Estimating Discount for Lack of Liquidity Using the Size Premia Spread Approach

A Short Actuarial Valuation

Roi Polanitzer, FILAVFA, FAILA, FILARM, FRM

Size Premia as a Liquidity Signal

Can the difference between two published size premia provide a practical estimate of the discount for lack of liquidity? The Size Premia Spread Approach treats that difference as a proxy for an embedded liquidity component.

The starting point is the long-standing question raised by Banz (1981) [1]: is the size effect caused by size itself, or is size a proxy for other factors correlated with size? Subsequent research links required returns to liquidity. Amihud and Mendelson (1986) [2] show that expected returns increase with the bid–ask spread, while later work argues that liquidity is economically important even after controlling for traditional investment styles. [3,4]

Polanitzer (2018) [6] proposed an earlier size-premium-based DLOL technique using a uniform probability allocation. Polanitzer (2026) [7] then proposed the Size Premia Spread Approach used here, replacing the uniform allocation with an observed spread between two published size premia. The valuation formulation is

$$\boxed{DLOL_{\text{Size Premia Spread}} = SP_{10Z} - SP_{10}.}$$

The method does not assert that the entire size premium is a liquidity premium. It uses the spread between the smallest subdecile premium and the tenth-decile premium as a practical proxy for the liquidity component embedded in size-related required returns. [6,7]

Approach Assumptions

The illustration adopts six assumptions:

1. The subject asset is marketable, but its liquidity is lower than that of a sufficiently liquid reference asset.
2. SP_{10Z} and SP_{10} are drawn from the same size-premium dataset, valuation period and methodology.
3. The difference between the two premia is used as a proxy for an embedded liquidity component, not as proof that size and liquidity are identical.
4. No separate constant-spread, exogenous-spread or endogenous price-impact DLOL is added unless double counting has been addressed.
5. The size-premium data are derived from publicly traded companies; the adjustment is therefore a liquidity discount, not a discount for lack of marketability.
6. The approach is an empirical valuation proxy rather than an arbitrage-pricing identity or a structural asset-pricing theorem.

The empirical motivation is that size and liquidity are strongly related, while the two effects are not necessarily the same. Duff & Phelps' valuation literature notes that size premia used in an "as if publicly traded" valuation can contain a liquidity-related effect. [5] Building on the 2018 size-premium/liquidity framework [6], the 2026 approach [7] asks whether part of that embedded effect can be extracted directly from the spread between size-premium categories.

The Size Premia Spread Formula

Let SP_{10Z} denote the published size premium for subdecile 10Z and let SP_{10} denote the size premium for the tenth decile. The proposed DLOL is

$$DLOL_{\text{Size Premia Spread}} = SP_{10Z} - SP_{10}.$$

If the liquid reference value of the position is V, the dollar liquidity discount is

$$LD = V \times DLOL_{\text{Size Premia Spread}},$$

and the liquidity-adjusted value is

$$V_{\text{adj}} = V(1 - DLOL_{\text{Size Premia Spread}}).$$

Definitions

V is the value before the liquidity adjustment. LD is the dollar discount attributed to lack of liquidity.

SP_{10Z} is the size premium for the smallest subdecile within decile 10. SP_{10} is the size premium for decile 10 as a whole. Both are entered as decimal annual return premia.

The difference is interpreted as a *proxy* for DLOL. The formula does not claim that every basis point of the size-premia spread is caused exclusively by liquidity. Other characteristics correlated with size may also contribute to the observed return differential. [1,6,7]

Numerical Illustration

Consider the Kroll size-premium inputs reported in Polanitzer (2026) [7]. The premium for subdecile 10Z is 10.38%, while the premium for decile 10 is 4.37%.

The Size Premia Spread is therefore

$$10.38\% - 4.37\% = 6.01\%.$$

Hence,

$$\boxed{DLOL_{\text{Size Premia Spread}} = 6.01\%.}$$

For a liquid reference value of 100, the implied dollar liquidity discount is

$$LD = 100 \times 0.0601 = 6.01,$$

and the liquidity-adjusted value is

$$V_{\text{adj}} = 100(1 - 0.0601) = 93.99.$$

The same percentage discount can be applied to another reference value, provided the analyst concludes that the Size Premia Spread Approach is appropriate for the asset and that the adjustment does not duplicate another liquidity allowance.

Interpreting the Size Premia Spread

The economic interpretation is narrower than saying "the size premium is liquidity." Banz [1] left open the possibility that size proxies for other correlated factors. Amihud and Mendelson [2] established a direct link between bid–ask spreads and required returns. Abbott and Pratt [3] and Ibbotson et al. [4] provide further evidence that liquidity is economically important and distinct from size alone.

The chronological development matters. Polanitzer (2018) [6] first proposed a size-premium-based DLOL technique using the Uniform Probability Space Approach. If the unknown liquidity share of a single size premium is $\lambda \sim U(0,1)$, then

$$E(DLOL) = 0.5\, SP.$$

Using $SP = 10.38\%$ would give 5.19%.

Polanitzer (2026) [7] later proposed the Size Premia Spread Approach. Rather than allocating an assumed share of one premium, it uses the observed difference between two published size premia:

$$DLOL_{\text{Size Premia Spread}} = SP_{10Z} - SP_{10}.$$

With the current illustration,

$$10.38\% - 4.37\% = 6.01\%.$$

Thus, the 2026 method follows the 2018 approach historically but is a distinct estimator. It uses $SP_{10Z} - SP_{10}$, not SP_{10Z} itself, and does not claim that the entire size premium is compensation for illiquidity.

Python Implementation

The following implementation reports the Size Premia Spread DLOL, the dollar liquidity discount and the adjusted value. Size premia are entered as decimals.

```
def DLOLSizePremiaSpread(value, sp_10z, sp_10):
    if value <= 0:
        raise ValueError("value must be positive")
    if sp_10z < sp_10:
        raise ValueError("SP_10Z must be >= SP_10")

    dlol = sp_10z - sp_10
    discount = value * dlol
    adjusted_value = value - discount

    return dlol, discount, adjusted_value

dlol, discount, adjusted = DLOLSizePremiaSpread(
    100, 0.1038, 0.0437)

print(f"DLOL: 100*dlol:.2f%")
print(f"Liquidity discount: discount:.2f")
print(f"Adjusted value: adjusted:.2f")
```

The output is a DLOL of 6.01%, a liquidity discount of 6.01 on a 100 reference value, and an adjusted value of 93.99. The code implements only the proposed spread formula; it does not estimate the published size premia themselves.

Evidence and Limitations

Two illustrations reported by Polanitzer [7] show how the spread is obtained from published size-premium data:

Data point	SP_{10Z}	SP_{10}	Spread
Ibbotson data (2010)	12.06%	6.36%	5.70%
Kroll data	10.38%	4.37%	6.01%

The 2026 article also reports that, over 2009–2025, the difference between the 10Z and decile-10 premia averaged 6.01% with a standard deviation of 0.22%. [7] That historical stability is supportive evidence, but it does not establish causation.

The principal limitation is identification: size premia may reflect risks other than liquidity, so the spread cannot be treated as a pure econometric decomposition of a liquidity premium. The method should therefore be presented as a practical proxy and corroborated, where possible, with direct evidence on turnover, bid–ask spreads, market depth and position size.

The approach also requires matching the size-premium dataset to the valuation date and avoiding double counting if another liquidity adjustment is already embedded elsewhere in the valuation. It is intended for DLOL of marketable assets; it should not be relabeled as DLOM for a nonmarketable interest.

References

[1] Banz, R. W. (1981). "The Relationship Between Return and Market Value of Common Stocks." *Journal of Financial Economics*, 9(1), 3–18.

[2] Amihud, Y., & Mendelson, H. (1986). "Asset Pricing and the Bid–Ask Spread." *Journal of Financial Economics*, 17(2), 223–249.

[3] Abbott, A., & Pratt, S. P. (2012). "Does Liquidity Masquerade as Size?" Working paper.

[4] Ibbotson, R. G., Chen, Z., Kim, D. Y.-J., & Hu, W. Y. (2013). "Liquidity as an Investment Style." *Financial Analysts Journal*, 69(3), 30–44.

[5] Duff & Phelps. (2015). *2015 Valuation Handbook: Guide to Cost of Capital*. John Wiley & Sons.

[6] Polanitzer, R. (2018). "The Relationship Between the Size Premium and Liquidity: A New Technique for Estimating the Discount for Lack of Liquidity (DLOL)." Intrinsic Value, October 2018. (In Hebrew).

[7] Polanitzer, R. (2026). "It's Not a DLOM, It's a DLOL!" *The Valuator*, August 3, 2026. (In Hebrew).

Source and implementation note

The Size Premia Spread Approach presented here is the 2026 formulation in Polanitzer [7]. It builds on, but is distinct from, Polanitzer's 2018 Uniform Probability Space Approach [6]. The 2026 method uses the difference between the 10Z and decile-10 size premia as a practical DLOL proxy rather than assigning a uniform probability to the unknown liquidity share of a single size premium. The broader empirical motivation is drawn from the size-effect and liquidity literature [1–5].

The numerical illustration uses the Kroll size-premium inputs reported in [7]: 10.38% for 10Z and 4.37% for decile 10. The historical figures on page 8 are also those reported in [7]. No claim is made that the spread is a pure causal measure of liquidity.

Computerized calculations retain full precision; displayed figures may show immaterial rounding differences.