Do Students Expect Compensation for Wage Risk?

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Motivation

What do potential students know when they decide on their education?

- **Do they use private information or only contemporaneous market information?**

- **Are students aware of the uncertainty about their potential wages?**

- **Do they expect compensation for the risk in future earnings?**

Two main approaches

1. Retrieve information from ex-post labour market data

2. Collect expectation data, i.e. ex-ante information

Literature on mean or median wage expectations exists, e.g. Kodde (1986), Betts (1996), Wolter and Zbinden (2001), Nicholson (2002), Webbink and Hartog (2004), Brunello et al. (2004)

Extension to include information on the expected wage *distribution*:

Dominitz and Manski (1996); replication for CH: Wolter (2000)

Structure of the presentation

1. The data: How to elicit wage expectations? And: How to derive risk and skewness measures from the expectation data?

2. Explaining variation in expected wage distributions: Private information?

3. Do students expect compensation for wage risk?

1. Data

- **Computer-assisted self-administered interviews**

- **252 Swiss economics students (1st year) from the University of Applied Sciences in Berne 1998-2001 (4 cohorts)**

- **Collected information:**
  - background information about students (sex, age, parents education, school grades, social class)
  - attitudes about working
  - wage expectations

Information on expected wage distributions

- **expected median wage**

- **probability to earn less than 0.8*median / more than 1.2*median**

- **The wage information was asked for different scenarios:**
  - conditional on working after finishing secondary education, age 30 and 40
  - conditional on finishing tertiary education, age 30 and 40

=> 252 * 4 = 1,008 expected wage "distributions" elicited

Variance and skewness measures

$$A = P(0 \leq w < 0.8 * m)$$

$$B = P(0.8 * m \leq w < m)$$

$$C = P(m \leq w < 1.2 * m)$$
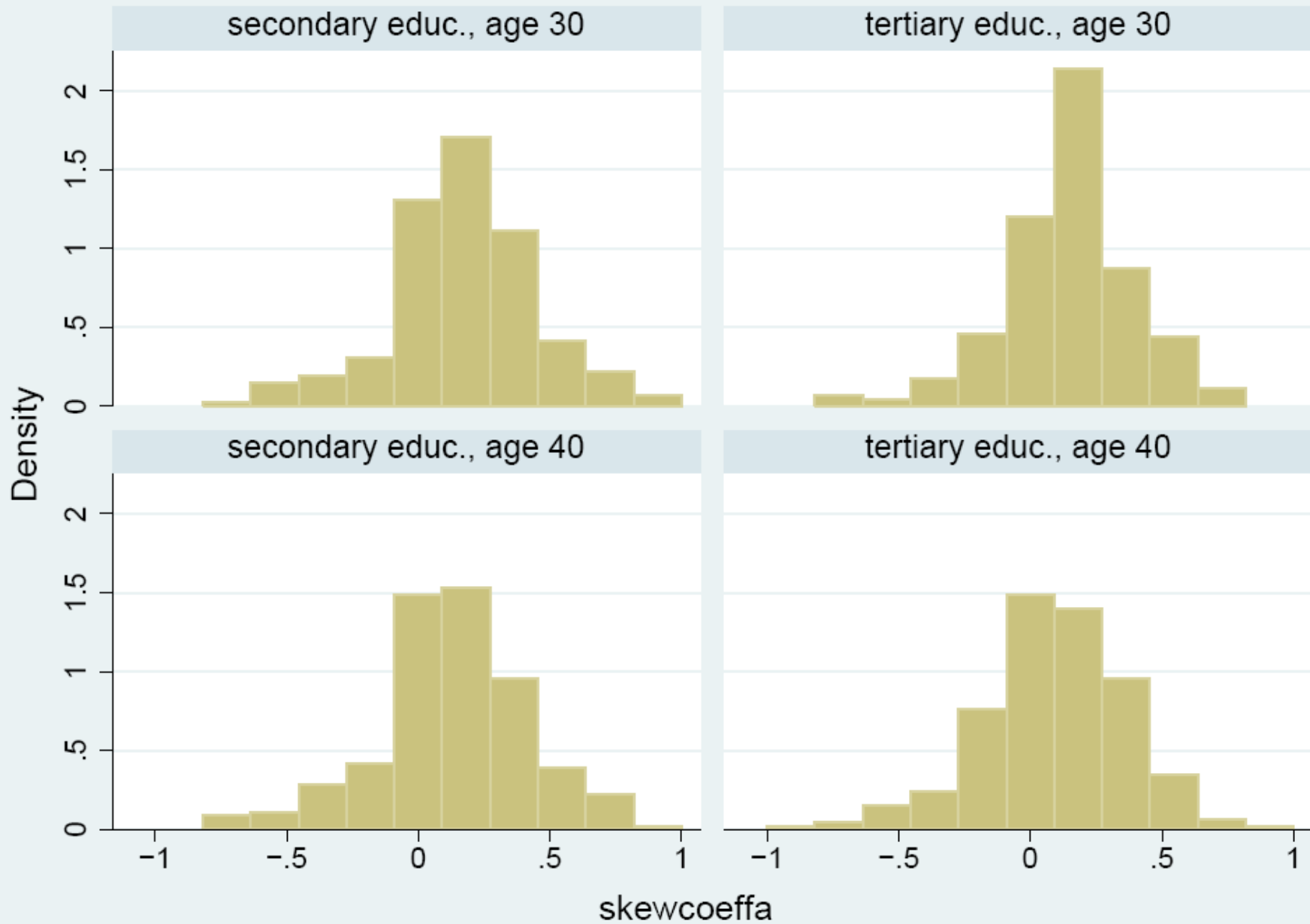
$$D = P(1.2 * m \leq w < \infty)$$

$$0 \leq v = 2(A + D) \leq 1$$

$$-1 \leq s = 2(D - A) \leq 1$$

secondary educ., age 30 | tertiary educ., age 30
secondary educ., age 40 | tertiary educ., age 40

Density

expected monthly median wage in CHF
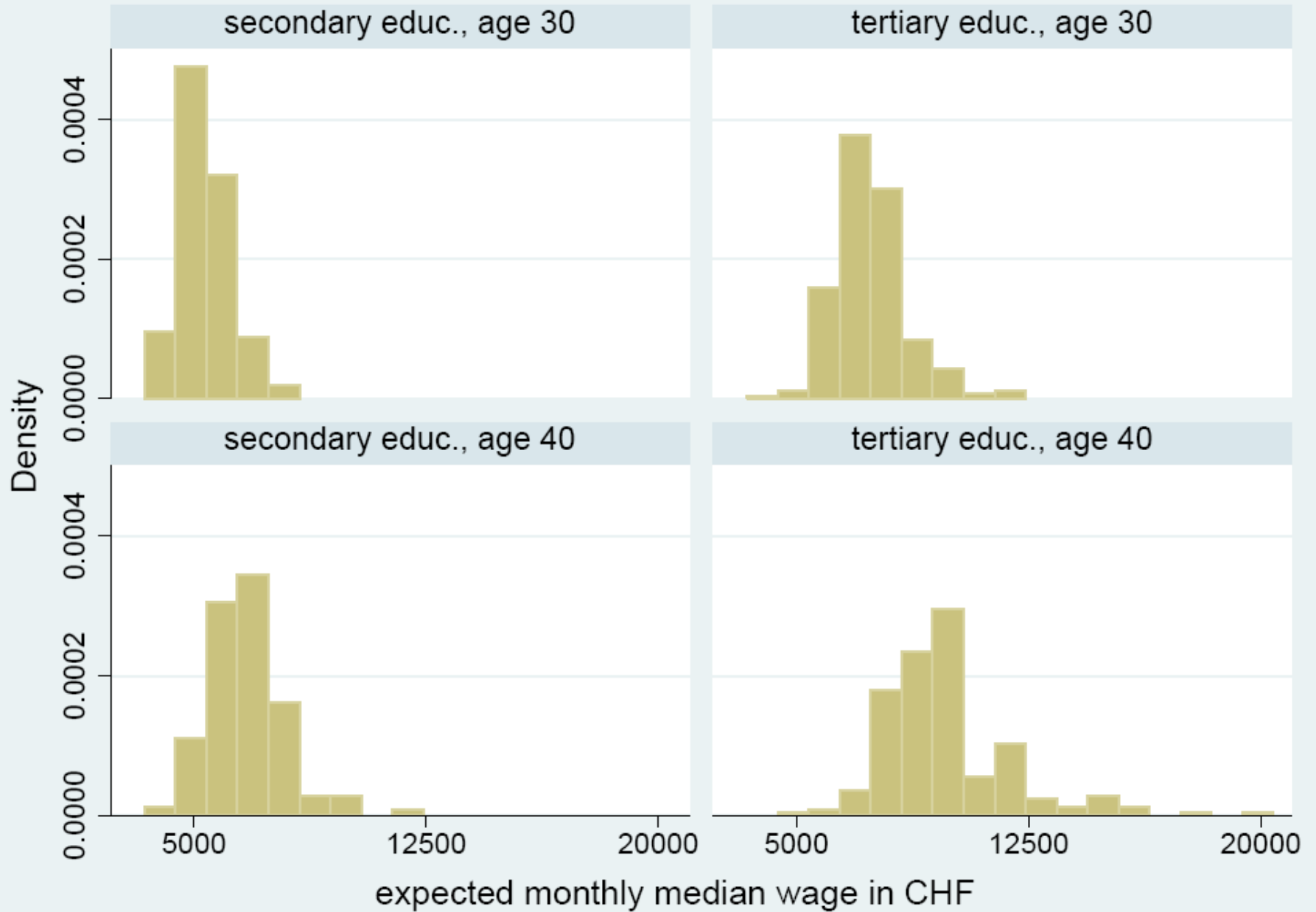
2. Explaining variation in expected wage distributions: Private information?

- **Do individuals have private information about where they will end up in the wage distribution, or do they only use contemporaneous market information on workers who have completed the education they are considering? That is, do they simply expect a draw from the actual wage distribution (as they perceive it)?**

$\Rightarrow$ **1st step: compare expectations and perceptions**

$\Rightarrow$ **2nd step: we test whether the difference between personal wage expectations and perceived market wages can be explained by individual background variables (parents education, social class, school grades).**

Regressing wage expectations on perceptions of market wages

	slope	t(0)	t(1)	R2
median, 30, secondary	0.67	9.03	4.40	0.24
median, 40, secondary	0.74	10.87	3.82	0.31
median, 30, tertiary	0.85	16.96	3.02	0.53
median, 40, tertiary	0.89	15.70	1.86	0.49
variance coeff., 30 , second.	0.37	7.16	12.12	0.17
variance coeff., 40 , second.	0.40	6.68	9.92	0.15
variance coeff., 30 , tertiary	0.68	11.55	5.54	0.35
variance coeff., 40 , tertiary	0.69	12.38	5.59	0.38
skewness coeff., 30 , second.	0.21	3.44	12.81	0.05
skewness coeff., 40 , second.	0.16	2.67	14.38	0.03
skewness coeff., 30 , tertiary	0.36	5.61	10.12	0.11
skewness coeff., 40 , tertiary	0.48	6.90	7.39	0.16

Note: t(0): t value against zero; t(1): absolute t value against unity.

median wages	ln expected median wage – ln perceived actual median wage			
	second. educ. age 30	second. educ. age 40	tertiary educ. age 30	tertiary educ. age 40
age	-0.006	-0.007	-0.001	-0.000
male	-0.018	-0.024	0.019	0.008
part time study	0.084*	0.119*	-0.016	0.042
father's education high	0.056	0.048	-0.038	-0.005
father's education low	0.016	0.014	-0.022	-0.040*
mother's education high	-0.045	-0.037	-0.016	0.001
mother's education low	-0.037	0.033	0.014	-0.010
upper class	0.084	0.084	0.067*	0.049
upper middle class	-0.005	-0.003	0.021	0.034+
lower class	0.005	-0.013	-0.007	-0.026
Second. school grade French	-0.003	0.030	-0.021	-0.037
Second. school grade German	0.018	-0.013	0.044*	0.047
Second. school grade Math	0.007	-0.015	-0.011	-0.009
High wage: important	0.019	0.023	0.053**	0.039+
Secure job: important	-0.027	-0.022	-0.009	-0.023
year dummies	yes	yes	yes	yes
Constant	0.184	0.325	-0.005	0.063
Adj. R-squared	0.025	0.028	0.052	0.018
N	252	252	252	252

wage risk	expected variance coeff. - perceived variance coeff.			
	second. educ. age 30	second. educ. age 40	tertiary educ. age 30	tertiary educ. age 40
age	-0.004	-0.006	0.001	-0.000
male	0.031	-0.008	0.064**	0.038+
part time study	-0.060	-0.045	-0.051	-0.000
father's education high	0.035	-0.044	-0.005	0.037
father's education low	-0.006	-0.039	-0.013	-0.023
mother's education high	-0.035	-0.019	0.042	0.024
mother's education low	0.082**	0.066+	0.021	-0.040
upper class	0.022	0.004	-0.003	0.061
upper middle class	-0.046+	-0.017	0.013	0.005
lower class	0.043	0.033	-0.010	-0.054
Second. school grade French	-0.011	0.023	-0.038	-0.015
Second. school grade German	-0.002	0.010	0.035	0.027
Second. school grade Math	0.005	-0.009	-0.001	-0.005
High wage: important	0.055+	0.093**	0.049*	0.026
Secure job: important	-0.026	-0.039	0.016	0.004
year dummies	yes	yes	yes	yes
Coefficient	-0.006	-0.066	-0.101	-0.066
Adj. R-squared	0.007	0.005	0.029	-0.029
N	252	252	252	252

Conclusion: explaining expected wage distributions

- **Perceived earnings of those already in the market have a large impact on the wages students expect for themselves.**

- **If we try to explain deviations of expectations and perceptions by individual background variables ("private information"), we find few significant results in some of the scenarios.**

$\Rightarrow$ **Wage expectations appear much more anchored to perception of actual contemporaneous market data, there is only weak evidence for private information.**

3. Do students expect wage risk compensation?

Risk-augmented Mincer earnings equation:

$$\ln w = X\gamma + \delta \text{RISK} + \lambda SKEW + \nu$$

We can use this approach here, with expectations data instead of labour market survey data.

$\Rightarrow$ Do those individuals that expect a higher wage risk for themselves also expect a higher median wage?

OLS; Dep. var.: ln(m)	I	II	III
variance coefficient	**0.425****	**0.433****	**0.429****
skewness coefficient		**-0.082****	**-0.082****
age	-0.002	-0.002	-0.002
man	0.025	0.025	0.025
part time student	0.076*	0.063*	0.063+
fathers educ. low			-0.009
fathers educ. high			0.013
mother's educ. low			0.005
mother's educ. high			0.015
upper class			0.109*
upper middle class			0.035*
lower class			-0.050
grade French			0.016
grade German			0.051*
grade Math			0.014
scenario and year dummies	yes	yes	yes
Constant	8.448**	8.480**	8.038**
adj. R squared	0.714	0.720	0.733
N	1008	1008	1008

Conclusions

- **When building expectations about wages for different education choices, individuals seem to rely mainly on what they observe on average in the contemporaneous labour market.**

- **They can observe structures in compensation (means, dispersions) and use these for their predictions.**

- **In addition, they are aware of risk compensation. Our results with expectation data show implicit elasticities that are close to those actually observed in the labour market.**

- **Thus we conclude that while uncertainty in educational choice leads to risk compensation, private information plays a minor role compared to observed market information.**