



Company X Financial Product Exercise

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Assumptions



Base Assumptions		
	Initial Home Value (\$)	\$ 1,000,000.00
	Investment Size (\$)	\$ 100,000.00
	IRR Cap (%)	20%
	Up Share Multiplier (HPA >= 0%)	1.7
	Down Share Multiplier (HPA < 0%)	1.4
	Capital Partner Portfolio Size (\$)	\$ 200,000,000.00
	Select HPA (annual)	3.0%
	Select Exit Year	10
	Max Term (Years)	10
	Select HELOC Rate (flat annual, non-adjustable)	9.0%
	HELOC Payment Structure	Annual interest only until balloon payment at exit year
Portfolio Simulation		
	HPA Mean	3.0%
	HPA Standard Deviation	5.4%
	Minimum Exit Year	1
Proposed Modification Assumptions		
	No IRR Cap	
	Up Share Multiplier (HPA >= 0%)	1.65
	Down Share Multiplier (HPA < 0%)	1.35

- The base case, downside, and upside scenarios were modeled using the base assumptions above with the HPA value adjusted for each. The HELOC was structured so that the homeowner paid 9% annual interest on the principal each year, with a balloon payment due in the final year.
- The portfolio simulation uses assumptions for the mean HPA (3.0%) and standard deviation (5.4%*). The simulation also assumes a minimum exit year of 1, as homeowners can settle their investment at any point during the 10-year term limit.
- The portfolio simulation is designed to model the performance of the capital partner's \$200 million portfolio. Each row in the simulation represents an individual HEI, with an initial home value of \$1 million and initial investment of \$100,000. Each HEI is assigned a randomized HPA calculated using the normal distribution of HPA values given the assumed mean (3%) and standard deviation (5.4%). Each HEI also received a randomized exit year between 1 and 10, inclusive.

*Source: Spreads and Volatility in House Returns - Journal of Risk and Financial Management (2022)

HPA Scenarios (Single-Investment)



Downside Case (HPA = -1%)			Base Case (HPA = 3%)			Upside Case (HPA = 7%)	
Exit Year	10		Exit Year	10		Exit Year	10
Exit Home Value (\$)	\$ 904,382.08		Exit Home Value (\$)	\$ 1,343,916.38		Exit Home Value (\$)	\$ 1,967,151.36
Total HPA	-9.6%		Total HPA	34.4%		Total HPA	96.7%
Company X Share of Home Value	14.0%		Company X Share of Home Value	17.0%		Company X Share of Home Value	17.0%
Uncapped Company X Payout (\$)	\$ 126,613.49		Uncapped Company X Payout (\$)	\$ 228,465.78		Uncapped Company X Payout (\$)	\$ 334,415.73
IRR-Capped Maximum Payout (\$)	\$ 619,173.64		IRR-Capped Maximum Payout (\$)	\$ 619,173.64		IRR-Capped Maximum Payout (\$)	\$ 619,173.64
Final Company X Payout (\$)	\$ 126,613.49		Final Company X Payout (\$)	\$ 228,465.78		Final Company X Payout (\$)	\$ 334,415.73
IRR (Capital Partner)	2.4%		IRR (Capital Partner)	8.6%		IRR (Capital Partner)	12.8%
MoM (Capital Partner)	1.27		MoM (Capital Partner)	2.28		MoM (Capital Partner)	3.34
Homeowner Cost of Capital - HEI	2.4%		Homeowner Cost of Capital - HEI	8.6%		Homeowner Cost of Capital - HEI	12.8%

- A HELOC loan at 9% interest offers a comparable rate to the Base Case scenario for homeowners, which assumes an 8.6% Homeowner Cost of Capital. When compared to the HELOC loan, the HEI investment will offer a favorable return for the homeowner over a 10-year term if HPA is less than or equal to 3%.
- The HEI is enticing to homeowners who are cash-constrained but own significant home equity. Potential borrowers might have irregular income, a sub-optimal credit score, or they might have recently been laid off. It is appealing to individuals who either do not wish to, or are unable to, take on additional monthly payments, as the product requires no payments until the end of the term or an earlier exit by the homeowner.
- A potential drawback of the HEI product from the homeowner's perspective is the immediate equity they give up in their home due to Company X's share multiplier. If a homeowner needs to move for work or relocate early in their term with Company X, the Cost of Capital will be high. It reaches its peak in year one and gradually decreases over time, potentially far exceeding the Cost of Capital associated with alternative financing such as a HELOC.
- From the capital partner's perspective, IRR and MoM grow with HPA. Only the upside case (HPA = 7%) offered an IRR that outpaced the S&P 500 over the last 30 years. However, it is important to consider that these scenarios all operated under the assumption that terms lasted 10 years. The portfolio simulation also accounts for returns from HEIs closed before the 10-year term, which can increase returns for the capital partner.

Portfolio Simulation



Base Assumptions Portfolio Cash Flow				Modified Assumptions Portfolio Cash Flow			Base Assumptions Exit Metrics	
Year	Total Cash Flow	Date		Year	Total Cash Flow	Date		
0	(200,000,000.00)	10/1/2025		0	(200,000,000.00)	10/1/2025	Mean HPA	3.0%
1	23,160,000.00	10/1/2026		1	31,165,783.92	10/1/2026	HPA Standard Deviation	5.4%
2	26,863,184.07	10/1/2027		2	32,626,359.83	10/1/2027	Total Portfolio HPA	25.3%
3	25,093,950.36	10/1/2028		3	27,438,274.53	10/1/2028	IRR (Capital Partner)	12.2%
4	36,626,625.32	10/1/2029		4	37,901,578.02	10/1/2029	MoM (Capital Partner)	1.94
5	39,831,886.84	10/1/2030		5	39,874,911.15	10/1/2030		
6	46,150,327.30	10/1/2031		6	45,851,959.09	10/1/2031	Modified Assumptions Exit Metrics	
7	41,516,528.53	10/1/2032		7	40,503,902.32	10/1/2032	Mean HPA	3.0%
8	45,115,756.32	10/1/2033		8	43,997,337.33	10/1/2033	Total Portfolio HPA	25.3%
9	53,202,091.65	10/1/2034		9	52,011,805.96	10/1/2034	IRR (Capital Partner)	13.5%
10	50,039,854.99	10/1/2035		10	48,805,606.67	10/1/2035	MoM (Capital Partner)	2.00

- The simulation was run using both the baseline Company X product structure and proposed product modifications, which included: no IRR cap, a 1.65 up-share multiplier, and a 1.35 down-share multiplier. The value proposition for the homeowner is retaining more equity in their home than under the typical HEI structure, regardless of whether their home appreciates or depreciates. However, the homeowner risks potential downside if their HPA increases significantly or if they choose to exit early in the investment term, as Company X is no longer bound by the 20% IRR cap. This recommendation is based on the premise that the revised structure should not be offered universally to all HEI applicants. Instead, it should be offered selectively to those who meet specific criteria, such as being likely to exit early or living in a market expected to appreciate more quickly than the national average.
- Under a mean HPA of 3%, the simulation using the modified assumptions produces an IRR and MoM that only slightly exceed those of the base case. As HPA increases, the gap between the two widens, with the modified assumptions delivering progressively higher returns.
- From a capital partner's perspective, HEIs can offer satisfactory returns if market conditions are favorable. The structure of the investment also protects against downside due to the 1.4% down share multiplier. A drawback of the investment is timing uncertainty. A homeowner can choose to exit the investment at any point during the 10-year term. Additionally, investor returns are closely linked to HPA, making it essential to accurately forecast residential real estate values in target markets.