

Asset Allocation or Active Management ?

Evidence from Israeli Provident Funds

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Abstract

Most of the studies on asset allocation put policy at the forefront of their studies, claiming that it is the most important factor contributing to returns. They usually ignore the fact that even in the absence of a long-term perspective; funds can still achieve returns by simply putting money in the capital markets. In this paper, we used 15 years of monthly data for the Israeli provident funds to assess the relative importance of capital market movements and asset allocation policy separately against the timing and selection abilities of fund managers. We found that, according to time-series analysis, total market movements, which account for more than 70% of total returns, predominantly influence returns and the incremental contribution of policy above the market is only 17%. Moreover, policy explains less than half of the variations in excess market returns. Indeed, policy is no better than active management in explaining variations in returns both across time and between funds. Remarkably, security selection dictates both the return level and the variation in returns from active management (53% in cross sectional analysis), while the influence of timing is found negligible (below 10% on average).

Keywords: Market, Policy, Provident fund, Return, Security selection, Timing

1. Introduction

In this paper, we analyze and compare the contribution of asset allocation decisions to the performance of Israeli provident funds relative to a passive market participation. Our goal is to determine which investment decisions have the greatest impact on the magnitude of total returns and the variability of those returns. To accomplish this goal, we decompose total return into four components: return from exposure to the capital markets, return from the fund's excess long-term policy and return from active management in the form of market timing and security selection.

The early well known studies of Brinson, Hood and Beebower (1986) and Brinson, Singer and Beebower (1991) defined investment policy, market timing and security selection as the three determinants of portfolio performance and disregarded the effect of market movements on policy and total returns. Hence, they found that asset allocation policy explains more than 90% of the time-series return variations and more than 100% of the level of total returns (Brinson et al. 1986). Furthermore, they concluded that on average, returns from timing and security selection are negligible (Brinson et al. 1991). Many others followed the Brinson et al. studies (Ibbotson and Kaplan, 2000; Vardharaj and Fabozzi, 2007; Cumming, D.L., Haß, H. and Schweizer, D. 2014) showing strategic asset allocation as the main determinant of portfolio performance.

Ezra and Ilkiw (1991) and Ibbotson and Kaplan (2000) pointed out that it might be more realistic to evaluate the "relative" importance of asset allocation policy over the market. Ibbotson and Kaplan (2000) showed that market movements dominate total returns and the high explanatory power of policy in time-series regressions drops significantly if the market effect is taken out. For this purpose, they used two benchmarks as the market return: the S&P500 and the average of all of the policy benchmarks. They then regressed the market returns against the total returns. They also looked into the level of total average return explained by policy, which yielded results similar to those of Brinson (1986, 1991). However, they did not explicitly separate the market component from policy return and they did not compare the incremental contribution of policy with that of active management.

Xiong, Ibbotson, Idrozek and Chen (2010) addressed some of the issues not explored by Ibbotson and Kaplan (2000) and studied the "relative" importance of asset allocation policy compared to active portfolio management, using time-series and cross-sectional analyses of US mutual funds. They concluded that when stripped from the market movements both regressions yielded the same result, indicating that "excess market policy" is as important as active management in explaining variations in returns. Aglietta, Briere, Rigot and Signori (2012) supported the conclusions of Xiong et al. (2010) using a dataset of 143 US defined-benefit pension funds from 1990 to 2008. Most recently, Briere, Peillix, and Ureche (2016) demonstrated that market dominates the performance of socially responsible (SR) mutual funds and asset allocation and active management together account for less than one-third of their total return variability. However, these studies did not look into the components of active management: timing and selection. Moreover, demonstrating and comparing the level of average return attributed to "excess market policy" and active management was not the goal of these papers.

Thus, we attempt to extend the previous research in two ways. First, we look at variations in fund performance due to timing and selection separately (instead of considering active management as a whole) and compare their individual influences on excess market returns with that of "excess market policy"- extending Xiong et al. (2010) and Aglietta et al. (2012). Second, we compare "excess market policy", market timing and security selection in terms of their contribution to the level of average return - extending Brinson et al. (1986, 1991).

We ask the following questions for Israeli provident funds:

- 1) What portion of the excess return is explained by excess market policy, timing and selection separately?
- 2) How much of the variation in returns across time and between funds is attributable to the market? Similarly and after removing the market effect, how much of the variation in returns is attributable to policy, timing and selection?

The remainder of our paper is organized as follows: Section 2 presents the provident fund industry in Israel. Section 3 describes and summarizes the provident fund data used in the study. Section 4 sets out our methodology. Section 5 tests and relates the level of return and variations of return attributed to each performance factor. Section 5 concludes the study.

2. Israeli Provident Funds

In Israel, provident funds are one of the five main types of pension vehicles. Other pension vehicles include old pension funds, new pension funds, new general pension funds and life insurance. They are supervised and regulated by the Capital Market Insurance and Savings Division (the CMISD), a division within Israel's Ministry of Finance.

Like pension funds, provident funds are "pure" long term saving instruments for old age retirement. However while pension funds are required to provide death and disability benefits collectively financed by plan members, provident funds do not include any insurance coverage. Furthermore, provident funds may not invest in the non-tradable earmarked government bonds, which make up 30% of the new and old pension fund investments. These non-tradable earmarked government bonds are seen by many Israelis as a government subsidy of the new (and old) pension funds given their relatively high and stable rates of investment return and as such, give the new pension funds a relative financial advantage over the provident funds in attracting members savings. Until 2005, provident funds gave independent workers the option to withdraw their funds as a lump sum at the end of 15 years from the date the account in the fund was opened, regardless of their age. However, this advantage was abolished and rules were equalized with the withdrawal rules of new pension funds, such that the funds may be withdrawn only at retirement (in 2006) and only after a 3,850 NIS (new Israeli shekels, equal to about 27 American cents at the time of writing) minimum monthly payment is established (in 2008). Finally, savings portability (in 2009) gave members the possibility to transfer their savings to different savings tracks (provident, insurance, pension) and not only among similar ones. These reasons make provident funds a less popular savings product than the new pension funds.

In addition, the Bachar Reform of 2005 forced banks to sell their provident and mutual funds in order to mitigate concentration and conflicts of interest, which liberalized the market and increased competition.

In light of all of the above developments, asset allocation decisions and accompanying return performances /yields are especially important for provident funds in Israel in order to compete with pension funds, mutual funds as well as between themselves.

Before the Bachar Reform went into effect in July 2005, banks in Israel controlled more than 90% of the provident fund industry (with the three largest banks controlling about 75%) and about 80% of the mutual fund industry, which prevented competition and gave rise to conflicts of interests. After the Bachar Reform, private entities and insurance firms (46% and 29%, respectively, as of 2009) took over the ownership and management of provident

funds, and the number of provident funds multiplied. The increasing competition and change in the control structure led to new asset allocation policies encouraging provident fund companies to take greater risks to attract new capital. Many of the funds utilized their newfound freedom to buy high-yielding corporate bonds and stocks, which carried high risk. Table 1 shows the significant increase in company bonds and stocks at the expense of cash and government bond holdings after June 2005.

Table 1. Asset class weights for the sample of Israeli provident funds

Asset class	15-year Average	Jan 2000- June 2005	July 2005- Sep 2008	Oct 2008- Mar 2009	Apr 2009- Dec 2014
Cash and deposits	15%	23.6%	12.9%	14.3%	7.8%
Government bonds	36%	43.3%	34.4%	35.3%	30.4%
Company bonds	27%	18.2%	30.6%	32.7%	32.2%
Stocks	18%	12.7%	19.2%	14.0%	22.3%
Other	4%	2.2%	3.0%	3.7%	7.3%

3. Data

Our sample consists of 101 provident funds that existed from January 2000 until December 2014, with assets above 100million shekels as of December 2014 (funds with asset size below 100million shekels are found insignificant, as they constitute only 0.5% of our total sample asset size). In addition, we excluded the funds that lacked data about their returns. The total assets of all of the provident funds amounted to 369billion shekels at the end of 2014, for which our group achieves a good representation rate of 57% (209billion shekels).

We obtained our sample from the Israeli Ministry of Finance's (MOF) GEMELNET database, which provides market data on Israeli provident funds. The data includes the fund identification number, name of the fund, monthly returns and net assets, annual management fees and most importantly, monthly percentage allocations of each fund across nine specified investment categories. We have 18180 monthly observations in total and 180 monthly observations per fund.

Table 2 summarizes the statistics for the funds' exposure to each asset class. In order to facilitate our calculations and analysis, we reduced the number of available investment categories from nine to five--cash and cash equivalents, government bonds, corporate bonds, equities and a miscellaneous category "others"--according to the classifications by the Bank of Israel. The category of "others" covers many investments including loans, mortgages, participation certificates in mutual funds, land rights, futures assets and ETFs, which complicates setting for it an appropriate market index. Therefore, following Brinson, Randolph, Hood and Beebower (1995), we chose to exclude this segment by eliminating the "other" investment weights from each fund each month and calculating new weights for the segments that remained. Consequently, the "other" weight is spread proportionally across the remaining asset classes.

Table 2. Summary statistics of asset class weights for 101 provident funds, 2000-2014

Assets	Average	Minimum	Maximum	Standard Deviation	Policy Benchmark*
Cash& deposits	14.91%	-2.95%	99.71%	10.56%	Makam, S&P Dow Jones T Bills
Government bonds	35.95%	0.00%	99.44%	15.52%	Israeli gov. bond index above 1 year S&P Dow Jones US gov. bond index 5-10yrs
Corporate bonds	26.95%	0.00%	96.69%	12.60%	Israeli all corporate bond index, S&P Dow Jones US corp. bond index
Equities	17.83%	-0.20%	96.54%	12.16%	CTA 100, MSCI World stock index
Other	4.36%	-4.60%	31.02%	5.35%	Not available
Total	100,00%				
Cash& deposits	15.44%	-2.95%	99.91%	10.71%	
Government bonds	37.35%	0.00%	99.49%	15.43%	
Corporate bonds	28.35%	0.00%	97.29%	13.33%	
Equities	18.86%	-0.20%	97.84%	12.95%	
Total	100.00%				

* From 2006 until 2014, the policy benchmark for each asset class is a combination of the local and foreign indices described in Table 2. The allocations to policy benchmarks from local and foreign indices for each fund in our sample are set according to their annual exposures the Israeli and international markets. Before 2006, only local indices are used, since international investments on average do not exceed 3.5%.

We compiled the monthly policy benchmarks used for each asset class in Table 2, from the Israeli stock exchange (TASE) for local assets, from the S&P Dow Jones for foreign government bonds, corporate bonds and cash components and from the MSCI World index for foreign equities.

During the period of analysis in our provident fund universe, from 2000 to 2006, international investments appear to be at a minimum, accounting for only 3.5% of the total assets on average. However, thereafter, foreign assets more than double, reaching from 8.3% in 2006 to as high as 19.82% of total assets in 2014. Although we cannot observe the individual weights of foreign fund investments separately and we do not know what those investments are, we attempted to account for this increased exposure after 2006. For each asset class, we set the benchmark index as the weighted average of the representative monthly local and international index, whereby weights are based on each fund's aggregate yearly international and domestic investment percentages. Given that the selected international

indices are in US dollars and the local indices are represented in Israeli shekels, we converted the foreign indices to shekels using the monthly exchange rates between 2006 and 2014.

For cash and cash equivalents, we selected the short-term Treasury bill index for Israel known as Makam and the US Treasury bill index, both of which include all such certificates listed on the exchange. For corporate bonds, we used a general Israeli and US index, which include all of the corporate bonds traded on the Israeli and US exchanges. The government bond index comprises a local government bond index with maturities greater than one year and the US 5-10 year government bond index. Regarding equities, we used the TA-100 Index, which is one of the leading indices of the Tel Aviv Stock Exchange (TASE) and the MSCI World Index. The TA- 100 index consists of the 100 Israeli companies with the largest market capitalization.

As we take only the existing funds in the analysis period; our sample is subject to survivorship bias, whereby poorly performing funds that are liquidated or funds that merged into other funds are disregarded. We also do not segregate our sample into different investment categories, because more than 90% of the funds in our sample have no risk preference or no concentration on a specific investment policy.

3. Methodology

The provident funds' asset allocation decisions reflect both their long-term investment policy, which illustrates the investment preference of the board of directors and the short-term strategies of their fund managers through timing market movements and stock selections. In line with Xiong et al. (2010) and Ibbotson and Kaplan (2000), we believe we should take into account only the returns in excess of market movements to see the real effect of asset allocation decisions. Returns from market movements occur irrespective of policies, meaning they are realized simply by participating in the capital markets. Ibbotson and Kaplan (2000) showed that the majority of the variability of total returns was a case of "rising tide lifting all boats". By using an average policy benchmark across all funds, they found that asset allocation policies explain less than half the time-series variations in returns. Hensel, Ezra and Ilkiv (1991) made a similar point suggesting a baseline portfolio including risky assets as well as cash as an alternative to funds' asset allocation policies. Therefore to represent the "capital markets effect" we used two common benchmarks; an average portfolio equally invested in each asset class (for Israel) and returns from a peer group (Xiong et al., 2010), which is the provident fund universe in our case.

We decomposed the provident fund returns into four fundamental components: (1) market return (i.e., no policy), (2) long-term excess policy return (net of market movements), (3) tactical allocation (i.e., market timing), and (4) security selection. We attempted to quantify the contribution of each component to Israeli provident funds' performance using the methodology of Xiong et al. (2010), Brown, Garlappi and Tiu (2010), Brinson et al. (1986, 1991) and Daniel, Grinblatt, Titman and Wermers (1997).

We defined the funds' total returns as follows:

$$R_{i;t} = \sum_{j=1}^N W_{i;j;t-1} \times R_{i;j;t} \quad (1)$$

where $R_{i;t}$ is the total realized return of fund i at the end of month t , $W_{i;j;t-1}$ is the actual percentage allocation of fund i in asset class j at the end of the previous month ($t-1$) and $R_{i;j;t}$ is the return of fund i on asset class j at the end of month t . We have access to actual monthly returns and percentage asset class allocations for each fund in our database but we lack data about the funds' individual asset class returns separately.

Hence, the total realized return can be decomposed as follows:

$$R_{i;t} = M_t + \Delta RP_{i;t} + RT_{i;t} + RS_{i;t} \text{ whereas;} \quad (2)$$

$$\Delta RP_{i;t} = RP_{i;t} - M_t = \sum_{j=1}^N (W_{i;j;t-1} \times R_{i;j;t}) - M_t \quad (3)$$

$$RT_{i;t} = \sum_{j=1}^N (W_{i;j;t-1} - W_{i;j;t}) \times R_{i;j;t} \quad (4)$$

$$RS_{i;t} = R_{i;t} - (RP_{i;t} + RT_{i;t}) = \sum_{j=1}^N W_{i;j;t-1} \times (R_{i;j;t} - R_{i;j;t}) \quad (5)$$

M_t is the market return (i.e. equally weighted returns for available investments in the local market or return from the peer group).

$\Delta RP_{i;t}$ is the excess return of fund i from its asset allocation policy. $\Delta RP_{i;t}$ is computed by deducting the total policy return of fund i ($RP_{i;t}$) from the market return (M_t). The total policy return of fund i ($RP_{i;t}$) is computed by multiplying the long-term policy weight of fund i in asset class j of the previous month ($W_{i;j;t-1}$) by the return of the benchmark index for asset class j at the end of month t ($R_{i;j;t}$).

$RT_{i;t}$ is the return from market timing and is calculated by multiplying the policy return of fund i ($RP_{i;j;t}$) by the difference between the actual and long term target allocation of fund i in asset class j ($W_{i;j;t-1} - W_{i;j;t}$).

$RS_{i;t}$ is the remaining return after deducting $RP_{i;t}$ and $RT_{i;t}$ from the total realized return ($R_{i;t}$), which encompasses both the return from security selection and any other return not attributable to long term policies and market timing decisions. However for simplicity we assume $RS_{i;t}$ is attributable solely to security selection. In order to make a reliable analysis of all of the three components of asset allocation we need to determine the policy weights of funds and the benchmark policy returns, the two unknowns in the above equations. We explained earlier in the data section how we determined the benchmark returns (Table 2).

With regard to policy weights, following Blake, Lehmann and Timmermann (1999), we used the simple average portfolio allocation (monthly data). We divided the sample period into two sub periods. The first period, from January 2000 to June 2005, is characterized by centralized holdings and management by the banks. In contrast, in the second period between July 2005 and September 2014, the provident fund market was liberalized, resulting in new owners and fund managers. Therefore, we used two different target weights.

Figure 1 illustrates how asset allocations between risky and less risky investments change drastically between the two sub periods.

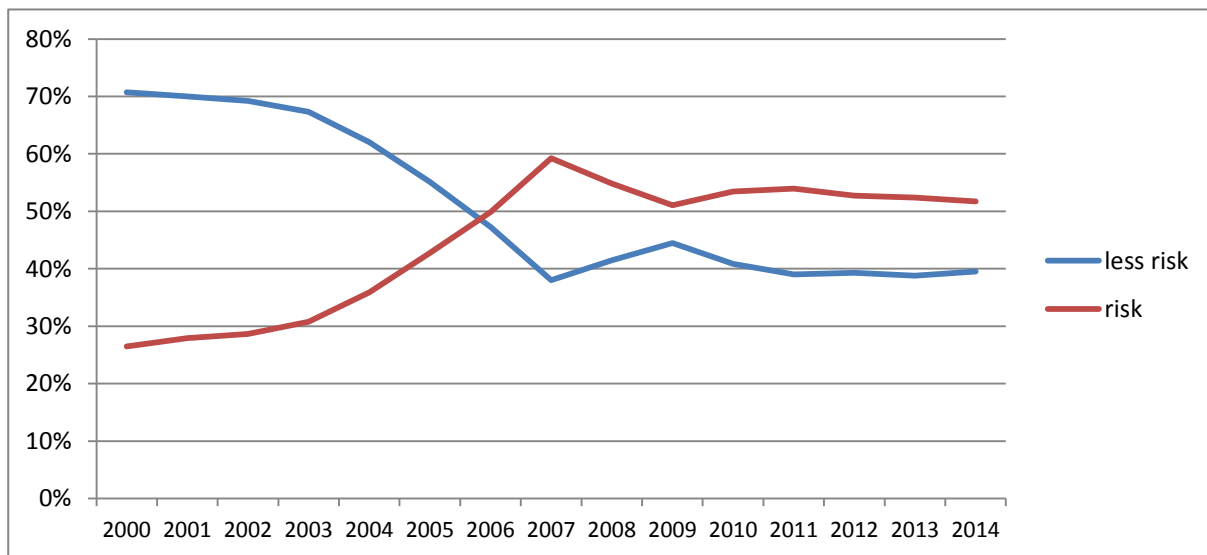


Figure 1. Level of risk of the asset allocations of the funds from 2000-2014

Given their heavy investment in corporate bonds and the fact that a much larger percentage of their funds could be withdrawn without a penalty, provident funds were hit hard by the global financial crisis of 2008. Therefore, we checked whether the financial crisis of 2008 caused a drastic change in the asset compositions of provident funds in an attempt to trim their risks. In the six months following the crisis, provident funds increased their cash holdings and reduced their stock investments (Table 1, Oct. 2008-Mar. 2009). However, after the first shock, we do not observe a significant difference between pre and post crisis asset compositions that would justify the need for a third group of policy benchmarks.

In accordance with Xiong et al. (2010) we made use of two types of monthly time-series regressions and one monthly cross-sectional regression to see the relative importance of market, policy, timing and selection on the variability of returns. Xiong et al. (2010) explain and prove that time-series analyses of total returns are dominated by overall market movement and cross-sectional variances are excess market return variances as they neutralize the effect of average return from the peer group. In our analysis, we use both the “peer group” and the “average portfolio of Israeli indices” as the market portfolio to assess the sensitivity of our results to different assumptions about market return. Hence, we ran 1) total return time-series regressions and 2) excess market return time-series regressions with the following equations:

$$R_{i,t} = b_0 + b_1 R_{k,i,t} + \text{resi}_{i,t} \quad (1)$$

$$(R_{i,t} - M_t) = b_0 + b_1 R_{k,i,t} + \text{resi}_{i,t} \quad (2)$$

where i denotes the funds in our sample, t is the respective month, R is the total return and M is the market return. In the first equation R_k refers to total return component from market (M_t), from policy (RB), from timing (RT) and

from selection (RS). In the second equation R_k refers to return component from policy in excess of the market (RB-Mt), from timing (RT) and from selection (RS)

To estimate the contribution of asset allocation to cross-sectional variation, we used total return instead of excess market return. This is because in a single period market return (Mt) is a constant and does not change the regression results. For each sample month t , the equation is as follows:

$$(R_{i,t}) = b_0 + b_1 R_{k,i,t} + \text{resi,t} \quad (3)$$

where R_k refers to return component from policy (RB), from timing (RT) and from selection (RS)

4. Results

4.1 Return Levels

We calculated the average annualized total returns and its components i.e market, policy, timing and selection for 101 funds using compound monthly returns. We used two common market benchmarks described earlier in the method section (average policy / peer group). The results are shown in Table 3.

Table 3. Summary of 15-year returns for the 101 provident funds, 2000-2014

	Average	Minimum	Maximum	Standard Deviation
Total Policy Return	6.4%	5.8%	6.8%	0.2%
Above average policy*	0.2%	-0.6%	1.1%	0.2%
Above peer group**	-0.1%	-0.9%	0.8%	0.2%
Active Return	0.2%	-3.2%	2.7%	0.7%
Timing	-0.1%	-0.7%	0.5%	0.2%
Selection	0.3%	-2.5%	2.6%	0.7%
Total Return	6.6%	3.2%	9.3%	0.6%

*Policy return net of simple average of domestic asset class benchmarks, which are shown in Table 2. **Policy return net of average Israeli provident fund universe returns (Xiong et al, 2010).

Our entire provident fund portfolio earned on average a 6.6% total return per annum over 15 years, which also includes other investments in addition to cash, bonds and stocks. However, the average incremental policy return in excess of the market is negligible, only 20 basis points above the average policy return and 10 basis points below the peer group. This analysis shows that after removing the effect of the funds' exposure to the capital markets, the real contribution of long-term policy decisions to return is not greater than active management.

In terms of active management, funds gained on average 30 basis points from security selection, which illustrates the ability of fund managers to actively overweight and underweight securities within asset classes. However, they were unable to anticipate market trends and lost 10 basis points on average from market timing.

The individual fund performances due to active management differed significantly, ranging from -3.2% to 2.7%. This volatility stemmed mainly from the choice of securities, which was between -2.5% and 2.6%. These results are not surprising given the flexibility in day-to-day actions and changes in style of fund managers. The range of returns from excess market policy is tighter on the individual fund level, between -0.6% and 1.1% (above average policy) and -0.9 and 0.8 (above peer group), meaning that the funds aligned closer in their long-term policy than their short-term investment decisions. Based on these results, we can conclude that Israeli provident funds on average could not beat the market with their corporate strategies. On the other hand, some successful fund managers seem to have improved profitability beyond the limitations of a passive policy. Thus, according to our results, active management matters and is no less important than policy. However, it is unclear if the incremental return from active

management can cover the managers' fees. In short, neither active management nor long-term policy but simple market exposure accounts for most of the provident funds' performance.

4.2 Variations in Returns

We require a more in-depth analysis to determine which factor dictates the variances in the returns of the funds over time and across funds. We followed the methodology of Xiong et al. (2010) and conducted a month-by-month analysis of the 101 funds over 180 months. Table 4 shows the regression results for 180 months of fund returns against their corresponding market returns, policy returns and active returns (total, timing, selection) relative to the studies of Xiong et al. (2010) and Ibbotson and Kaplan (2000) on US mutual funds.

Table 4. Regression Results for 101 Israeli provident funds and US balanced funds

R Squared Results	Total return time series		Excess return time series		Total return cross sectional	
	US balanced funds (2000&2010)	Israeli provident funds	US balanced funds (2000)	Israeli provident funds	US balanced funds (2000&2010)	Israeli provident funds
Mt=Avg Policy						
	1) return-	Total Avg. policy	3) return-	Excess Avg. policy		
Market Policy	78.8%	73.9%			40.0%	40.8%
Excess Policy	NA	18.4%	NA	35.6%		
Active(AR)	27.0%	16.9%	NA	37.5%	NA	56.1%
Interaction	NA	-25.5%	NA	26.9%	NA	3.1%
Rt	NA	10.1%	NA	6.4%	NA	8.0%
Rs	NA	23.1%	NA	29.0%	NA	52.0%
Mt=Peer Group						
	2) return-	Total Peer group	4) return-	Excess Peer group*		
Market Policy	88.0%	82.1%			40.0%	40.8%
Excess Policy	20.0%	16.1%	36.0%	21.0%		
Active (AR)	10.0%	16.9%	39.0%	31.3%	NA	56.1%
Interaction	-18.0%	-15.1%	25.0%	47.7%	NA	3.1%
Rt	NA	10.1%	NA	10.7%	NA	8.0%
Rs	NA	23.1%	NA	23.5%	NA	52.0%

*We conducted a sensitivity analysis for our "peer group" benchmark results according to different assumptions about foreign investments. Under different scenarios ranging from all stock foreign investments to zero foreign investments, the time-series and cross-sectional variations did not change significantly, thereby confirming our conclusions. Our results did not change significantly also after making tax adjustment to the TASE indices.

We ran four time-series regressions according to two models and two market benchmarks: 1) total return -average policy 2) total-return -peer group 3) excess return- average policy 4) excess return- peer group. The first model time-series (1 & 2) shows the variation of total returns with respect to the market, policy, active management and

timing and security selection separately. The results in Table 4 prove that capital markets account for most of the total return, about 70%-80% of the total variations. In addition, as expected, the explanatory power of policy drops significantly after eliminating the market effect. We find that "excess market" return from asset allocation policy and active management have an equal level of explanatory power, both of which account for around 17%. These findings are the same as the earlier research of Xiong et al. (2010) and Ibbotson and Kaplan (2000)

In the second model time-series (3 & 4) we regressed excess market returns against excess market policy returns to exclude the effect of market movements. The results of the second model time-series appear to be sensitive to the market benchmark chosen. Nevertheless, we can conclude that fund policies explain far less than half of the variations in returns over the market (36% and 21%) and do not have a stronger influence on time-series variations than active management (36% vs. AR 38% and 21% vs. AR 31%). These observations accord with Xiong et al. (2010) and Ibbotson and Kaplan (2000).

In addition, we conducted a cross-sectional analysis, which naturally removes the market movements. Therefore, the resulting R² above gives us a more realistic picture of the relative importance of policy as opposed to active management. The cross-sectional results, as mentioned by Xiong et al. (2010), are not sensitive to different market benchmarks. Table 4 shows that asset allocation policy explains on average 40% of the variances in excess returns among Israeli provident funds as is the case in the studies of Xiong et al. (2010) and Ibbotson and Kaplan (2000). Moreover, the contribution of active management to cross-sectional variations in performance is on average 56%, which is above that of policy. Hence, our cross-sectional results reconfirm our conclusions about the excess market time-series regressions.

Finally, if we analyze the abilities of the fund managers with regard to market timing and security selection separately, we observe that according to all of the regressions, security selection has a much stronger impact on return variations than tactical asset allocation. Moreover, the association between tactical asset allocations and total returns is the weakest, not exceeding 10%. More strikingly, however, the average contribution of security selection decisions to cross-sectional and total time-series variations in performance is also significantly above that of policy or approximately similar according to excess market time-series variations. This evidence seems to underscore the success of fund managers in exceeding the performance of long-term strategies by choosing the right stocks.

5. Conclusion

Many studies to date focused on asset allocation policy as the most important factor of performance, ignoring that bulk of the returns come from capital market movements. In this study, we shed new light on provident funds' sources of performance using a unique database from Israel. To the best of our knowledge, this is the first paper to check the real effect of policy (after removing the effect of the market) on the performance of provident funds. Second, it is the first attempt to compare the influence of the market, excess-market policy, security selection and timing separately on fund performance, looking into both the total return levels and the variations in returns.

The study of Xiong et al. (2010) proved that for mutual funds, policy and active management equally explain variations in excess-market returns across time and funds. Michel Aglietta et al. (2012) showed that active management plays a major role in explaining returns to individual asset classes for US defined-benefit pension funds. We provide supporting evidence from the Israeli provident funds to the findings of Xiong et al. (2010) and Michel Aglietta et al. (2012). In addition, we show that active management owes its influence to security selection.

The main result from our empirical investigation is that market performance is the dominant factor in the total return over the 15 years analyzed. It explains around 96% of the level of total return and more than 70% of the variations in total return over time. Policy did very little to improve performance and it was no better than active management in explaining excess return variations in the funds. Moreover, according to all of the regressions variations seem to be unrelated to timing abilities. Unfortunately, managers appear to have failed timing market movements with negative returns in general. They seem to be more successful in their selections of securities. As a result, they can beat the market on average but not significantly and management fees can wipe out these profits. Nevertheless, this does not mean that active management does not matter. In fact, we observe that some funds have superior managers, who achieve high excess returns by choosing the right securities. In short, a "laissez faire" approach to portfolio management gives the best results and active management could be more important than policy if we can choose the right managers.

Finally, a detailed monthly composition of fund investments abroad would help achieve more precise results. However, given the very long span of our sample period and the large number of observations, in which the percentage of foreign investments are on average below 10%, we believe we provide a realistic picture.

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