Perceived Income Risks

Tao Wang
Johns Hopkins University

March 22, 2020

Outline

1. Motivation
2. Stylized facts
   - Cross-sectional pattern of subjective income risks
   - Perceived risks and economic decisions
   - Correlation with stock market returns
3. Model (work in progress)
4. Conclusion

Motivation

- ddddddddd

This paper's agenda

1. dddd

Literature

- ddddd
  - dddd

Data

Table: Survey of Consumer Expectations

Time period	2013M6-2018M6
Frequency	monthly
Sample size	1,300
Density variable	1-yr-ahead earning growth (same position/hours)
Pannel structure	stay up to 12 months
Demographics	educ, income, age

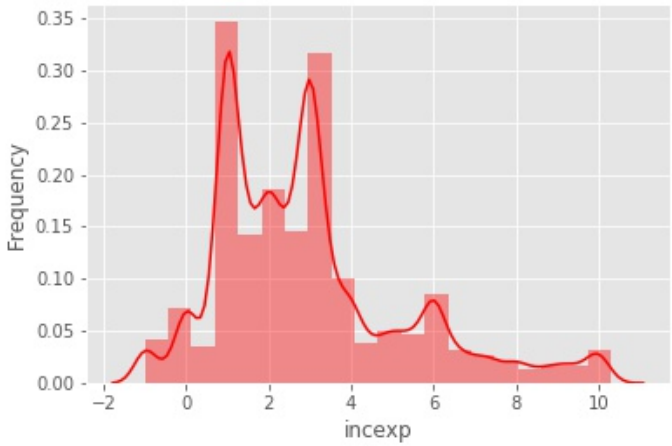
- density estimation following (**?**)
- exclude top and bottom 5% values for forecast errors and uncertainty

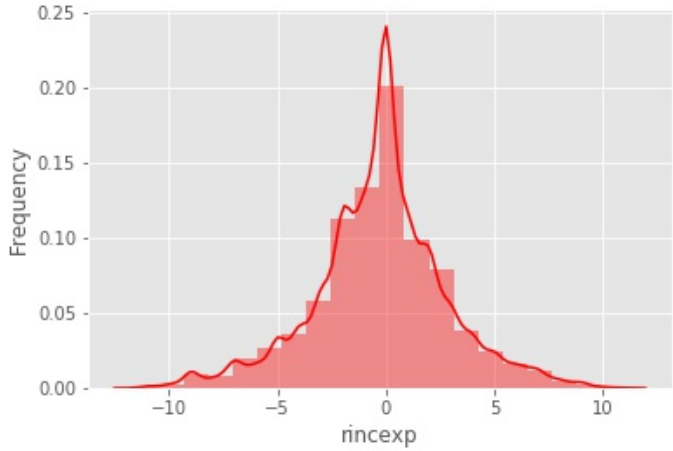
Definitions

- Moments to look at
  - expected growth, $\overline{\Delta}_i(y_i)$
  - variance: $\overline{var}_i(\Delta y_i)$
  - skewness: $\overline{skew}_i(\Delta y_i)$
- Nominal can be converted into real using forecast uncertainty of inflation
  - $\overline{var}_i(\Delta y^r) = \overline{var}_i(\Delta y^n) + \overline{var}_i(\pi)$
- Also, can be adjusted with perceived unemployment risk. So the perceived risk of same job/hour is just a lower bound for income risk.

Outline

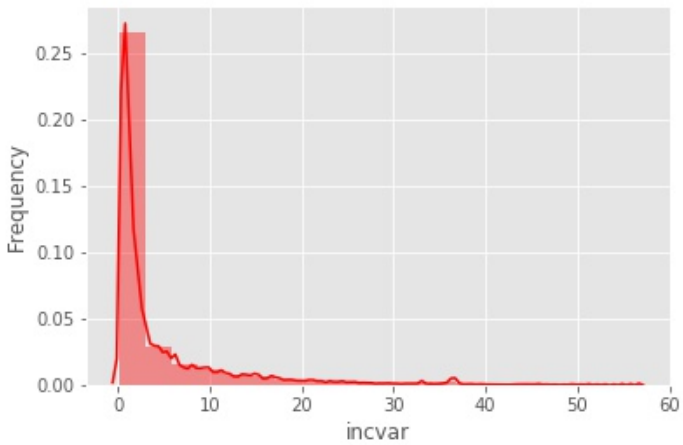
Cross-sectional distribution of expected income growth

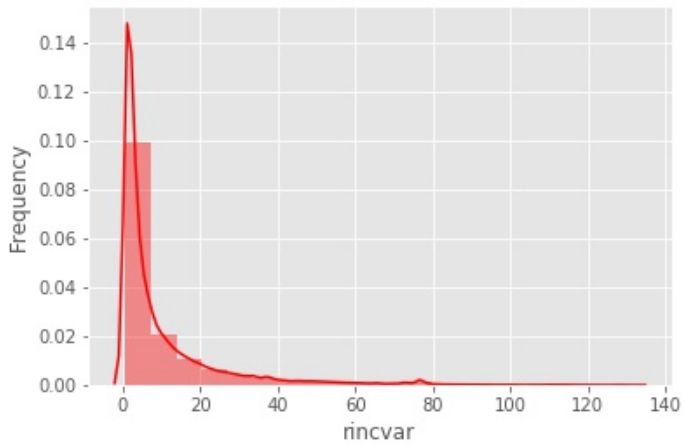




- Nominal rigity can be seen from the expected norminal earning growth, while real expected growth become symmetric

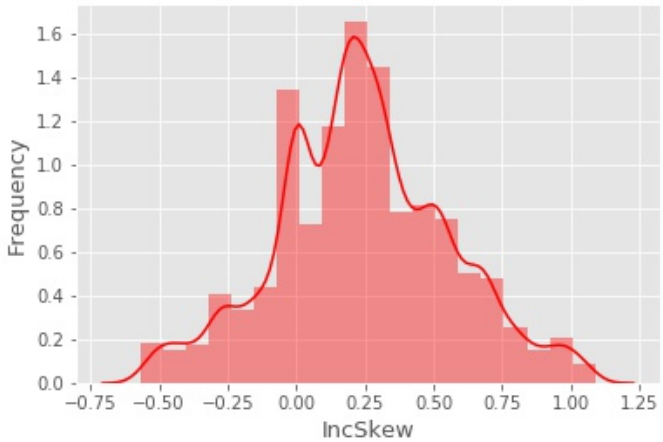
Cross-sectional distribution of income dispersion





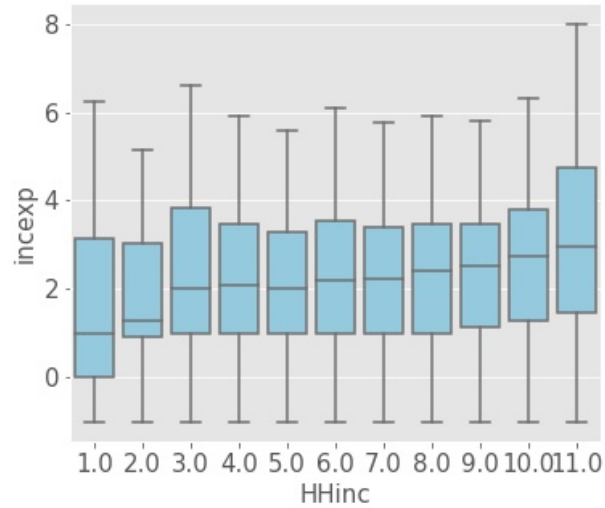
- average perceived income risks: 3% standard deviation for nominal and 4% standard deviation for real income
- just a lower bound: before adjustment of unemployment risk

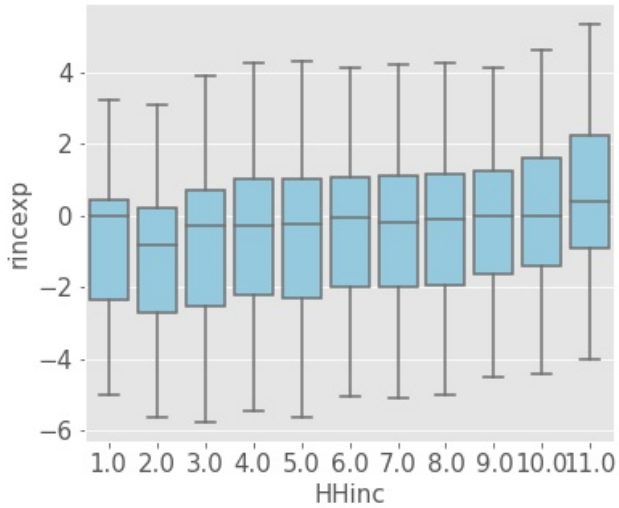
Cross-sectional distribution of tail risks

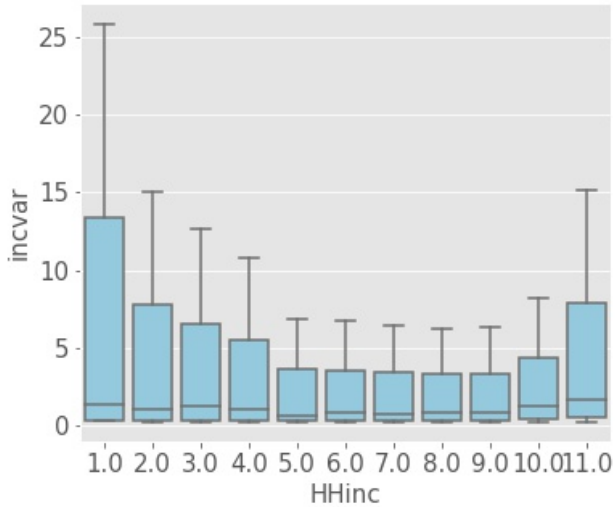


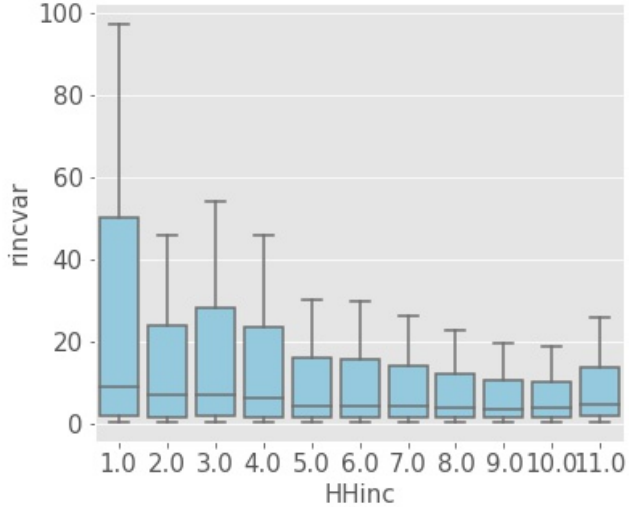
- sizable dispersion in skewness, i.e. about half of the people have non-zero skewness in perceived inome distribution.

Perceived income risks by household income

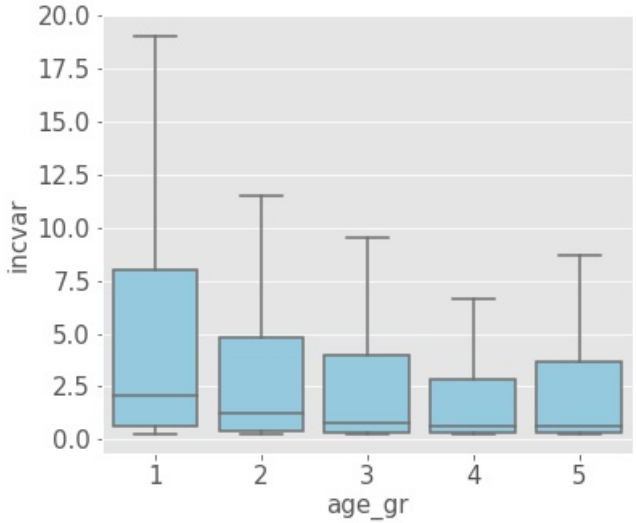


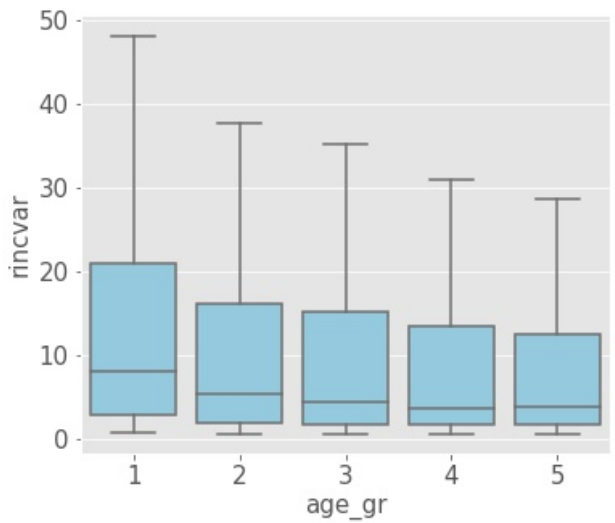


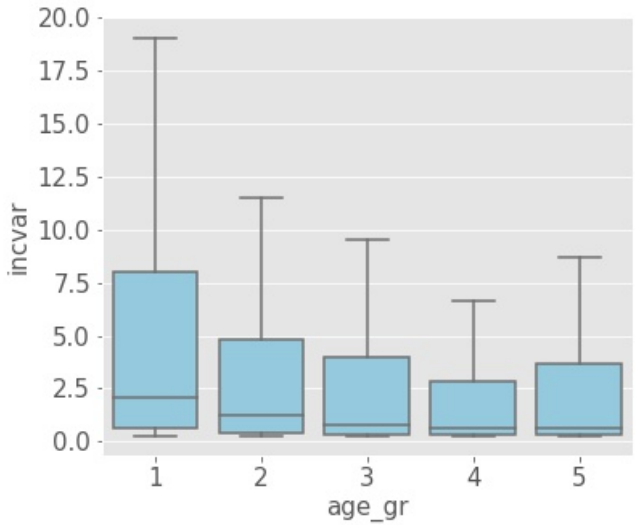


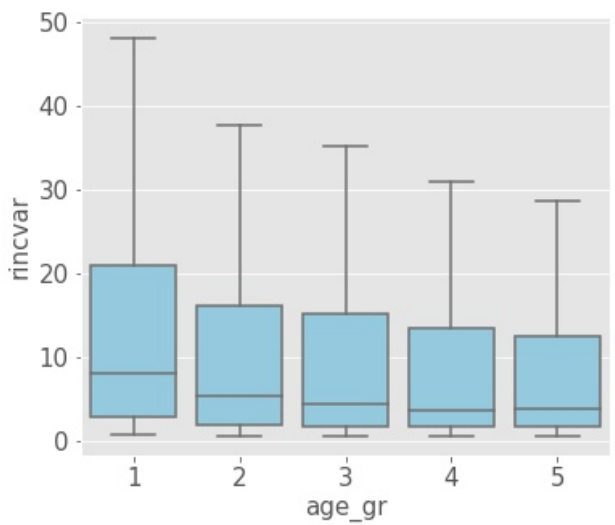


Perceived income risks by age

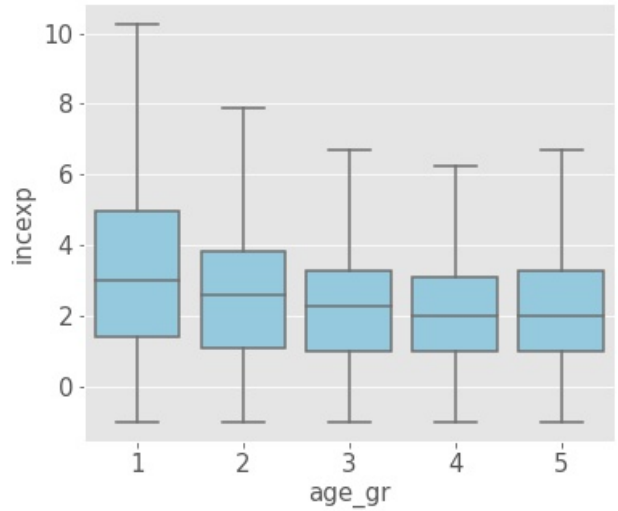


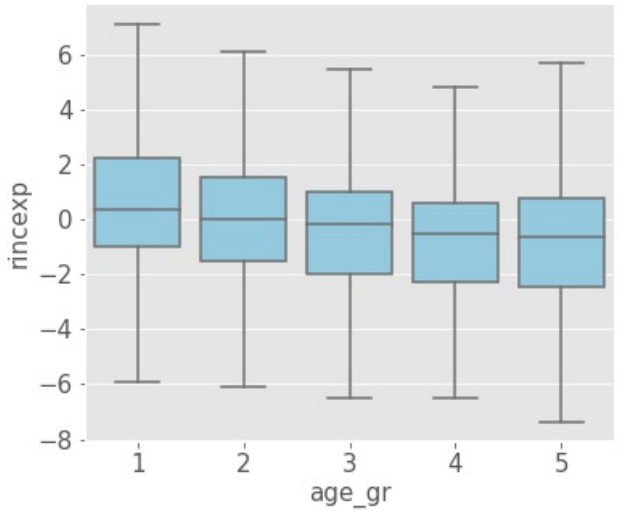


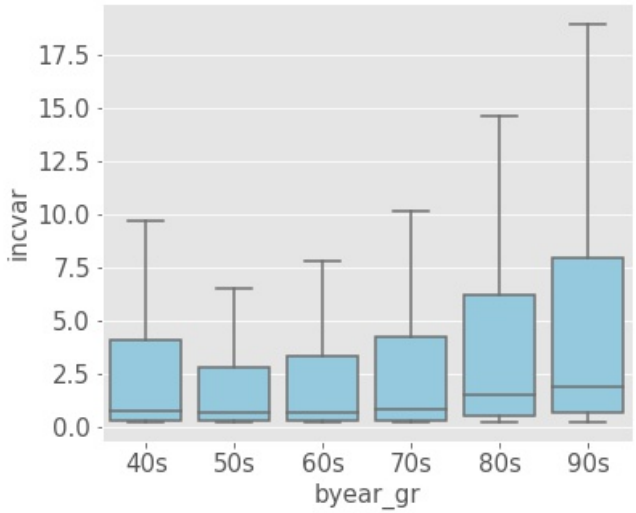


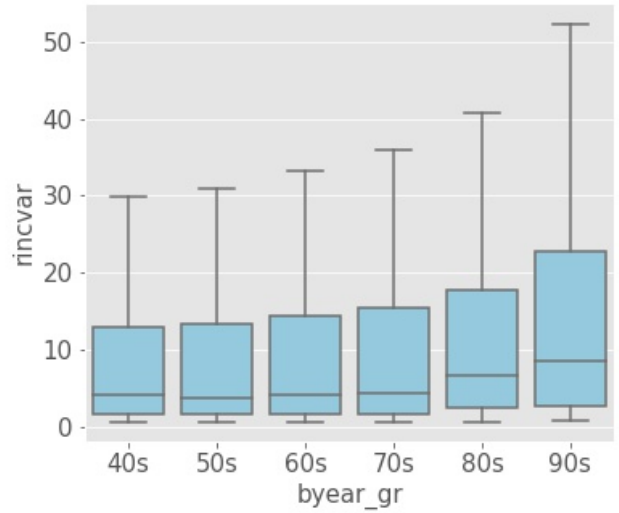


Perceived income risks by generation









Covariants of expected income growth

Table: Expected income growth and individual characteristics

	incexp I	incexp II	incexp III	incexp IIII	rincexp I	rincexp II	rincexp III	rincexp IIII
HHinc_gr=low inc			-0.03				-0.39***	
			(0.02)				(0.03)	
educ_gr=low educ				-0.25***				-0.63***
				(0.02)				(0.03)
gender=male				-0.32***				-0.78***
				(0.02)				(0.03)
parttime=yes	-0.47***	-0.36***	-0.35***		-0.63***	-0.53***	-0.44***	
	(0.03)	(0.03)	(0.03)		(0.04)	(0.04)	(0.04)	
selfemp=yes	0.86***	-0.00***	0.00***		0.84***	-0.00***	-0.00***	
	(0.03)	(0.00)	(0.00)		(0.05)	(0.00)	(0.00)	
Stkprob		0.01***	0.01***			0.02***	0.02***	
		(0.00)	(0.00)			(0.00)	(0.00)	
UEprobInd		-0.01***	-0.01***			-0.02***	-0.02***	
		(0.00)	(0.00)			(0.00)	(0.00)	
Intercept	2.82***	2.57***	2.58***	3.05***	-0.29***	-0.92***	-0.80***	0.20***
	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)	(0.03)	(0.03)	(0.02)
N	54275	48606	48606	47712	49702	44446	44446	43694
R2	0.01	0.02	0.02	0.01	0.01	0.04	0.04	0.02

Covariants of perceived income risks

Table: Perceived income risks and individual characteristics

	incvar I	incvar II	incvar III	incvar IIII	rincvar I	rincvar II	rincvar III	rincvar IIII
HHinc_gr=low inc			1.56***				7.01***	
			(0.10)				(0.19)	
educ_gr=low educ				0.40***				3.82***
				(0.11)				(0.21)
gender=male				-0.80***				2.76***
				(0.10)				(0.19)
parttime=yes	0.05	0.24*	-0.12		1.41***	1.81***	0.19	
	(0.12)	(0.13)	(0.13)		(0.23)	(0.26)	(0.26)	
selfemp=yes	7.21***	-0.00***	-0.00***		6.27***	-0.00***	0.00***	
	(0.15)	(0.00)	(0.00)		(0.27)	(0.00)	(0.00)	
Stkprob		0.01***	0.01***			-0.05***	-0.05***	
		(0.00)	(0.00)			(0.00)	(0.00)	
UEprobAgg		0.01**	0.00*			0.05***	0.04***	
		(0.00)	(0.00)			(0.00)	(0.00)	
UEprobInd		0.03***	0.02***			0.05***	0.04***	
		(0.00)	(0.00)			(0.00)	(0.00)	
Intercept	4.64***	3.75***	3.28***	5.72***	12.42***	12.21***	10.16***	11.16***
	(0.05)	(0.12)	(0.12)	(0.07)	(0.10)	(0.24)	(0.25)	(0.14)
N	54029	47331	47331	47457	50730	44382	44382	44517
R2	0.05	0.00	0.01	0.00	0.01	0.01	0.04	0.01

Outline

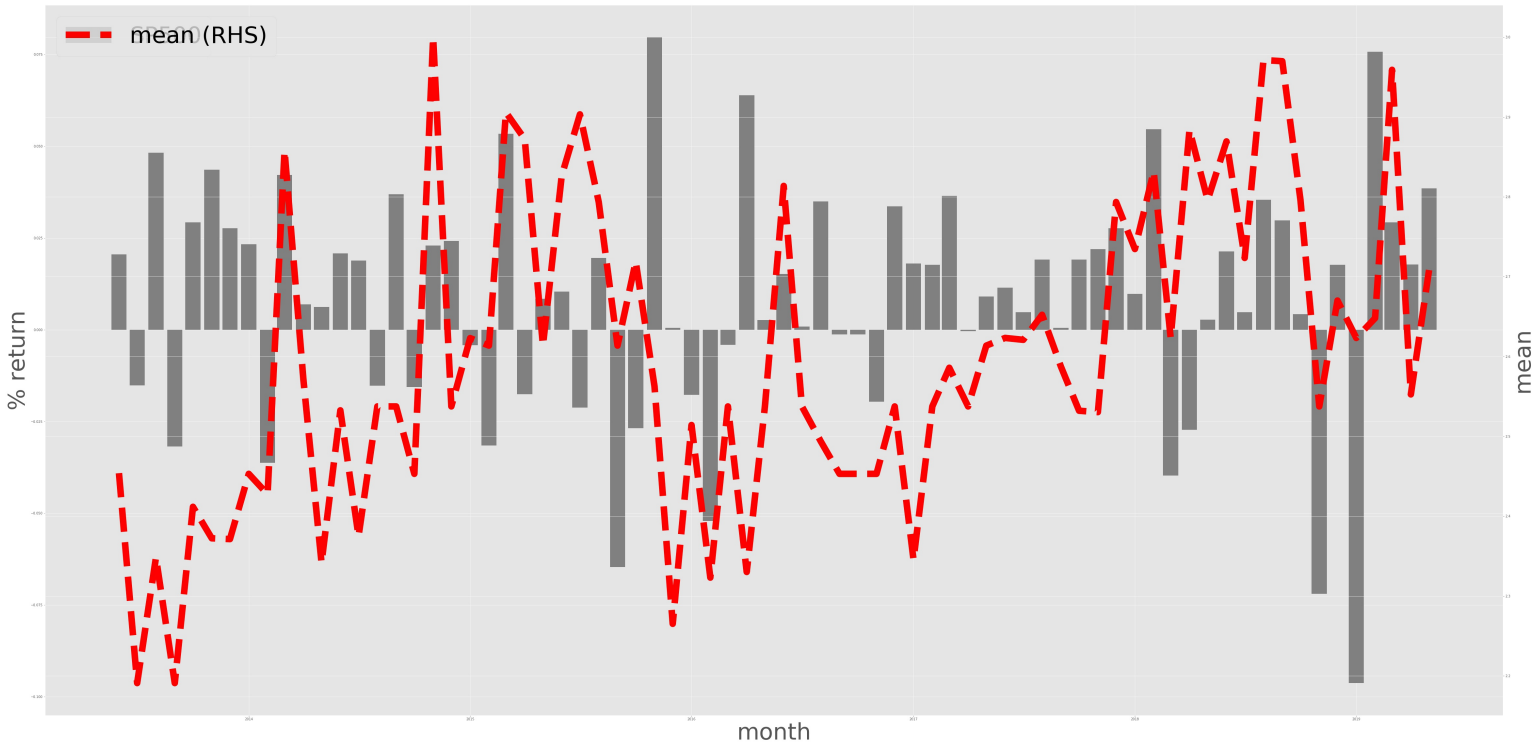
Perveived income risks and household spending

Table: Perceived income risks and household spending

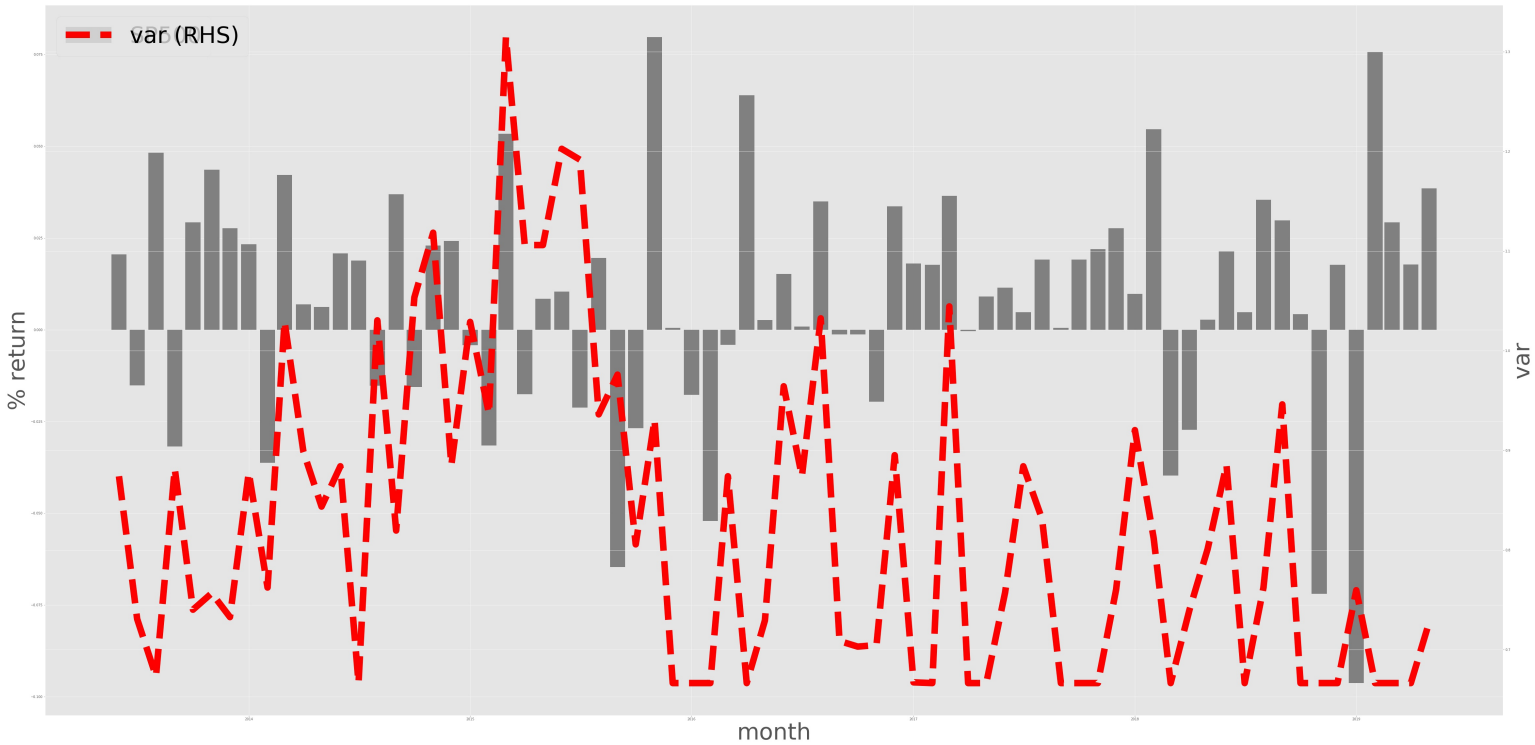
	spending I	spending II	spending III	spending IIII	spending IIIII	spending IIIIII	spending IIIIIII
incexp	0.39***						
	(0.08)						
rincexp		-0.04*					
		(0.02)					
incvar			0.07***				
			(0.02)				
rincvar				0.07***			
				(0.01)			
UEprobAgg						0.04***	
						(0.01)	
UEprobInd					-0.01		
					(0.01)		
incskew							0.21
							(0.43)
N	55673	50997	55465	52099	54315	85468	55029
R2	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Outline

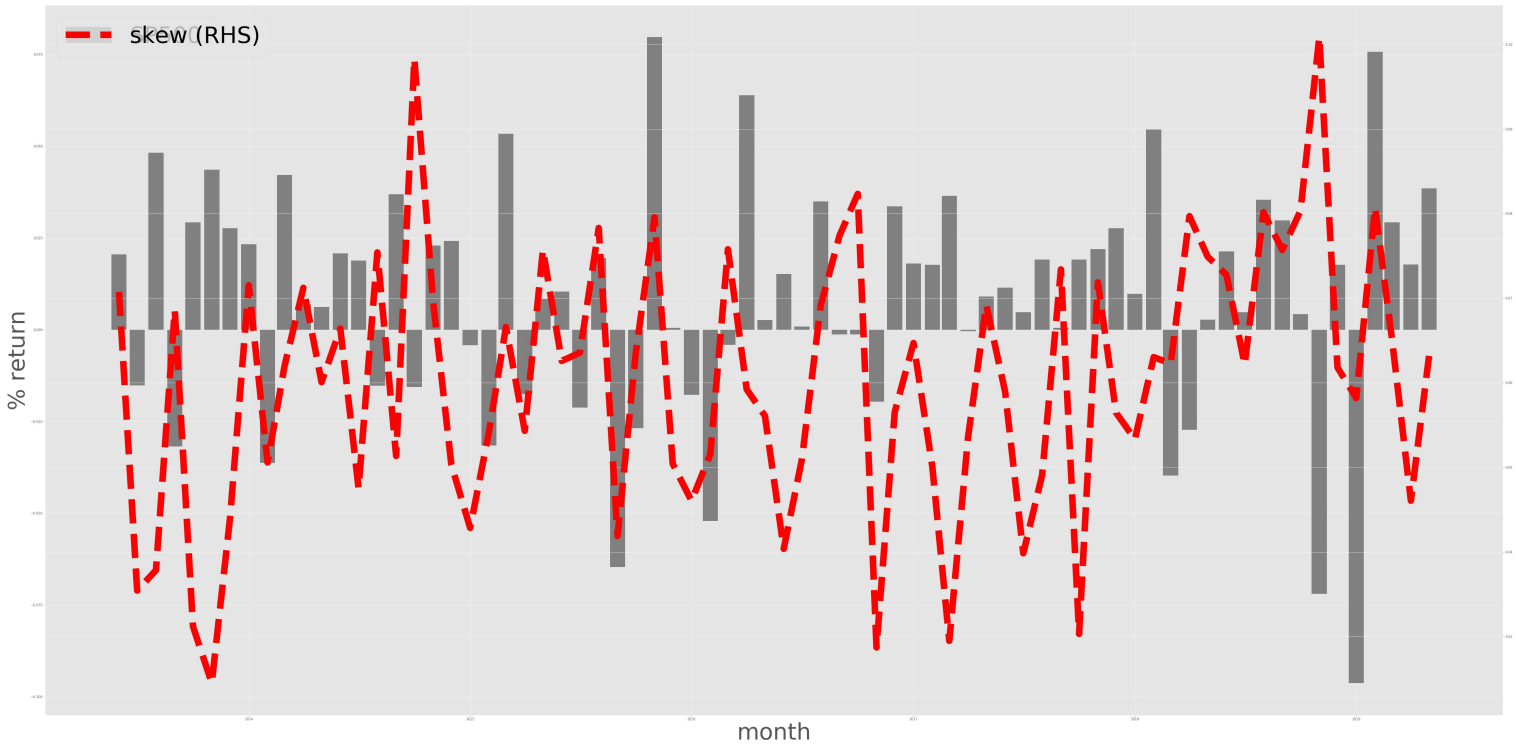
Expected income growth and stock market performance



Dispersion risks and stock market performance



Tail risks and stock market performance



Model ingredients

1. imperfect understanding of the income process, a deviation from rational expectation benchmark.
   - experience-based learning capturing the cross-generatio and age-dependence income perceptions
2. finite-period life cycle with a constant probability of death
3. uninsured idiosyncratic risks and aggregate risks, workhorse assumption of the HANK literature
4. single asset, i.e. no distinction between liquid and iliquid assets

Intuitions behind the model mechanisms

- imperfect understanding $\rightarrow$ heterogeneous perception of risks
  uninsurance of risks $\rightarrow$ difference in precautionary motives and MPCs across populations $\rightarrow$ potential amplification of aggregate MPC.

Some Figures

(a) FE

(b) Disg

(c) FE/Disg

figuresDraft/spf_se_est_diagr0.pdf figuresDraft/spf_se_est_diagr1.pdf figuresDraft/

Conclusion

- ddddd

Density estimation and robustness of my results

- ddd