

Art Is Twice as Risky as Your Report Says

Measuring, sizing and reporting a fine art sleeve inside a family office portfolio. What number to use, how much the portfolio can carry, and what the report understates if the art is left out.

9.8%

Art volatility as reported by the published index, and as it reaches a family office risk report

19.6%

Volatility once corrected for smoothing. An independent unsmoothed series gives 21.3%

57.5%

True illiquid share of household wealth where the report says 41.0%, at a 28% art allocation

August 2026 · Portfolio figures computed live from 3HC capital markets assumptions, 2026 vintage, 58 asset classes, full correlation matrix. Art market figures are third party and were verified against the primary source document in each case.

Executive summary

A family office consolidating a fine art sleeve into its risk report at the valuation it holds on file will produce a number that is wrong in a predictable direction. The error is not small, it is not a matter of opinion, and it moves the reported risk of the household the wrong way.

- 1 Adding a 28% art sleeve at its reported mark reduced measured household volatility from 11.06% to 9.29%.** A position worth more than a quarter of the family's wealth, with no exchange, no daily price and no reliable exit, made the measured risk fall by 1.77 percentage points.
- 2 The effect is unavoidable.** Across 27 configurations of portfolio shape, art weight and correlation, the reported mark reduced measured volatility in 27 of 27. No counter-case was found.
- 3 The reported volatility is roughly half the real one, and two independent methods agree.** Correcting the published 9.8% for appraisal smoothing gives 19.6%. An independently constructed series that was never smoothed gives 21.3%. The two land within 1.7 percentage points.
- 4 The error propagates into allocation.** A long-only maximum-Sharpe optimiser wants 22.4% of household wealth in art on the reported input and 0.0% on the corrected one, with the same expected return and the same correlation.
- 5 At the allocation families actually hold, art consumes more than a third of portfolio risk while the report shows less than a fifth.** At 28% of wealth the sleeve is 37.4% of total risk on corrected inputs against 17.6% as reported.
- 6 Excluding the art does not solve it.** A report stating 41.0% illiquid holdings understates the household's true illiquid share, which is 57.5% of wealth once the art is counted. This result requires no estimate of art's return, volatility or correlation.

What this report does not contain. It takes no view on whether a family should own art, and it is not a valuation of any work, artist or collection. It names no gallery, artist, auction house or company. It contains no figure drawn from any confidential document. It is not an art market index and does not attempt to forecast art prices. 3HC holds no proprietary art market data and every art figure here is external and attributed.

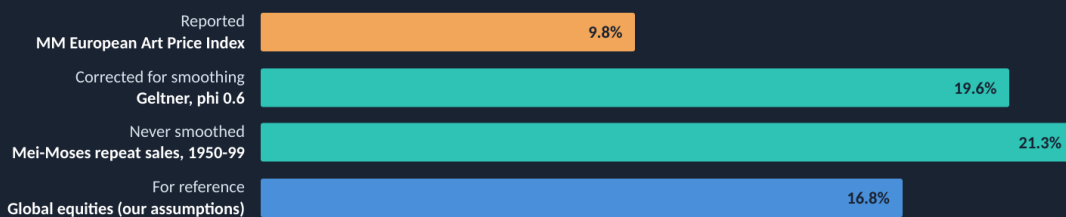
1. Why the reported number is wrong

Most art is sold privately through dealers who do not register prices in a common database, so auction records are effectively the only data available. They are not a sample of the art market; they are a sample of the art that came back to market, and works come back when they have appreciated. Mei and Moses, whose 1875 to 2000 repeat-sales dataset remains the reference work in the field, state that the resulting mean return should be regarded as an upper bound on what investors actually earned.

Layered on top of that selection effect is a measurement effect. An appraisal-based or dealer-set mark is anchored on the previous mark, which suppresses both measured volatility and measured correlation. The finance literature has corrected for this in commercial property since Fisher, Geltner and Webb published the procedure in 1993. No art-specific parameter has been published, so we import that literature's range and disclose the sensitivity.

The reported volatility is roughly half the real one, and two independent methods agree

Annual volatility of art, by how it is measured



Two unrelated routes to the true figure. One imports an unsmoothing parameter from commercial property, the other measures auction repeat sales directly across half a century. They land within 1.7 percentage points of each other, and both are roughly double the reported figure.

Sources: MM European Art Price & Sentiment Indices (CKGSB & SDA Bocconi, Oct 2025); Mei & Moses (2002), American Economic Review 92; Fisher, Geltner & Webb (1993). Equity volatility: 3HC capital markets assumptions 2026.

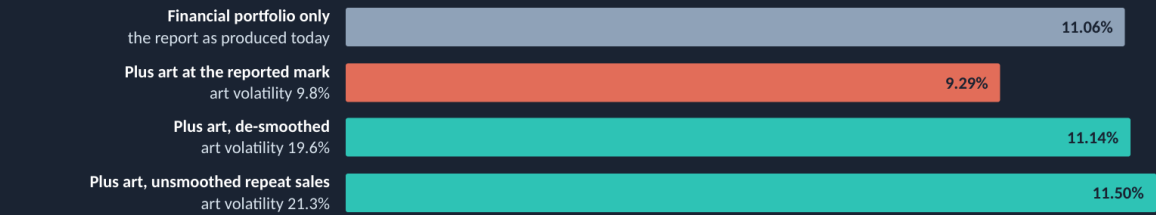
2. What it costs the portfolio

A representative eleven-sleeve family office portfolio carries an expected return of 6.95% and a volatility of 11.06% on our own capital markets assumptions. Consolidating an art sleeve at 28% of total wealth, the average share held by individuals above fifty million dollars of assets, produces the following.

TREATMENT	ART VOLATILITY	TOTAL WEALTH VOLATILITY	ART SHARE OF TOTAL RISK
As reported	9.8%	9.29%	17.6%
De-smoothed, phi 0.5	17.0%	10.61%	31.9%
De-smoothed, phi 0.6	19.6%	11.14%	36.6%
De-smoothed, phi 0.7	23.3%	11.94%	42.7%
Unsmoothed repeat sales	21.3%	11.50%	39.5%

Add a 28% art sleeve at its reported mark and measured household risk falls

Total wealth volatility, representative family office portfolio



A position worth more than a quarter of the family's wealth, with no exchange, no daily price and no reliable exit, reduces measured risk by 1.77 percentage points. That is the tell. Tested across 27 configurations of portfolio shape, art weight and correlation, the reported mark reduced measured volatility in 27 of 27.

Portfolio figures computed live from 3HC capital markets assumptions 2026 (58 asset classes, full correlation matrix). Art sleeve 28% of wealth, the UHNW average per Art Basel & UBS 2025.

3. The input set we recommend

INPUT	AS PUBLISHED	RECOMMENDED	BASIS
Volatility	9.8%	19.6%	Geltner correction, phi 0.6; corroborated at 21.3% unsmoothed
Correlation to equities	0.35	0.44	rho divided by the square root of (1 minus phi squared)
Expected return	up to 8% quoted	4% nominal	Regional indices 2.3% Europe to 7.7% Asia, Africa and Oceania

Four percent is generous rather than conservative. Europe dominates the underlying sample, at 5,578 of 7,914 artists covered, and returned 2.3%. A sample-weighted blend sits closer to that figure than to the midpoint. The most recent ten-year annualised readings are negative, at minus 0.9% in 2023 and minus 1.4% in 2024, the weakest since 1954.

The same reversal shows in the risk-adjusted return of the sleeve on its own, against a 3.10% risk-free rate and a 7.7% nominal art return. As reported, art shows a Sharpe ratio of 0.469. Corrected for smoothing it is 0.235, and on the unsmoothed series 0.216. Global equities, on our own assumptions, sit at 0.238 with a volatility of 16.8%. **On the reported number art looks roughly twice as good as owning the world's stock markets. Corrected, it is indistinguishable from them,** and unlike global equities it cannot be sold on Tuesday, costs money to store and insure, and carries the risk of physical loss.

Correct the volatility and the model's appetite for art falls to nothing

Allocation to art chosen by a long-only maximum-Sharpe optimiser, art return held at 5.0% nominal



Same expected return. Same correlation. Same portfolio. The only difference is whether the volatility was corrected before it entered the model. Mean-variance optimisation is the wrong tool for sizing an illiquid, indivisible, emotionally held asset and is not proposed as one here. It is used as a diagnostic: an error in an input does not stay in that input, it propagates into an allocation.

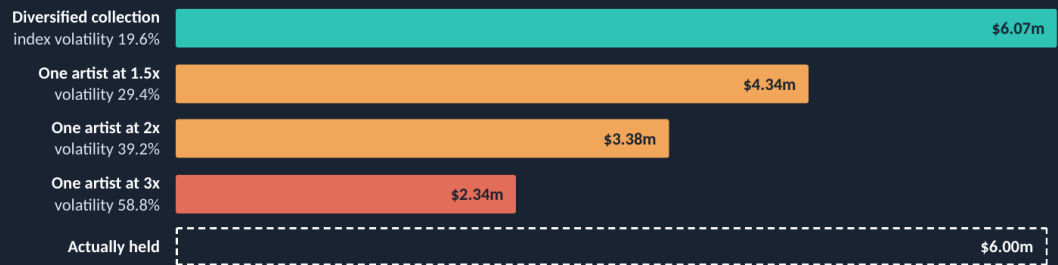
Optimiser chooses between the family's financial portfolio and the art sleeve, long only, risk-free rate 3.10% (3HC capital markets assumptions 2026).

4. Capacity, and the single-name question

Express the limit as a share of the risk budget rather than a share of wealth. At a 25% risk budget the sleeve caps at 20.2% of wealth. But every published art index is a diversified basket, so the index volatility is a floor for a concentrated position and never an estimate of it.

The same \$6 million of art is either prudently sized or nearly three times too large

Capacity at a 25% risk budget, household with \$30m of wealth holding \$6m of art



Nothing about the valuation decides which of these applies. What decides it is whether the collection is one name or many, and that is a question no dealer's performance summary will ever put in front of you. Single-name multiples are illustrative: no measured multiple has been published, so the index figure is a floor for a concentrated position, never an estimate. Capacity solved for the art weight at which the sleeve contributes 25% of total portfolio risk, using corrected inputs.

A diversified collection is governed by the risk budget. A single name with no independent secondary market is governed by survivability, which binds far tighter: the question is not what share of the risk budget the position consumes but what share of the family's wealth can be written off without changing anything that matters.

5. The reporting convention

- 1 State the provenance of the mark, every time.** Independent appraisal, dealer quote, historic cost or insurance value. If the party that supplied the number benefits from it being high, say so on the same page.
- 2 Show raw and corrected side by side.** The mark as received, then the de-smoothed volatility used for risk budgeting, each labelled.
- 3 Report the sleeve's share of total portfolio risk, not just its share of wealth.** Wealth share understates it by roughly two times at every level families actually hold.
- 4 State the total illiquid share of household wealth, including the art, on the front page.** It is the one figure no assumption can argue away.

Leave the art out and the report understates the family's illiquidity by up to 16 points

Illiquid holdings as a share of total household wealth



This is the one result in the paper that requires no estimate of art's return, volatility or correlation. It follows from the weights alone, which is why every objection to the rest of the analysis leaves it standing. Excluding art from the risk model is a legitimate choice. Excluding it from the illiquidity line is not. Illiquid sleeves: private equity, venture capital, core real estate, direct lending, diversified hedge funds. Representative family office allocation.

Verification statement. Every portfolio figure in this report was computed live from *3HC capital markets assumptions, 2026 vintage*, across 58 asset classes with a full correlation matrix; all 55 correlation pairs in the modelled portfolio resolved with no gaps and no defaults, and every figure was independently re-derived from source rather than read back from model output. Every art market figure was checked against the primary source document rather than secondary commentary: Art Basel and UBS (Arts Economics) for market size and collector allocation; Mei and Moses, *American Economic Review* 92 (2002) for the unsmoothed repeat-sales series; MM European Art Price and Sentiment Indices (CKGSB and SDA Bocconi, October 2025) and MM Art Indices Spring 2025 for the current regional series; Fisher, Geltner and Webb (1993) for the unsmoothing procedure. Where a figure could not be located in a primary source, it has been excluded from the recommendation and said so. The representative portfolio weights are a stated construction, not a client book.

This report is a measurement and reporting discipline. It is not a certified art market index, it is not investment advice, and it is not a recommendation to buy, hold or sell any asset. Past performance is not a guide to future returns.