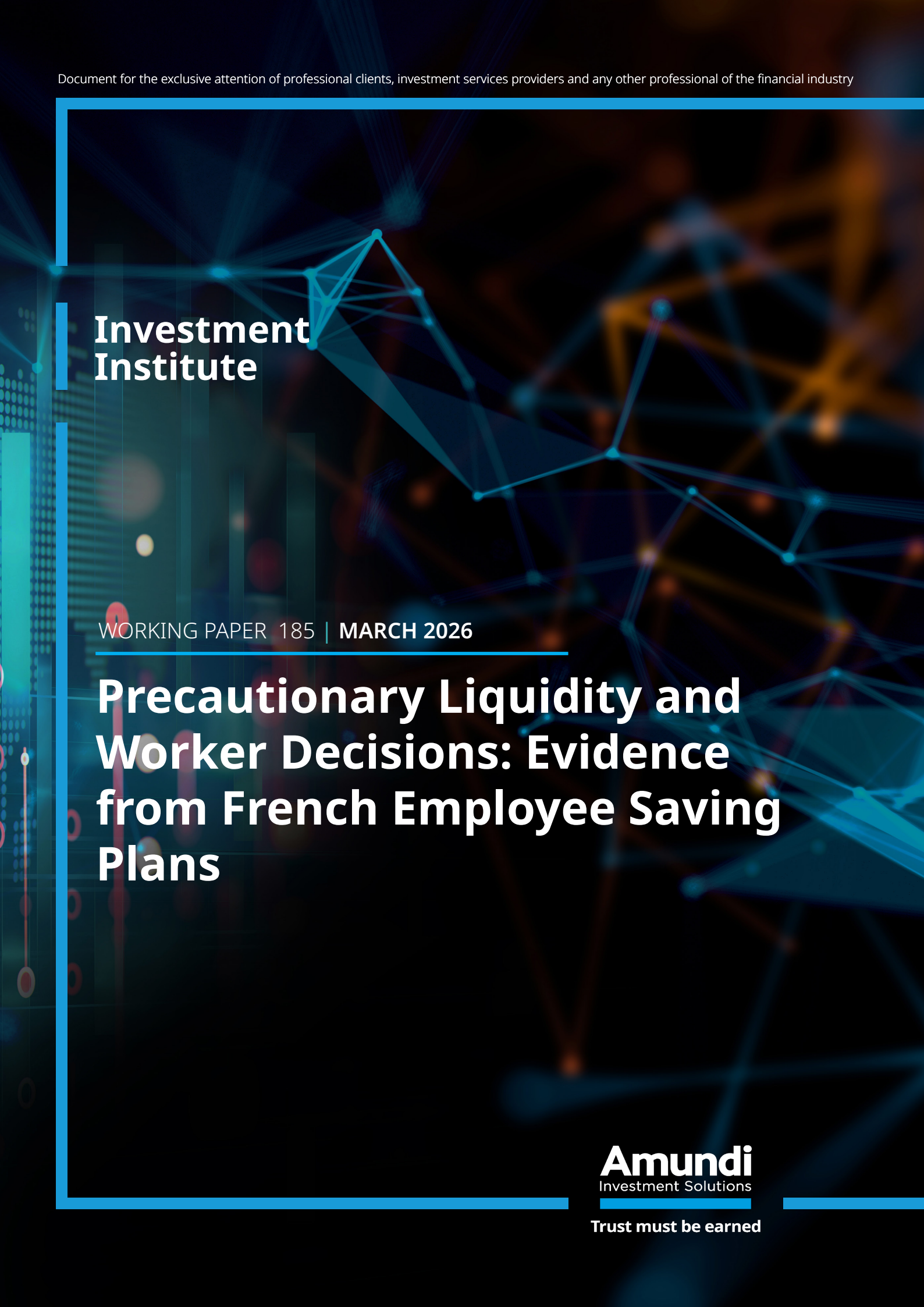

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Precautionary Liquidity and Worker Decisions: Evidence from French Employee Saving Plans

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Precautionary Liquidity and Worker Decisions: Evidence from French Employee Saving Plans

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Abstract

This paper investigates the demand for precautionary liquidity versus commitment contracts among participants in retirement saving programs by analyzing administrative data from the largest workplace saving plan provider in France, a country in which employers have wide discretion in structuring these plans. All firms in the sample offer medium-term investments, which cannot be accessed for five years, and some also offer long-term investments, which cannot be accessed until retirement. All plans feature auto-enrollment. When a plan offers long-term investments, those investments must be included in the plan default. Analysis of workers who experience changes in access to long-term investments as a result of job change suggests that when plans offer long-term investments, acceptance of the default option falls by about 6 percentage points and overall plan participation falls about 3 percentage points. Although workers seem to prefer medium-term to long-term investments, at firms that offer long-term investments, two-thirds of those who opt out of the default and make active choices allocate at least some of their contributions to them. Most allocate less to long-term investments than the default allocation, suggesting that contributors are reluctant to forego access to their accounts completely but nevertheless value commitment contracts.

Keywords: saving, retirement, pension, behavioral finance

JEL classification: J32, G4, D14

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The design of workplace saving plans is a topic of active public policy debate in many countries. Fiscal challenges are placing growing pressure on public pension systems, thereby elevating the importance of private savings for retirement. In this paper, we investigate how plan participation and acceptance of the default depend on plan characteristics. A key design feature of defined contribution (DC) plans, which now dominate the retirement planning landscape, is the extent to which participants can access their accumulated account balance before retiring. As described in Beshears et al. (2015), policies vary widely among countries, ranging from very limited access, as in Australia, to access for particular hardship situations or for a fee, as in the United States. France's workplace savings plans provide an ideal setting for studying such choices. All participants in French savings plans receive valuable tax benefits and accept some degree of illiquidity relative to workers who opt out and choose a cash payment. Employer-sponsored plans offer two combinable savings vehicles with different time frames: medium term (MT) of five years and long term (LT) until retirement. These saving plans feature an auto-enrollment default, so the variable remuneration of employees who do not express any choice is automatically directed to the default plan. Moreover, by law, plans offering LT or MT savings vehicles must include a fund from each respective category in the default.

We study two measures of employee preferences over these savings options: plan participation and response to the default plan, in the spirit of Goldin and Reck (2020), and portfolio allocations across the MT and LT savings vehicles, applying insights from Choukhmane and de Silva's (forthcoming) analysis of equity allocations among active participants in US 401(k) plans. We analyze an original dataset on the saving choices of 1,782,877 individuals who were covered by workplace savings plans administered by Amundi—France's largest DC plan provider—from

2015 to 2020.[1] To address the endogeneity issue that can confound cross-sectional analysis of how plan attributes affect workers' saving decisions, we use an identification strategy focused on job changers, as in Choukhmane (2025).

In our full sample, 87% of workers participate in a plan, with 19% accepting the default. Our estimates from the behavior of job changers suggest that plan participation drops by about 3 percentage points when the plan offers an LT savings vehicle, and take-up of the default falls by about 6 percentage points. However, two-thirds of active decision-makers who are offered LT savings vehicles choose to invest in them, in most cases at a level lower than that in the default plan. When investments in LT funds are matched, 69% of these active choosers invest in these vehicles; this figure is 35% when LT funds are not matched.

This apparent willingness to fine tune the share of LT savings is consistent with workers' behavior combining rational demand for precautionary liquidity present in MT savings, as discussed in Briere, Poterba, and Szafarz (hereafter BPS,2022) with s*ophisticated* (as opposed to so-called naïve) present-biased demand for the commitment embedded in LT savings, as described in Beshears, Choi, Clayton, Harris, Laibson, and Madrian (hereafter Beshears et al. 2020).[2] The relative importance of these two forces is a key input into retirement plan design, both because it can affect the level of employee contributions and because it determines the welfare effects of various provisions in the retirement saving system.

[1] EURES (European Employment Services, https://eures.europa.eu/living-and-working/labour-market-information-europe/labour-market-information-france_en, estimates the working population in France to be around 31 million individuals over the period of the study. The French Statistical Institute (INSEE, https://www.insee.fr/fr/statistiques/8567183) reports that 21 million work in the private sector. According to the Statistics Department of the French Labor Ministry (DARES, https://dares.travail-emploi.gouv.fr/nos-sources-de-donnees), 9.5 million workers have access to employee savings plans. With over 4 million clients, Amundi serves nearly half of this market. The firms served by Amundi tend to be larger, and are more likely to be publicly traded, than the firm population at large. About 60% of the workers in the Amundi dataset work at firms with more than 5,000 employees; only 29% of the French labor force works at such firms.

[2] Nehring (1999) explores the preference for flexibility which is rooted in the comfort of dealing with more opportunities in the future.

We are not aware of any evidence on how participants' contribution behavior in workplace saving plans is affected when there are different restrictions on future account access for different saving vehicles within the same plan. In a somewhat different setting, involving randomized controlled trials with saving products in developing countries, Kos and Lensink (2023) find greater demand for flexible withdrawals than for commitment contracts. Several studies have analyzed an issue that is closely related to the subject of this paper: the extent to which withdrawals from retirement saving plans respond when restrictions on such withdrawals are lifted. Goda, Jones, and Ramnath (2022), for example, find that in the US, withdrawals from these plans spike as soon as savers can withdraw assets without a tax penalty. Andersen, Bartscher, Leth-Petersen, and Moran (2024) find that when the tax on withdrawals in Denmark was lowered from 20% to 10%, the share of account holders taking withdrawals rose by 2.5 percentage points -- a doubling. The rich structure of the French workplace saving system, where employer-sponsored savings plans can include MT and/or LT savings vehicles, allows us to develop new evidence on how contribution patterns are affected by restrictions. Our results are consistent with Choukhmane's (2025) finding that some auto-enrolled contributions are withdrawn from retirement savings accounts before retirement, for example when participants change jobs.

Our results also inform the growing literature on the demand for commitment contracts among retirement savers. Amador, Werning, and Angeletos (2006) frame the general problem facing a consumer who desires constraints that avoid present-biased consumption choices. In contrast to the findings of demand for commitment contracts in Thaler and Benzarti (2004), who analyze 401(k) plan innovations in the US, Ashraf, Karlan and Yin (2006), who study commitment saving products in the Philippines, and Beshears, Choi, Harris, Laibson, Madrian, and Sakong (2020), who carry out an experiment, we find that the net effect of offering commitment contracts

is a drop in plan participation. This finding relates to the small but growing literature on optimal default design, such as Beshears, et al (2020) and Carroll, Choi, Laibson, Madrian and Metrick (2009). Our findings also highlight the important role of defaults in workplace saving plans. Some participants appear to follow simple heuristics to reduce the cost of choosing contribution levels and investment options.[3] Further analysis of how the structure of defaults affects worker choices will inform not only behavioral economics but also the design of regulatory policies.

This paper is divided into five sections. The first presents an overview of the structure of French employer-sponsored retirement plans. The second describes the administrative data on workplace saving plans underlying our analysis and explains our identification strategy. Section three presents our central findings on how the presence of an LT savings vehicle affects the probability of taking up the plan default and the probability of plan participation. The fourth section describes the active choices of workers who opt out of the LT-inclusive default allocation. A brief conclusion suggests directions for future work.

1. Employer-Sponsored Saving Plans in France

The compensation of French workers has three components: a fixed wage, an individual bonus, and variable remuneration.[4] The latter is a group-based incentive program that is linked to the company's overall profits, rather than the productivity of individual workers. French companies with more than 50 employees must offer variable remuneration based on profits, but they have

[3] Madrian and Shea (2001) attribute the widespread acceptance of defaults in part to inertia. Goda, Levy, Manchester, Sojourner, and Tascoff (2020) find that when plans offer auto-enrollment, present bias is a key predictive factor for participation. BCLM (2009) and Besedeš, Deck, Sarangi, and Shor (2015) show that the characteristics of default offerings affect the likelihood of making an active choice.

[4] The fixed wage is constrained by numerous legal restrictions, including an overall minimum and sector-based conventions with worker representatives (unions). It is a contractual unconditional amount, typically negotiated with the worker when hired. The individual bonus (if any) is fixed by the firm at the end of the year, conditional on the worker's individual productivity. It is added to the fixed wage. The bonus is designed to create performance incentives. The sum of the fixed wage and the bonus is taxed at a marginal rate that ranges from 14%, on total pay between about €10,000 and €27,000, to 41% above roughly €72,000 and 45% above €154,000.

substantial discretion in the structure of this compensation. Variable remuneration has two parts: a compulsory profit-sharing component called "participation" and an optional component called "intéressement." The profit-sharing portion depends on the company's performance and must be distributed either uniformly among all employees or proportionately based on wages or seniority.[5] The "intéressement" portion is less constrained, but it must be granted using a publicly known formula related to the firm's income or other performance metrics, such as achieving operational objectives.

Defined-contribution (DC) plans were introduced in France in 1967 as part of a program proposed by President Charles de Gaulle. The motivation was to require corporations to share profits with their employees, which explains why the system initially included MT savings vehicles that had to be held for five years before becoming available for penalty-free withdrawal rather than LT savings vehicles that needed to be held until retirement. In 2003, the program was modified to allow firms to offer their employees LT investments, with access to the account balance restricted until retirement. French DC plans include two types of savings vehicles: PEE (Plan d'Epargne Entreprise), which offers a menu of investments for the MT, and PERCO (Plan d'Epargne Retraite Collectif), which is aimed at retirement savings. PEE accounts forbid withdrawals for a five-year period, although exceptions are allowed for life events such as marriage, the birth of a child, and purchasing a home. PERCO accounts allow exceptions for a more limited set of life events than PEE accounts. Company stock, possibly sold at a discount, may be offered in PEE accounts but not in PERCO accounts.[6] The investment options offered in the PEE and PERCO are similar, except for company stock. On average in our full sample, the

[5] Employees who have been with the firm for less than three months may be excluded from the profit-sharing program.

[6] These characteristics of the default plan may explain why acceptance of the default is so low in France (19% in our full sample), despite strong participation in employer-sponsored plans (87% in our full sample).

PEE offers 12 non-employer stock funds, including two equity, three balanced, one bond, and four money market funds. The PERCO, on the other hand, offers an average of seven funds, including two equity, three balanced, one bond, and one money market fund. The composition of these funds is typically unrelated to the savings vehicle investment horizon.

The French tax code provides income tax relief for contributions to workplace savings programs. In 2017, for example, variable compensation paid out in cash to middle-income workers with an annual income of up to EUR 26,818 would be taxed at a rate of 14%. For higher-income workers, the rate could be 30% or 45%. Contributions from workers and employers are not taxed upon withdrawal, although financial returns accumulated within the plan were taxed at 15.5% until 2017 and 17.2% since then. Contributing to a PEE or PERCO offers significant tax advantages, even for workers in the 14% bracket whose employers do not provide matching contributions. For a worker in this bracket with variable compensation of EUR 2,211, the median for plans offering both MT and LT investments, the tax on this compensation, if paid out, is EUR 310 (0.14 X 2,211). For this worker, participating in a plan offering an LT savings vehicle with an average employer match rate of 50% would not generate any taxes on the matching contribution, so the total benefit of contributing would be EUR 310 + 1,106, where EUR 1,106 equals the value of the untaxed matching contribution (0.5 x EUR 2,211). These calculations understate the value of plan participation because they do not account for the tax deferral advantage on investment income until the funds are withdrawn.[7]

When establishing a workplace savings plan, employers must make three important design decisions: (i) whether to offer a PEE and/or a PERCO; (ii) which funds to include in each savings

[7] Workers can contribute additional funds to the plan, though usually without tax incentives. Some employers extend matching benefits to investments such as employer shares. Voluntary contributions that exceed variable remuneration are not considered in our analysis.

vehicle; and (iii) a default MT and/or LT fund for automatic enrollment.[8] There are legal restrictions on default plans. First, the relative shares of LT and MT savings in the default plan are fixed by law, depending on the type of variable remuneration paid. For "participation", the default option allocates 50% of the employee's contribution to the MT default fund and 50% to the LT default fund. For "intéressement" remuneration, the default allocation is 100% MT. Second, firms are legally restricted in the default funds they can offer their employees. The default MT fund must be relatively low risk, such as a money market, bond, or balanced fund. The default LT fund must be a "balanced life-cycle fund."

Employers decide whether and how to match their employees' contributions. They can select a range of match rates and ceilings, which may differ by savings vehicle (PEE/PERCO) or investment fund and be as high as 300%. Some firms establish match rates and ceilings for specific funds. For example, a firm aiming to increase employee ownership of company stock might only match investments allocated to company stock. Employers match contributions to the default investment allocation in the same way as those to active allocations.

There are legal limits on tax-exempt contributions to workplace saving plans; they vary by variable remuneration type. In 2017, for example, the overall limit was EUR 49,035, the sum of EUR 19,614 for intéressement and EUR 29,421 for participation. Matching contributions are also limited: EUR 3,138 for MT funds without company stock, EUR 5,648 for MT funds with company stock, and EUR 6,276 for LT funds.

[8] The French Labor Code requires auto-enrolment in the default option and makes employers responsible for informing employees about the structure of the saving plan. However, informal evidence suggests that employees are not always informed about the precise funds included in the default. In the US, auto-enrollment grew in popularity after regulatory action in 2007 provided employers with a safe harbor from litigation if they adopted auto-enrollment. Beshears, Choi. Laibson, and Madrian (hereafter BCLM) (2010) point out that many firms embraced auto-enrollment as a tool for increasing plan participation and ensuring that the retirement plan passes the Internal Revenue Service nondiscrimination test, which caps the share of contributions to the plan that can be made by highly compensated employees.

Employees who do not actively opt out of the plan are automatically enrolled in the default plan. Those who do not participate in the plan receive their variable remuneration in their bank account and are taxed on this income. Employees who participate in the plan but opt out of the default must actively allocate all of their contributions. Specifically, employees offered a default plan that includes an LT vehicle fund who wish to invest only in MT vehicle funds must opt out of the default plan. This requirement is key to our empirical strategy. Employees face no restrictions on the percentage of variable remuneration invested in LT or MT savings vehicles when making active decisions. Consequently, the MT/LT composition of active decision-makers' portfolios can be viewed as a revealed preference regarding MT and LT investment horizons.

Practically, the auto-enrollment mechanism in the French system is as follows: The worker either fails to properly and fully fill out their option bulletin and receives the default plan, whose MT/LT composition cannot be amended, or specifies a valid alternative choice, including either cashing out or active portfolio composition. All decisions are communicated in the same form.

2. Data, Method, and Descriptive Statistics

We examine how plan participation and acceptance of the default option are affected by the availability of a long-term savings vehicle. If the plan includes an LT vehicle, then a fund from the LT menu must be included in the default option. To avoid saving in the LT vehicle, a worker must therefore opt out of the default option entirely and either actively select a different portfolio or not participate in the plan at all. Opting out of a default that includes LT while participating in the plan thus provides indirect evidence of the demand for precautionary liquidity. In contrast, opting out of the plan altogether indicates that workers are reluctant to make active investment choices, even at the cost of significant tax savings.

2.1 Data

Our analysis is based on administrative data collected by Amundi, between 2015 and 2020. The dataset includes information on the saving choices of 1,782,877 individuals living in France who, according to Amundi's records, received variable remuneration from only one employer. These individuals worked at 7,980 different firms. There are 5,035,828 worker-year observations, 3,167,843 of which are associated with firms offering LT options.

Figure 1 summarizes workers' decisions regarding acceptance of the default and participation in the plan. Among workers at firms offering LT savings vehicles, 12% selected the default option, whereas 31% of workers at firms without LT savings vehicles did so (N = 1,867,985 worker-years). Plan participation was slightly higher at firms that did not offer LT savings vehicles (89%) than at firms that did (86%).

Figure 1: Default Acceptance and Plan Participation

The graphs show the percentage of worker-years in the full sample that correspond to either default acceptance or plan participation. In each graph, the observations are divided into two categories based on whether the firm's plan includes LT savings vehicles. See text for sample description.

The results in Figure 1 are largely driven by cross-sectional differences in saving plans. They suggest that the presence of LT savings vehicles may affect worker behavior, but they do not provide causal evidence because plan attributes may be endogenous. Employers may design plans recognizing their employees' preferences. At small firms, owners may have information on worker preferences, and at large firms, unions may aggregate and communicate preferences. ***2.2 Method: Job-Switcher Identification Strategy***

To address the potentially confounding effect of endogenous plan attributes on estimates of how plan attributes affect behavior, we follow previous studies including Chetty, Friedman, Leth-Petersen, Nielsen, and Olsen (2014) and Choukhmane (2025) and focus on workers who change jobs during our sample period.[9] This identification strategy assumes that workers change jobs for reasons that have little or nothing to do with the savings plans offered by different

[9] We do not consider changes in access to LT investments that result from changes in plan structure at individual firms during our sample period, since we regard these changes as potentially due to evolving worker preferences.

employers, an assumption that is more reasonable in France than in some other nations because contributions to these plans account for a relatively modest share of compensation. When workers who participate in a savings plan change jobs, their accumulated funds can remain invested in the previous plan or be transferred to a similar investment vehicle offered by the new employer, if one exists.

Besides focusing on job changes, we restrict our sample in several additional ways. First, we consider only firms with at least 50 employees. These firms are required by law to offer variable compensation to their employees. This reduces our sample size to 1,214,744 workers associated with 3,140,115 worker-year observations. Second, we restrict our analysis to individuals who changed jobs only once between 2015 and 2020. Some of these workers are offered savings plans with similar features at their initial and subsequent employers, while others experience changes in plan structure when they change jobs. Third, we exclude firms that change their investment options by introducing or eliminating LT savings vehicles. This ensures that all changes to the plan structure in our sample result from job changes. Our final sample includes 48,784 individuals with 216,051 worker-year observations between 2015 and 2020.

We adapt the Abowd, Kramarz, and Margolis's (1999) three-way fixed effects model for worker earnings to estimate the effect of the presence of LT savings vehicles on plan participation and investment decisions. We replace firm fixed effects in their model with a linear function of three time-invariant attributes of the firm's savings plan. Our specification is:

$$y_{it} = \alpha_i + \mu_t + X'_{it}\,\gamma + Z'_{j(i,t)}\,\beta + \varepsilon_{it} \qquad (1)$$

where y_{it} is worker i's acceptance of the default, or participation in the plan, in period t. X_{it} is a vector of individual, time-varying characteristics, including three indicator variables representing which variable remuneration quantile the worker falls into at their current firm ($VRQuart_{j(i,t)k}$ for

k=1,2, 3, with quartile 4, the highest quartile, omitted). α_i and μ_t are worker and year fixed effects, respectively. $Z_{j(i,t)}$ is a vector of possibly time-varying firm-specific indicator variables, including one for the presence of an LT savings vehicle at firm j(i,t), the firm (j) that employs worker i in year t ($LT_{j(i,t)}$). The characteristics of each plan are constant over time, but the plan to which worker i is exposed to may vary over time. $Z_{j(i,t)}$ also includes indicator variables for the opportunity to invest in employer stock ($EmpStock_{it}$) and the presence of an employer match ($Match_{it}$). Brière, Poterba, and Szafarz (2021) identify matching opportunities and the presence of employee stock funds as salient attributes in determining the attractiveness of a saving plan. There are many other features of French saving plans, such as the number and types of funds and matching rules, that we do not consider, in most cases because of data limitations.

Employer savings records contain little information about worker' characteristics aside from compensation. To account for the possibility that some unobserved individual attributes may change when an individual changes jobs, we introduce a variable called $PostChange_{it}$, that is equal to 1 in the year when a worker starts a new job and in all subsequent years. For someone who changed jobs in 2017, this variable is defined as {0,0,1,1,1,1} over the six-year span 2015-2020. Our estimating equation is therefore:

$$y_{it} = \alpha_i + \mu_t + \gamma_1 * PostChange_{it} + \Sigma_{k=1,2.3}\ \gamma_{2k} * VRQuart_{j(i,t)k} + \beta_1 * LT_{j(i,t)} + \beta_2 * Match_{j(i,t)} + \beta_3 * EmpStock_{j(i,t)} + \varepsilon_{it} \quad (1')$$

The inclusion of worker fixed effects means that β_1 is identified by the choices of workers who move between firms with different plan structures. Since the variation in plan design occurs at the firm level, we report standard errors clustered at the firm level.

2.3. Descriptive Statistics

Table 1 presents summary demographic information on our job-changer sample, the full sample of Amundi plan participants, and the French labor force. The workers in the full Amundi sample and the job-changer sample are both somewhat older than the French working population, and they have a higher fraction of men than the working population. This is probably the result of the Amundi data being drawn disproportionately from large firms, with primarily full-time workers, in sectors such as construction and energy. Job changers are also slightly older, on average, than workers in the full sample of Amundi plan participants. While

Table 1: French Labor Force in 2017 vs. Amundi Samples

	% Female	% Age 15 to 24	% Age 25 to 49	% Age 50 to 64
French Working Population in 2017	48	8	62	29
Amundi Full Sample	36	3	60	38
Amundi Job Changer Sample	31	1	57	42

The table compares the demographic characteristics (gender and age) of the two samples used in this paper (the Amundi full sample and the Amundi job changer sample) with those of the entire French working population. The comparison is drawn for the year 2017, which corresponds to the midpoint of our sample period. The data on the Amundi samples are based on the authors' calculations; data on the French working population are drawn from https://www.insee.fr/fr/statistiques/3676623?sommaire=3696937

the age distribution of the sample we analyze does not correspond to the French labor force, it over-weights workers in the years when they are most likely to be saving for retirement.

Table 2 provides information about workers in the full and job-changer samples. On average, job changers receive higher variable remuneration (€3,748 vs. €2,402) than workers in the full sample. This value is the average for all years for which we have data on these workers, both before and after their job change. Job changers are more likely to participate in savings plans (96% vs. 87%) and less likely to accept the default plan (8% vs. 19%). The low default

Table 2: Sample Means: Full Sample and Job-Changer Sample

.

Variable	Full Sample (N = 5,035,828)	Job-Changer Sample (N = 216,051)
Age	44.73	46.03
Female	0.36	0.31
Variable Remuneration (EUR)	2402.16	3748.20
Employee Accepts Default	0.19	0.08
Employee Participates in Plan	0.87	0.96
Plan w/ MT	1.00	1.00
Plan w/ LT	0.63	0.72
Plan w/ Matched MT	0.64	0.87
Plan w/ Matched LT	0.57	0.70
Plan w/ employer stock (necessarily MT)	0.70	0.89

Entries report authors' calculations for two samples: the Amundi full sample and the Amundi job changer sample.

acceptance rate suggests that the default option is unattractive to many employees. In some cases, the workers' lack of knowledge about the precise composition of the default plan may also create a "black box" impression. The saving plan attributes differ moderately between the entire sample of worker-years and the subsample associated with job changers. LT savings vehicles are more prevalent at firms where job changers are employed than in the full sample (72% vs. 63%). The same is true of employer matching for MT savings vehicles (87% vs. 64%)[10] and opportunities to invest in employee stock (89% vs. 70%).

3. Results

3.1. Baseline Results

In Table 3, the dependent variable is default acceptance. The results suggest that the presence of LT savings vehicles in the plan, which means that LT is in the default, has a negative

[10] We only have partial information on match rates. Based on 2017 data from firms that disclosed their matching formulas to Amundi, the average match rates are 27% for MT investments and 76% for LT investments. On average the match favors LT investments. Under the assumption that higher match rates make an investment option more attractive, this evidence is inconsistent with the possibility that the match rate is an omitted variable that accounts for apparent preference for MT over LT investments.

impact of between 4.9 and 6.1 percentage points on acceptance. This impact is significant, both statistically and economically, since the baseline default acceptance rate is 8 percentage points in the job changer sample. Including retirement investment in the default plan reduces its acceptance rate by more than half.[11]

Table 3. Acceptance of Default

.

Explanatory Variable	(1)	(2)	(3)	(4)
Plan w/ LT	-0.061***	-0.060***	-0.061***	-0.049***
	(0.020)	(0.020)	(0.020)	(0.017)
PostChange		0.005	-0.005	-0.010
		(0.008)	(0.008)	(0.009)
Variable Remuneration in Q1			0.025**	0.025**
			(0.010)	(0.010)
Variable Remuneration in Q2			0.002	0.001
			(0.004)	(0.004)
Variable Remuneration in Q3			0.003	0.002
			(0.003)	(0.003)
Plan w/ Matched MT				-0.028
				(0.022)
Plan w/ Employer Stock				-0.047***
				(0.015)
Constant	0.119***	0.121***	0.117***	0.177***
	(0.014)	(0.015)	(0.015)	(0.026)
Time Fixed Effects	Yes	Yes	Yes	Yes
Worker Fixed Effects	Yes	Yes	Yes	Yes
R2	0.65	0.65	0.65	0.66

The table shows the results of the estimation of Equation (1') using the job changer sample (216,051 observations). The explained variable is the acceptance of the default plan proposed by the employer under the legal restriction that the presence of LT savings ("Plan w/ LT") in the plan implies the presence of LT savings in the default. "PostChange" is a dummy variable that equals one to 1 when and after the worker starts the new job. Variable remuneration is presented by firm-based quartiles, Q4 being the omitted modality. Standard errors are reported in parentheses, with clustering at the firm level. Significance levels ***, **, and * are 1%, 5%, and 10%, respectively.

The PostChange coefficient is not significantly different from zero, suggesting that job changes are not correlated with significant changes in saving preferences. Column (4) of Table 3 includes a specification with three plan characteristics: LT, matched MT,[12] and employer stock.

[11] We obtain similar results when we consider firms that begin offering an LT savings vehicle. Acceptance of the default decreased by around 10 percentage points (significant at the 5% level) after the LT introduction.

[12] Since more than 90% of plans that include LT savings vehicles match funds in these vehicles (see Table 2), we did not include a "matched LT" indicator variable.

The results in Table 3 remain qualitatively the same when the sample is limited to job changers who are offered the same number of funds before and after the change, suggesting that the diversity of the fund menu plays at most a minor role in investment choices.

The presence of employer stock reduces default acceptance. This is consistent with workers viewing investments in such stock as attractive and therefore opting out of the default to access it. In contrast, the effect of matched MT investments is statistically indistinguishable from zero, perhaps reflecting the fact that matching contributions are typically available for both in- and out-of-default investments. Employees in the bottom quartile of the variable remuneration distribution are about 2.5 percentage points more likely to accept the default option than those in the top quartile. This difference may reflect varying levels of investment knowledge and sophistication or different valuations of portfolio customization.[13]

For some workers, making an active choice entails a significant effort. Plan documents are complex, and many workers lack financial literacy. Even for someone comfortable with plan details, it may be difficult to predict future tax rates, a key input to the valuation of PEE and PER contributions. Some workers may be burdened by choice overload, a concept applied to the retirement saving context by Iyengar, Huberman, and Jiang (2004) and Iyengar and Kamenica (2010). Tse, Friesen, and Kalaycı (2016) present experimental evidence suggesting that, as retirement plans become more complex, participants are more likely to choose the default option,

[13] The French Social Security system is progressive in terms of replacement rate. Wealthier people have a lower replacement rate and thus need to do more private saving to achieve a given income replacement rate in retirement. We find, in results not reported here, that those in the top quartile of variable remuneration are less likely to accept the default and to participate in the plan when switching to an employer offering LT than those with lower incomes, but the differences between groups are only significant at the 10% level for Q2 and Q3 compared to Q4. The evidence of a Q1 vs. Q4 difference is stronger.

even if it is not a good fit for them.[14] For these workers, an attractive default option could increase plan participation.

In Table 4, plan participation is the dependent variable. LT savings vehicles are associated with lower plan participation, but the effect is smaller than the difference in default acceptance, possibly because opting out of the default allows workers to participate in the plan without committing funds for the LT. The lower participation rate at firms with LT may signal that some workers, reluctant to compose their own portfolios, opt out of participation entirely when the auto-enrollment default is not attractive.[15]

The choice overload narrative offers a possible interpretation of some workers' reluctance to make active portfolio decisions. It is easier, even if costly in terms of after-tax spending power, to opt out of the plan than to opt out of the default and make an active decision about the allocation of contributions across investment choices. Alternatively, there may be a group of employees who dislike LT savings and would not choose them if opting out was costless, but who, when opting out is costly, accept the default and do not make active choices, provided the default does not include LT. These scenarios are observationally equivalent and differ only in what is defined as a friction.

[14] Dahlquist, Setty, and Vestman (2018) suggest that in the US, the default is often different from the asset allocation that would be dictated by optimal portfolio selection. Goldin, Homonoff, Patterson, and Skimmyhorn (2020) find that in US Department of Defense retirement plans, plan simplification increases participation.

[15] BPS (2021) reports cross-sectional evidence on the relationship between the presence of an LT plan, plan participation, and default acceptance in 2017. The effect sizes obtained with the job-switcher design in Tables 2 and 3 are smaller than those in the cross-sectional analysis. In unreported results, we examined whether the effects are stronger for workers who must wait longer until retirement. While our point estimates of the interaction term between the "plan with LT" variable and age quartiles are consistent with younger workers being reluctant to accept the default option when an LT savings vehicle is offered, we were not able to reject the null hypothesis of no age-related differences.

Table 4: Plan Participation

Explanatory Variable	(1)	(2)	(3)	(4)
Plan w/ LT	-0.028***	-0.028***	-0.029***	-0.029***
	(0.012)	(0.011)	(0.012)	(0.013)
PostChange		-0.001	-0.002	-0.010
		(0.013)	(0.014)	(0.013)
Variable Remuneration in Q1			0.038**	0.038**
			(0.012)	(0.012)
Variable Remuneration in Q2			0.016	0.017
			(0.007)	(0.007)
Variable Remuneration in Q3			0.004	0.005
			(0.003)	(0.003)
Plan w/ Matched MT				-0.046*
				(0.024)
Plan w/ Employer Stock				0.058***
				(0.022)
Constant	0.983***	0.984***	0.976***	0.963***
	(0.009)	(0.010)	(0.010)	(0.021)
Time Fixed Effects	Yes	Yes	Yes	Yes
Worker Fixed Effects	Yes	Yes	Yes	Yes
R2	0.50	0.50	0.50	0.50

The table shows the results of the estimation of Equation (1') using the job changer sample (216,051 observations). The dependent variable is plan participation. "PostChange" is a dummy variable that equals one to 1 when and after the worker starts the new job. Variable remuneration is presented by firm-based quartiles, Q4 being the omitted group. Standard errors are reported in parentheses, with clustering at the firm level. Significance levels ***, **, and * are 1%, 5%, and 10%, respectively.

3.2. Robustness: Moving to, and away from, LT Investments

To investigate the robustness of our findings, we divide the job-changer sample into two subsamples based on whether or not the changer's source firm offered LT investments.[16] For the 150,378 job changers whose source firm offered LT, we measure the effect of moving to a firm without LT. For those whose source firm did not offer LT, we measure the effect of moving to a firm that does. We consider plan participation and acceptance of the default over a five-year period. The year before the job change is the baseline year; it is omitted from the figures. Year 1,

[16] We performed two additional robustness checks. First, we limited the years in the sample to two years (one before and one after the job change). Second, we replaced the quartiles for variable remuneration, which is related to the annual cash inflow to the saving plan, with quartiles for the total account accumulated by the employee, a measure of the stock of saving. Both exercises (available upon request) produced estimates of the effect of LT investments in plans that are similar to those shown in Tables 2 and 3.

or MoveYear, is the year the job changer is first employed at the new job. Year 2 is the following year, or the second year in the new position.[17] The estimating equation, with the time subscript running from t = -2 to t = 2, with t = 1 denoting the first year at the destination firm, is:

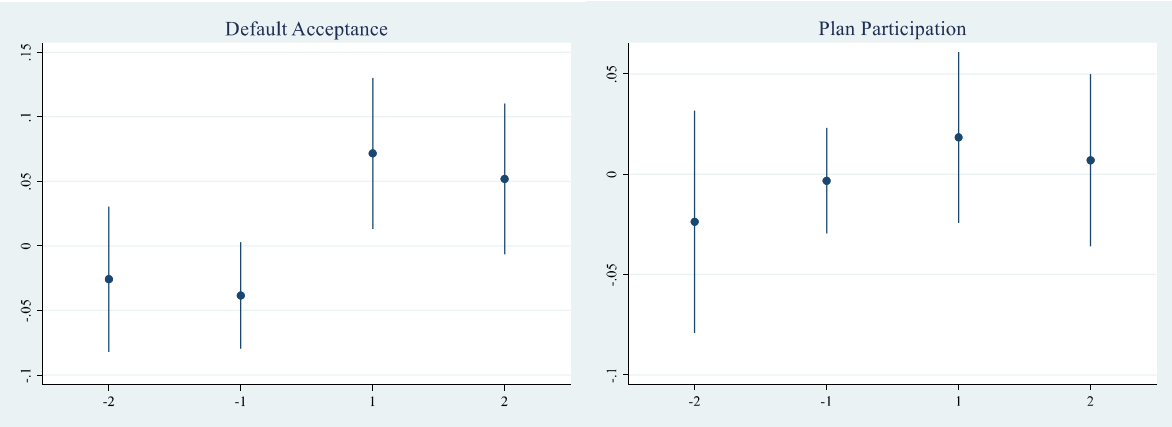
$$y_{it} = \alpha_i + \mu_t + \Sigma_{k=-2,2}\ \delta_k * Treat_{k(i,t)} + \Sigma_{k=1,3}\ \gamma_{2k} * VTQuart_{j(i,t)k} + \beta_2 * Match_{j(i,t)} + \beta_3 * EmpStock_{j(i,t)} + \varepsilon_{it} \quad (2)$$

where $k(i,t) = t - MoveYear_i$, and $Treat_{k(i,t)} = 1$ if $k(i,t) \geq 0$, and zero otherwise.

Figure 2 plots the coefficient estimates $\{\delta_k\}$ for workers whose source firm offers LT savings vehicles and destination firm does not. The plot on the left shows the acceptance of the default before and after the job change. The plot on the right features the coefficients on plan participation. In both graphs, the treated group is the set of workers who join a firm with no LT savings vehicle and the control group is the set of workers who have a plan with an LT savings vehicle at both their source and destination firms. Figure 3 presents similar plots for the second subsample, the 65,673 observations corresponding to workers whose source firm offers LT investments. The treated group is the set of workers who transition to a firm with LT investments, the control, those whose destination firm does not offer LT investments.

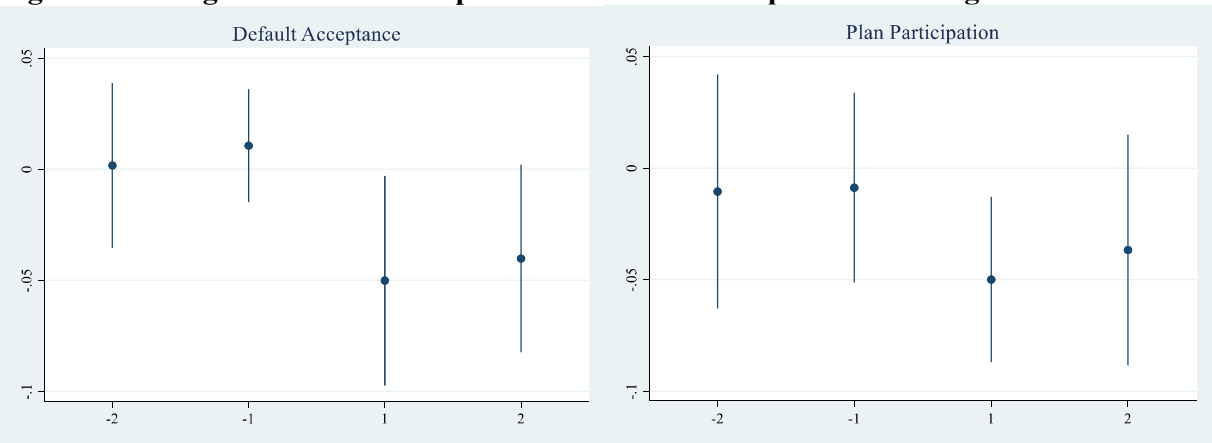
[17] The small number of observations on workers more than two years away from their job change results in noisy estimates of event study coefficients more than two years before or after the change.

Figure 2: Changes in Default Acceptance and Plan Participation: Starting with LT



The two graphs show the point estimates and 95% confidence intervals obtained from estimating Equation (2) with the sample of 150,378 job changers whose source employer offered LT. The graph on the left shows the impact of transitioning to a firm *without* LT on default acceptance, while the graph on the right illustrates the effect on plan participation. Time 1 represents the first year at the destination firm and time 0 is the omitted modality.

Figure 3: Changes in Default Acceptance and Plan Participation: Starting without LT



The two graphs show the point estimates and 95% confidence intervals obtained from estimating Equation 2 with the sample of 65,673 job changers whose source employer offered no LT. The graph on the left shows the impact of transitioning to a firm *with* LT on default acceptance, while the graph on the right illustrates the effect on plan participation. Time 1 represents the first year at the destination firm and time 0 is the omitted modality.

The results for both sub-samples are consistent with the findings in Tables 3 and 4, and are of roughly equal magnitude. Figure 2 shows that when moving from a firm that offers LT to one that does not, workers are about seven percent more likely to accept the default option and about two percent more likely to participate in the plan. Figure 3 shows that when a worker moves from a firm that does not offer LT to one that does, both acceptance of the default and participation in

the plan drop by about five percent. The standard error bands are larger for participation than for default acceptance, making it more difficult to draw strong conclusions.

4. Choices of Active Decision-Makers

The finding that, on average, plan participation and default acceptance are lower when plans include retirement savings vehicles is consistent with more workers demanding precautionary liquidity than commitment contracts, but it does not rule out the presence of some present-biased consumers who value such contracts. We observe the allocation choices of workers who are offered LT savings vehicles, decline the default allocation, and select their own allocation. Building on recent work by Goldin and Reck (2020) and Choukhmane and De Silva (forthcoming), we assume that those who make active decisions reveal their preferred mix of relatively liquid savings and commitment contracts. In contrast, the preferred allocations of plan participants who accept defaults are not directly observable because various frictions lead them to refrain from active choice.[18]

Table 5 analyzes job changers who are offered LT savings vehicles *and* participate in the plan (N = 155,723). By conditioning on participation, it excludes workers who opt out of the plan because they dislike LT savings enough, and have costs of active choice high enough, to forgo the associated tax benefits. The restricted sample is divided into two subgroups: passive savers who accept the default plan (N = 6,329) and active savers who opt out the default and make their own portfolio decision (N = 149,394). We ask two questions: Do workers invest in LT savings vehicles, and what percentage of their investments are in these vehicles?

[18] The revealed preferences approach has the merit of providing numerical bounds on workers' demand for LT investments and the optimal share of savings invested in them, both of which are potentially relevant for the design of retirement saving policies.

All the plans considered here include LT savings vehicles. We divide these plans into the subset that match LT savings, and the subset without a match. The first column of Table 5 (Panel A) shows that 69 percent of plan participants at firms offering LT savings vehicles invest in these vehicles. This percentage is a weighted average of 100% for the 4% (6,329 out of 155,723) of passive savers who accept the default and 68% for active savers who opt out of the default. The next two columns show that for active savers, this percentage is 35% when LT investments are not matched, which occurs in only 2.5% of the observations (3,855 out of 155,723), while it is 69% when LT investments are matched. These findings suggest that an important factor in retirement saving is that most LT savings vehicles are matched, whether in the default plan or

Table 5: Investment in LT Savings Vehicles

Plan type / Plan participants	All plans w/ LT	Plans w/ Matched LT	Plans w/Unmatched LT
	Panel A. Share of workers who invest in LT		
All (N = 155,723)	69%	70%	50%
Passive (N = 6,329)	100%	100%	100%
Active (N = 149,394)	68%	69%	35%
	Panel B. Average share of LT investment		
All (N = 155,723)	21%	21%	26%
Passive (N = 6,329)	37%	37%	41%
Active (N = 149,394)	21%	21%	22%
Sample Size	N = 155,723	N = 151,838	N = 3, 855

The table shows statistics on investment in LT savings vehicles computed from the subset of Amundi job movers who were offered LT savings *and* who participated in the plan. Panel A presents the figures corresponding to the percentage of participants who have positive LT savings; Panel B shows the average percentage of contributions devoted to LT savings.

not. Workers might be reluctant to leave money on the table. This can be interpreted as evidence that savers need additional compensation to invest in LT savings vehicles.

The average contribution to LT savings is shown in Panel B of Table 5. For all plans with LT savings vehicles, this is 21%. Most LT savings vehicles are matched. For workers who accept the default option, the LT investment share is determined by the default composition. On average, this composition includes 37% of LT savings when the plan includes matched LT investments and 41% when it does not. Active savers who opt for retirement savings hold an average LT portfolio share of 21% when LT is matched, and 22% when it is not. In both cases, these percentages are below those of the default plan. These results suggest that workers tend to value commitment contracts but are reluctant to devote as high a share of their contributions to LT savings vehicles as many default allocations require.

Our foregoing results based on the job changer sample suggest that adding LT savings vehicles to the plan menu decreases default participation by approximately 6% and plan participation by about 3%. How do these results integrate with the findings about revealed preference? The two sets of findings correspond to different margins of behavior and are based on different samples of Amundi plan participants. The results in Table 5 describe choices of workers who are in firms offering plans with LT savings vehicles and who have chosen to participate in these plans. The findings in Tables 3 and 4, in contrast, describe the behavior of all workers who are offered plans. Both sets of results suggest that employees are reluctant to invest a large part of their savings in LT plans in the absence of financial incentives to do so.

6. Conclusion

This paper presents evidence on the demand for commitment contracts in retirement saving plans, and how the presence of such contracts affects contribution and investment decisions. We

exploit French administrative data on workplace saving plans that present participants with both medium-term and long-term savings vehicles. By studying workers who experience changes in the features of their retirement plan as a result of job changes, we estimate that the participation rate is about three percentage points lower in plans that offer long-term investments than in those that do not, and that acceptance of the default is about six percentage points lower. These findings are consistent with more workers being unwilling to forego access to their savings until retirement than being attracted to commitment contracts that prevent them from tapping these accounts. Andersen, et al (2024) point out that the relative importance of these groups is a central consideration in policy debates about the parameters of retirement saving accounts. Our findings suggest that restrictions on access to account balances can be an important consideration as workers make contribution decisions. They align with the results of Laibson, et al. (2024) that households apply a relatively low discount rate to long-term illiquid investments and are prepared to hold such investments. One conclusion of our analysis is that further research is warranted on the options for hardship withdrawals and other ways of withdrawing assets from long-term savings vehicles, and the extent to which these provisions improve access to these assets.

Our finding that some workers choose not to participate in workplace saving plans that include long term investments, despite the tax and other benefits of doing so, is consistent with their not being prepared to exert the decision effort that is needed to select investment options other than the default. Demand for precautionary liquidity can rationalize the low acceptance rate of the default for plans offering long-term investments, but it cannot explain why a menu that includes both long- and medium-term investments is associated with lower plan participation. This suggests a potential role for behavioral explanations of the observed patterns.

One threat to the external validity of our findings is that French workers may value commitment less than savers elsewhere because France's unconditional retirement pension makes workers less responsible for their retirement security than workers in some other nations. French workers may also recognize that both medium- and long-term investments allow early withdrawals under hardship conditions or the acquisition of a first primary residence, which makes contributed funds more accessible. Unlike the US system, there are no penalties for withdrawals. Analysis of the extent to which hardship withdrawal provisions weaken commitment contracts in practice is a fruitful direction for future work.

Our analysis focused only on firms with more than 50 employees because they must offer variable remuneration to their employees. At smaller firms, both matching provisions and investment offerings may be driven in part by tax-planning opportunities for business owners. Organizational considerations, such as the fraction of the firm's workforce with close ties to the owner, may also matter. If the rich variation in the structure of French workplace saving plans could be linked with detailed information on worker characteristics, beyond the information available in the administrative data we analyze, it might be possible to use a job-changer identification strategy or other approaches to estimate demand functions for different plan attributes. We hope to explore these and other issues in future work.

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