Supplementary Information For "Economics of Delaying the Inevitable at the Coast: The Coastal Home Ownership Model (C-HOM)"

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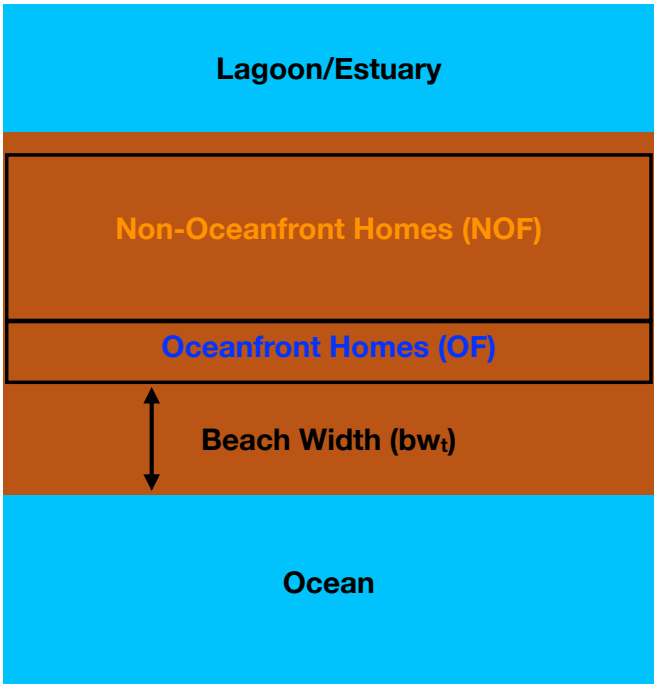
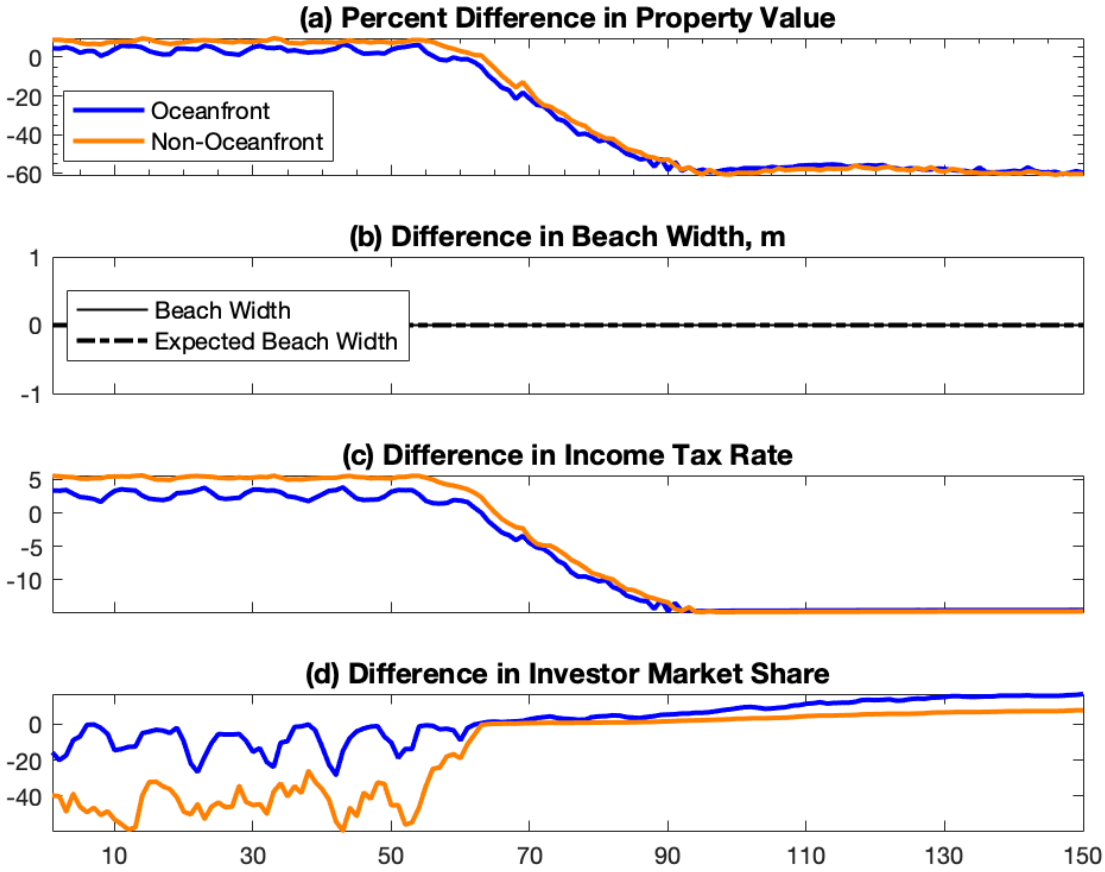
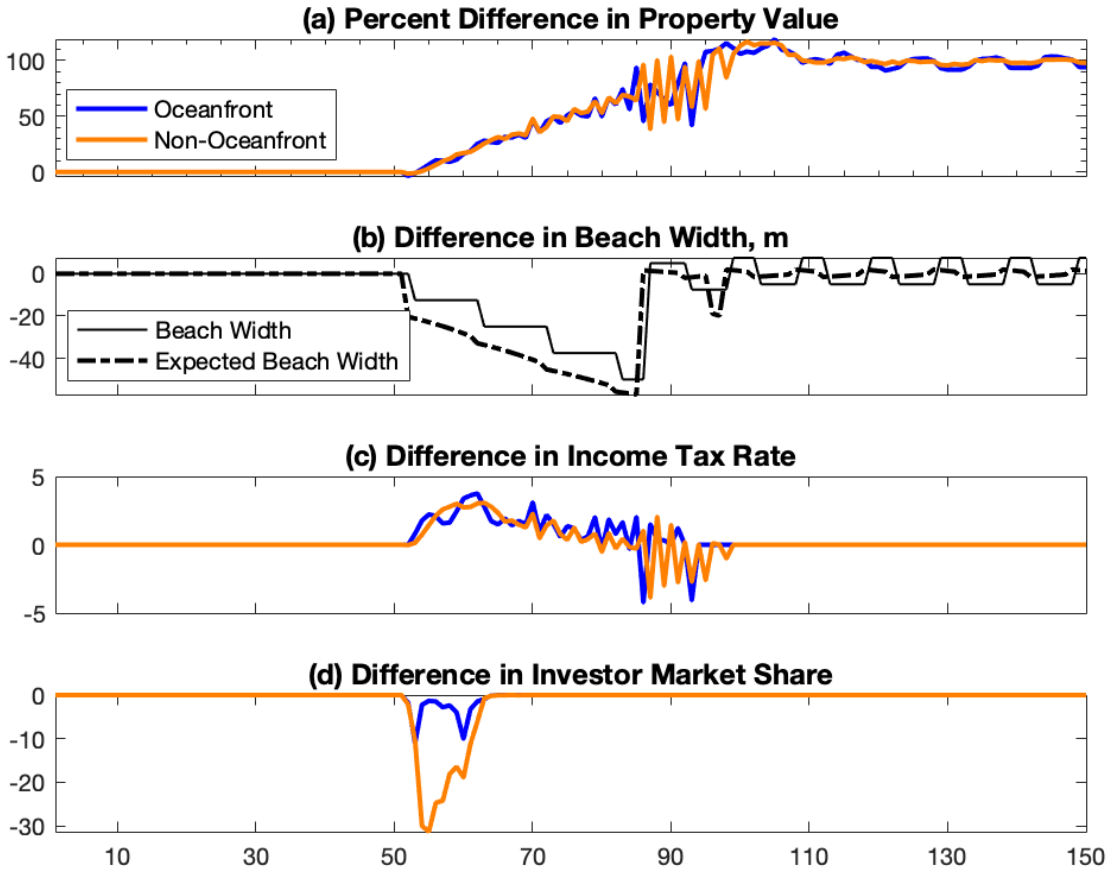
1 Figures and Table



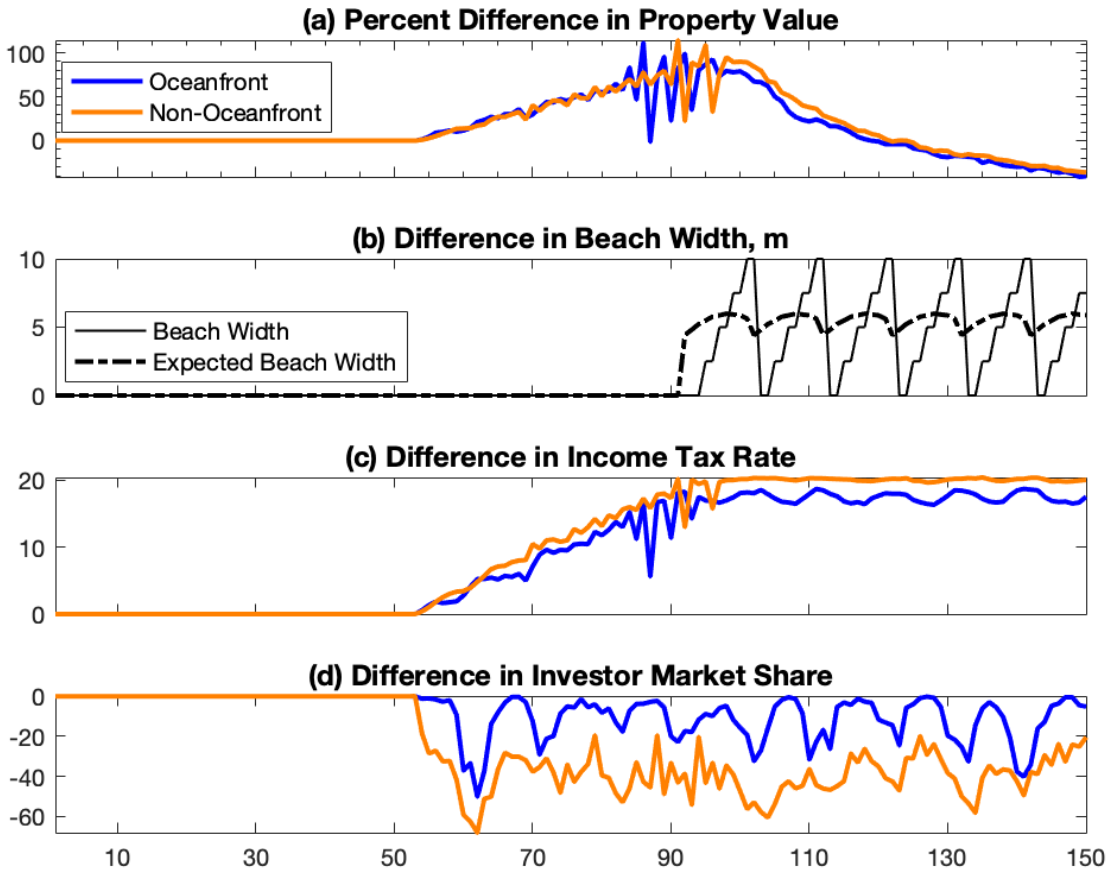
Supplemental Figure 1. Model Domain Schematic. Plan view orientation of oceanfront and non-oceanfront property markets with respect to ocean and lagoon/estuary. Beach width is indicated as the horizontal distance that spans the zone between the ocean and oceanfront homes.



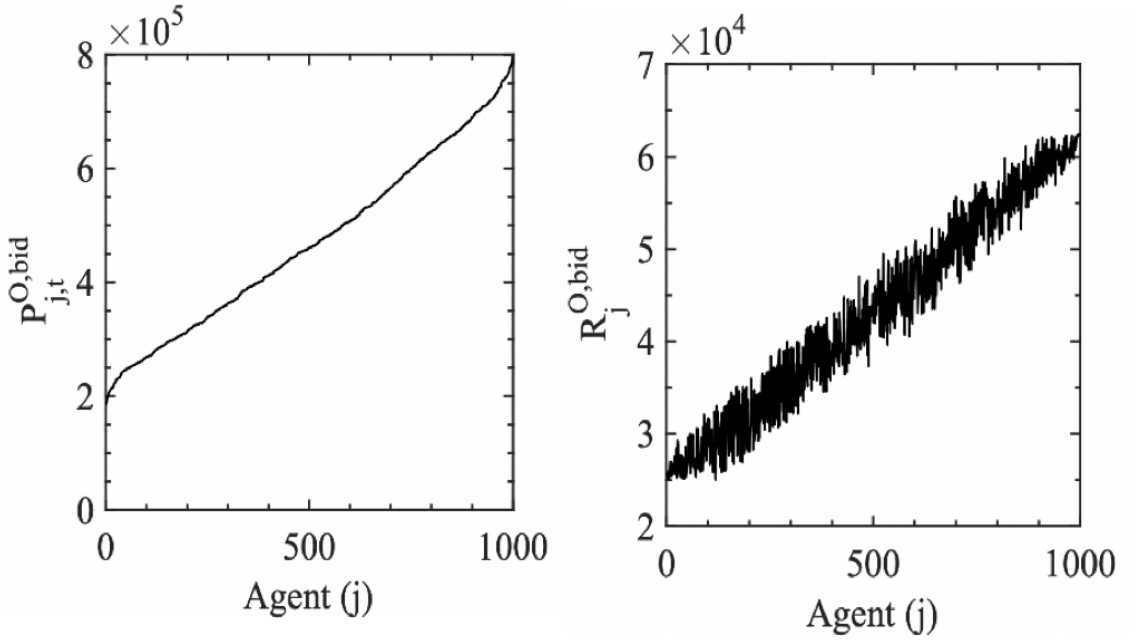
Supplemental Figure 2. No Agent Flux. Model results for scenario where agent flux is turned off. Results displayed as differences compared to baseline scenario.



Supplemental Figure 3. Simultaneous Increase in Outside Markets and Reduction in Nourishment Subsidy. Model results for scenario where outside property markets increase in value and the nourishment subsidy is reduced. Results displayed as differences compared to baseline scenario.



Supplemental Figure 4. Comparison of the Offsetting Effects of SLR and Appreciation in Outside Markets to No SLR and Stable Outside Markets. Model results compare two scenarios that each differ from the baseline scenario. The first is with outside markets that increase along with SLR, which allows for the possibility that market appreciation compensates for SLR. The second is with stable outside markets and but no SLR. Results displayed are differences between the two scenarios.



Supplemental Figure 5. Example of price and rent bids for prospective owners.

Table 1. Model parameters

Parameter	Definition	Value	Note
δ	Discount Rate	0.06	
τ^p	Property tax rate	0.01	Base rate
τ^{inc}	Income tax rate	[0.10 0.37]	Marginal
γ	Depreciation rate	0.01	w/o SLR or storms
HV	Housing services	0	Incl. in shared WTP
m	Management fee	\$2000 year^{-1}	
$\overline{r^p}$	Real estate risk premium	0.005	Background risk across markets
r^{OF}	Fixed OF add. risk	0.02	
a_2	SL risk	0.70 m^{-1}	
h^{elev}	Property elevation	1m	Initial (no SLR)
h^o	Nourished dune height	4m	
a_1	Storm return scaling	0.10 years	
λ_t	Storm return time	20 years	
π_j	Agent risk multiplier	[0.5 1.5]	
WTP_j^{base}	Base WTP	[23500 40000]\$	
β^{OF}	Hedonic width exponent OF	0.2	
β^{NOF}	Hedonic width exponent NOF	0.1	
α_j	Hedonic scaling	[9000 12000] \$ m$^{-\beta}$	
t_{bw}	Beach width averaging time	30 years	
P_e^{OF}	External market price OF	\$500,000	
P_e^{NOF}	External market price NOF	\$400,000	
h	Bubble feedback coefficient	1x10^{-6}\$$^{-1}$	
ρ	Nourishment tax ratio	3	
ψ_{bw}	Yearly erosion rate	1.25 m	
ψ_{slr}	Yearly rate of sea level rise	.01 m	