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When financial advice rocks the market

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ABSTRACT

We document the impact of recommendations by a hugely influential Chilean pension advisor, H&L, on pension investments by individuals, domestic stock market outcomes, and pension fund manager investment strategies. Following H&L's retirement portfolio recommendations, pension investors shifted amounts that, in a week, often exceeded 100% of monthly domestic stock trading volume. The market believed the recommendations—domestic stock prices responded, but they did so without trade: the massive portfolio shifts did not generate abnormally-high trading volume. To accommodate H&L's impact, pension managers adjusted portfolio compositions, making them more similar, and shifted holdings of liquid assets rather than domestic stocks.

1. Introduction

On March 6, 2012, the Chilean government ordered *Felices y Forrados* (Happy and Loaded, henceforth H&L) to stop providing pensioners guidance on portfolio choices for retirement savings. While the government revoked the order, an April 26, 2013 report from the Financial Stability Board detailed concerns that "movements between different pension funds have increased markedly… movements of this quantity, in such a short term, affect the system as a whole by affecting the prices of some financial assets, creating stress on market infrastructures." Fast forwarding, in July 2021, regulations were imposed on pension advisors that were so onerous that all advisors, including H&L, exited the legal advising market.[1]

This paper investigates the many impacts of H&L, providing insights into how individual investors, pension fund managers and the market respond to perceived information contained in the financial advice of "experts." For an annual fee of about $24, H&L emailed occasional recommendations after the close of a trading day telling followers how to re-allocate retirement savings across five available portfolios. H&L's recommendations typically instructed clients to shift 50% or 100% of savings from the riskiest to the safest portfolio, or vice versa.

H&L only had 54 paying subscribers for its first four recommendations, but its recommendations did well, outperforming any buy and hold strategy at the outset and drawing a following. Once H&L became popular, over 100,000 investors switched portfolios in the direction recommended by H&L in a week after an announcement, leading to portfolio shifts that often exceeded 100% of total monthly domestic stock market trading volume. Daily data on portfolio transfers reveal that H&L was *the* driver of these portfolio flows: movements between portfolios aligned perfectly with H&L's recommendations.

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[1] Some advisors still provide advice services from abroad, where they do not face this regulation.

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One's instinct is that such transfers *must* overwhelm liquidity provision in domestic equity markets. Indeed, recommendations *did* have large price impacts on the domestic stock market. However, we find that portfolio transfers were *not* what moved equity prices: domestic stock market volume was not abnormally high on days when transfers were high, both for the market as a whole and for stocks held by pension managers. In short, contrary to government concerns, domestic stock price movements did not reflect price pressure from trade that overwhelmed liquidity provision. Rather, they reflected that recommendations comprised public information that was quickly incorporated into prices.

We show that H&L's arrival changed individual retirement investment strategies: passive investors became active, and active investors switched from following intermediate-term momentum strategies to following H&L's recommendations. However, we show that while individual pension investors followed H&L's advice about portfolio choices, neither they nor institutional investors traded on that advice in the domestic stock market. In particular, to avoid having to adjust domestic equity positions in response to surges in portfolio transfers after recommendations, portfolio managers (i) altered the risk compositions of portfolios to make them more similar circumventing the need to trade in the market, and (ii) they, instead, adjusted holdings of liquid assets, largely cash and foreign (e.g., U.S.) equities.

Chile's pension design is widely emulated, adopted in some form by over 20 countries (Berstein et al., 2006). It is a fully funded, defined contribution, multi-fund, personal account system. Total savings on Dec 31, 2014 were $165 billion USD, or roughly 60% of the Chilean GDP. Average pension savings were $38,600, or 54% of total net wealth (Behrman et al. (2012)), making it the primary source of savings for most workers. Formal workers must save 10% of earnings. Workers choose a Pension Fund Administrator (AFP) to manage investments. AFPs offer five funds, ordered from A to E by their riskiness. Fund A is the riskiest—largely invested in foreign mutual funds, ETFs and domestic stocks. Fund E is the safest—invested mainly in bonds and bank deposits (see Table 1). Asset allocations within portfolios are not fixed. Crucially, AFPs alter portfolio compositions in response to market conditions.[2]

Individuals can choose how they allocate savings across portfolios. Men under 55 and women under 50 face no constraints. Older workers cannot select portfolio A, and pensioners cannot select B. Workers who do not choose portfolios are assigned default options. Workers can otherwise transfer savings freely, and transfers incur no fees. Portfolio transfers within an AFP are made four working days after a request, unless the total transfer request from a portfolio exceeds 5% of its value, in which case the excess is delayed to the next working day, on a first-come, first-serve basis. AFPs can transfer assets between portfolio to accommodate portfolio transfers, without liquidating the assets. Using t to denote the first trading day after a recommendation, AFPs first transfer savings based on a recommendation on trading day $t+3$, and these funds are valued using day t asset prices.

To start, we show H&L's impact on pension investments. H&L's first recommendations earned higher returns than just holding any portfolio (Cuevas et al., 2023). We show this led to a surge in media coverage and investor attention, followed by huge increases in the number of investors following H&L's advice. Investor behavior changed sharply. Prior to H&L, very few pension investors employed active investment strategies, and active investors tended to follow intermediate-term momentum strategies, shifting to risky portfolio A if it had high returns in the three previous months, and out of A if it had low returns. However, once H&L became popular, the vast majority of active investors only relied on H&L and movements between portfolios stopped varying with intermediate-term performance.

We then analyze the consequences for stock market returns and trading volume. We find positive announcement effects for the Chilean stock market on the first trading day after recommendations to shift to risky portfolio A (negative announcement effects after recommendations to shift to E), but no excess returns on post-recommendation trading days when portfolio transfers are high. Still, it is natural to posit that the transfers must overwhelm liquidity provision and move domestic stock prices. Surprisingly, this is not so. Once H&L developed a following, domestic trading volume was *not* above average on the next ten trading days after a recommendation.[3] That is, (i) information in recommendations was quickly incorporated into prices; (ii) individual pension investors followed H&L's advice about portfolio choices; but (iii) neither retail nor institutional investors traded on that advice in the stock market. In particular, the massive pension investment shifts were *not* associated with abnormally high trading volume in domestic stocks held by AFPs. In stark contrast, trading volume for stocks *not* held by AFPs *was abnormally high* after recommendations.

This gives rise to a puzzle: if AFPs did not meaningfully alter their domestic equity positions, how did they accommodate the huge recommendation-induced transfers? We show that AFPs adjusted their strategies to minimize exposure to the impacts of recommendations in two ways. First, they altered the risk compositions of the different portfolios—making them more similar, i.e., making the risky portfolio safer and the safe portfolio riskier—to make it easier to shift assets internally between portfolios. AFPs also temporarily re-defined the notions of safe and risky portfolios. For example, after a recommendation to shift from safe portfolio E to risky portfolio A, AFPs increased portfolio weights on cash in risky portfolio A by roughly one percentage point. Second, to achieve the transfers across portfolios they focused on trading liquid assets such as bonds, foreign (e.g., U.S.) mutual funds and ETFs, thereby circumventing the need to trade illiquid domestic stocks.

Related literature. Cuevas et al. (2023) documents that H&L's recommendations harmed followers. Due to conventions on how AFPs price transfers, investors cannot shift funds in time to benefit from announcement day returns, reducing annualized returns by 1.4–1.9 percentage points (resulting in average annual losses of -$406 to -$551). Almost all followers would have done better to stick with their original portfolio holdings, *no matter what they were*. A survey analysis of followers combined with broad national surveys

[2] Of note, investments in foreign risky assets is highly diversified among different instruments. At the end of 2014, aggregating portfolios A to C, AFPs invested in over 150 foreign mutual and investment funds, with all instruments with a weight below 5%.

[3] In contrast after the first five recommendations that had almost no followers, volume was extremely abnormally high on the next ten trading days, and there were large significantly positive excess returns on days $t+3$ to $t+7$.

Table 1
Total assets of portfolios (millions $US) and asset distribution (in %) on 12/31/2014.

	A	B	C	D	E
Total assets	26,348	27,169	61,277	26,385	24,253
Asset distribution					
Domestic stocks	11.8	12.8	10.0	3.8	0.7
Domestic mutual and investment funds	2.5	2.6	2.5	0.9	0.1
Foreign ETFs	16.6	12.2	9.4	6.5	3.7
Foreign mutual and investment funds	59.7	43.8	31.0	20.7	1.5
Other foreign assets	3.1	2.3	2.5	2.1	2.1
Central bank bonds	0.4	3.7	5.9	9.4	15.0
Government bonds	0.7	7.6	14.4	22.7	28.3
Bank bonds	2.5	6.2	10.8	13.9	14.4
Domestic firm bonds	1.9	4.6	8.7	9.5	10.2
Deposits	0.3	3.5	3.3	8.9	22.9
Others	0.5	0.9	1.6	1.7	1.1

reveals that followers are highly educated, financially sophisticated and informed (and H&L causally increased that sophistication) and they understand that H&L's recommendations under-performed; nonetheless, almost 80% renew their subscriptions.

Kristjanpoller and Olson (2021) examine the trading behavior of active investors in Chile's pension system. Using monthly data between January 2007 and December 2013, they show that monthly trading increases with negative returns but decreases with volatility (but less during the crisis). Active members reduce (increase) their exposure to risky assets when returns are negative (positive), and higher volatility tends to increase risk-taking. Their sample includes two years where agents responded to H&L recommendations. Similar to our findings, they show that H&L significantly impacted agents' behavior.

Working papers by Ceballos and Romero (2020) and Pedraza et al. (2017) also study the effect of H&L on the Chilean economy. Ceballos and Romero show how H&L impacts the domestic government bond market documenting a significant and persistent impact on bonds yields. Pedraza et al. show that greater reallocations between portfolios is linked to increased holdings of short-term and more liquid assets by AFPs.

Da et al. (2018) also find abnormal returns in the Chilean stock market in a ten-day window after recommendations. Using *monthly* portfolio flows, they posit that the returns reflect "price pressure generated around H&L's recommendations due to trading from pension funds or market participants". Da et al. base this on a finding of positive, but *insignificant* abnormal *dollar* trading volume in the window using only the first 15 recommendations.

Our analysis reveals that their conclusion is misplaced. We first use daily flow data to show that flows between portfolios perfectly align with H&L recommendations, but only beginning with the sixth announcement. We augment the daily flow data analysis with google trend data and H&L's payment records to confirm that H&L was virtually unknown initially and that its initial recommendations do not show up in the flow data. Importantly, Da et al. only use 15 recommendations, and those include the initial five recommendations that had almost no followers. In contrast, our analysis uses a much longer time series of 80 recommendations, focusing on the relationship between trading volume and recommendations made after H&L became popular. We show not only that overall volume in the domestic stock market is not abnormally high after those recommendations, but that it is abnormally *low* in stocks held by portfolio managers. Further, we refine their measure of volume. Da et al.'s dollar trading volume measure mixes the effects of recommendations on prices and quantities.[4] To prevent our volume measure from being contaminated by price impacts, we use turnover as the dependent variable in our volume regressions.

Because we find *no abnormal trading volume around or after recommendations,* it becomes important to identify the economic mechanisms underlying our findings. We provide explanations both for why volume was not high (strategic portfolio composition and trading changes by portfolio managers) and for the return patterns (recommendations instantly become public information that is immediately incorporated into asset prices). In addition to these contributions, we show how H&L changed investor behavior, establishing that prior to H&L, portfolio flows in and out or portfolios A and E were consistent with medium-term momentum strategies.

A challenge for studies of the price pressure hypothesis is to identify events that cause abnormal volume but do not convey new information (Chen et al. (2004), Coval and Stafford (2007), Lou (2012)). We show information in recommendations moves prices, but portfolio transfers do not. We exploit the fact that a necessary precursor of price pressure from abnormal volume is abnormal volume. However, once H&L became popular, its recommendations did not generate abnormal volume either in the Chilean stock market as a whole, or in the subset of stocks held by AFPs. We find evidence that (a) recommendations became public information that was immediately incorporated into prices without trade; and (b) stock volume was left unchanged due to how AFPs alter their portfolio compositions.

Our results are consistent with other research on the impact of public information on asset prices. Mitchell and Mulherin (1994) find that public information affects U.S. stock prices without affecting trading volume. Their findings are in line with the idea in French and Roll (1986) that "public information is information that becomes known at the same time that it affects stock prices," and thus can

[4] Our sample includes 80 recommendations, but all our findings hold for the sample used by Da et al.

be incorporated into prices without significant trading volume. Using U.S. treasury market data, Fleming and Remolona (1999) argue that the arrival of public information causes a two-stage adjustment process: In a short first stage, prices instantaneously adjust to reflect information arrival, with a *reduction* in trading volume. In a longer second stage, trading volume rises. Jones et al. (1998) also find that prices immediately incorporate public information in the U.S. bond market. In contrast, Berry and Howe (1994), using intraday data for the U.S. stock market, find a positive, but moderate, relationship between public information and trading volume.

Jiang et al. (2021) show that, normally, corporate bond mutual funds tend to reduce holdings of liquid assets to meet investors redemptions. However when aggregate uncertainty is higher, these funds tend to scale down illiquid and liquid assets proportionally. We show that AFPs similarly adjust positions in liquid foreign assets, but they alter the composition of risky and safe portfolios differentially, making them more similar to each other.

2. Analysis

We first establish H&L's impact on daily flows between portfolios.[5] We use data on daily flows in and out of different portfolios to determine the extent to which flows match the direction and timing of H&L's recommendations. Fig. 1 plot daily net flows (money) for portfolio E beginning in October 2011. *Every* big spike is due to investors following H&L's recommendations: the direction and timing of transfers perfectly align.[6,7]

To show formally that portfolio flows match the timing of H&L's recommendations we estimate flow regressions of the form:

$$y_\tau^X = \alpha + \beta_0\delta_{E\tau}(-2:-1) + \beta_1\delta_{E\tau}(0) + \beta_2\delta_{E\tau}(1:2) + \beta_3\delta_{E\tau}(3:7) + \beta_4\delta_{E\tau}(8:10) + \epsilon_\tau,$$

where y_τ^X is daily flow on date τ (in percentage terms) to portfolio $X \in \{A, E\}$ and

$$\delta_{E\tau}(s) = \begin{cases} \rho, & \text{if } \tau - s \text{ is the first trading day after a recom.to sell fraction } \rho \text{ of port.E,} \\ -\rho, & \text{if } \tau - s \text{ is the first trading day after a recom.to buy fraction } \rho \text{ of port.E,} \\ 0, & \text{otherwise.} \end{cases}$$

Thus, $\delta_{E\tau}(0) = 1$ if on the previous day $\tau - 1$, H&L recommended shifting all holdings from E to A. $\delta_{E\tau}(1:2)$ is the analogous function for the next two days; $\delta_{E\tau}(3:7)$ captures days when portfolio transfers should be high after recommendations; and $\delta_{E\tau}(8:10)$ captures the three subsequent days.

The first two regressions in Table 2 reveal very large and highly statistically significant coefficients on the indicator functions for dates $t+3$ to $t+7$. The adjusted R^2 of 0.5 for portfolio E highlights that H&L's advice was *the* driver of fluctuations in portfolio transfers. Investors responded quickly and massively to recommendations. Moreover, investors did not systematically shift funds before recommendations, indicating there was no leakage of information. Identification of the causal impact of recommendations is clean: Table 3 shows H&L only had 54 paid followers for its first four recommendations and net portfolio flows were in the *opposite* direction of recommendations 2 and 4.[8] The fact that so few investors switched portfolios in the direction of the first few recommendations indicates a common force does not drive recommendations and reallocations.[9,10]

The last two columns in Table 2 decompose recommendations into early recommendations (1–5), and later recommendations (6 onward) to estimate flow regressions of the form:

$$y_\tau^X = \alpha + \beta_0\delta_{E\tau}(-2:-1) + \beta_1\delta_{E\tau}(0) + \beta_2\delta_{E\tau}(1:2) + \beta_3\delta_{E\tau}(3:7) + \beta_4\delta_{E\tau}(8:10) + \phi_0\gamma_{E\tau}(-2:-1) + \phi_1\gamma_{E\tau}(0) + \phi_2\gamma_{E\tau}(1:2) + \phi_3\gamma_{E\tau}(3:7) + \phi_4\gamma_{E\tau}(8:10) + \epsilon_\tau, \quad (1)$$

The δ_E indicators are active (taking on values $\pm\rho$) only for the first five recommendations, and the γ_E indicators become active starting at recommendation 6. The notation is as before. As expected, the first five recommendations are not significantly related to flows. Accordingly, H&L's estimated impact on *subsequent* flows rises and partitioning recommendations sharply improves the regression's fit, as measured by the adjusted R^2 rising from 0.5 to 0.6.

Cuevas et al. (2023) show that six of the first seven recommendations the portfolio recommended by H&L outperformed the other portfolios during the window of the recommendation. We now show that H&L then experienced a surge in media coverage and investor attention, followed by a cascade of investors starting to follow H&L's advice. To do this, we use Google trends data, searching for the

[5] Data on portfolio flows start Oct. 12, 2011, after H&L's first recommendation on July 27, 2011.

[6] The sole small spikes that do not align with H&L's recommendations in Figure 1 are due to a call by the 'no more AFP' movement to shift savings to portfolio E. The movement called for an overhaul of the Chilean pension system, including the replacement of AFPs by a new non-profit and autonomous institution.

[7] Similar patterns hold for the other portfolios. See Cuevas et al. (2023).

[8] As a result, estimates in Table 3 for the total number of followers are negative for these recommendations.

[9] Data on paid followers are from H&L's administrative records.

[10] Data on weekly flows show the net flow to portfolio E during the week of H&L's first recommendation was the highest among all weekly flows in 2010–2011. Due to the lag in portfolio transfers, that flow *cannot* be due to the recommendation. The next week had the second highest net flow for 2010–2011, and the week after had the fourth highest net flow to portfolio E. This suggests that these flows are not related to recommendations, but rather were part of a flight to quality episode associated with fears of contagion from the European debt crisis that started before the recommendations and ended afterward.

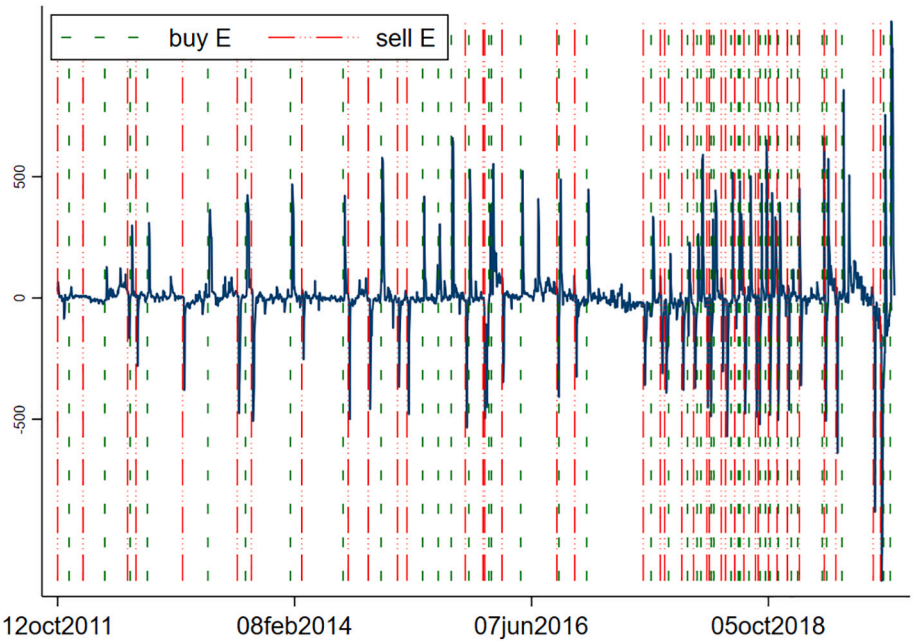

Fig. 1. H&L recommendations and daily net flows to portfolio E (billions of CLP).

Table 2
Recommendations and portfolio transfers. Columns 2 and 3: OLS regression of $y^X_\tau = \alpha + \beta_0\delta_{E\tau}(-2:-1) + \beta_1\delta_{E\tau}(0) + \beta_2\delta_{E\tau}(1:2) + \beta_3\delta_{E\tau}(3:7) + \beta_4\delta_{E\tau}(8:10) + \epsilon_\tau$ using daily data for the period 12Oct2011–30Dec2019, where y^X_τ is the percentage net flow to portfolio $X \in \{A, E\}$ on day τ: y^X_τ is the value of the inflow minus the value of the outflow to portfolio X on τ divided by the value of the portfolio on day $\tau - 1$. Columns 4 and 5: OLS regression of $y^X_\tau = \alpha + \beta_0\delta_{E\tau}(-2:-1) + \beta_1\delta_{E\tau}(0) + \beta_2\delta_{E\tau}(1:2) + \beta_3\delta_{E\tau}(3:7) + \beta_4\delta_{E\tau}(8:10) + \phi_0\gamma_{E\tau}(-2:-1) + \phi_1\gamma_{E\tau}(0) + \phi_2\gamma_{E\tau}(1:2) + \phi_3\gamma_{E\tau}(3:7) + \phi_4\gamma_{E\tau}(8:10) + \epsilon_\tau$, where the δ-indicators are active for recommendations 1 to 5, and the γ-indicators are active for recommendation 6 onward.

	Port. A	Port. E	Port. A	Port. E
$\delta_E(-2:-1)$	−0.034	0.128*	−0.042*	0.223**
	(0.044)	(0.077)	(0.021)	(0.107)
$\delta_E(0)$	0.023	0.017	−0.026	0.210***
	(0.057)	(0.103)	(0.016)	(0.079)
$\delta_E(1:2)$	0.069***	−0.091	−0.035	0.223
	(0.026)	(0.059)	(0.024)	(0.148)
$\delta_E(3:7)$	1.168***	−2.219***	0.064**	−0.220
	(0.106)	(0.185)	(0.030)	(0.141)
$\delta_E(8:10)$	0.105***	−0.222***	0.013	−0.050
	(0.032)	(0.070)	(0.012)	(0.043)
$\gamma_E(-2:-1)$			−0.016	0.084
			(0.052)	(0.091)
$\gamma_E(0)$			0.043	−0.035
			(0.070)	(0.126)
$\gamma_E(1:2)$			0.098***	−0.162***
			(0.031)	(0.062)
$\gamma_E(3:7)$			1.345***	−2.541***
			(0.094)	(0.155)
$\gamma_E(8:10)$			0.132***	−0.272***
			(0.034)	(0.076)
Obs.	2047	2047	2047	2047
R^2	0.431	0.494	0.493	0.559
Adj. R^2	0.430	0.493	0.491	0.557

HAC (five trading days) standard errors in parentheses.
**p<.001, **p<.05, *p<.1.

phrase 'Felices y Forrados.'

Fig. 2 shows the Google trends index, taking on the value of 100 in the month when the most users 'Googled' H&L, and a 'Google search' series, constructed using a monthly search on Google of the same phrase. We only count results from media sites, news sites,

Table 3
Number of followers and size of transfers.

Recommendation	Date	Advice	Number of Followers (paid)	Estimated Followers (total)*	Size of transfers**
2	10-12 − 2011	sell E	54	−3175	2%
3	22-11-2011	buy E	54	6210	7%
4	01-11-2012	sell E	54	-2471	2%
5	29-03-2012	buy E	1113	10,740	10%
6	19-06-2012	sell E	3168	5933	4%
7	28-06-2012	buy E	3587	36,503	23%
8	19-07-2012	sell E	4456	25,408	22%
9	29-08-2012	buy E	7486	54,638	57%
10	01-02-2013	sell E	18,010	65,609	45%
11	04-03-2013	buy E	27,132	113,780	99%
12	17-07-2013	sell E	42,304	104,713	100%
13	16-08-2013	buy E	44,935	128,941	136%
14	09-06-2013	sell E	45,736	90,567	79%
15	24-01-2014	buy E	51,431	115,840	79%
20	15-12-2014	buy E	46,266	106,303	161%

* Total number of followers is defined as the net number of accounts shifted on days t + 3 through t + 8 to portfolio E times $(-1)^k$, where k = 1 if the recommendation is to sell portfolio E, and k = 2 if the recommendation is to buy portfolio A. A negative number of followers implies that the net flow was in the opposite direction of H&L's advice.

** Size is defined as the absolute value of the cumulative net flow of portfolio E on days t + 3 to t + 8 as percentage of the total amount traded on the Santiago stock exchange on the month of the recommendation.

and opinion blogs. H&L was almost unknown before 2012. Media coverage and internet interest increased and then exploded, peaking in July 2013; after this, interest in H&L remained steady. The numbers of new clients closely track these indexes. The adjusted $R^2 = 0.70$ from regressing the number of new (paid) followers each month on the Google trends index (GT) and its first lag underscores the tight relationship between media attention and followers. These findings show H&L was unknown up to mid 2012, but after gaining followers its advice generated massive portfolio flows.

We next show that H&L altered the investment strategies of active pension investors, shifting them away from momentum strategies. Chevalier and Ellison (1997) and Sirri and Tufano (1998) find that higher past returns of a mutual fund increase cash flows into the fund. We modify Sirri and Tufano's approach to study the relationship between measures of past performance of portfolio A and net flows to portfolios A and E to show how this relationship changed once investors began following H&L's advice. Because there are no daily data on portfolio flows prior to October 2011, we use monthly data for the period October 2002–December 2019. Table 4 presents OLS estimates of

$$\text{Flow}_m^X = \alpha + \left(\sum_{s=1}^{3} \beta_{1,s} \text{RetA}_{m-s} + \sum_{s=1}^{3} \beta_{2,s} \text{RiskA}_{m-s} + \beta_3 log\text{TA}_{m-1} \right) \times (1 - d_m)$$
$$+ \left(\sum_{s=1}^{3} \beta_{4,s} \text{RetA}_{m-s} + \sum_{s=1}^{3} \beta_{5,s} \text{RiskA}_{m-s} + \beta_6 log\text{TA}_{m-1} \right) \times d_m + \beta_7 d_m + \epsilon_m.$$

Flow_m^X is the net flow to portfolio $X \in \{A, E\}$ in month m as a percent of total assets in X on the last day of month $m-1$; RetA_{m-s} is the monthly return on portfolio A computed as the log difference using the price on the last day of month $m-s$ and the price on the last day of month $m-(s+1)$; RiskA_{m-s} is the standard deviation of the daily returns of portfolio A in month $m-s$; and TA_{m-1} is total assets in portfolio A on the last day of month $m-1$.

We use two formulations for the indicator d_m of H&L's presence: one where $d_m = 1$ once H&L enters the market in October 2011, so $d_m = 0$ before October 2011; and one where $d_m = 1$ starting in June 2012, when substantial numbers of investors began shifting investments in line with H&L's recommendation. This latter formulation is consistent with how we divided recommendations into early and late in Table 2.

Table 4 provides insights into how H&L's entry changed pension investor behavior. Prior to H&L, and consistent with Chevalier and Ellison (1997) and Sirri and Tufano (1998), higher lagged monthly returns of portfolio A led pension investors to shift funds into A and out of E. This is consistent with investors entering and exiting the stock market, chasing returns and then fleeing to quality. After H&L's entry, investments no longer vary with the long-term performance of portfolio A—pension investors only rely on H&L.

Asset returns. Having established how H&L's recommendations affect portfolio flows, we uncover how asset returns relate to recommendations, estimating the analogue to Eq. (1) in which y_τ^X is the daily return $r_\tau = 100(p_\tau/p_{\tau-1} - 1))$ on day τ of portfolio A, E or the IPSA stock market index.[11] To control for broad market returns, we include the contemporaneous return on the MSCI Emerging Markets Latin America index when analyzing the IPSA index.

Table 5 reveals that H&L's advice reflected the *immediate* past performance of the Chilean stock market. On the two trading days

[11] IPSA is an index of the 40 stocks with the highest annual volume among stocks with a market capitalization above USD 200 MM and a free-float of at least 5%. The index is market capitalization weighted, free float adjusted, and includes dividends.

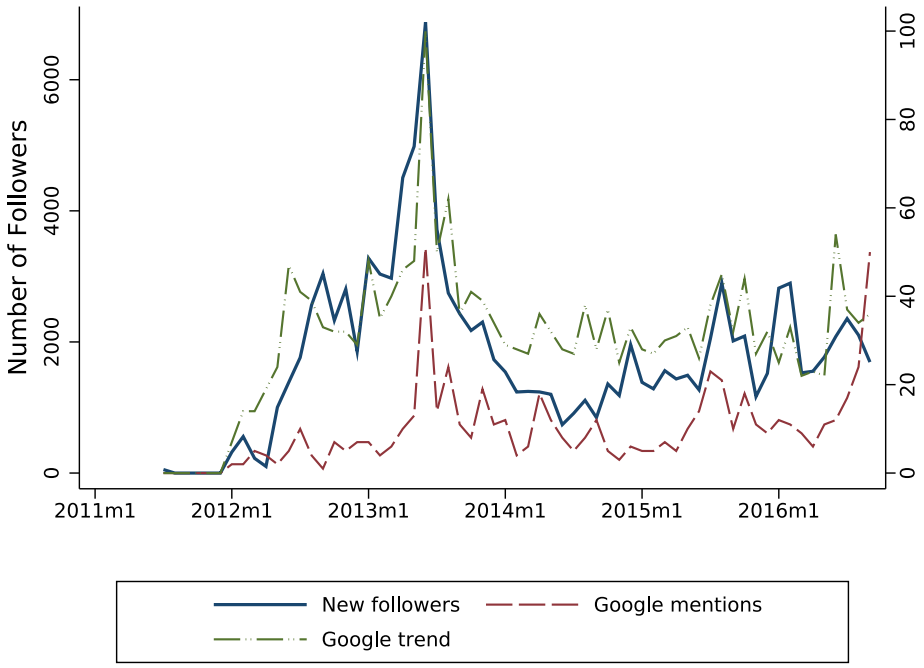

Fig. 2. Investors interest, media coverage, and new subscriptions.

prior to recommendations to shift into portfolio A and out of E, on average, the Chilean stock market rose by 1.6%. Roughly the opposite occurs prior to recommendations to shift out of A and into E. Thus, after good market returns, H&L recommended risky portfolio A; and after bad returns, H&L recommended safe portfolio E. That is, we find that H&L employed a very short-term momentum strategy.

Table 5 also shows that the massive portfolio reallocations on days $t+3$ to $t+7$ that occur after later recommendations do *not* affect the prices of the underlying assets. After early recommendations that almost no one acted on, there are large abnormal returns on days $t+3$ to $t+7$ of about 0.5% on the domestic stock market and portfolio A. This underscores how H&L's first recommendations were profitable, attracting followers. However, once investors flocked to H&L, there are *no* excess returns in the stock market on days $t+3$ to $t+7$ when re-allocations occurred. Instead, the market immediately responds with abnormal announcement day returns on the stock market of about 1%.[12,13]

The last two columns of Table 5 show the effect of H&L announcements on two portfolios labeled AFP and not-AFP. We observe the holdings of domestic stocks by AFPs on the last day of each month. A stock is in the AFP portfolio on day t of month m if it was held by at least one AFP in months m *or* $m-1$; otherwise it belongs to the not-AFP portfolio. We compute equally-weighted returns.[14] Both portfolios show similar results—large abnormal returns during days $t+3$ to $t+7$ for the set of early recommendations, and a significant announcement effect for later recommendations. Importantly, the patterns shown by the IPSA index are *not* driven by domestic stocks held by AFPs only.[15]

Stock market trading volume. One might expect the massive recommendation-induced portfolio transfers—transfers that often exceed 100% of all trading volume on the domestic exchange—must move domestic equity prices by swamping liquidity provision. We now show that the recommendations moves prices, but portfolio transfers do not. To cleanly identify how investors respond to recommendations in their trades, we distinguish between the first few, unfollowed recommendations and the subsequent ones; and we decompose domestic stock market trading volume according to whether or not the stocks are held by AFPs.

The dependent variable is *log* of daily trading volume. To measure trading volume, we use turnover, defined as the share volume of stock i on day t divided by total shares outstanding of stock i on day t. The turnover on day t of a portfolio equals the weighted sum of

[12] Similar results obtain if we shift the cutoff dividing early and late recommendations slightly, or if we use the IGPA or INTER-10 indexes, or if we use indexes without dividends, or if we use different foreign stock market indexes to control for market returns. Results available upon request.

[13] We reinforce these results in the appendix, where we estimate similar regressions that aggregate the dummies for days $t+1$ to $t+10$ into a single indicator function, to reduce the impact of noise.

[14] Similar results obtain if we weight returns in the AFP portfolio by the holding weights in the (aggregate) AFP portfolio.

[15] To benchmark the announcement effect on the IPSA index observe that it is about one-fifth of the (classical) index inclusion effect (2.79%) found by Shleifer (1986).

Table 4

Effect of past performance on monthly cash flows to portfolios A and E, pre and post H&L. OLS regression of $\text{Flow}_m^X = \alpha + \left(\sum_{s=1}^{3}\beta_{1,s}\text{RetA}_{m-s} + \sum_{s=1}^{3}\beta_{2,s}\text{RiskA}_{m-s} + \beta_3 log\text{TA}_{m-1}\right) \times (1 - d_m) + \left(\sum_{s=1}^{3}\beta_{4,s}\text{RetA}_{m-s} + \sum_{s=1}^{3}\beta_{5,s}\text{RiskA}_{m-s} + \beta_6 log\text{TA}_{m-1}\right) \times d_m + \beta_7 d_m + \epsilon_m$, using monthly data from Oct. 2002–Dec. 2019. The dependent variable is the net flow to portfolio $X \in \{A, E\}$ in month m as a percent of total assets in X on the last day of month $m-1$; RetA_{m-s} is the return on portfolio A in month $m-s$; RiskA_{m-s} is the standard deviation of daily returns of portfolio A in month $m-s$; and TA_{m-1} is total assets of portfolio A on the last day of month $m-1$; d_m is an indicator of H&L's presence.

	$d_m = 1$ starting Oct. 2011		$d_m = 1$ starting Jun. 2012	
	A	E	A	E
Before H&L				
RetA_{m-3}	0.176*	−0.288	0.160*	−0.274
	(0.093)	(0.182)	(0.084)	(0.169)
RetA_{m-2}	0.210***	−0.882***	0.204***	−0.874***
	(0.073)	(0.263)	(0.066)	(0.247)
RetA_{m-1}	0.212**	−1.456***	0.230**	−1.456***
	(0.104)	(0.325)	(0.093)	(0.301)
RiskA_{m-3}	−0.697	2.237	−0.638	2.236
	(0.808)	(2.567)	(0.743)	(2.347)
RiskA_{m-2}	1.311	−3.457	1.087	−3.625
	(1.181)	(4.431)	(0.979)	(4.057)
RiskA_{m-1}	1.057	−9.436**	1.237	−9.246**
After H&L	(1.346)	(4.378)	(1.221)	(4.065)
RetA_{m-3}	−0.154	0.348	−0.150	0.338
	(0.139)	(0.259)	(0.167)	(0.309)
RetA_{m-2}	−0.003	−0.097	0.014	−0.147
	(0.149)	(0.271)	(0.173)	(0.315)
RetA_{m-1}	−0.190	0.248	−0.184	0.285
	(0.169)	(0.270)	(0.176)	(0.278)
RiskA_{m-3}	3.801*	−8.225**	4.229	−7.017
	(2.051)	(3.838)	(2.939)	(5.268)
RiskA_{m-2}	−3.049	8.005*	−4.144	9.357
	(2.509)	(4.670)	(2.961)	(6.012)
RiskA_{m-1}	−4.510	7.063	−4.869	7.505
	(3.207)	(5.637)	(3.572)	(6.266)
d_m	0.198	−0.100	0.178	−0.119
	(0.738)	(1.282)	(0.783)	(1.350)
Obs.	203	203	203	203
R^2	0.334	0.317	0.335	0.320
Adj. R^2	0.281	0.262	0.282	0.266

Robust standard errors in parentheses.
***$p < .001$, **$p < .05$, *$p < .1$.

turnover on day t of all stocks in the portfolio, where the weight on stock i is $\omega_t^i = N_t^i P_t^i / \sum_i N_t^i P_t^i$, where N_t^i is shares outstanding on day t and P_t^i is the closing price.[16] The trading volume regressions mirror the return regression in Eq. (1), save that both sets of indicator functions take positive values for recommendations to buy or sell portfolio E. To control for expected volume, we include as a regressor the average volume of the last twenty non event-window days, where the event-window is defined as days $t-2$ to $t+10$.[17]

Table 6 shows that after the first recommendations that almost no one followed, stock market volume is extremely high, especially for stocks held by AFPs. In stark contrast, the later, heavily-followed recommendations have *no significant impact on volume*. In fact, point estimates for stocks held by AFPs are negative for days when portfolio flows are high. A robustness check in the appendix that aggregates the dummy variables for days $t+1$ to $t+10$ into a single indicator function reinforces these qualitative conclusions: it finds abnormally high volume in domestic stocks *not* held by AFPs, but not in stocks held by AFPs.

These findings indicate that (i) investors come to follow recommendations to transfer funds across portfolios in vast numbers, but (ii) they do *not* follow this up with trade in the domestic stock market, and (iii) AFPs accommodate the mass transfers by only adjusting other positions. That is, portfolio reallocations and market illiquidity do *not* drive the observed return patterns. Instead, once H&L gained widespread attention, the market treated H&L's recommendations as public information that is quickly incorporated into stock prices.

AFP adjustment. Having established that AFPs do not materially adjust positions in domestic stocks in response to recommendation-induced portfolio shifts, we now uncover how AFPs actually adjust their asset allocations. For each portfolio of each

[16] Results are robust to using different closing prices (from dates $t-\tau$ for $\tau = 1, \ldots 15$) to compute the weights. Point estimates are unchanged in magnitude (to one decimal point) and statistical significance.
[17] Similar results obtain if we use the market volume to control for expected volume.

Table 5
Recommendations and asset returns. OLS regression of $y_\tau^X = \alpha + \beta_0\delta_{E\tau}(-2:-1) + \beta_1\delta_{E\tau}(0) + \beta_2\delta_{E\tau}(1:2) + \beta_3\delta_{E\tau}(3:7) + \beta_4\delta_{E\tau}(8:10) + \phi_0\gamma_{E\tau}(-2:-1) + \phi_1\gamma_{E\tau}(0) + \phi_2\gamma_{E\tau}(1:2) + \phi_3\gamma_{E\tau}(3:7) + \phi_4\gamma_{E\tau}(8:10) + \epsilon_\tau$ using daily data for the period 3Jan2011–30Dec2019, where y_τ is the daily return (in %) of portfolio A or the IPSA index, for example.

	Port. A	Port. E	IPSA	AFP	not-AFP
$\delta_{-2:-1}$	0.569***	−0.021	0.829***	0.810***	0.150
	(0.128)	(0.036)	(0.288)	(0.298)	(0.326)
δ_0	0.331	0.016	0.172	0.234	0.177
	(0.239)	(0.067)	(0.311)	(0.316)	(0.275)
$\delta_{1:2}$	0.017	0.008	0.024	−0.006	0.209**
	(0.102)	(0.060)	(0.231)	(0.111)	(0.085)
$\delta_{3:7}$	0.457**	−0.026	0.519**	0.528**	0.732**
	(0.218)	(0.021)	(0.213)	(0.230)	(0.320)
$\delta_{8:10}$	0.119	−0.122*	−0.566	−0.692*	−0.396
	(0.229)	(0.074)	(0.425)	(0.403)	(0.261)
$\gamma_{-2:-1}$	0.588***	0.007	0.345***	0.339***	0.001
	(0.069)	(0.020)	(0.116)	(0.123)	(0.121)
γ_0	0.288**	−0.114***	0.476***	0.387***	0.207*
	(0.123)	(0.043)	(0.132)	(0.119)	(0.123)
$\gamma_{1:2}$	0.019	−0.088*	0.083	0.090	0.127
	(0.068)	(0.048)	(0.115)	(0.109)	(0.096)
$\gamma_{3:7}$	0.139***	0.015	0.087	0.094	−0.056
	(0.043)	(0.020)	(0.069)	(0.062)	(0.068)
$\gamma_{8:10}$	−0.033	−0.011	−0.149*	−0.071	−0.030
	(0.046)	(0.012)	(0.80)	(0.067)	(0.075)
Market return			yes	yes	yes
Obs.	2243	2243	2236	2236	2236
R^2	0.0546	0.0133	0.318	0.265	0.0414
Adj. R^2	0.0503	0.00892	0.314	0.262	0.0367

Robust standard errors in parentheses.
**p<.001, **p<.05, *p<.1.

Table 6
Recommendations and stock market volume. OLS regression of $y_\tau = \alpha + \beta_0\delta_{E\tau}(-2:-1) + \beta_1\delta_{E\tau}(0) + \beta_2\delta_{E\tau}(1:2) + \beta_3\delta_{E\tau}(3:7) + \beta_4\delta_{E\tau}(8:10) + \phi_0\gamma_{E\tau}(-2:-1) + \phi_1\gamma_{E\tau}(0) + \phi_2\gamma_{E\tau}(1:2) + \phi_3\gamma_{E\tau}(3:7) + \phi_4\gamma_{E\tau}(8:10) + \epsilon_\tau$ using daily data for the period 3Jan2011–30Dec2019, where y_τ is the the log of the daily volume of the IPSA index, the domestic stocks held by the AFPs, or the domestic stocks not held by the AFPs. The dummies are unsigned, i.e. either ρ or 0.

	IPSA	AFP	not-AFP	IPSA	AFP	not-AFP
$\delta_{-2:-1}$	0.183***	0.169***	−0.161	0.065	0.029	0.120
	(0.062)	(0.063)	(0.162)	(0.074)	(0.082)	(0.179)
δ_0	0.304***	0.274***	−0.302**	0.185***	0.134***	−0.021
	(0.049)	(0.047)	(0.122)	(0.023)	(0.042)	(0.180)
$\delta_{1:2}$	0.027	0.102	−0.572***	−0.092	−0.039	−0.292**
	(0.092)	(0.096)	(0.094)	(0.097)	(0.104)	(0.115)
$\delta_{3:7}$	0.238***	0.225***	−0.250	0.119	0.085	0.031
	(0.088)	(0.085)	(0.156)	(0.096)	(0.093)	(0.150)
$\delta_{8:10}$	0.530***	0.491***	−0.525***	0.411***	0.350**	−0.244
	(0.151)	(0.146)	(0.150)	(0.157)	(0.149)	(0.177)
$\gamma_{-2:-1}$	0.161***	0.145**	0.194	0.082	0.073	−0.007
	(0.060)	(0.063)	(0.130)	(0.056)	(0.058)	(0.117)
γ_0	0.109	0.082	0.450	0.028	0.008	0.242
	(0.086)	(0.084)	(0.275)	(0.078)	(0.078)	(0.270)
$\gamma_{1:2}$	0.176*	0.154*	0.271**	0.090	0.076	0.053
	(0.093)	(0.092)	(0.131)	(0.089)	(0.088)	(0.129)
$\gamma_{3:7}$	0.084**	0.056	0.162*	0.001	−0.019	−0.052
	(0.042)	(0.043)	(0.087)	(0.039)	(0.041)	(0.081)
$\gamma_{8:10}$	0.100*	0.090	0.168	0.026	0.022	−0.035
	(0.057)	(0.056)	(0.107)	(0.053)	(0.053)	(0.104)
Expected vol.				yes	yes	Yes
Obs.	2238	2238	2238	2218	2218	2218
R^2	0.0230	0.0180	0.0146	0.162	0.127	0.237
Adj. R^2	0.0186	0.0135	0.0102	0.158	0.122	0.233

Robust standard errors in parentheses.
***p<.001, **p<.05, *p<.1.

AFP we see total holdings at an asset level on the last day of each month.[18] We aggregate assets into six categories: cash (defined as the sum of current account balances in domestic investment banks, current account balances in foreign investment banks, overnight deposits in foreign banks, holdings of domestic fixed-income instruments with maturity of 90 days or less, and holdings of foreign fixed-income instruments with maturity of 90 days or less), domestic stocks, domestic fixed income, domestic mutual and investment funds, foreign assets (including stocks, fixed income, ETFs, mutual funds, and investment funds) and other assets (mainly derivatives).

Aggregating asset holdings at a portfolio level, we estimate:

$$w_m^{a,X} = \alpha + \beta \text{H\&L}_m + \gamma Z_m + \epsilon_m,$$

where $w_m^{a,X}$ is the portfolio weight (in %) of asset class a of portfolio X on the last day of month m; H&L is a dummy variable equal to one beginning with H&L's sixth recommendation (i.e., it becomes active starting June 2012); Z_m is a vector of covariates that includes the monthly return of the IPSA and S&P500 indices, the log difference of the VIX index, and the log of the total assets of portfolio X on the last day of month m.

Table 7 shows the results for cash, domestic stocks, and foreign assets for portfolios A and E. Once H&L becomes popular, (i) in risky portfolio A, AFPs sharply raise the weight on foreign assets and substantially reduce the weight on domestic stocks; and (ii) in safe portfolio E, AFPs sharply raise the weight on cash and modestly increase domestic stock holdings. In sum, AFPs respond to H&L by increasing weights on liquid assets, and by making holdings of illiquid domestic equity across portfolios more similar, facilitating the transfer of domestic equity directly between portfolios without using the market.[19]

Even sharper evidence comes from investigating how AFPs change holdings of different asset classes in response to the recommendation-induced portfolio flows. To identify which assets are adjusted, we estimate the following regression:

$$\Delta h_m^{a,X} = \alpha + \beta \text{Flow H\&L}_m^X + \gamma Z_m^X + \epsilon_m,$$

where $h_m^{a,X}$ is holdings (in billions CLP) of asset class a by portfolio $X \in \{A, E\}$ on the last day of month m, Δ is the first difference operator, Flow $\text{H\&L}_m^X$ is the net flow to portfolio $X \in \{A, E\}$ after a recommendation $r \geq 6$—computed as the cumulative net flow on days $t+3$ to $t+10$, as a fraction of the value of the portfolio on day $t-1$. We assign flow on day $\tau \in [t+3, t+10]$ to the month of day τ. Z_m^X is a vector of regressors that includes the sum across AFPs of net flows to the portfolio within the AFP in month m, and the sum across AFPs of other (net) flows to the portfolio in month m.[20] We express the variables in Z_m as a fraction of total assets in $m-1$. Monthly flow data start in October 2002.

Table 8 shows that to accommodate the massive recommendation-induced portfolio flows portfolio managers almost exclusively adjust liquid assets—cash and foreign equity (ETFs, mutual funds, etc.)—and not the relatively illiquid domestic stocks. In particular, AFPs largely adjust foreign equity in response to inflows and outflows to risky portfolio A, and they adjust cash for safe portfolio E. Table 9 divides H&L flow into that in the first half of a month (FH; if $\tau \leq 15$) and that in the second half (SH; if $\tau \geq 16$). The results show that the findings in Table 8 are reinforced if the recommendation is late in a month—presumably reflecting that when a recommendation is earlier, AFPs have more time to adjust holdings by the end of the month without impacting the market.

To summarize, we find that the initial good performance of H&L's recommendations received massive media attention and led to a shared belief among pension investors *and* the market that H&L's recommendations contained valuable information, causing large numbers of pension investors to follow H&L's advice and stock prices to move immediately in response to the 'information'. However, the absence of abnormally high domestic stock trading volume after recommendations indicates that (i) investors did not similarly trade on the recommendations in the stock market, and (ii) by reducing exposure to domestic equity markets, AFPs were able to accommodate the transfers by only adjusting more liquid assets.

3. Conclusion

"Privatized" social security systems seek to align individual investments with risk attitudes, while avoiding shortfalls in savings due to bad investment choices or moral hazard by investment advisors. One way to do this is to limit the set of investment alternatives, the approach adopted by Chile, which has the most-widely emulated pension design in the world. We study the impacts in Chile of the arrival of a pension advisory service, Happy and Loaded. We show how H&L's initial good performance drew media attention and a surge in followers. Our analysis highlights that with few investment alternatives, common information arrival—here taking the form of H&L's portfolio recommendations—can result in massive coordinated portfolio reallocations, amounting to as much as 1.5% of GDP.

More generally, we provide insights into how individual investors, pension fund managers and the market respond to the perceived information contained in the financial advice of well-regarded 'experts.' H&L's arrival changed individual retirement investment strategies: passive investors became active, and active investors switched from intermediate-term momentum strategies to following H&L's recommendations. Moreover, we find that the equity market itself came to believe the recommendations, with stock prices shifting immediately in response. Remarkably, while individual pension investors follow H&L's advice on portfolio choices, neither

[18] Data start in September 2002 for portfolios A, B and D, and in January 2002 for portfolios C and E.

[19] Similar results hold if we include the first lag of Z and the first lag of the dependent variable as regressors.

[20] We see the net flow to each portfolio within an AFP for each AFP at a monthly frequency. To this flow, we subtract the net flow generated by H&L during the month (the sum of net flows during days $t+3$ to $t+10$). We compute other flow as total net flow minus total net flow within the AFP.

Table 7
Portfolio weights before and after H&L. OLS regression of $w_m^{a,X} = \alpha + \beta H\&L_m + \gamma Z_m + \epsilon_m$, using monthly data for the period September 2002 – December 2019 for portfolio A and January 2002–September 2019 for portfolio E. The dependent variable is is the portfolio weight (in %) of asset class a of portfolio $X \in \{A, E\}$ on the last day of month m, H&L is a dummy variable equal to one beginning with H&L's sixth recommendation. Z_m^X is a vector of regressors that includes the monthly return of the IPSA and S&P500 indices, the log difference of the VIX index, and the log of the total assets of portfolio X on the last day of month m.

	A			E		
	Cash	Dom. stocks	For. assets	Cash	Dom. stocks	For.assets
H&L	−0.098	−2.138***	9.767***	4.363***	0.604***	0.564
	(0.192)	(0.290)	(0.798)	(0.686)	(0.127)	(0.544)
Obs.	208	208	208	216	216	216
R^2	0.578	0.854	0.816	0.156	0.610	0.308
Adj. R^2	0.567	0.851	0.812	0.136	0.600	0.291

Robust standard errors in parentheses.
** p<0.01, ** p<0.05, * p<0.1.

Table 8
Change in asset holdings and H&L's recommendations. OLS regression of $\Delta h_m^{a,X} = \alpha + \beta Flow\ H\&L_m^X + \gamma Z_m^X + \epsilon_m$, using monthly data for the period October 2002 – December 2019. The dependent variable is the first difference of holdings (in billions CLP) of asset class a by portfolio X, Flow $H\&L_m^X$ is the net flow to portfolio X after a recommendation $r \geq 6$—computed as the cumulative net flow on days $t + 3$ to $t + 10$, as a fraction of the value of the portfolio on day $t - 1$. We assign flow on day $\tau \in [t + 3, t + 10]$ to the month of day τ. Z_m^X is a vector of regressors that includes the sum across AFPs of net flows to the portfolio within the AFP in month m, and the sum across AFPs of other (net) flows to the portfolio in month m, both are expressed as a fraction of total assets in $m - 1$.

	A			E		
	Cash	Dom. stocks	For. assets	Cash	Dom. stocks	For. assets
Flow H&L	23.257***	7.749**	162.378***	84.583***	3.836**	16.422***
	(5.777)	(3.032)	(23.518)	(13.567)	(1.452)	(4.270)
Obs.	206	206	206	206	206	206
R^2	0.228	0.054	0.464	0.479	0.229	0.192
Adj. R^2	0.217	0.040	0.456	0.471	0.218	0.180

Robust standard errors in parentheses.
** p<0.01, ** p<0.05, * p<0.1.

Table 9
Change in asset holdings and H&L's recommendations dividing monthly H&L Flow into first half of the month (FH) and second half of the month (SH). OLS regression of $\Delta h_m^{a,X} = \alpha + \beta_1 Flow\ H\&L\ FH_m^X + \beta_2 Flow\ H\&L\ SH_m^X + \gamma Z_m^X + \epsilon_m$, using monthly data for the period October 2002 – December 2019. The dependent variable is the first difference of holdings (in billions CLP) of asset class a by portfolio X, Flow $H\&L\ FH_m^X$ is the net flow to portfolio X after a recommendation $r \geq 6$ during the first half of the month ($\tau \leq 15$)—computed as the cumulative net flow on days $t + 3$ to $t + 10$, as a fraction of the value of the portfolio on day $t - 1$. Flow $H\&L\ SH_m^X$ is the net flow to portfolio X after a recommendation $r \geq 6$ during the second half of the month ($\tau \geq 16$). We assign flow on day $\tau \in [t + 3, t + 10]$ to the month of day τ. Z_m^X is a vector of regressors that includes the sum across AFPs of net flows to the portfolio within the AFP in month m, and the sum across AFPs of other (net) flows to the portfolio in month m, both are expressed as a fraction of total assets in $m - 1$.

	A			E		
	Cash	Dom. stocks	For. assets	Cash	Dom. stocks	For. assets
Flow H&L FH	17.706***	12.363***	170.849***	66.014***	3.446*	21.947***
	(5.282)	(4.696)	(28.382)	(17.578)	(1.964)	(6.782)
Flow H&L SH	26.271***	5.244	157.779***	93.759***	4.029	13.691**
	(7.462)	(3.640)	(25.931)	(15.005)	(1.545)	(5.985)
Obs.	206	206	206	206	206	206
R^2	0.236	0.062	0.465	0.493	0.231	0.204
Adj. R^2	0.221	0.043	0.454	0.483	0.215	0.188

Robust standard errors in parentheses.
** p<0.01, ** p<0.05, * p<0.1.

individual nor institutional investors trade on that advice in the domestic market. In fact, we find that the massive shifts in pension investments are associated with abnormally *low* trading volume in domestic stocks held by portfolio managers. We show that portfolio managers are able to adjust to H&L's arrival by altering the risk compositions of the different portfolios. Portfolio managers made the portfolios more similar to make it easier to shift assets between portfolios, and they accommodated the rest of the portfolio transfers by adjusting holdings of liquid assets—largely cash and foreign equities—thereby avoiding having to trade illiquid domestic stocks. This results in changes to portfolio allocations and risk exposures for the various portfolios, effectively changing investors' choice sets. This could lead to worse risk sharing by investors (particularly of domestic stocks) and hence have welfare implications. In effect, the portfolio managers are unwinding the intentions of the pensioners—whether those intentions are well-founded or not.

CRediT authorship contribution statement

Conrado Cuevas: Conceptualization, Methodology, Software, Formal analysis, Investigation, Data curation, Writing – original draft, Writing – review & editing, Visualization. **Dan Bernhardt:** Conceptualization, Methodology, Writing – original draft, Writing – review & editing, Visualization.

Data availability

When financial advice rocks the market (Original data) (Mendeley Data)

Appendix A. Regressions Pooling Days $t+1$ to $t+10$

To reduce noise, we run regressions similar to (1) that aggregate days $t+1$ to $t+10$, estimating

$$\begin{aligned} y_\tau^X = \quad & \alpha + \beta_0 \delta_{E\tau}(-2:-1) + \beta_1 \delta_{E\tau}(0) + \beta_2 \delta_{E\tau}(1:10) \\ + \quad & \phi_0 \gamma_{E\tau}(-2:-1) + \phi_1 \gamma_{E\tau}(0) + \phi_2 \gamma_{E\tau}(1:10) + \epsilon_\tau. \end{aligned}$$

where $\delta_{E\tau}(s)$ and $\gamma_{E\tau}(s)$ for $s = -2, -1, 0$, are defined as before, and $\delta_{E\tau}(1:10)$ and $\gamma_{E\tau}(1:10)$ takes a value of $\pm\rho$ if the first trading day after a recommendation was 1 to 10 days earlier. Again, the δ-indicators are active for recommendations 1 to 5, and the γ indicators are active for recommendations 6 onward. The dependent variable is returns or trading volume. Table 10 confirms the good performance of portfolio A after H&L's initial recommendations, and the announcement effect on the domestic stock market for later recommendations. Table 11 shows that on days where portfolio transfers are high, volume is economically and statistically unaffected in stocks held by AFPs. In contrast, volume is abnormally high for stocks not held by AFPs.

Table 10
Recommendations and asset returns. OLS regression of $y_\tau = \alpha + \beta_0 \delta_{E\tau}(-2:-1) + \beta_1 \delta_{E\tau}(0) + \beta_2 \delta_{E\tau}(1:10) + \phi_0 \gamma_{E\tau}(-2:-1) + \phi_1 \gamma_{E\tau}(0) + \phi_2 \gamma_{E\tau}(1:10) + \epsilon_\tau$ using daily data for the period 3Jan2011–30Dec2019, where y_τ is the daily return (in %) of portfolio A or the IPSA index, for example.

	Port. A	Port. E	IPSA	AFP	not-AFP
$\delta_{-2:-1}$	0.569***	−0.021	0.827***	0.808***	0.148
	(0.128)	(0.036)	(0.288)	(0.298)	(0.326)
δ_0	0.331	0.016	0.170	0.232	0.176
	(0.239)	(0.067)	(0.309)	(0.314)	(0.274)
$\delta_{1:10}$	0.268**	−0.048*	0.094	0.054	0.288
	(0.133)	(0.028)	(0.184)	(0.183)	(0.191)
$\gamma_{-2:-1}$	0.582***	0.005	0.336***	0.332***	0.002
	(0.069)	(0.020)	(0.116)	(0.123)	(0.122)
γ_0	0.286**	−0.116***	0.475***	0.386***	0.210*
	(0.124)	(0.043)	(0.132)	(0.118)	(0.122)
$\gamma_{1:10}$	0.064**	−0.013	0.017	0.045	−0.012
	(0.031)	(0.015)	(0.051)	(0.046)	(0.047)
Market ret.			Yes	yes	yes
Obs.	2243	2243	2236	2236	2236
R^2	0.0484	0.00654	0.310	0.254	0.0336
Adj. R^2	0.0459	0.00388	0.308	0.252	0.0305

Robust standard errors in parentheses.
**p<.001, **p<.05, *p<.1.

Table 11
Recommendations and stock market volume. OLS regression of $y_\tau = \alpha + \beta_0\delta_{E\tau}(-2:-1) + \beta_1\delta_{E\tau}(0) + \beta_2\delta_{E\tau}(1:10) + \phi_0\gamma_{E\tau}(-2:-1) + \phi_1\gamma_{E\tau}(0) + \phi_2\gamma_{E\tau}(1:10) + \epsilon_\tau$ using daily data for the period 3Jan2011–30Dec2019, where y_τ is the the log of daily volume. The dummies are unsigned, i.e. either ρ or 0.

	IPSA	AFP	not-AFP	IPSA	AFP	not-AFP
$\delta_{-2:-1}$	0.176***	0.164***	−0.162	0.060	0.026	0.125
	(0.062)	(0.063)	(0.161)	(0.074)	(0.082)	(0.179)
δ_0	0.297***	0.269***	−0.303**	0.180***	0.131***	−0.016
	(0.049)	(0.047)	(0.122)	(0.023)	(0.042)	(0.179)
$\delta_{1:10}$	0.276***	0.275***	−0.398***	0.160**	0.137*	−0.110
	(0.071)	(0.068)	(0.096)	(0.075)	(0.072)	(0.099)
$\gamma_{-2:-1}$	0.156***	0.141**	0.187	0.078	0.069	−0.011
	(0.060)	(0.062)	(0.130)	(0.056)	(0.058)	(0.116)
γ_0	0.102	0.075	0.440	0.022	0.003	0.238
	(0.086)	(0.084)	(0.274)	(0.078)	(0.078)	(0.270)
$\gamma_{1:10}$	0.081**	0.069*	0.209***	0.007	0.002	0.013
	(0.037)	(0.038)	(0.068)	(0.035)	(0.036)	(0.065)
Expected vol.				yes	Yes	Yes
Obs.	2238	2238	2238	2218	2218	2218
R^2	0.0151	0.0129	0.0138	0.157	0.124	0.236
Adj. R^2	0.0124	0.0102	0.0111	0.154	0.121	0.234

Robust standard errors in parentheses.
**p<.001, **p<.05, *p<.1.

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