

Climate + Data:

How financial institutions use climate metrics in downstream risk decision-making

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The Climate Risk Maturity Index



Proprietary & Confidential

Financial services companies typically focus on economic impact with less stress on where the data comes from





Jupiter has worked with financial services companies to understand the end-to-end climate risk impact





Jupiter generates a climate-adjusted valuation to account for future climate impacts

• Jupiter assumes that the current value of today's assets do not account for climate change

• As a result, a climate-adjusted value can be calculated by taking future climate projections and factoring them into current value



Climate Impacts (for a set # of years)



Different asset types require different approaches





Residential mortgages analysis uses cost of ownership to determine the change in value

Cost of Ownership is impacted by physical climate as shown below:



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Technical insurance premium is used for cost of insurance

Year	Current View (No Climate Change)	Jupiter View (Climate Change)		
2020	34,544	34,544		
2021	34,544	35,155		
2022	34,544	35,672		
2023	34,544	36,650		
2024	34,544	37,592		
2025	34,544	38,629		
2046	34,544	61,497		
2047	34,544	62,125		
2048	34,544	64,032		
2049	34,544	64,064		
2050	34,544	64,301		



Change in Technial Premium (TiP)

TiP (No Climate Change)
TiP (Climate Change)





Climate-adjusted loan to value ratios can be used for credit risk modeling on specific assets

Location	Current Value (\$)	Current LTV	Climate Value Adjustment	Climate-Adjusted LTV	
1	841,285	0.80	-27,868	0.83	
2	977,142	0.84	-20,920	0.86	
3	459,298	0.75	-15,728	0.77	
4	320,679	0.66	-12,926	0.68	
10987	456,851	0.67	+10,611	0.66	
10988	932,830	0.60	+35,061	0.58	



Data can be aggregated to account to build potential underwriting rules

Floo	d+Wind			Val	ue Decrease	by Year and	Scenario		
ZIP	US state	Scenario	2020	2025	2030	2035	2040	2045	2050
	33573 FL	SSP1-2.6 (1.8°C)	0%	-1%	-2%	-2%	-3%	-3%	-4%
	33573 FL	SSP2-4.5 (2.7°C)	0%	-1%	-2%	-3%	-3%	-3%	-4%
	33573 FL	SSP5-8.5 (4.4°C)	0%	-1%	-2%	-2%	-3%	-5%	-6%
	33578 FL	SSP1-2.6 (1.8°C)	0%	-2%	-3%	-4%	-4%	-4%	-4%
	33578 FL	SSP2-4.5 (2.7°C)	0%	0%	-1%	0%	0%	-1%	-2%
	33578 FL	SSP5-8.5 (4.4°C)	0%	-1%	-1%	-2%	-2%	-3%	-4%
	94304 CA	SSP1-2.6 (1.8°C)	0%	-1%	0%	-4%	-5%	-3%	-4%
	94304 CA	SSP2-4.5 (2.7°C)	0%	-7%	-10%	-12%	-13%	-15%	-17%
	94304 CA	SSP5-8.5 (4.4°C)	0%	0%	-2%	-1%	-5%	-7%	-9%
	94502 CA	SSP1-2.6 (1.8°C)	0%	-2%	-2%	-2%	-4%	-5%	-5%
	94502 CA	SSP2-4.5 (2.7°C)	0%	-7%	-14%	-15%	-17%	-19%	-21%
	94502 CA	SSP5-8.5 (4.4°C)	0%	0%	-1%	-2%	-2%	-3%	-3%
	95843 CA	SSP1-2.6 (1.8°C)	0%	-2%	-3%	-3%	-3%	-3%	-7%
	95843 CA	SSP2-4.5 (2.7°C)	0%	-8%	-18%	-18%	-20%	-20%	-24%
	95843 CA	SSP5-8.5 (4.4°C)	0%	-3%	-5%	-7%	-12%	-15%	-15%
	14203 NY	SSP1-2.6 (1.8°C)	0%	-4%	-9%	-9%	-10%	-15%	-20%
	14203 NY	SSP2-4.5 (2.7°C)	0%	-3%	-4%	-4%	-4%	-4%	-4%
	14203 NY	SSP5-8.5 (4.4°C)	0%	-1%	-1%	-2%	-3%	-4%	-5%
	12210 NY	SSP1-2.6 (1.8°C)	0%	-1%	-1%	-1%	-1%	-1%	-1%
	12210 NY	SSP2-4.5 (2.7°C)	0%	-3%	-5%	-8%	-8%	-10%	-11%
	12210 NY	SSP5-8.5 (4.4°C)	0%	-4%	-9%	-14%	-19%	-26%	-32%



Example: Jupiter's partnership with Bain on a mortgage analysis in Italy



mortgage portfolio of about 7% - 10% due to increase in cost of risk*



Financial services companies are using this information today for a number of use cases

- Climate stress testing
- Credit risk modeling
- Portfolio underwriting strategy
- Regulatory response
- Public disclosures (qualitative only)





Thank You!