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Asset Management Costs and Financial Performance of Dutch Pension Funds in 2011-2014

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Abstract

The costs of Dutch pension funds have increased in the last decades. The costs, as a percentage of assets invested, doubled between 1992-2009. In 2014 total costs equalled 6.3 billion euro, or 19.6% of annual contributions. Asset management is the largest component of costs. Pension funds claim that the costs are necessary for financial performance. Using a unique data-set of Dutch pension funds, the effect of costs on performance is estimated. The hypothesis that higher costs do not lead to better financial results cannot be rejected.

I. INTRODUCTION

In 2011 the Dutch supervisor on conduct of behaviour ("Autoriteit Financiële markten", abbreviated AFM) drew attention to the costs made by pension funds. In a report titled *costs pension funds deserve more attention*, the AFM stated that a reduction of costs equivalent to 0.25 percent point of assets under management would lead to an increase of total pension assets of 7.5%.[1] The implicit assumption of this proposition is that a decrease in asset management costs will not affect the financial performance of funds. Pension funds disagree, stating that the current level of asset management costs is a necessary condition for adequate financial returns. If pension funds are correct, the question remains whether an extra euro annually spend on asset management leads to an increase of (the present value of) annual financial performance by at least a euro. This is the question that indeed is addressed in this paper. That is, the research question is what the relation is between asset management costs and financial performance.

The main question is here addressed as an empirical one, to be answered by estimation of econometric models of pension funds' data. The data have been manually collected from annual reports of pension funds. The resulting (panel-)data-set is unique; a comparable data-set has –to my knowledge at least- not been analysed thus far. This is not to state that no econometric research has been conducted on Dutch pension funds.

There has indeed been substantial research on Dutch pension funds, but this research uses different data-sets and focuses on other factors. One focus has been the effect of administrative costs and size on performance; see Bikker and DeDreu (2009), Bikker et al. (2012), Bikker (2013) and Broeders et al. (2015). Huang and Mahieu (2010) focus instead on performance persistence. Bikker et al. (2012) document the effect of the demographic structure of pension funds on their strategic asset allocation; they document a negative relation between (average) age of participants and investment

[1]The Dutch statement reads: "een kostenverlaging van 0,25 procentpunt op een termijn van veertig jaar leidt tot een circa 7,5% hoger collectief pensioenvermogen" (AFM, 2011, p. 4).

risk (proxied by equity allocation). This paper adds to the econometric literature on (Dutch) pension funds by relating performance to costs.

As indicated, the approach here is empirical. The approach here is however related to and has implications for the theoretical literature on performance-pay. In perfect markets pay is a function of productivity. Several imperfections lead to a discrepancy of pay and performance. Here two imperfections are important. First, performance of asset managers is difficult to evaluate, as effort cannot be observed (fully), only the outcome can. The outcome –that is, financial performance- is however a weak signal, as returns are influenced by many factors out of control of asset managers. In the absence of the possibility to observe effort (and make pay contingent on it), a second-best solution is to incentivise asset managers by pay-for-performance. This solution comes with a potential problem. If bonus-schemes are asymmetric (bonuses for high return, no maluses for low return), there is an incentive to increase risks (see Dixit, 2002 and Bebchuk and Spamann, 2009).

A second imperfection is the institutional framework of the financial sector -including pension funds-, from which labour market models typically abstract. The pension sector consists of a chain of outsourcing and principal-agent relations; De Deken (2008) calls the pension sector a "*highly complex form of mediated ownership*". In the first layer of the chain pension funds can be interpreted as agents working on behalf of participants (both active and retired), who are the principal. Subsequently, funds act in the second layer on behalf of participants when they outsource asset management. In that layer, funds are the principal and the asset managers are the agent. Frequently asset managers themselves subsequently outsource part of the asset management to yet other investors (e.g. hedge funds, private equity) –leading to a long chain of outsourcing. At each node, principal-agent problems arise and the link between the ultimate beneficiaries (fund participants) and end-investors is weakened. This may lead to over-payment and/or underperformance, as participants cannot hold the fund effectively to account, let alone the asset managers further down the line.

The combined result of the two market imperfections may be that the link between pay and performance is weakened or may even be absent all together.

Whether this is the case is an empirical question and has to be established on a case-by-case basis.

II. THE DUTCH PENSION SYSTEM[2]

As in most developed countries, the institutional structure of the pension system in the Netherlands is organized as a three-pillar system. The first pillar comprises the public pension scheme financed on a pay-as-you-go base. It offers a basic flat-rate pension to all retirees (if they were a resident in the Netherlands). The benefit level is linked to the statutory minimum wage. The second pillar is that of fully funded wage-related pension schemes managed by pension funds. The third pillar comprises personal savings, which individuals undertake on their own initiative. Personal savings are generally tax-deductible.

The wage-related pension system in the Netherlands is mainly formally organized with defined-benefit (DB) plans. The benefit entitlement is determined by years of service and a reference wage, which may be final pay or the average wage over the years of service. Most Dutch pension plans are based on average wage. As most corporate sponsors don't (fully) cover shortfalls of the pension funds, the residual risk is borne by participants, who may have their pension benefits and entitlements cut. This type of plan may also be labelled as hybrid, having characteristics of both defined benefit and defined contribution plans. It is partly DB in that the yearly accrual of pension rights is specified in the same way as in a traditional DB plan, and it is partly DC because the annual indexation is linked to the financial position of the fund and thereby related to investment returns.

There are three types of pension funds in the Netherlands. The first is the industry-wide pension fund (in Dutch: "bedrijfstakpensioenfonds"), organized for a specific sector of industry (e.g. construction, health care). Participation in an industry-wide pension fund is mandatory for all firms operating in the sector. A corporate can opt out only if it establishes a corporate pension fund (ondernemingspensioenfonds") that offers a better pension plan to its employees than the industry-wide fund. Where

[2] This section is an adaptation of part of Bikker et al. (2012).

a supplementary scheme exists, either as a corporate pension fund or as an industry-wide pension fund, participation by workers is mandatory and governed by collective labour agreements. The third type of pension fund is the professional group pension fund ("beroepspensioenfonds"), organized for a specific group of professionals such as dentists or notaries.

III. DATA AND VARIABLES

The data-set covers industry-wide funds and professional funds in the period 2011-2014. Data were collected using annual reports of the pension funds involved. Some funds did not report all variables of interest. There is no reason to assume that incomplete reporting is connected with costs or with performance (or the relation between the two), but this cannot be ruled out a priori. Prior to 2011, reporting by too many funds is incomplete and the period before 2011 is therefore not considered.

The omission of corporate funds is a practical choice, as they represent the majority of pension funds. Obviously more information (and more efficient estimates) can be get by including them, as is the intention to do in future research. There is no reason to assume that corporate funds are intrinsically different from the other two types of funds. In particular, rules and regulation are similar. However, it can -again- not be ruled out and the results in the remainder do not necessarily apply to corporate funds.

Funds report four cost-categories. These are (i) administrative costs, (ii) asset management costs, (iii) transaction costs and (iv) pay-related costs. Unless stated otherwise, asset management costs consists of categories (ii)-(iv). So, asset management costs equal total costs minus administrative costs. Inclusion of transaction costs might be debated on the grounds that it does not cover asset *management* as such rather asset *managing*; transaction costs finance trading of assets but not the decision to trade them. Here the position is taken that financial transactions –and their costs- are an integral part of asset management; particularly high-frequency trading (leading to higher costs) is part and parcel of asset management decisions.

Financial performance is here equivalent to gross return on assets (ROA). Pension funds ultimately ultimately need to fund their liabilities, and their key indicator therefore is the coverage ratio –the ratio between assets and liabilities. The coverage ratio is also the main determinant of decisions on indexation and contributions. This might suggest that the increase of the coverage ratio (which may be interpreted as the liabilities-weighted return) ultimately captures financial performance of pension funds. While there is nothing against such an approach per se, the ROA is more indicative of asset management performance for two reasons. First, it is the main performance indicator of asset managers (and of funds *in their role as principal*) themselves. Second and related, asset managers have little or no control over the interest-rate which is the main determinant of liabilities. Taking the ROA as the performance indicator is furthermore in line with related literature.

Financial return is influenced by several (other) factors, used as regressors here. Arguably the most important covariate is the overall market return, which is proxied by year dummies. Another important factor is investment-risk, since higher expected return is theoretically only possible by taking more risk. Ex post returns are then partly a reflection of ex-ante risk-taking -not of performance proper. Investment risk is here proxied by the percentage of assets invested in equity (comparable to Bikker et al., 2012). This is a rough proxy at best, but the only one available in the annual reports (which also provides relative weight of investments in fixed-income securities and real estate; obviously investment in these asset categories are highly collinear with investments in equity). The last regressor considered here is the size (the number of participants) of the fund. The (positive) effect of size on performance is an empirical regularity, indicating both advantages of scale and increased bargaining power vis-à-vis asset managers.

Table 1 shows the mean, standard deviation, minimum and maximum of the variables.

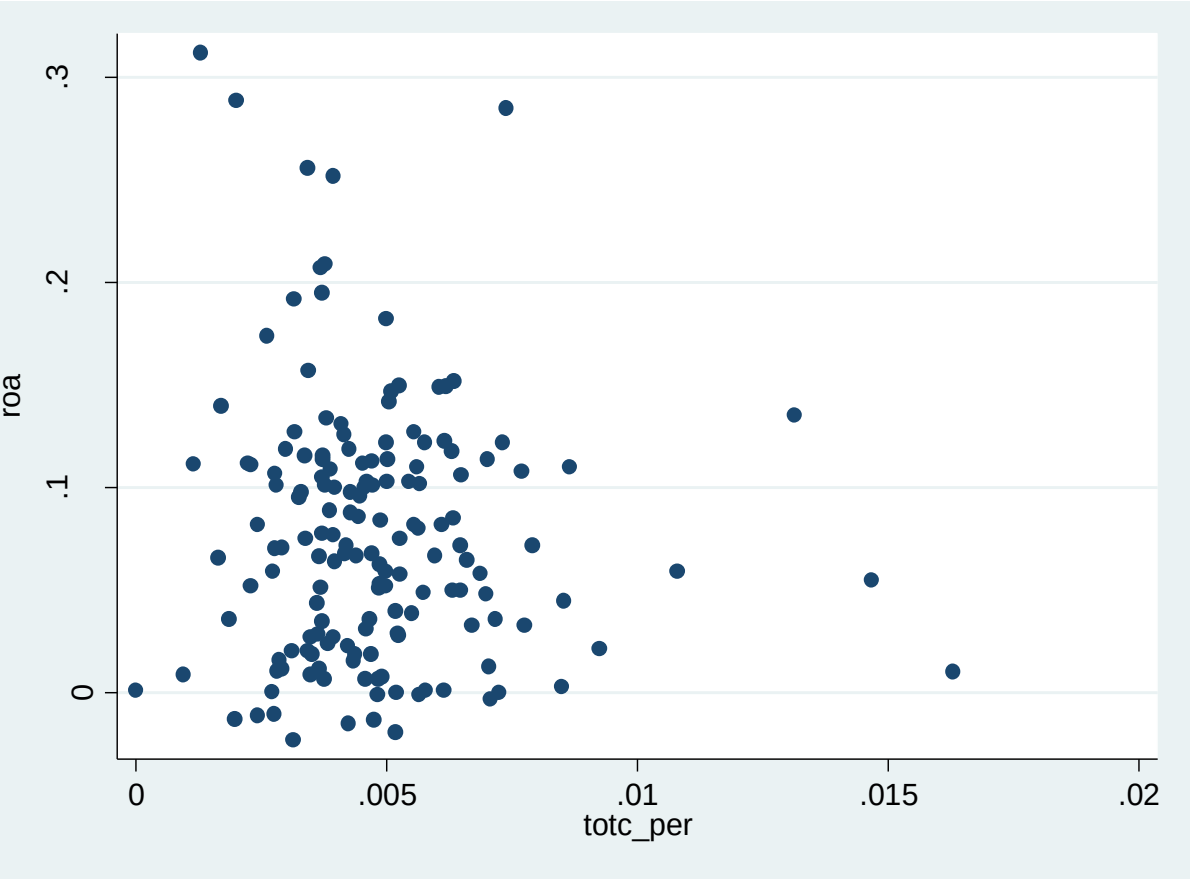
Table 1

	Average	Std. Dev.	Min	Max
ROA	0.077	0.063	-0.023	0.312
ROA, inc. hedge	0.0117	0.0919	-0.046	0.388
SIZE	171944.5	399047.4	5	2203700
EQUITY	0.2729	0.0904	0	0.5070
COST				

IV. MODEL AND RESULTS

There is a positive association between return on assets and asset management costs as a percentage of assets. This is depicted in graph 1.

Graph 1: the return on assets (y-axis) and the total asset management-costs as % of assets invested (x-axis) for Dutch industry-wide and occupational pension funds in 2011-2014.



This association is inconclusive as it excludes covariates. To include those, the following baseline model is estimated:

$$ROA_{i,t}=\alpha_i+\beta_1 COST_{i,t-1}+\beta_2 \ln(SIZE)_{i,t-1}+\beta_3 EQUITY_{i,t}+\beta_4 D2013_{i,t}+\beta_5 D2014_{i,t}+\varepsilon_{i,t}$$

where i=1,..,N and t=2012,.., 2014

$ROA_{i,t}$ indicates the return on assets in year t for fund i. COST, SIZE and EQUITY indicate total asset management costs (as % of total assets), total number of participants (retired and active) and assets invested in equity (as % of total assets) respectively. Year-dummies are indicated by D followed by the year for which the dummy equals 1 (0 otherwise). Note that the year 2012 is the reference year. The SIZE-variable is taken in logarithm to allow for decreasing returns to scale, as seems reasonable theoretically and has been established empirically.

The COST-variable is lagged to address endogeneity. Returns directly affect via pay-for-performance schemes- costs. This reversed causality leads to correlation between the error term and the regressor (id est to endogeneity). This is addressed by instrumentalizing the COST-variable by its value lagged one year. (As robustness checks a model including contemporaneous values is estimated.) The correlation between the COST-variable and its own lag is 0.46, rendering it a relevant instrument.

Table 2: Estimates of baseline-regression
(standard errors in parentheses)

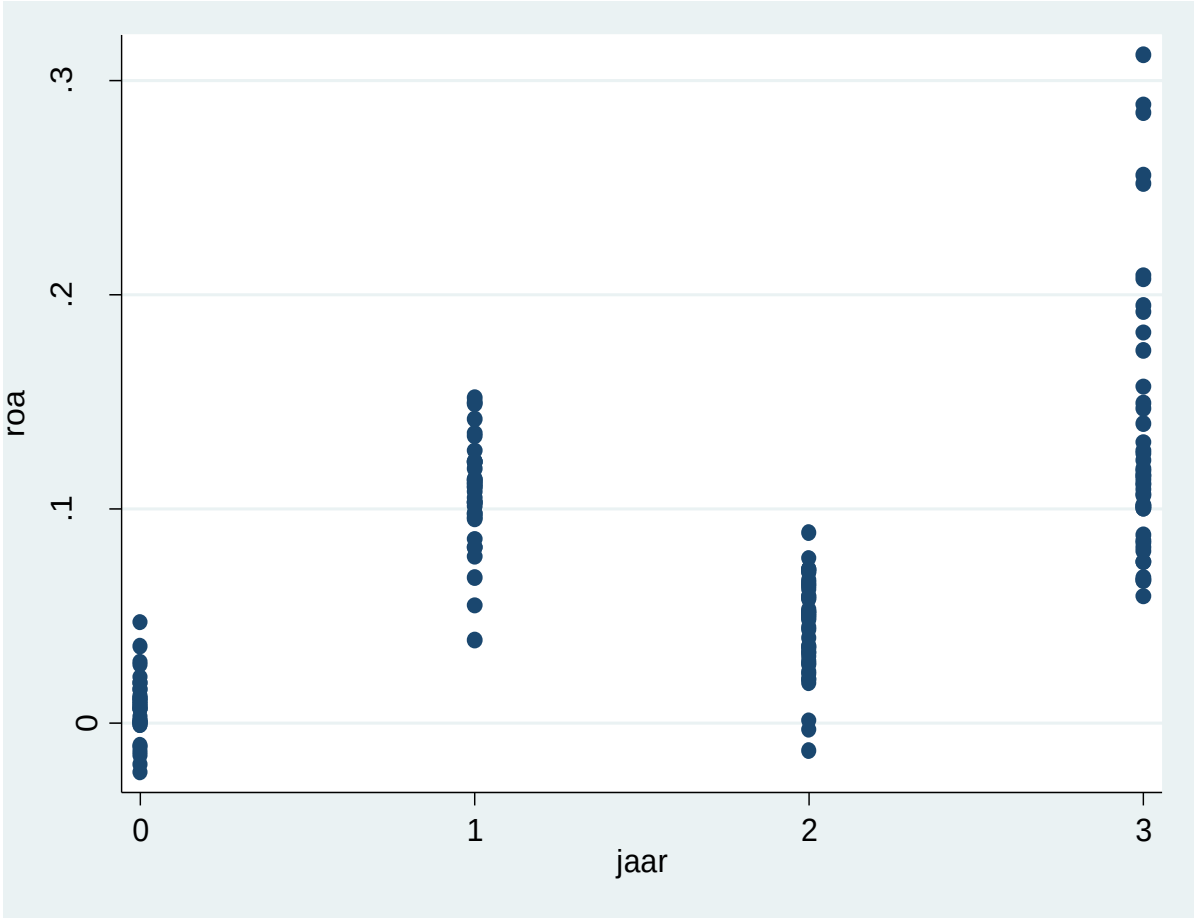
	Dependent variable: ROA
Regressors:	
Ln(SIZE)	0.13 (0.1)
D2013	-0.07 (0.01)
D2014	0.02 (0.01)
EQUITY	0.03 (0.1)
COSTS (lagged)	-2.86 (3.3)
Constant	-1.2 (0.99)
N=120	
(Within) R^2=0.59	

Table 2 shows the estimation result. The coefficient of interest is the coefficient of the COST-variable. In order for an extra euro (scaled by assets) to increase returns by at least one euro (scaled by total assets as well) the coefficient should be larger than 1. As can be seen the estimate of the coefficient is negative. With a standard error of 3.3 it is however not significantly different from one. (Consequently, the estimate is also not statistically different from 0.) Coefficients of the covariates SIZE and EQUITY show expected (positive) signs, but are not significantly positive. The coefficient of the year dummy 2013 is significant at a significance level of 0.05, whereas the coefficient

of the year dummy 2014 is insignificant –though the p-value is close to 1.65, the threshold for significance at the 0.01 level.

The upshot of this regression is (i) that the ROA is governed by year-effects, which in itself suggests that the effect of asset management is limited and (ii) that the null hypothesis that costs have a 1-on-1 relation cannot be rejected (and given the negative coefficient, therefore the null that there is no effect can also not be rejected). The effect of (i) can also be shown graphically –see graph 2.[3]

Graph 2: the return on assets (y-axis) by year (0:=2011; 1:=2012; 2:=2012; 3:=2014) for Dutch industry-wide and occupational pension funds.



[3] Regressing ROA on year-dummies and year-dummies only results in coefficients of 0.10, 0.03 and 0.12 for the years 2012, 2013 and 2014 respectively (2011 reference-year) and (significant) t-values of 10.4, 3.0 and 13.1 respectively. The (within) R^2 is then 0.70. Further results not shown here.

The limited number of significant regressors might be a consequence of the limited number of data. In the next section several other specifications are considered, which take more observations into account.

V. ROBUSTNESS ANALYSIS

Specifications different from the base-line model are reasonable and/or useful. Here several are discussed as robustness analysis. The first alternative specification includes another definition of the dependent variable. Instead of taking the ROA, the ROA including hedges is considered. As indicated the coverage ratio of funds depends on the interest-rate, which in turn determines the present value of liabilities. Many funds hedge therefor their exposure to low interest-rates. Another important hedge shelters funds from exchange risk (as the liabilities of funds are euro-denominated but assets need not be). A strong case can be made that the ROA including hedges should be considered, as hedging is an integral part of risk management which is closely connected to, if not a component of asset management. A futher advantage here is that there are more observations available if ROA including hedges is considered.

Table 3: Estimates of regression with ROA inc. hedge as dependent variable (standard errors in parentheses)

	Dependent variable: ROA, inc. hedge
Regressors:	
Ln(SIZE)	0.02 (0.07)
D2013	-0.12 (0.01)
D2014	0.09 (0.01)
EQUITY	0.09 (0.09)
COSTS (lagged)	-2.25 (2.59)
Constant	-0.05 (0.67)
N=207	
(Within) R^2=0.84	

The outcome of this specification is shown in table 3 and is similar to the base-line model, with the notable exception of the year dummy 2014, which is now significant. The (within) R^2 increases substantially from 0.59 to 0.83.

A second alternative considers the contemporaneous values of asset management costs, while leaving out pay-for-performance costs, as these are directly linked to ROA.[4] The results are in table 4. Inclusion of non-lagged values enables to consider more observations and allows to include the dummy for year 2012. Results are shown in table 4. The ROA is now driven by the significant year dummies. The cost-coefficient is positive, though not significantly different from 0 (and therefore also not significantly different from 1).

[4] It is remarkable that inclusion of pay-for-performance actually decreases the estimated coefficient. and this estimate is not statistically different from 0. One would certainly expect this relation to be positive. (Full results not shown here.)

Table 4: Estimates of regression with (a) contemporaneous values and (b) asset management costs without pay-for-performance
(standard errors in parentheses)

	Dependent variable: ROA
Regressors:	
Ln(SIZE)	-0.002 (0.04)
D2012	0.098 (0.01)
D2013	0.028 (0.01)
D2014	0.12 (0.01)
EQUITY	0.001 (0.08)
COSTS (lagged)	1.24 (2.45)
Constant	0.03 (0.46)
N=157	
(Within) R^2=0.70	

Combining the first and second alternative specifications in a model with the dependent variable of the first alternative (ROA including hedges) and the regressors of the second alternative does not lead to qualitatively different findings (results not shown here).

VI. CONCLUSION

The main conclusion is that there is not any specification in which the null hypothesis that there is no relation between asset management costs and return on assets can be rejected. This conclusion contains several negations but can alas not be simplified into that statement that there is no empirical link. No positive link between costs and performance could however be established. The main conclusion –the failure to reject a null- may reflect the limited number of data, which makes it harder to distinguish any null hypothesis from alternatives. This can obviously only be addressed by collecting more observations, both across time (including the year 2015) and across

funds (including corporate funds). The aim is to do both in future research. Given the negative estimate of the coefficient of the cost-variable, the conclusion might then be that there is a negative link.

A second conclusion is that year-dummies are economically substantial and frequently statistically significant (the latter even with the limited number of observations). This indicates that ROA is driven primarily by yearly changing market conditions. This in turn suggests that the effect of asset management ("the search for alpha") is limited in any case.

The policy implication of the estimations is that the burden of proof is on the side of pension funds. Funds claim that costs are necessary for a high ROA. The hypothesis that there is a 1-on-1 link between asset management costs and performance –the minimum required for the cost-efficiency of asset management- can indeed also not be rejected. But the failure to reject the justification for high and rising costs does not seem a firm foundation to justify high and rising costs. To add to the imperative of the AFM with which this paper started, the justification of costs deserve more attention.

REFERENCES

Autoriteit Financiële Markten (2011). Kosten pensioenfondsen verdienen meer aandacht (April 2011).

Bebchuk, L. A. and H. Spamann (2009), Regulating Bankers'Pay, Harvard Law School Discussion Paper 641 6/2009.

Bikker, J.A., D. Broeders, D.A. Hollanders and E. Ponds (2012) Pension funds' asset allocation and participant age: a test of the life-cycle model, *Journal of Risk and Insurance*, 79 (3), pp. 595-618;

Bikker J.A. and J.De Dreu (2009), Operating costs of pension funds: the impact of scale, governance and plan design. *Journal of Pension Economics and Finance*, 8, pp. 63- 89.

Bikker J.A., O.W. Steenbeek and F.Torracchi (2012), The impact of scale, complexity and service quality on the administrative costs of pension funds: a cross-country comparison. *The Journal of Risk and Insurance*, 79(2), pp. 477-514.

Bikker, J.A. (2013), Is there an optimal pension fund size? A scale-economy analysis of

administrative and investment costs. De Nederlandsche Bank working paper, No. 376.
Broeders D., A. van Oord and D. Rijsbergen (2015), Scale economies in pension fund investments; a dissection of investment cost among asset classes. De Nederlansche Bank working paper Jun. 2015, No. 474.
De Deken, J.J., 2008, Pension Fund governance and stakeholding: the double trust dilemma in the control of supplementary pensions in Europe, paper presented at the ESPANET 2008 conference held in Helsinki September 18-20.
Dixit, A., 2002, Incentives and Organizations in the Public Sector: An Interpretative Review, The Journal of Human Resources, vol. 37(4): 696-727.
Huang X. and R.J. Mahieu (2010), Performance persistence of Dutch pension funds. *De Economist*, 160(1), pp. 17-34.