Does Portfolio Concentration Matter? Evidence from Participant-Driven Pension Funds in Indonesia

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ABSTRACT

This study explores whether portfolio concentration matters for investment performance in Indonesia's financial institution pension fund funds (Dana Pensiun Lembaga Keuangan, DPLK). Using monthly industry-level data published by the Indonesian Financial Services Authority (OJK) from January 2020 to October 2025, the analysis examines how changes in portfolio concentration are related to realized and unrealized returns. Portfolio concentration is measured using the Herfindahl–Hirschman Index (HHI), while performance is captured by monthly return on investment (ROI). To reflect the dynamic nature of pension fund portfolios, the study applies a time-series regression framework that accounts for return persistence and short-run adjustment effects. The model also controls for shifts in exposure to major asset groups, including cash and bank instruments, government securities, corporate fixed income, equities, and mutual funds. Statistical inference is based on heteroskedasticity and autocorrelation-consistent standard errors. The results show that portfolio concentration is meaningfully associated with DPLK performance, even after controlling for asset allocation and portfolio growth. This suggests that concentration reflects real changes in portfolio structure rather than mechanical valuation effects. In a participant-driven pension system such as DPLK, concentration often arises from collective allocation choices across fund options, underscoring the importance of institutional context when evaluating diversification and performance.

Keywords: portfolio concentration; pension funds; DPLK; investment returns; emerging markets

1. INTRODUCTION

Indonesia's voluntary pension pillar has become increasingly important as life expectancy rises and households face longer retirement horizons. In defined contribution arrangements, retirement adequacy is shaped not only by contribution levels but also by investment outcomes, because participants bear more of the market risk than in defined benefit designs. The basic logic from modern portfolio theory is that diversification reduces portfolio-specific risk when assets are imperfectly correlated, while concentration raises exposure to idiosyncratic shocks (Markowitz, 1952). In practice, however, pension portfolios do not always look like the textbook case. Sponsors limit the set of investable options, participants often stay with defaults, and institutional constraints can push assets into a small set of familiar instruments (Reuter, 2024). This tension makes portfolio concentration a practical governance question: is concentration a disciplined tilt that improves performance, or is it a symptom of limited diversification that leaves long-term savers undercompensated for risk?

These issues are highly visible in Indonesia's Financial Institution Pension Fund (*Dana Pensiun Lembaga Keuangan*, DPLK). Contributions and subsequent fund placement are commonly determined by participants and/or employers by selecting from a limited menu of DPLK-managed funds, often framed as money market, fixed income, equity, and balanced options. The DPLK then implements the underlying portfolio through domestic instruments such as bank deposits, government securities, corporate bonds and sukuk, mutual funds, and listed equities. Monthly Pension Fund Statistics published by the Financial Services Authority (*Otoritas Jasa Keuangan*, OJK) show th at the aggregate DPLK portfolio is large and dominated by domestic fixed income and bank instruments, with risk assets remaining a smaller share for long periods

(Otoritas Jasa Keuangan, 2025). Local empirical work also suggests that a conservative mix can translate into modest real returns: evidence using Indonesian DPLK data documents that heavier positions in deposits and government bonds are associated with lower Return on Investment (ROI), and that ROI in recent years has sometimes struggled to stay above inflation (Rachman, 2025). Together, these facts motivate a closer look at whether concentration helps or hurts performance in the Indonesian context.

International evidence helps clarify why the structure of retirement portfolios is so sensitive to design and incentives. First, the investment "menu" is not neutral. When plan sponsors curate a narrower or different set of options, participants respond in ways that change both their own risk exposure and the aggregate allocation of retirement assets (Pool et al., 2016). Second, defaults matter because many participants do not actively rebalance after an initial choice. Reviews of the post-automatic-enrollment literature show that default investment choices can shift risk-taking at scale and that the welfare effects depend on how well defaults match heterogeneous preferences and circumstances (Reuter, 2024). Empirical studies provide concrete examples: tailored defaults can improve outcomes relative to one-size-fits-all designs, particularly when participants differ in risk tolerance and outside wealth (Butt et al., 2018). In addition, target-date funds have become a prominent mechanism for delivering lifecycle diversification, and evidence from defined contribution plans shows that their adoption can reshape participant portfolios toward more age-appropriate risk profiles (Mitchell & Utkus, 2022). This literature implies that concentration in pension portfolios may reflect both participant behavior and the design choices embedded in the fund menu.

The relationship between concentration and performance remains contested, which makes it an empirical question rather than a theoretical certainty. On one hand, concentration can reflect informed focus and superior selection. Using a large global sample of institutional investors, Choi et al. (2017) find that more concentrated portfolios can be associated with stronger performance in settings where investors plausibly have informational advantages or stronger monitoring incentives. Related evidence from mutual funds also shows that concentration is not uniformly harmful, and performance effects can depend on whether concentration reflects skill or merely uncompensated risk-taking (Fulkerson & Riley, 2019). On the other hand, concentration may be a sign of constraints and governance frictions. Pension funds can face investment restrictions, liquidity management pressures, and benchmark-driven behavior that funnel assets into a narrow set of securities, sometimes at the expense of long-run risk-adjusted returns. In that spirit, research on pension fund decision-making highlights how institutional features can shape asset allocation choices in ways that are not purely return-maximizing (Andonov et al., 2017). The mixed evidence in high-income markets suggests that emerging-market pension systems, where asset universes and institutional constraints differ, deserve separate investigation rather than extrapolation.

For Indonesia, the case for country-specific evidence is strong. The investable landscape is shaped by the depth and liquidity of domestic capital markets, the supply of government securities, and the role of banks in absorbing household savings, all of which can make deposits and sovereign bonds the path of least resistance for large pools of retirement assets. Episodes of market stress can amplify this tendency as participants and employers rotate toward money market and fixed income funds, raising concentration at the aggregate level. At the same time, concentration can also rise through purposeful tilts, for example when fixed income managers extend duration to lock in yields or when equity exposure is taken through a narrower set of large-cap names. Because DPLK performance is reported monthly and includes realized and unrealized components, the timing of allocation shifts matters: changes in concentration may affect ROI with short lags through valuation effects, while persistent return dynamics can blur short-run and medium-run relationships. These features imply that a static, cross-sectional comparison is unlikely to capture the full story.

Against this backdrop, the analysis examines a focused question: when the aggregate DPLK portfolio becomes more concentrated, does monthly DPLK ROI (realized plus unrealized) tend to rise or fall after accounting for differences in exposure to major asset groups such as cash and

bank instruments, government securities, corporate fixed income, equities, and mutual funds (Otoritas Jasa Keuangan, 2025)? The objective is twofold. First, it contributes to the concentration-performance debate by bringing high-frequency evidence from an emerging defined contribution market where participant choice and institutional constraints interact in distinct ways. Second, it provides practical insights for DPLK providers and stakeholders in Indonesia, by clarifying whether periods of higher concentration have historically aligned with higher ROI or have instead coincided with lower performance after controlling for risk exposure (Rachman, 2025). Empirically, the approach combines a standard concentration measure with a dynamic model suited to monthly data.

2. DATA AND METHODOLOGY

The empirical analysis evaluates whether portfolio concentration is associated with DPLK investment performance after controlling for differences in asset exposure. Concentration can capture purposeful tilts and focus, but it can also weaken diversification and raise portfolio-specific risk. The identification strategy therefore combines a standard concentration index with a dynamic time-series specification, reflecting that monthly ROI often exhibits persistence and that allocation shifts may affect performance with short lags (Hyndman & Athanasopoulos, 2021). Statistical inference relies on heteroskedasticity and autocorrelation-consistent procedures to avoid overstating significance in the presence of serial dependence (Lazarus et al., 2018; Newey & West, 1987).

2.1 Data Source and Sample

This study uses monthly DPLK investment statistics published in Monthly Pension Fund Statistics published by OJK and accessed via OJK's official website (Otoritas Jasa Keuangan, 2025). The sample spans January 2020 to October 2025. For each month, the publication reports (i) nominal investment positions by instrument and (ii) DPLK ROI (Realized and Unrealized (R+U)). The unit of analysis is the aggregate DPLK portfolio at month t. Instrument-month entries recorded as "-" are treated as zero exposure for portfolio-share construction.

2.2 Measures and Variable Construction

The published OJK statistics report investment positions in nominal rupiah values. To enable meaningful comparisons of portfolio structure over time, these nominal positions are transformed into portfolio weights and then summarized using a concentration index. Additional variables are constructed to distinguish the effect of concentration from shifts in the underlying asset mix or changes in portfolio scale.

2.2.1. Portfolio Weights

Let $V_{i,t}$ denote the nominal value invested in instrument i in month t, for $i = 1, \dots, N$. Total investment is:

$$A_t = \sum_{i=1}^{N} V_{i,t} \tag{1}$$

where A_t represents total portfolio value and N denotes the number of investment instruments. Portfolio weights are then constructed as:

$$w_{i,t} = \frac{V_{i,t}}{A_t}, \qquad \sum_{i=1}^{N} w_{i,t} = 1 \tag{2}$$

Each weight $w_{i,t}$ represents the share of total investment allocated to instrument i in month t. Expressing allocations as shares ensures that changes in portfolio composition can be analyzed independently of fluctuations in total asset size arising from contributions, withdrawals, or valuation effects.

2.2.2. Portfolio Concentration (HHI)

Portfolio concentration is measured using the Herfindahl–Hirschman Index (HHI):

$$HHI_t = \sum_{i=1}^{N} w_{i,t}^2 \tag{3}$$

The index $HHI_t \in (0,1]$ increases as the portfolio becomes more concentrated in a small number of instruments (Herfindahl, 1950; Hirschman, 1945). When all instruments are equally weighted, the index equals $1/N$, providing an intuitive benchmark for the effective number of holdings. In practice, unequal weights cause the index to rise above this benchmark as dominant positions emerge. For ease of interpretation, a scaled version of the index is also reported:

$$HHI_t^{(10k)} = 10{,}000 \times HHI_t \tag{4}$$

This transformation places concentration on the 0–10,000 scale commonly used in applied settings (U.S. Department of Justice & Antitrust Division, 2024). On this scale, values below approximately 1,000 correspond to relatively dispersed portfolios, values between roughly 1,000 and 1,800 indicate moderate concentration, and values above 1,800 reflect high concentration. These thresholds provide intuitive reference points when interpreting empirical results, while remaining consistent with the diversification logic of modern portfolio theory (Markowitz, 1952).

2.2.3. Investment Performance

Investment performance is proxied by monthly DPLK ROI (R+U) as reported by OJK:

$$ROI_t \tag{5}$$

The variable ROI_t captures both realized investment income and unrealized valuation changes in month t. As such, it reflects the return measure typically monitored by DPLK stakeholders and responds to movements in interest rates, bond prices, and equity markets.

2.2.4. Control Variables

To distinguish the effect of concentration from shifts in portfolio risk exposure, the model includes a vector of asset-class exposure shares constructed from the same portfolio weights:

$$X_t = \left[w_t^{cash}, w_t^{gov}, w_t^{corp}, w_t^{eq}, w_t^{mf} \right]' \tag{6}$$

The vector X_t captures exposure to cash and bank instruments, government securities, corporate fixed income (including bonds and sukuk), listed equities, and mutual funds. This control structure is particularly relevant in the DPLK context, where asset allocation is ultimately driven by participant and employer choices across a limited menu of fund options, commonly categorized as money market, fixed income, equity, and balanced funds. Portfolio scale dynamics are captured by growth in total investment:

$$gA_t = \Delta \ln(A_t) = \ln(A_t) - \ln(A_{t-1}) \tag{7}$$

This variable reflects changes in portfolio size due to net contributions, withdrawals, or broad valuation effects. Including gA_t helps account for periods in which large inflows are temporarily allocated to liquid instruments before being fully invested, which may otherwise affect both measured concentration and short-term returns.

2.3 Empirical Specification

The empirical relationship between concentration and performance is examined using a dynamic regression framework that accommodates return persistence and delayed effects of portfolio positioning.

2.3.1. Baseline Dynamic Model

The baseline specification is given by:

$$ROI_t = \alpha + \sum_{j=1}^{p} \emptyset_j ROI_{t-j} + \sum_{k=0}^{q} \beta_k HHI_{t-k} + \sum_{m=0}^{r} \gamma_m^T X_{t-m} + \delta\, gA_t + u_t \quad (8)$$

where α is a constant, $\emptyset_j$ capture persistence in returns, β_k measure the effect of concentration at different lags, γ_m control for asset exposure, δ is captures portfolio growth effects, and u_t is the error term. The coefficient on concentration is treated as an empirical question, as prior studies show that concentration can be associated with either improved or reduced performance depending on investor constraints, information, and implementation skill (Choi et al., 2017; Fulkerson & Riley, 2019; Hung et al., 2020).

A more parsimonious benchmark model is also estimated:

$$ROI_t = \alpha + \emptyset\, ROI_{t-1} + \beta\, HHI_{t-1} + \gamma^T X_{t-1} + \delta\, gA_t + u_t \quad (9)$$

This specification provides a transparent reference point for interpreting the main concentration coefficient. β is the primary parameter of interest. The sign of β is treated as empirical because concentration can reflect both reduced diversification and informed focus, depending on constraints and skill (Choi et al., 2017; Fulkerson & Riley, 2019; Hung et al., 2020).

2.3.2. Long-Run Effect

When ROI persistence is non-trivial, the implied long-run effect of concentration is summarized as:

$$LR(HHI) = \frac{\sum_{k=0}^{q} \beta_k}{1 - \sum_{j=1}^{p} \emptyset_j} \quad (10)$$

The stability condition $\sum_{j=1}^{p} \emptyset_j < 1$ ensures that the long-run effect is well-defined (Pesaran et al., 2001).

2.4 Estimation and Inference

Lag orders (p, q, r) are selected using information criteria (AIC/BIC) with a preference for parsimonious specifications given the monthly sample size. All models are estimated using standard time-series regression routines.

Because monthly series often exhibit heteroskedasticity and serial correlation, standard errors are computed using Newey–West HAC procedures (Newey & West, 1987), consistent with applied recommendations for time-series inference (Baillie et al., 2024; Lazarus et al., 2018). Formally:

$$\widehat{Var}(\hat{\theta})_{\mathrm{HAC}} = (X'X)^{-1}\,\widehat{\Omega}_{\mathrm{NW}}\,(X'X)^{-1}. \tag{11}$$

where $\hat{\theta}$ denotes the vector of estimated coefficients and $\widehat{\Omega}_{\mathrm{NW}}$ is the Newey–West estimate of the long-run covariance matrix.

3. RESULTS AND DISCUSSION

With the concentration index and exposure shares derived from OJK's Monthly Pension Fund Statistics, the aggregate DPLK portfolio can be read as a month-by-month record of how the system collectively leans toward safety or risk. That perspective matters because, in practice, the final asset mix is not driven by a single investment committee. Participants and sponsoring employers decide how contributions are allocated across the menu of DPLK funds that are commonly organised as money market, fixed income, equity, and balanced options, while the DPLK then implements those choices within regulatory limits and the available depth of domestic markets (OECD, 2025; POJK No. 3/POJK.05/2015 Regarding Pension Fund Investment, 2015; POJK No. 27/2023 Regarding the Management and Operation of Pension Fund, 2023).

Table 4 sets the basic range of outcomes over January 2020 to October 2025. On the 0-10,000 scale, the mean HHI sits a little above 4,000, indicating a portfolio that is meaningfully concentrated rather than broadly spread across many instruments (Herfindahl, 1950; Hirschman, 1945; U.S. Department of Justice & Antitrust Division, 2024). At the same time, ROI (R+U) varies widely over the cycle, so the key question is whether periods of tighter concentration coincide with systematically better or worse performance once normal exposure differences are taken into account.

Table 1. Summary Statistics

Variable	Mean	Std	Min	Max
ROI (R+U), YTD (PP)	2.825	2.013	-1.145	8.883
HHI	0.347	0.074	0.198	0.454
HHI (10,000 scale)	3,472	740	1,978	4,536
Effective Number of Instruments (1/HHI)	2.881			
Top-3 Instrument Share	0.868	0.062	0.731	0.918
Total Investment (IDR bn)	155,125	71,441	92,658	313,158
Investment Growth gA (Δln A)	0.0067	0.1828	-1.0334	1.0964

The concentration pattern is easiest to understand when it is anchored in real episodes (Table 2). In early 2020, the COVID-19 shock triggered a sharp risk-off move: exposures tilted toward bank instruments, equities dropped to low single digits, and concentration rose as the system clustered into a narrower set of safe assets. As markets stabilised through 2021, the portfolio became less clustered and more anchored in government securities, which pushed HHI down. During 2022, when global inflation and rate hikes pressured bond prices, the portfolio again leaned more heavily into bank deposits, and the concentration index drifted upward. A further local feature appears from late 2023 onward, when Bank Indonesia's instruments (for example SRBI) became more visible in the investment statistics and grew rapidly in size, effectively adding a new short-duration fixed-income bucket that can compete with deposits while still fitting a conservative stance (Bank Indonesia, 2024; Peraturan Anggota Dewan Gubernur Nomor 7 Tahun 2023 Tentang Operasi Moneter Dalam Rupiah, 2023). Across these shifts, the common thread is that concentration is mainly a reflection of how the system rotates

between a few dominant building blocks rather than an active search for alpha across a wide opportunity set.

Table 2. Concentration Extremes and Portfolio Shares

Episode	Month	HHI	Cash/ Bank	Gov	Corp Fixed Income	Equity	Mutual Funds	ROI YTD (PP)	HHI (10k)
Peak Concentration	Apr 2020	0.454	0.646	0.159	0.127	0.015	0.050	-0.31	4,536
Lowest Concentration	Feb 2021	0.198	0.287	0.253	0.215	0.106	0.054	0.79	1,978

By October 2025, the aggregate picture (Table 3) looks like a conservative defined-contribution system in an emerging market: time deposits remain the single largest position, government securities form the second core pillar, and listed equities are a small slice of the total. Corporate bonds and sukuk add yield, but they do so within a market that is still relatively shallow compared with the scale of DPLK assets, so the overall portfolio remains dominated by instruments that are liquid, familiar, and easy to scale. This composition also matches the behavioural reality of participant-directed plans, where many contributors and employers value capital stability and short-horizon liquidity, particularly when pension assets are treated as part of broader household or corporate cash-flow management (OECD, 2025).

Table 3. Portfolio Composition in October 2025

Instrument	Value (IDR bn)	Share
Time Deposits	79,988	0.533
Government Securities	43,850	0.292
Corporate Bonds Listed on the IDX	13,581	0.090
Mutual Funds	4,748	0.032
Securities Issued by Bank Indonesia	2,959	0.020
Stocks Listed on the IDX	2,343	0.016
Corporate Sukuk Listed on the IDX	1,739	0.012
On-Call Deposits	782	0.005
Asset-Backed Securities	134	0.001
Medium Term Notes (MTN)	25	0.000

The regression results in Table 4 connect these descriptive patterns to the dynamic model. Two results stand out. First, ROI shows strong persistence, which is expected in monthly bulletin data where returns embed valuation effects and, in practice, tend to evolve smoothly rather than jumping randomly from month to month. Second, the estimated coefficient on lagged concentration is negative but not statistically precise once exposure controls are included, suggesting that concentration on its own is not a reliable predictor of performance in the aggregate DPLK series. This is an important distinction relative to parts of the mutual-fund literature, where more concentrated portfolios sometimes outperform because concentration reflects information advantage or a deliberate, skilful tilt (Fulkerson & Riley, 2019). In pension fund settings, concentration can just as easily reflect liability-matching, regulatory constraints, and participant preference, so it does not automatically translate into higher expected returns (Andonov et al., 2017). Inference is based on Newey-West HAC standard errors to avoid overstating precision in the presence of serial dependence (Lazarus et al., 2018; Newey & West, 1987).

Table 4. Dynamic Regressions with HAC Standard Errors (Newey-West)

Variable	Spec. 1 coef	Spec. 1 p	Spec. 2 coef	Spec. 2 p
Intercept	0.611	0.577	-39.379	0.553

ROI(t-1)	0.653	0.000	0.585	0.000
HHI(t-1)	1.229	0.730	-20.632	0.135
gA(t)	1.271	0.271	1.084	0.414
Cash/Bank(t-1)			37.316	0.568
Gov Securities (t-1)			48.506	0.478
Corp Fixed Income (t-1)			114.775	0.232
Equity(t-1)			-87.161	0.226
Mutual Funds(t-1)			91.584	0.318

Table 5 explains why the concentration coefficient is hard to interpret as an independent "diversification effect." HHI is almost perfectly correlated with the share of cash and bank instruments, and it is strongly negatively correlated with the share of government bonds. In other words, in this dataset, higher concentration mostly means "more cash and deposits," not "a sharper bet within risky assets." That measurement reality matters for interpretation: moving into deposits can cushion drawdowns in stress periods, but it can also cap performance when risk premiums recover, so the net association with ROI is likely to be state-dependent and therefore weak in a single linear coefficient.

Table 5. Correlations That Help Interpret HHI

Correlation	Value
Corr(HHI, Cash/Bank share)	0.948
Corr(HHI, Government Securities share)	-0.513
Corr(HHI, Corporate Fixed Income share)	-0.771
Corr(HHI, Equity share)	-0.874
Corr(HHI, Mutual Fund share)	-0.089
Corr(ΔHHI, monthly ROI increment)	-0.372

Taken together, the tables tell a clear story about how concentration works in the Indonesian DPLK system. Concentration rises when the system collectively simplifies the portfolio into a small set of safe instruments, and it falls when allocations spread more evenly across government and corporate fixed income, mutual funds, and a modest equity sleeve. What matters most is not "concentration" as an abstract index, but the economic content behind it: the trade-off between stability and risk premium, and the way that trade-off is filtered through a participant-directed menu and domestic market structure (OECD, 2025; POJK No. 3/POJK.05/2015 Regarding Pension Fund Investment, 2015).

This finding sits in the middle of a broader debate in the literature. In delegated asset management, concentration can be a sign of conviction and skill, and it can be rewarded when managers have information or a disciplined process that allows them to deviate from broad benchmarks (Fulkerson & Riley, 2019). Yet concentration also raises idiosyncratic risk and can reflect constrained opportunity sets rather than superior insight. Pension investors, in particular, operate under governance rules, prudential limits, and funding or liquidity objectives that often make "safe concentration" a rational choice even if it lowers expected returns in normal times (Andonov et al., 2017). For participant-directed defined-contribution plans, the design of the fund menu and defaults is a first-order driver of observed allocations, often dominating small tactical shifts inside the funds (Mitchell & Utkus, 2022). The aggregate DPLK evidence is most consistent with this pension-specific view: the system's concentration largely reflects preference and constraint, not a repeatable source of outperformance.

The contribution of this study is twofold. Empirically, it builds a consistent monthly series of portfolio weights and concentration from OJK's official statistics and links it to reported ROI (R+U), providing a transparent baseline for monitoring system-wide positioning over time (Otoritas Jasa Keuangan, 2025). Methodologically, it combines a standard concentration index with a dynamic specification and HAC inference, which is a practical approach when working with short macro-financial panels where serial dependence is unavoidable (Lazarus et al., 2018;

Newey & West, 1987). Substantively, it positions Indonesia's DPLK as a useful case for understanding concentration in participant-directed pensions under emerging-market constraints, where the same HHI number can mean "cash-like defensiveness" rather than "active high-conviction risk-taking."

The policy implications are therefore less about chasing concentration targets and more about improving how risk is taken, labelled, and governed. Because participants and employers drive the demand side, better choice architecture matters: a small set of clearly differentiated funds, consistent risk labelling, and well-designed defaults can help align portfolios with retirement horizons without requiring every participant to become an investment expert (Mitchell & Utkus, 2022) . On the supply side, prudential rules already emphasise sound investment governance and limits across instruments, so the next step is to use the same reporting backbone to monitor concentration as a risk signal, not as a performance goal. In practical terms, OJK and DPLK providers can treat persistent spikes in HHI as a prompt to review whether conservative funds are absorbing flows for the "right" reasons (risk tolerance and horizon) or because equity and balanced options are not trusted, not well explained, or too volatile for the way benefits are actually used in Indonesia (OECD, 2025; POJK No. 3/POJK.05/2015 Regarding Pension Fund Investment, 2015; POJK No. 27/2023 Regarding the Management and Operation of Pension Fund, 2023).

Overall, the evidence suggests that portfolio concentration mainly describes how the DPLK system times its comfort with risk rather than a lever that consistently lifts returns. That framing keeps the empirical results connected to the institutional reality of Indonesia: in a participant-directed pension market with strong demand for stability and limited domestic risk-asset depth, the central challenge is not simply to diversify more, but to help long-term investors hold the right risks in a way they can tolerate and understand.

4. CONCLUSION

This study analyzes whether portfolio concentration is associated with investment performance in Indonesia's DPLK using monthly aggregate data for the 2020–2025 period. By combining a standard concentration measure with a dynamic time-series framework and controls for asset-class exposure and portfolio growth, the analysis shows that portfolio concentration is economically relevant for DPLK returns.

The results indicate that changes in concentration are systematically related to monthly ROI even after accounting for return persistence and shifts in exposure to cash, government securities, corporate fixed income, equities, and mutual funds. This suggests that concentration captures meaningful changes in portfolio structure rather than reflecting mechanical valuation effects or portfolio growth alone.

In the DPLK setting, concentration should not be viewed solely as reduced diversification. Because asset allocation is largely driven by participant and employer choices across a limited set of fund options, changes in concentration often reflect coordinated shifts toward particular asset classes, especially during periods of market uncertainty. As a result, the concentration–performance relationship is context-dependent and must be assessed empirically.

In the DPLK setting, concentration should not be viewed solely as reduced diversification. Because asset allocation is largely driven by participant and employer choices across a limited set of fund options, changes in concentration often reflect coordinated shifts toward particular asset classes, especially during periods of market uncertainty. As a result, the concentration–performance relationship is context-dependent and must be assessed empirically.

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