a dummy which indicates if you answered that you have a low or a very low understanding of retirement issues we receive similar outcomes for the regressions except that the two confidence in retirement knowledge dummies are not always both statistically significant. In another robustness check, for the weighted complementary sample we added income information for 82 observations where income was missing using a forecast regression from the CBS expenditure survey of 2014. The outcomes are again similar in size and significant to the main specifications in the paper.

We estimate the model using three data specifications: the first is the representative sample, the second is the representative sample with an additional complementary sample and the third is the representative sample with a weighted additional complementary sample. The first and main sample selection is the representative sample that has 504 respondents. The additional complementary sample has 124 respondents from the same Internet survey who stated they were aware of the "Money Mountain" campaign. We surveyed the additional sample in order to make sure we have enough observations of the population to characterize it. The weights for the complementary sample in the third data specification are such that respondents of the complementary sample received a 0.42 weight and respondents for the representative sample received a weight of 1. The reason for this is that when looking at the representative sample only 42% stated that they are fully aware of the "Money Mountain" campaign, and the weights were built accordingly.[50]

We begin by examining the characteristics of individuals who are aware of the financial campaigns (Table 6). We also examine the characteristics of individuals who took financial action following the financial campaigns (Table 7). We present the size of the characteristics' effects on individuals' awareness of financial campaigns and their financial action (Table 8). We then continue to examine robust specifications (Table 9).

5.2.2 *Characteristics of individuals who indicated that they were aware of the campaign*

In Table 6[51], we look at the characteristics of individuals in order to investigate what affect the awareness of the financial campaigns had. The tables presented in this paper use a Logit method of estimation but results are qualitatively similar when using either a linear probability model (estimated by OLS) or Probit method of estimation. In particular, our main coefficients of interest (financial literacy and confidence in financial knowledge) have the same sign and similar levels of statistical significance across all three estimation techniques.

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[50] A specification where a dummy variable is used instead of weights for the complementary sample produces similar outcomes.
[51] When analyzing the awareness of the campaigns we only investigate the representative sample (columns 1 and 4) because the complementary sample is made up of respondents that stated upfront that they are aware of the "Money Mountain" campaign.

Table 6 - Awareness of campaigns, main specification, representative sample

Variables:		Full awareness of the "Money Mountain" campaign	Full awareness of the tax exemption on small inactive plans in provident funds campaign
		(1)	(2)
Financial literacy index		0.281**	0.337***
		(0.116)	(0.125)
Confidence in retirement knowledge		0.937**	1.497***
		(0.414)	(0.454)
Age		0.015	0.024**
		(0.01)	(0.01)
Female		-0.347	-0.317
		(0.219)	(0.231)
Married		0.054	0.348
		(0.254)	(0.265)
Income Level	Average income	0.469	-0.086
		(0.439)	(0.476)
	Above average income	0.148	0.019
		(0.255)	(0.273)
Education Level	Above high school education	-0.046	0.993***
		(0.272)	(0.315)
	Academic education	0.272	0.959**
		(0.357)	(0.392)
Religious Identity	Traditional	0.026	-0.14
		(0.242)	(0.259)
	Religious	-0.235	-0.254
		(0.329)	(0.344)
	Ultra-Orthodox	-0.214	-0.348
		(0.736)	(0.753)
Working Level	Unemployed	-0.6**	-0.594*
		(0.293)	(0.32)
	Retiree	-0.472	-0.278
		(0.516)	(0.53)
Immigrant		-0.498*	-0.135
		(0.297)	(0.298)
Constant		-1.268***	-2.744***
		(0.486)	(0.555)
Observations		424	424
McFadden Pseudo R^2		0.23	0.29
AIC		562	517

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Notes: Each column represents a different regression of the effect of individual characteristics on awareness of financial campaigns. Column (1) reports Logit estimations on awareness of "Money Mountain" campaign for the representative sample. Column (2) reports Logit estimation on awareness of the tax exemption campaign for the representative sample.

Column (1) of Table 6 shows that there are a number of variables that significantly affect the awareness of the "Money Mountain" campaign which was publicized as a commercial on television, the radio and Internet sites. The coefficients of financial literacy and confidence in retirement knowledge are statistically significant and positive. Immigrants

and the unemployed have negative significance correlation with awareness of the campaign. An explanation for the negative effect of being an immigrant, mostly from the former USSR (over 50% of immigrants in the survey come from the former USSR), can arise from language barriers or even cultural barriers that prevented this population from registering the campaign. When looking at immigrants from 1989 instead of all immigrants, the regression's outcomes are very similar (not displayed). Controlling for all other related variables, in the representative sample, age was not found to have a significant effect.[52] Age and age squared were also found to have no effect in the regression where the working level dummies, which have a high correlation of over 0.4 in absolute value with the age variable, were not added, as presented in column (1) in Table 9.

Column (2) of Table 6 shows the effect of the variables for awareness of the tax exemption on small inactive plans in provident funds campaign. In this regression, again, the effects of financial literacy and confidence in retirement knowledge are significant and positive, and being unemployed remains statistically significant with a negative effect. In this regression, age and higher education are statistically significant and positively correlated with being aware of the tax exemption. The fact that this campaign was not broadcast using a commercial on prime-time television or radio can explain why these effects are stronger. For example, if the campaign was only mentioned in economic media, then only people who listen to or read economic media are aware of the campaign. If the people who listen to or read economic media are more educated this can explain the positive connection between awareness of the campaign and education. Another potential explanation is the complexity of knowledge that is needed for fully understanding the campaign. Clearly, it is more complicated to understand tax exemption issues.

For awareness of the tax exemption campaign, the coefficient of immigrants is not significant but the sign of the coefficient is still negative. Immigrants (who are mostly from the former USSR), might not have been aware of the commercial which was only broadcast in Hebrew but they could have been aware of the tax exemption which was promoted in immigrant-oriented media in different languages as well (even though this was probably more financial oriented media and hence the importance of the other significant variables in the regression).

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[52] Age has a correlation of 0.41 with the working status variable.

Age is positively correlated with awareness of the tax exemption campaign and when adding age squared and dropping the variable for working level (which includes retirees and is strongly correlated with age) both age variables are statistically significant, where age squared is negative and age stays positive—column (2) in Table 9. This is in accordance with the literature, where the effect of age on financial outcomes has been found to have an inverse U shape.

5.2.3 *Characteristics of individuals that took financial action*

Table 7 presents the effect of the dependent variables on entering the Internet portal and or contacting the provider with intent to withdraw funds.[53] One of the regulator's objectives was not only to raise the awareness of the population but also to provide the population with a digital tool to help them check if they have inactive accounts, and where. In columns (1)-(3) of Table 7, we investigate the variable of entering the "Money Mountain" Internet portal. We do not have the timing of when individuals entered the "Money Mountain" Internet portal or contacted the fund managers with intent to withdraw funds. This means that we do not know if the people are entering the site because of the "Money Mountain" campaign or because of the tax exemption or because of both.[54] In these regressions, financial literacy, confidence in retirement knowledge, age, being female and academic education[55] are positive and statistically significant. We also find that the effect of age has an inverse U shape even when controlling for working level variables (not presented, the regression without the working level variables is presented in column (3) in Table 9). The nature of the financial action in this regression is technological and needs individuals to be comfortable with the Internet and technology as well as with the subject. It is reasonable that this kind of financial action has a strong inverse U shape with regard to age. The gender effect found in these regressions is consistent with the literature on financial literacy, although we didn't find such unequivocal outcome for awareness of financial

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[53]When running the financial action regressions only on the population that indicates that it has retirement savings in pension funds, provident funds or in insurance policies (412 respondents in the representative sample instead of 504), we see that education is no longer statistically significant for entering the Internet site and the unemployed variable is no longer statistically significant for withdrawing funds but all other outcomes are hardly changed (not presented). We believe that a large part of the population does not know if it has retirement savings or not and looking at the more general sample gives a better indication of actual outcomes.

[54] From matching the overall entries to the CMISD data from June 2013 we find little differences which could mean that most of the entries resulted from the "Money Mountain" campaign.

[55]In column (2) the education variables are not statistically significant but we believe that this sample suffers from uncorrected sample selection.

campaigns. Being a woman is documented to have negative effects on financial outcomes above and beyond the effect originating from financial literacy.

Table 7 – Financial action, Main specification						
		Entered the "Money Mountain" Internet portal			**Contact with the intent of withdrawing funds amounting from the campaigns**		
Variables:		(1)[1]	(2)[2]	(3)[3]	(4)[1]	(5)[2]	(6)[3]
Financial literacy index		0.1430	0.234**	0.188*	-0.050	0.0010	-0.028
		(0.115)	(0.102)	(0.109)	(0.171)	(0.147)	(0.159)
Confidence in retirement knowledge		1.447***	1.049***	1.234***	0.874**	1.398***	1.158***
		(0.494)	(0.383)	(0.436)	(0.432)	(0.324)	(0.37)
Age		0.027***	0.031***	0.029***	0.010	0.0080	0.009
		(0.01)	(0.009)	(0.009)	(0.014)	(0.011)	(0.012)
Female		-0.372*	-0.405**	-0.39*	-0.604*	-0.4520	-0.521*
		(0.22)	(0.198)	(0.209)	(0.326)	(0.278)	(0.302)
Married		0.1920	0.1980	0.190	0.2750	0.4660	0.373
		(0.25)	(0.226)	(0.238)	(0.376)	(0.319)	(0.348)
Income Level	Average income	0.0680	-0.0640	0.0040	0.1330	-0.1010	0.002
		(0.447)	(0.429)	(0.438)	(0.655)	(0.593)	(0.625)
	Above average income	0.0730	-0.0190	0.0350	0.1440	-0.1980	-0.028
		(0.25)	(0.229)	(0.239)	(0.395)	(0.337)	(0.365)
Education Level	Above high school education	0.49*	0.2090	0.3430	-0.0320	0.2180	0.097
		(0.268)	(0.237)	(0.252)	(0.416)	(0.359)	(0.387)
	Academic education	0.734**	0.4970	0.608*	0.440	0.4880	0.47
		(0.364)	(0.33)	(0.347)	(0.501)	(0.442)	(0.472)
Religious Identity	Traditional	-0.432*	-0.3070	-0.3670	0.280	0.0260	0.157
		(0.244)	(0.219)	(0.232)	(0.345)	(0.298)	(0.321)
	Religious	-0.0170	0.0320	0.0040	0.1320	-0.0690	0.03
		(0.327)	(0.306)	(0.317)	(0.46)	(0.406)	(0.434)
	Ultra-Orthodox	-0.0980	0.3130	0.1120	0.0210	0.2410	0.149
		(0.69)	(0.62)	(0.652)	(1.112)	(0.818)	(0.949)
Working Level	Unemployed	-0.2140	-0.2580	-0.2380	-1.11*	-0.5330	-0.803
		(0.278)	(0.254)	(0.266)	(0.572)	(0.431)	(0.495)
	Retiree	-0.1510	-0.6580	-0.4240	-0.2270	-0.9530	-0.558
		(0.536)	(0.439)	(0.487)	(0.719)	(0.614)	(0.662)
Immigrant		0.0090	-0.1950	-0.0940	-0.4620	-0.0950	-0.26
		(0.288)	(0.269)	(0.279)	(0.474)	(0.371)	(0.417)
Constant		-1.45***	-1.242***	-1.351***	-2.245***	-2.339***	-2.287***
		(0.487)	(0.444)	(0.465)	(0.711)	(0.617)	(0.663)
Observations		424	539	539	424	539	539
McFadden Pseudo R2		0.24	0.23	0.24	0.27	0.24	0.27
AIC		559	682	561	333	447	335

[1.] Representative sample
[2.] Representative sample and complementary sample
[3.] Representative sample and weighted complementary sample Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: Each column represents a different regression of the effect of individual characteristics on financial action taken. Column (1)-(3) reports Logit estimations on entering the "Money Mountain" Internet portal for three different samples. Columns (4)-(6) reports Logit estimation on withdrawal of funds from inactive accounts amounting from the "Money Mountain" campaign or the tax exemption campaign for three different samples.

We have data on whether people contacting the fund managers with intent to withdraw funds did so because of the "Money Mountain" campaign or because of the tax exemption, but we don't have data on the date of the contact. Hence we analyze the intention of withdrawing funds data per se while realizing that it can be driven by both campaigns together in columns (4)-(6) of Table 7. In the regression presented in these columns, confidence in retirement knowledge, female[56] and unemployed[57] are the only statistically significant variables.[58]

Our results suggest that in this case, taking financial action, which is contacting one's retirement fund manager, is significantly correlated more with the confidence in knowledge of the subject than with actual general financial knowledge. This confidence can be the mechanism that facilitates reception of financial information as well as overcoming apathy and procrastination. This can suggest that financial regulation aimed at transparency and disclosure does not affect actual financial action unless the population has high confidence in their knowledge of the subject. This might also explain some of the contradictory outcomes in the literature for the effects of financial literacy and financial education on economic behaviors.[59]

As found for entering the "Money Mountain" site, being a woman has an effect on financial action above and beyond financial confidence. The fact that the unemployed withdrew fewer funds might be because current working status is positively correlated with past working status and hence the unemployed do not have funds in retirement funds, but there may also be an effect originating from the attentiveness of this population to the issue at hand.

It is interesting to note that age has no effect on the intention to withdraw funds, as seen in columns (4)-(6) of Table 7 and in column (4) in Table 9. This may be because the younger population has a bigger ability to enjoy the tax exemption. All funds saved before 2008

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[56] In column (5) the female variable is not statistically significant but we believe that this sample suffers from uncorrected sample selection.

[57] In the representative sample.

[58] When running the regressions only on the population that indicated that they are aware of at least one of the financial campaigns, confidence in retirement knowledge is the only statistically significant variable and its size effect is similar to the regressions presented in Table 7.

[59] Many papers find that people's financial behavior is better when people were offered or attended financial education curriculum at the work place, at school or in other facilities (Bernheim, Garrett, and Maki, 2001, Bayer, Bernheim, Scholz, 2009), while others found mixed results (Fernandes, Lynch and Netemeyer, 2014, especially regarding financial education in school programs (Mandell and Klein, 2009, and Cole and Shastry, 2009).

already have a tax exemption on lump sum withdrawals. The outcomes for the age variable are consistent with the outcomes from the CMISD evaluation from June 2013.

5.2.4 *Illustration of size effects of individuals' characteristics*

To illustrate the size of the effects from the main regression in Table 6 and in Table 7 on different populations, Table 8 displays the probability of being aware of the financial campaigns or taking financial action with regards to financial literacy, confidence in retirement knowledge and demographic characteristics. We can see that both the demographic characteristics and the financial literacy effects are substantial. The model states that over 65% of individuals (depending on gender and campaign) with high financial literacy and confidence in financial knowledge will be aware of the campaigns. For individuals with high demographic attributes (55 years old, academically educated, with an above-average income) the awareness rises to over 82%. Individuals with low financial literacy and confidence in retirement knowledge have a maximum awareness of 51% and it reaches as low as 13% for woman with low demographic attributes (35 years old, with a high school degree or lower and below-average income) for awareness of the tax exemption campaign. Between 77% and 95% of individuals (depending on high or low demographic attributes and gender) with high financial literacy and confidence in financial knowledge will enter the "Money Mountain" Internet portal compared with between 33% and 74% of individuals with low financial literacy and confidence. Additionally, between 18% and 48% of individuals (depending on high or low demographic attributes and gender) with high financial literacy and confidence in financial knowledge intend to withdraw funds versus between 10% and 30% of individuals with low financial literacy and confidence.

Table 8 - Probability of being affected by the financial regulation for specific populations

			Full awareness of the "Money Mountain" campaign	Full awareness of the tax exemption on small inactive plans campaign	Entered the "Money Mountain" Internet portal	Contact with the intent of withdrawing funds amounting from the campaigns
Have a high financial literacy index and have confidence in retirement knowledge	**Male**	**High demographic attributes**	86%	92%	95%	48%
		Low demographic attributes	75%	72%	83%	29%
	Female	**High demographic attributes**	82%	89%	93%	32%
		Low demographic attributes	68%	65%	77%	18%
Have a low financial literacy index and do not have confidence in retirement knowledge	**Male**	**High demographic attributes**	51%	47%	74%	30%
		Low demographic attributes	34%	17%	42%	16%
	Female	**High demographic attributes**	43%	40%	66%	19%
		Low demographic attributes	26%	13%	33%	10%

Notes: The table shows the representative sample regulatory outcomes (being aware of financial regulation or taking financial action) deriving from the Logit model in Tables 9 and 10 for individuals who are married, non-immigrant, secular and working. The table displayed data for women and men who have either a high (3) or low (0) financial literacy index and are confident in their retirement knowledge, which means that they stated they understand retirement to a large extent or more, or are not confident in their knowledge and answered otherwise. The data also represents results by high and low demographic attributes. People with high demographic attributes are 55 years old academically educated with above average income. People with low demographic attributes are 35 years old with a high school degree or lower and below average income

5.2.5 Robustness test inquiry of inactive accounts and additional subjective questions

We were also able to look at individuals who contacted their retirement management firm in order to inquire about inactive funds. This inquiry referred to any inquiries about inactive funds and not specifically at inquiries resulting from the financial campaigns. When looking at the variables effecting this financial action, we find that only confidence in retirement knowledge is statistically significant, column (5) in Table 9. This strengthens the emphasis of subjective financial literacy with regard to financial action.

As mentioned above, the question of confidence in retirement knowledge is not as validated as the financial literacy index. That is why for a robustness check we looked at the effect of the subjective question that asks about general interest in retirement issues instead of

confidence in retirement knowledge. When adding this question to the main specification for the representative sample[60] as presented in columns (6)-(9) in Table 9, we find that interest in retirement works in the same direction as confidence in retirement knowledge and is positively correlated with financial awareness and action, as expected, and that all other outcomes remain similar. It should be noted that interest in retirement is only significant for awareness of the tax exemption campaign and entering the "Money Mountain" Internet portal. We believe that confidence in one's knowledge is a better variable as it significantly captures more of the individual's financial behavior.

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[60] When running the additional regressions on the weighted complementary sample as well as the representative sample the outcomes are very similar and the conclusions are the same.

Table 9 - Robustness tests: Age square and Interest in retirement issues

Left panel — **Age square**

Variables:	(1) Awareness of the "Money Mountain" campaign	(2) Awareness of the tax exemption on small inactive plans campaign	(3) Entered the "Money Mountain" Internet portal	(4) Contact with the Intent of withdrawing funds amounting from the campaigns	(5) Inquiring about inactive accounts
Financial literacy index	0.262** (-0.115)	0.33*** (-0.124)	0.146 (-0.114)	-0.068 (-0.169)	0.094 (0.164)
Confidence in retirement knowledge	1.045** (-0.411)	1.585*** (-0.453)	1.467*** (-0.49)	0.989** (-0.431)	0.848* (0.446)
Age	0.082 (-0.059)	0.157** (-0.066)	0.129** (-0.059)	0.074 (-0.088)	-0.021 (0.089)
Age Square	-0.001 (-0.001)	-0.002** (-0.001)	-0.001* (-0.001)	-0.001 (-0.001)	0 (0.001)
Female	-0.366* (-0.217)	-0.341 (-0.23)	-0.374* (-0.22)	-0.62* (-0.325)	-0.089 (0.31)
Income Level — Average income	0.498 (-0.438)	-0.071 (-0.478)	0.081 (-0.447)	0.158 (-0.653)	-0.372 (0.677)
Income Level — Above average income	0.219 (-0.252)	0.032 (-0.273)	0.067 (-0.249)	0.248 (-0.392)	-0.062 (0.354)
Education Level — Above high school education	-0.04 (-0.276)	0.92*** (-0.317)	0.388 (-0.274)	-0.009 (-0.413)	0.141 (0.395)
Education Level — Academic education	0.28 (-0.368)	0.851** (-0.4)	0.587 (-0.375)	0.476 (-0.507)	0.166 (0.524)
Immigrant	-0.477 (-0.296)	-0.076 (-0.298)	0.065 (-0.29)	-0.436 (-0.474)	0.221 (0.396)
Constant	-2.724** (-1.132)	-5.45*** (-1.32)	-3.379*** (-1.143)	-3.843** (-1.749)	-1.834 (1.739)
Control for other variables presented in the main specification	Y	Y	Y	Y	Y
McFadden Pseudo R²	0.23	0.29	0.25	0.27	0.16
AIC	564.27	515.09	554.37	335.07	353.11

Right panel — **Interest in retirement issues**

Variables:	(6) Awareness of the "Money Mountain" campaign	(7) Awareness of the tax exemption on small inactive plans campaign	(8) Entered the "Money Mountain" Internet portal	(9) Contact with the Intent of withdrawing funds amounting from the campaigns
Financial literacy index	0.298*** (0.116)	0.362*** (0.126)	0.160 (0.115)	-0.0220 (0.168)
Interest in retirement issues	0.320 (0.244)	0.992*** (0.26)	0.774*** (0.26)	0.4940 (0.322)
Age	0.016* (0.009)	0.024** (0.01)	0.027*** (0.01)	0.010 (0.014)
Female	-0.404* (0.216)	-0.3780 (0.23)	-0.432** (0.219)	-0.667** (0.32)
Income Level — Average income	0.4280 (0.437)	-0.220 (0.476)	-0.0280 (0.444)	0.0990 (0.649)
Income Level — Above average income	0.1230 (0.254)	-0.0270 (0.274)	0.0360 (0.25)	0.110 (0.393)
Education Level — Above high school education	-0.0710 (0.27)	0.948*** (0.311)	0.455* (0.265)	-0.0770 (0.414)
Education Level — Academic education	0.2670 (0.356)	0.979** (0.392)	0.761** (0.365)	0.40 (0.499)
Immigrant	-0.553* (0.297)	-0.2190 (0.304)	-0.0530 (0.29)	-0.5470 (0.474)
Constant	-1.23** (0.485)	-2.793*** (0.558)	-1.453*** (0.487)	-2.246*** (0.707)
Control for other variables presented in the main specification	Y	Y	Y	Y
Observations	424	424	424	424
McFadden Pseudo R²	0.22	0.29	0.24	0.27
AIC	566.24	514.84	559.84	334.44

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: Each column represents a different regression of the effect of individual characteristics on awareness of financial campaigns and financial action taken when controlling for age and age square without controlling for working level variables. Columns (1)-(4) report LOGIT estimations on awareness of the financial campaigns and financial action taken when controlling for age and age square without controlling for working level variables. Column (5) reports Logit estimation on taking financial action and inquiring about inactive accounts. Columns (6)-(9) report Logit estimation on awareness of the financial campaigns and financial action taken when controlling for an additional subjective question about interest in retirement issues. All columns have 424 observations that were taken from the representative sample.

5.3 How to reconcile provident fund data and survey data

Data about actual withdrawals from provident funds during the campaign is largely compatible with the representative survey data.[61] We find that taking financial action is negatively affected by age and weaker socioeconomic conditions. The effect of socioeconomic conditions on financial action can be seen by the positive effect of education and the negative effect of unemployment on financial action but also through the positive effect of financial literacy and confidence in financial knowledge on financial actions. Financial literacy and confidence in financial knowledge are positively correlated with the investigated indices: the socioeconomic index and the periphery index, which therefore indicate a positive correlation between these socioeconomic conditions and financial action.

We did not find differences in withdrawals between men and women in the provident fund data, as suggested by the survey data and literature. We believe that it is because we don't know precisely who withdrew the money, but only the gender of the account owner. It is quite probable that in some households the husband (or other male family member) could have taken the initiative to withdraw the wife's (or other female family members) accounts for her. The fact that the data from the provident fund is missing information on the actual characteristics of the individuals shows us the advantages of using survey data when trying to separate out the effects of interventions on the population. The survey data allows us to investigate factors on an individual level, and specifically, shows us the importance of gender as well as other factors on financial action.

6. Conclusion, discussion and further research suggestions

The outcomes of financial campaigns were researched in this paper by looking at specific regulatory campaigns in Israel aimed at the public, were the regulator reached out to the population to inform them of a new service intended to help individuals find inactive retirement plans and withdraw small funds in provident funds, on a tax exempt basis. By analyzing provident fund data and survey data we conclude that the campaigns did not reach all subpopulations equally, and less privileged population with lower socioeconomic geographical indices took less advantage of the campaigns. The regulator's unintentional

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[61] It should be stated that the representative sample is younger than the provident fund population; 41.77 relative to 44.34 in the large provident fund and that the representative sample also has less women; 50% relative to 54% in the large provident fund. The provident funds also have a higher representation of people living in Arab localities which are underrepresented in the representative Internet survey.

bypass of underprivileged populations can also be found in the strong positive correlation between the effectiveness of the financial regulation with individuals' financial literacy, financial confidence and specific sociodemographic characteristics such as age, gender, education and working status. The sociodemographic and age effects seem to be the most pronounced when looking at the use of the "Money Mountain" Internet portal.

We also found evidence that the effect of the campaign is short termed, and most of the people entering the "Money Mountain" Internet portal did so close to when the campaign ran in the media.

The paper also contributes to the understanding of financial literacy and the difference between objective financial literacy and subjective financial literacy. These personal attributes, and subjective financial literacy in particular, are important for the effectiveness of financial regulation, and future regulatory campaigns and interventions will need to address this.

Regulators should be aware of the effectiveness of their regulations and the spillover effects they have on inequality and it seems that using digital media exasperates this effect. We hope this research will be the basis for better regulatory interventions in the future.

We documented that the current policy of informing the public about regulatory changes via the mass media and use of an Internet portal is not fully efficient. We leave for future research the investigation of different strategies that can promote regulatory changes with higher participation of different subsets of the population that will address the attributes we found to be important.

Bibliography

Allgood, S., & Walstad, W. (2012). "The effects of perceived and actual financial literacy on financial behaviors", *Paper presented to the National Financial Capability Study Roundtable, The George Washington School of Business, 2012 . Available at SSRN 2191606.*

Atkinson, A. and Messy, F. (2012). "Measuring Financial Literacy: Results of the OECD / International Network on Financial Education" (INFE) Pilot Study, *OECD Working Papers on Finance, Insurance and Private Pensions*, No. 15, OECD Publishing, Paris.

Baumberg, B. (2016). "The stigma of claiming benefits: A quantitative study". Journal of Social Policy, 45(2), 181-199. doi:10.1017/S0047279415000525

Bayer, P. J., Bernheim, B. D., & Scholz, J. K. (2009). "The effects of financial education in the workplace: Evidence from a survey of employers", *Economic Inquiry, 47*(4), 605-624.

Bernheim, D. (1995). "Do households appreciate their financial vulnerabilities? An analysis of actions, perceptions, and public policy", *Tax Policy and Economic Growth, 3*, 11-13.

Bernheim, D. D. (1998). *Financial Illiteracy, Education, and Retirement Saving*, Olivia S.

Mitchell and Sylvester Schieber (eds.), Living with Defined Contribution Pensions, Philadelphia:University of Pennsylvania Press, pp. 38-68.

Bernheim, B. D., Garrett, D. M., & Maki, D. M. (2001). "Education and saving: The long-term effects of high school financial curriculum mandates", Journal *of Public Economics, 80*(3), 435-465.

Brown, M., & Graf, R. (2013). "Financial literacy and retirement planning in Switzerland", *Numeracy, 6*(2), 6.

Bucher-Koenen, T., Lusardi, A., Alessie, R., & van Rooij, M. (2014). "How Financially Literate are Women? An Overview and New Insights", *No. w20793. National Bureau of Economic Research, 2014.*

Calvet, L. E., Campbell, J. Y., & Sodini, P. (2006). "Down or Out: Assessing the Welfare Costs of Household Investment Mistakes", *No. w12030. National Bureau of Economic Research, 2006.*

Campbell, J. Y. (2016). Richard T. Ely lecture restoring rational choice: The challenge of consumer financial regulation. *The American Economic Review, 106*(5), 1-30.

Capital Markets, Insurance and Savings Division, Annual Report 2014. Israel Ministry of Finance.

Christelis, D., Jappelli, T., and Padula, M., (2010). "Cognitive abilities and portfolio choice", *The European Economic Review, vol. 54, Issue 1, 18-38*.

Clark, R., Lusardi, A., & Mitchell, O. S. (2015). "Employee Financial Literacy and Retirement Plan Behavior: A Case Study", *No. w21461. National Bureau of Economic Research, 2015.*

Coe, R. (1983)." Nonparticipation in welfare programs by eligible households: The case of the food stamp program", *Journal of Economic Issues 17: 1035–1056*.

Cole, S. A., & Shastry, G. K. (2009). "Smart money: The effect of education, cognitive ability, and financial literacy on financial market participation", *Boston, MA: Harvard Business School, 2009.*

Daponte, B.O., Sanders, S. and Taylor, L. (1998). "Why do low-income households not use food stamps? Evidence from an experiment", *Journal of Human Resources 34(3): 612–628*

DellaVigna, S. (2009). "Contract design and self-control: theory and evidence", Journal of Economic Literature, American Economic Association, vol. 47(2), pages 315-72, June

Drolet, Marie. "Gender differences in the financial knowledge of Canadians." (2016).

Drexler, A., Fischer, G., Schoar, A. (2014). "*Keeping it simple: Financial literacy and rules of thumb*", *American Economic Journal: Applied Economics,* vol. 6, no. 2, pp. 1-31.

Ebenstein ,A. and Stage, K. (2010). "Does inconvenience explain low take-up? Evidence from UI claiming procedures". *Journal of Policy Analysis and Management 29(1): 111–136*.

Fernandes, D., Lynch Jr, J. G., & Netemeyer, R. G. (2014). "*Financial literacy, financial education, and downstream financial behaviors*". Management Science*, 60*(8), 1861-1883.

Financial Literacy Survey: Knowledge, Opinions and Behavior in Financial Issues, November 2012, Central Bureau of Statistics.

Gabaix, X., Krishnamurthy, A., & Vigneron, O. (2007). "Limits of arbitrage: Theory and evidence from the Mortgage-Backed securities market". *The Journal of Finance, 62*(2), 557-595.

Hadar, L., Sood, S., & Fox, C. R. (2013). "Subjective knowledge in consumer financial decisions". *Journal of Marketing Research, 50*(3), 303-316.

Hastings, Justine S., Madrian, Brigitte C., and Skimmyhorn, William L. (2012). "Financial literacy, financial education and economic outcomes". No. w18412. National Bureau of Economic Research.

Hastings, J. S., Mitchell, O. S., & Chyn, E. T. (2010). "Fees, framing, and financial literacy in the choice of pension manager". *Pension Research Council WP2010-09,*

Hastings, Justine S., and Tejeda-Ashton, Lydia (2008). "Financial literacy, information, and demand elasticity: Survey and experimental evidence from Mexico". *No. w14538. National Bureau of Economic Research.*

Hastings, Justine S., and Mitchell, Olivia S. "How financial literacy and impatience shape retirement wealth and investment behaviors". No. w16740. National Bureau of Economic Research, 2011.

Heath, C., & Tversky, A. (1991). "Preference and belief: Ambiguity and competence in choice under uncertainty". *Journal of Risk and Uncertainty, 4*(1), 5-28.

Herd, P., Deleire, T., Harvey, H., & Moynihan, D. P. (2013). "Shifting administrative burden to the state: The case of Medicaid take-up". Public Administration Review, 73(S.1), 1–47.

Hilgert, M. A., Hogarth, J. M., & Beverly, S. G. (2003). "Household financial management: The connection between knowledge and behavior". *Fed. Res. Bull., 89*, 309.

Hung, A., Parker, A. M., & Yoong, J. (2009). "Defining and measuring financial literacy" RAND Working Paper Series WR-708. Available at SSRN: https://ssrn.com/abstract=1498674

Jianakoplos, N. A., & Bernasek, A. (1998). "Are women more risk averse?" *Economic Inquiry, 36*(4), 620-630.

Leventhal, Howard, Singer, R., and Jones, S. (1965). "Effects of Fear and Specificity of Recommendation upon Attitudes and Behaviour. *"Journal of Personality and Social Psychology, 2 (2), 20‑29*.

Li, G. (2014). "Information sharing and stock market participation: Evidence from extended families". *Review of Economics and Statistics, 96*(1), 151-160.

Lusardi, Annamaria (2008). "Household saving behavior: The role of financial literacy, information, and financial education programs". No. w13824. National Bureau of Economic Research.

Lusardi, A., & Beeler, J. (2006). "Savings between cohorts: The role of planning", *Michigan Retirement Research Center Research Paper no.WP, 122*

Lusardi, A., Keller, P. A., & Keller, A. M. (2009). "*New Ways to Make People Save: A Social Marketing Approach",* No. w14715. National Bureau of Economic Research, 2009.

Lusardi, A., & Mitchell, O. S. (2007). "Financial literacy and retirement planning: New evidence from the rand American life panel". *Michigan Retirement Research Center Research Paper no.WP, 157*

Lusardi, A., & Mitchell, O. S. (2008). "*Planning and Financial Literacy: How do Women Fare?", No. w13750. National Bureau of Economic Research, 2008.*

Lusardi, A., & Mitchell, O. S. (2009). "*How Ordinary Consumers make Complex Economic Decisions: Financial Literacy and Retirement Readiness", No. w15350. National Bureau of Economic Research*

Lusardi, A., & Mitchell, O. S. (2011a). "*Financial Literacy and Planning: Implications for Retirement Wellbeing"* No. w17078. National Bureau of Economic Research.

Lusardi, A., & Mitchell, O. S. (2011b). "Financial literacy around the world: An overview". *Journal of Pension Economics and Finance, 10*(04), 497-508.

Lusardi, A., & Mitchell, O. S. (2014). "The economic importance of financial literacy: Theory and evidence." *Journal of Economic Literature, 52*(1), 5-44.

Lusardi, A., Mitchell, O. S., & Curto, V. (2010). "Financial literacy among the young". *Journal of Consumer Affairs, 44*(2), 358-380.

Lusardi, A., Samek, A., Kapteyn, A., Glinert, L., Hung, A., & Heinberg, A. (2014). "Visual tools and narratives: New ways to improve financial literacy". *Journal of Pension Economics and Finance,* 1-27

Lusardi, A., & Tufano, P. (2009). "*Debt Literacy, Financial Experiences, and Overindebtedness"*, No. w14808. National Bureau of Economic Research.

Mandell, L. (2008). "Financial literacy of high school students". *Handbook of Consumer Finance Research*, 163-183.

Mandell, L., & Klein, L. S. (2009). "The impact of financial literacy education on subsequent financial behavior". *Journal of Financial Counseling and Planning, 20*(1)

Meir, A., Mugerman, Y., Sade, O., (2016). "Financial literacy and retirement planning: Evidence from Israel", *Israel Economic Review Vol. 14, No. 1, 75-95.*

Moffitt, R. (1983). "An economic model of welfare stigma". American Economic Review, 73(5), 1023–1035.

Mugerman,, Y. Orly, S., and Moses, S., (2014). "Long term savings decisions: Financial reform, peer effects and ethnicity." Journal of Economic Behavior & Organization 106: 235-253.

National Insurance Institute of Israel, Poverty and Social Gaps Report, 2014.

OECD. (2005). Improving financial literacy: Analysis of issues and policies.

Parker, A. M., Bruin, W. B., Yoong, J., & Willis, R. (2012). "Inappropriate confidence and retirement planning: Four studies with a national sample". *Journal of Behavioral Decision Making, 25*(4), 382-389.

Riphahn, R. T. (2001). "Rational poverty or poor rationality? The take-up of social assistance benefits". Review of Income and Wealth, 47(3), 379–398.

Russell, B. D., Moulton, S., & Greenbaum, R. T. (2014). "Take-up of mortgage assistance for distressed homeowners: The role of geographic accessibility". Journal of Housing Economics, 24, 57–74.

Schmeiser, M. D., & Seligman, J. S. (2013). "Using the right yardstick: Assessing financial literacy measures by way of financial well-being". *Journal of Consumer Affairs, 47*(2), 243-262.

Stango, V., & Zinman, J. (2009). "What do consumers really pay on their checking and credit card accounts? Explicit, implicit, and avoidable costs". *American Economic Review, 99*(2), 06-09.

Tversky, A., & Shafir, E. (1992). "Choice under conflict: The dynamics of deferred decision". *Psychological Science, 3*(6), 358-361.

Uppal, S. (2016). *Financial literacy and retirement planning".* Statistics Canada.

Van Rooij, M. C., Lusardi, A., & Alessie, R. J. (2011). "Financial literacy and stock market participation". Journal of Financial Economics 101.2 (2011): 449-472.

Van Rooij, M. C., Lusardi, A., & Alessie, R. J. (2012). "Financial literacy, retirement planning and household wealth". *The Economic Journal 122.560 449-478.*

Zingales. Luigi. (2015). Presidential address: Does finance benefit society? The Journal of Finance 70 (4): 1327-63.

Appendix 1-Variable description	
Y Variables	**Description**
Full awareness of the "Money Mountain" campaign	Binary variable for people who stated that they have full awareness of the campaign
Full awareness of the tax exemption on small inactive plans campaign	Binary variable for people who stated that they have full awareness of the campaign
Entered the "Money Mountain" Internet portal	Binary variable for people who stated that they have entered the "Money Mountain" Internet portal
Contact with the intent of withdrawing funds amounting from the campaigns	Binary variable for people who stated that they contacted their retirement fund manager about withdrawing funds from inactive provident funds because of one of the campaigns.
X Variables	**Description**
Financial literacy index	Financial literacy index which is the sum of three questions answered correctly regarding: interest rate, inflation and diversification risk.
Age	Value in years.
Confidence in retirement knowledge	Dummy variable for all those answering they understand retirement issues to a large extent and more
Interested in retirement	Dummy variable for all those answering they are interested in retirement issues to a large extent and more
Interest rate question	Dummy variable for all those who answered correctly
Inflation question	Dummy variable for all those who answered correctly
Diversification question	Dummy variable for all those who answered correctly
Female	Dummy variable for female
Married	Dummy variable for married
Income level	Dummy variables for below average income, average income and above average income
Education level	Dummy variables for high school education, above high school education and academic education
Religious identity	Dummy variables for secular, traditional, religious and ultra-Orthodox
Working status	Dummy variables for working (including voluntary army service and part time), unemployed (including mandatory service and students) and retiree
Immigrant	Dummy variable for immigrant