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INCOME, ASPIRATIONS AND SUBJECTIVE WELL-BEING:
INTERNATIONAL EVIDENCE

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Income, Aspirations and Subjective Well-being:

International Evidence *

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Previous micro-level results from cross-sectional data from individual countries suggest that well-being improvements related to rising incomes are at least partly offset by associated rises in income aspirations. We conduct a more encompassing analysis on the topic, covering about 30 countries in different stage of economic development. We use micro-data on Europeans' subjective well-being, income and aspirations as measured by minimum income needs from the year 2013 and panel data on income and aspirations. Earlier findings on the negative role of income aspirations when it comes to well-being are shown to hold internationally. Moreover, in line with the earlier results from individual countries, we find that aspirations matter systematically more, the higher the country's average income. These results are robust to three different measures of well-being. Further, the panel analysis shows that aspirations increase with incomes. Taken together, our results suggest that aspirations play an important role in holding back income-induced well-being improvements, especially in high-income countries.

Keywords: Income, Subjective well-being, Aspirations
JEL codes:D60; D63; I31

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1 Introduction

At least since Easterlin (1974), rising consumption norms, or material aspirations, have been considered as a possible explanation for rising incomes' failure to improve subjective well-being (SWB). In a later paper, Easterlin (2001) documents negative correlations in the United States between falling short of getting goods one thinks are part of a good life and her subjective well-being. Yet, direct empirical evidence on how income aspirations affect subjective well-being, and how this effect compares to the effect of income, is limited. To our knowledge, Stutzer (2004), using Swiss data, and Knight and Gunatilaka (2012), using data from rural China, are the only studies on the topic. These two studies also provide results of an important related phenomenon of how income affects aspirations. In a recent paper, D'Ambrosio et al. (2018) provide support for the idea that aspirations matter by showing that a larger gap between the wage perceived as fair and actual wage is associated lower subjective well-being in Germany.

Rarity of aspirations data has hindered researchers from studying these questions. We utilise an international data set which includes information on subjective well-being, income and income aspirations. The European Union Statistics on Income and Living Conditions (EU-SILC) is a data set which includes information on income aspirations over many years because one of the standard questions in the EU-SILC survey concerns minimum income needs (a measure of aspirations in earlier studies as well). In 2013, an ad-hoc module containing questions related to well-being was included in EU-SILC. Combining the 2013 information on subjective well-being with income and income aspirations information, we are able to expand on the earlier analyses by including about 30 countries. The panel nature of the income and income aspirations data allows us to control for individual and year fixed effects in modelling aspirations as a function of income.

In line with earlier findings, our results suggest that higher income aspirations are

associated with lower well-being, controlling for actual income. However, there is marked heterogeneity across countries when it comes to the negative effect of aspirations offsetting the positive effect of income. We find that the two effects tend to be more similar in absolute magnitude in high-income countries whereas aspirations matter less as compared to income in low-income countries. Thus, Stutzer's (2004) and Knight and Gunatilaka's (2012) results that aspirations and income have similar-sized effects in Switzerland but not in rural China seem to be representative of a more general phenomenon. Namely, it is (by far) income relative to income aspirations that is associated with well-being in high-income countries whereas in low-income countries, rising aspirations do not offset the benefits of income rises. The results are robust to using three different measures of subjective well-being: life satisfaction, emotional well-being and eudaimonia. Some differences between the three well-being measures can be observed, however. Offsetting of income's effect by aspirations' effect in high-income countries appears not to be as predominant in the case of life satisfaction as it is for the other two well-being measures. This result is in line with that of Kahneman and Deaton (2010) who find that high-income buys life satisfaction but not emotional well-being in the United States. It can be conjectured that the differential effect of aspirations on different aspects of well-being is behind their finding.

Our results on how aspirations are associated with incomes suggest that a general rise in incomes of 1% is followed by roughly a 0.5% rise in aspirations, on average. On average, a change in country-level average income (a measure of others' income) is estimated to be associated with a larger change in aspirations than a rise in one's own income. Therefore, relative concerns seem to be important, though measurement error in own income may be behind this result. Taken together, our results indicate that income aspirations reduce higher incomes' potential to improve subjective well-being, especially in high-income countries.

2   Measures of well-being and data

Our SWB data come from the EU-SILC 2013 well-being module. The module data allows us to measure three distinct dimensions of well-being: life evaluation, emotional well-being and eudaimonia. Kahneman and Deaton (2010) argue that the two former aspects of well-being are determined differently by life circumstances. Importantly from the perspective of this study, they find that having high income is associated with high life evaluation but not high emotional well-being. A recent paper by Clark and Lee (forthcoming) includes a review of well-being measures and suggests that eudaimonia might be a dimension of well-being not well captured by the other well-being measures. We therefore find it worthwhile to separately estimate the association of income and income aspirations on the three aspects of well-being. Further, using three alternative well-being measures allows us to assess the robustness of the results. The 2013 well-being, income and income aspirations data as well as a rich set of control variables are available for almost 320,000 individuals in 31 European countries.

As is common in the literature, our measure of life evaluation is the answer to the question about respondent's satisfaction with life:

'Overall, how satisfied are you with your life nowadays? Where nought is not at all satisfied and 10 is completely satisfied.'

The measure of emotional well-being is constructed based on five questions that measure the frequencies of experiencing different emotional states.[1] We code the two most positive answering categories as one and the remaining categories as zero.[2] The emotional well-being variable is obtained by calculating the average of the resulting five dummy

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[1]The five emotional states are *'Being very nervous'*, *'Feeling down in the dumps'*, *'Feeling calm and peaceful'*, *'Feeling downhearted or depressed'*, and *'Being happy'*.

[2]The two most positive answering categories are *'all of the time'* and *'most of the time'* for positive emotions and *'none of the time'* and *'a little of the time'* for negative emotions, respectively.

variables. As compared to the emotional well-being measure in much-cited paper by Kahneman and Deaton (2010), our measure is similar in that it captures the prevalence of positive and negative emotions. The main difference is caused by the fact that Kahneman and Deaton's (2010) measure concerns respondent's emotions yesterday.

The eudaimonia variable is the answer to the question:

'Overall, to what extent do you feel the things you do in your life are worthwhile? Where nought is not at all worthwhile and 10 is completely worthwhile.'

Before its use in the 2013 EU-SILC, this question was specifically designed to measure eudaimonia and appeared in the 2011 Annual Population Survey of the United Kingdom (Hicks et al., 2013).

The other key variables are the total disposable household income and income aspirations. The former variable is directly available in EU-SILC either as a survey response or taken from national registers, depending on the country.

As the latter variable we use the answer to the question:

'In your opinion, what is the very lowest net monthly income that your household would have to have in order to make ends meet, that is to pay its usual necessary expenses? Please answer in relation to the present circumstances of your household, and what you consider to be usual necessary expenses (to make ends meet).'

This is a 'minimum income question' and it belongs to the class of 'income evaluation questions' that the so-called Leyden School (an early contribution is van Praag, 1971) have long used to study poverty. Answers to a minimum income question have been used to measure income aspirations in the earlier papers similar to ours (Stutzer, 2004; Knight and Gunatilaka, 2012). Stutzer (2004) conducts his analyses using also answers to a question about income considered as 'sufficient' and the results are fairly similar. Other

income evaluation questions besides the minimum income question are not available in EU-SILC, but Stutzer's (2004) results suggest that minimum income measures aspirations reasonably well as compared to sufficient income. A benefit of using minimum income as the measure of aspirations is that it plays a central in the subjective-poverty literature, as Knight and Gunatilaka (2012) mention. Therefore, studies such as ours can inform us about the relevance of subjective poverty from the point of view of subjective well-being.

The well-being information is only available in the 2013 module which means that, as in the earlier studies, only cross-sectional analysis of well-being determination is permitted. However, the EU-SILC longitudinal data file includes income and income aspirations information and, therefore, we can control for individual and year fixed effects, in addition to other control variables, when studying how aspirations depend on household's own income and the average income in their country. Earliest observations in our longitudinal sample are from the year 2003 and the last year of the sample is 2015. Because minimum income is the key variable in both the well-being analyses and the aspirations analyses, we carefully examined the distribution of this variable by country and year. There were some inconsistencies that led us to drop some observations. We were left with about 3.7 million observations from 29 countries for aspirations analyses.[3]

Table 1 describes our 2013 cross-sectional sample used for well-being analyses by presenting the summary statistics of the dependent variables and regressors. The most striking feature of the EU-SILC data is the coverage of wide range of countries at different stages of economic development. This variety manifests itself in the large variation in our

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[3]We dropped the following: Italy in 2004 because the minimum income variable was right-censored at 6,000 euros a month that year. About 4,500 unreasonably small values (as compared to both the actual incomes of those respondents and the country-year specific distribution) of minimum income in Bulgaria (2011), Hungary (2007), and Romania (2012-2015). Slovakia altogether because minimum income was reported in the old currency for some respondents and in euros for others in multiple years (such inconsistencies are also reported by Mysíková et al., 2019). 8,750 missing observations of minimum income coded as very large values in Denmark (2010, 2011) and Norway (2007-2009, 2012-2015). More detailed information on the observed anomalies is available upon request.

Table 1. Descriptive Statistics: Cross-section Sample

Variable		Mean	St. Dev.	25%	Median	75%
Life satisfaction		6.96	2.11	6	7	8
Eudaimonia		7.50	1.89	7	8	9
Emotional well-being		0.63	0.35	0	1	1
Income (€)		2514	2773	802	1741	3389
Minimum income (€)		1743	2008	795	1494	2298
Female		0.55	0.50	0	1	1
Age (0 if > 79)		46.59	19.24	34	48	62
Dummy: Age > 79		0.05	0.22	0	0	0
Education	Pre-primary	0.01	0.09	0	0	0
	Primary	0.11	0.32	0	0	0
	Lower secondary	0.19	0.39	0	0	0
	Upper secondary	0.41	0.49	0	0	1
	Post-secondary non-tertiary	0.04	0.19	0	0	0
	1st / 2nd stage of tertiary	0.25	0.43	0	0	0
General health	Very good	0.21	0.41	0	0	0
	Good	0.43	0.49	0	0	1
	Fair	0.25	0.43	0	0	1
	Bad	0.09	0.29	0	0	0
	Very bad	0.02	0.14	0	0	0
Country of birth	EU	0.03	0.17	0	0	0
	Local	0.89	0.32	1	1	1
	Other	0.08	0.28	0	0	0
Employment	Working full time	0.40	0.49	0	0	1
	Working part time	0.08	0.27	0	0	0
	Unemployed	0.08	0.26	0	0	0
	Pupil/student/training	0.06	0.23	0	0	0
	Retired	0.27	0.45	0	0	1
	Disabled	0.03	0.16	0	0	0
	Military, community service	0.00	0.03	0	0	0
	Fulfilling domestic tasks	0.07	0.26	0	0	0
	Other inactive	0.02	0.12	0	0	0
Marital status	Never married	0.25	0.43	0	0	0
	Married	0.57	0.50	0	1	1
	Separated	0.01	0.12	0	0	0
	Widowed	0.09	0.29	0	0	0
	Divorced	0.07	0.26	0	0	0
Household type	Single male, age<65	0.04	0.21	0	0	0
	Single female, age<65	0.04	0.21	0	0	0
	Single male, age>64	0.02	0.14	0	0	0
	Single female, age>64	0.06	0.23	0	0	0
	2 adults, age<65	0.15	0.36	0	0	0
	2 adults, age>64	0.16	0.37	0	0	0
	>2 adults	0.13	0.34	0	0	0
	Single, children	0.03	0.17	0	0	0
	2 adults, 1 child	0.10	0.30	0	0	0
	2 adults, 2 children	0.11	0.31	0	0	0
	2 adults, >2 children	0.04	0.20	0	0	0
	>2 adults, children	0.10	0.30	0	0	0
	Other	0.00	0.05	0	0	0
No. of adults in the household		2.31	1.04	2	2	3
No. of children in the household		0.53	0.91	0	0	1

N=318,980. Life satisfaction, eudaimonia measured on a 0-10 scale. Emotional well-being is the average of 5 dummies indicating frequent positive / non-frequent negative emotions. Income is the monthly disposable income, and minimum income is the lowest monthly income to make ends meet.

key variables, namely income and minimum income needed. Large between-country variation in the economic variables calls for modelling heterogeneous relationships between well-being, income, and income aspirations. We will next present our model of subjective well-being and the results from estimating it for the cross-sectional sample, also allowing for cross-country heterogeneity in the key associations.

3 Modelling subjective well-being

When it comes to how utility depends on income and income aspirations, both the aspiration-level theory (see Stutzer, 2004 and the references therein) and the adaptation-level theory (Helson, 1964; Frederick and Loewenstein, 1999) posit that utility is determined by the difference between the actual income and the reference level of income (aspirations or adaptation level). We will call that reference level 'aspirations' from here on. Thus, we can write a simple linear model of utility:

$$u = \beta(y - R) + \epsilon, \tag{1}$$

where u_{ict} is the (unobserved) level of utility, y_{ict} is the level of income, R_{ict} is the (unobserved) aspirations level of income, respectively. ϵ denotes other circumstances that affect utility (possibly including a constant). In line with theory, β is assumed to be positive, meaning that the larger one's income's deviation from her aspirations, the larger is utility. An alternative, more general model, the empirical counterpart of which is estimated in the earlier studies, allows utility to depend both on the difference and on income:

$$u = \beta_y y - \beta_R R + \epsilon \iff u = \beta_R(y - R) + (\beta_y - \beta_R)y + \epsilon, \tag{2}$$

This equation cannot, of course, be estimated as such because both u and R are unobservable. To make the equation estimable, the subjective well-being variables such as those described in Section 2 can be used as proxy measures of utility. Empirical data on minimum income can be thought of as being informative of R. Including control variables, we can now write our regression model for individual i living in country c in year t:

$$SWB_{ict} = \beta_y y_{ict-1} - \beta_R A_{ict} + \delta_c + \psi X_{ict} + e_{ict}, \tag{3}$$

where SWB_{ict} is subjective well-being, A_{ict} is the minimum income, and X_{ict} is a vector of control variables, respectively. We also include country fixed effects (δ_c) to control for country-level factors, most importantly country-specific price levels. Finally, e_{ict} is the error term. We take logarithms of income and the aspirations variable, which means that (3) becomes essentially the same regression model as the one estimated by Stutzer (2004) and Knight and Gunatilaka (2012). We use previous-year rather than current-year disposable income to measure income because the cross-sectional data set only has this information. However, previous-year income is actually also the better choice because interviews are conducted throughout the survey year and previous-year income is thus fully realised at the time of the survey whereas current-year income is not. Our set of control variables include age, age squared, an indicator for being older than 79 (exact age above 79 is not recorded), education (6 categories), gender, self-assessed general health (5 categories), area of birth (country of residence / another EU country / a country outside EU), employment status (9 categories), marital status (5 categories), household type (13 categories), the number of adults (older than 17) in the household, and the number of

children (younger than 18) in the household. The latter variables related to marital status and household type and composition measure overlapping characteristics of households which makes their estimated coefficients hard to interpret. On the other hand, we want to control for such factors extensively because they are likely to be associated with income, income needs and subjective well-being.

The results from estimating model (3) for the three SWB variables are reported in Table 2. The coefficient of disposable monthly income is positive and statistically significant at the 1% level in all of the models. As expected based on theory and the earlier papers, the coefficient of the aspirations variable is negative (and statistically significant at the 1% level) in all of the models. However, the coefficient of the aspirations variable is not nearly as large as the coefficient of the income variable. Rather, the coefficient of aspirations is about one-sixth of the coefficient of income in the case of the life-satisfaction model, one-seventh in the case of the eudaimonia model, and two-fifths in the case of the emotional well-being model. It thus seems that the relative magnitude of the effect of income aspirations on SWB in Europe as a whole is closer to what Knight and Gunatilaka (2012) find for rural China than to what Stutzer (2004) finds for Switzerland. However, as we will see, the small coefficient of aspirations masks considerable cross-country heterogeneity.

To examine cross-country heterogeneity suggested by the results of the earlier papers, we re-estimate the model (3) and allow for country-specific coefficients of the income variable and the aspirations variable. The results are presented in Table 3. When it comes to the difference between the absolute values of the coefficients of income and aspirations, we can verify a pattern proposed by Knight and Gunatilaka (2012) based on their results and Stutzer's (2004) results: the two coefficients are systematically more similar in magnitude the higher the average income level in a country is. Fig. 1 plots the sum of the two coefficients (and tests its statistical significance) in the countries against their real average income. It is apparent from Fig. 1 that aspirations' effect is more likely

Table 2. Determinants of well-being.

	Satisfaction (1)		Eudaimonia (2)		Emotional Well-being (3)	
Income (ln)	0.49***	(0.01)	0.27***	(0.01)	0.05***	(0.00)
Minimum income (ln)	−0.08***	(0.01)	−0.04***	(0.01)	−0.02***	(0.00)
Female	0.12***	(0.01)	0.19***	(0.01)	−0.03***	(0.00)
Age	−0.07***	(0.00)	−0.02***	(0.00)	−0.01***	(0.00)
Age squared/1000	0.69***	(0.02)	0.24***	(0.02)	0.09***	(0.00)
Dummy: Age>79	−0.89***	(0.04)	−0.11**	(0.04)	−0.04***	(0.01)
Education (ref. = Pre-primary)						
Primary	0.08*	(0.04)	0.17***	(0.04)	−0.03***	(0.01)
Lower secondary	0.18***	(0.04)	0.28***	(0.04)	−0.02**	(0.01)
Upper secondary	0.28***	(0.04)	0.37***	(0.04)	0.01	(0.01)
Post-secondary non-tertiary	0.30***	(0.05)	0.40***	(0.05)	0.01	(0.01)
1st or 2nd stage of tertiary	0.41***	(0.04)	0.46***	(0.04)	0.02***	(0.01)
General health (ref. = Bad)						
Very good	2.12***	(0.02)	1.49***	(0.02)	0.37***	(0.00)
Good	1.60***	(0.01)	1.10***	(0.01)	0.29***	(0.00)
Fair	0.93***	(0.01)	0.70***	(0.01)	0.15***	(0.00)
Very bad	−0.95***	(0.03)	−0.78***	(0.04)	−0.11***	(0.00)
Country of birth (ref. = Other)						
EU	0.11***	(0.02)	0.06**	(0.02)	0.01***	(0.00)
Local	0.17***	(0.02)	0.10***	(0.02)	0.03***	(0.00)
Employment (ref. = Military, community service)						
Working full time	−0.31***	(0.10)	0.18	(0.12)	0.01	(0.02)
Working part time	−0.41***	(0.10)	0.15	(0.12)	0.01	(0.02)
Unemployed	−1.22***	(0.10)	−0.47***	(0.12)	−0.10***	(0.02)
Pupil/student/training	−0.06	(0.10)	0.47***	(0.12)	0.04**	(0.02)
Retired	−0.31***	(0.10)	0.16	(0.12)	0.04**	(0.02)
Disabled	−0.66***	(0.10)	−0.23*	(0.12)	−0.02	(0.02)
Fulfilling domestic tasks	−0.36***	(0.10)	0.10	(0.12)	0.02	(0.02)
Other inactive	−0.60***	(0.10)	−0.01	(0.12)	−0.00	(0.02)
Marital status (ref. = Separated)						
Never married	0.23***	(0.03)	0.00	(0.03)	0.04***	(0.01)
Married	0.56***	(0.03)	0.33***	(0.03)	0.07***	(0.01)
Widowed	0.10***	(0.03)	0.04	(0.03)	0.02***	(0.01)
Divorced	0.16***	(0.03)	0.08***	(0.03)	0.03***	(0.01)
Household type (ref. = Single male, age>64)						
Single male, age<65	−0.18***	(0.03)	−0.07**	(0.03)	−0.02***	(0.01)
Single female, age<65	−0.13***	(0.03)	0.04	(0.03)	−0.02***	(0.01)
Single female, age>64	0.09***	(0.03)	0.07**	(0.03)	−0.00	(0.00)
2 adults, age<65	−0.09***	(0.03)	0.04	(0.03)	−0.01***	(0.01)
2 adults, age>64	−0.09***	(0.03)	0.06**	(0.03)	−0.02***	(0.00)
>2 adults	−0.30***	(0.03)	−0.04	(0.03)	−0.05***	(0.01)
Single, children	−0.38***	(0.03)	0.09***	(0.04)	−0.06***	(0.01)
2 adults, 1 child	−0.11***	(0.03)	0.09***	(0.03)	−0.03***	(0.01)
2 adults, 2 children	−0.07**	(0.03)	0.09**	(0.04)	−0.03***	(0.01)
2 adults, >2 children	−0.07	(0.04)	0.12***	(0.04)	−0.04***	(0.01)
>2 adults, children	−0.21***	(0.04)	0.06*	(0.04)	−0.04***	(0.01)
Other	−0.27***	(0.07)	0.03	(0.07)	−0.07***	(0.01)
No. of adults	−0.09***	(0.01)	−0.06***	(0.01)	−0.00	(0.00)
No. of children	−0.04***	(0.01)	0.01	(0.01)	−0.00	(0.00)

N=318,980. Country dummies included. Robust standard errors in parentheses. ***, ** and * denote significance at the 1%, 5% and 10% levels, respectively.

Table 3. Income and aspirations as determinants of well-being by country.

		Satisfaction (1)		Eudaimonia (2)		Emotional Well-being (3)	
Austria	Income (ln)	0.29***	(0.03)	0.13***	(0.03)	0.03***	(0.00)
	Minimum income (ln)	0.05	(0.04)	0.10**	(0.04)	0.01	(0.01)
Belgium	Income (ln)	0.39***	(0.03)	0.30***	(0.04)	0.09***	(0.01)
	Minimum income (ln)	−0.14***	(0.04)	−0.17***	(0.05)	−0.09***	(0.01)
Bulgaria	Income (ln)	0.98***	(0.04)	0.77***	(0.05)	0.09***	(0.01)
	Minimum income (ln)	−0.29***	(0.06)	−0.17***	(0.07)	−0.03***	(0.01)
Cyprus	Income (ln)	0.67***	(0.05)	0.33***	(0.04)	0.07***	(0.01)
	Minimum income (ln)	−0.37***	(0.07)	−0.03	(0.05)	−0.07***	(0.01)
Croatia	Income (ln)	0.59***	(0.06)	0.46***	(0.05)	0.07***	(0.01)
	Minimum income (ln)	−0.08	(0.08)	−0.14*	(0.08)	−0.03***	(0.01)
Czech	Income (ln)	0.68***	(0.05)	0.53***	(0.04)	0.08***	(0.01)
	Minimum income (ln)	−0.32***	(0.06)	−0.30***	(0.06)	−0.05***	(0.01)
Denmark	Income (ln)	0.44***	(0.05)	0.15***	(0.05)	0.05***	(0.01)
	Minimum income (ln)	−0.30***	(0.05)	−0.12***	(0.04)	−0.02**	(0.01)
Estonia	Income (ln)	0.64***	(0.04)	0.20***	(0.03)	0.05***	(0.01)
	Minimum income (ln)	−0.17***	(0.04)	0.22***	(0.04)	−0.00	(0.01)
Finland	Income (ln)	0.29***	(0.03)	0.05**	(0.02)	0.05***	(0.01)
	Minimum income (ln)	−0.08***	(0.03)	−0.04	(0.03)	−0.02***	(0.01)
France	Income (ln)	0.59***	(0.03)	0.14***	(0.03)	0.06***	(0.01)
	Minimum income (ln)	−0.11***	(0.04)	−0.10**	(0.04)	−0.04***	(0.01)
Germany	Income (ln)	0.61***	(0.03)	0.33***	(0.03)	0.06***	(0.01)
	Minimum income (ln)	−0.13***	(0.04)	−0.14***	(0.04)	−0.04***	(0.01)
Greece	Income (ln)	0.39***	(0.03)	0.33***	(0.03)	0.05***	(0.00)
	Minimum income (ln)	−0.02	(0.05)	−0.08*	(0.05)	−0.06***	(0.01)
Hungary	Income (ln)	0.85***	(0.03)	0.57***	(0.03)	0.08***	(0.01)
	Minimum income (ln)	−0.19***	(0.04)	−0.09**	(0.04)	0.02**	(0.01)
Iceland	Income (ln)	0.45***	(0.06)	0.07	(0.06)	0.05***	(0.01)
	Minimum income (ln)	−0.25***	(0.07)	−0.16**	(0.07)	0.01	(0.01)
Ireland	Income (ln)	0.29***	(0.04)	0.13***	(0.03)	0.04***	(0.01)
	Minimum income (ln)	−0.37***	(0.05)	−0.24***	(0.04)	−0.04***	(0.01)
Italy	Income (ln)	0.47***	(0.02)	0.32***	(0.02)	0.06***	(0.00)
	Minimum income (ln)	−0.10***	(0.03)	−0.06**	(0.03)	−0.03***	(0.01)
Latvia	Income (ln)	0.54***	(0.03)	0.33***	(0.03)	0.06***	(0.00)
	Minimum income (ln)	0.01	(0.04)	0.14***	(0.04)	−0.02***	(0.01)
Lithuania	Income (ln)	0.48***	(0.04)	0.42***	(0.03)	0.03***	(0.01)
	Minimum income (ln)	−0.04	(0.05)	0.02	(0.05)	0.03***	(0.01)
Luxembourg	Income (ln)	0.56***	(0.05)	0.08*	(0.04)	0.04***	(0.01)
	Minimum income (ln)	−0.24***	(0.05)	−0.19***	(0.05)	−0.05***	(0.01)
Malta	Income (ln)	0.34***	(0.04)	0.04	(0.03)	0.03***	(0.01)
	Minimum income (ln)	0.06	(0.05)	0.19***	(0.04)	−0.02***	(0.01)
Netherlands	Income (ln)	0.37***	(0.03)	0.03	(0.03)	0.09***	(0.01)
	Minimum income (ln)	−0.18***	(0.04)	−0.11***	(0.04)	−0.02***	(0.01)
Norway	Income (ln)	0.40***	(0.05)	0.22***	(0.05)	0.05***	(0.01)
	Minimum income (ln)	−0.19***	(0.05)	−0.11**	(0.05)	−0.02***	(0.01)
Poland	Income (ln)	0.42***	(0.03)	0.24***	(0.03)	0.04***	(0.00)
	Minimum income (ln)	0.10***	(0.04)	0.07**	(0.04)	−0.02***	(0.01)
Portugal	Income (ln)	0.63***	(0.04)	0.22***	(0.03)	0.07***	(0.01)
	Minimum income (ln)	−0.12**	(0.05)	−0.05	(0.04)	−0.01	(0.01)
Romania	Income (ln)	0.41***	(0.02)	0.32***	(0.02)	0.04***	(0.00)
	Minimum income (ln)	0.01	(0.03)	−0.12***	(0.03)	−0.02***	(0.01)
Serbia	Income (ln)	0.73***	(0.03)	0.45***	(0.03)	0.04***	(0.00)
	Minimum income (ln)	0.09**	(0.04)	−0.06	(0.05)	−0.00	(0.01)
Slovenia	Income (ln)	0.62***	(0.04)	0.31***	(0.04)	0.04***	(0.01)
	Minimum income (ln)	−0.03	(0.05)	0.15***	(0.05)	0.01	(0.01)
Spain	Income (ln)	0.34***	(0.02)	0.10***	(0.02)	0.04***	(0.00)
	Minimum income (ln)	−0.00	(0.03)	0.01	(0.03)	−0.01**	(0.01)
Sweden	Income (ln)	0.32***	(0.04)	0.17***	(0.05)	0.06***	(0.01)
	Minimum income (ln)	−0.07	(0.05)	−0.03	(0.06)	−0.01	(0.01)
Switzerland	Income (ln)	0.30***	(0.03)	0.07**	(0.03)	0.05***	(0.01)
	Minimum income (ln)	−0.15***	(0.04)	−0.09**	(0.04)	−0.04***	(0.01)
United Kingdom	Income (ln)	0.46***	(0.03)	0.22***	(0.03)	0.05***	(0.01)
	Minimum income (ln)	−0.14***	(0.04)	−0.10***	(0.03)	−0.01**	(0.01)

N=318,980. Well-being regressed on income variables interacted with country dummies (control variables as in Table 2). Robust st. errors in parentheses. ***, **, * denote significance at the 1%, 5%, 10% levels, respectively.
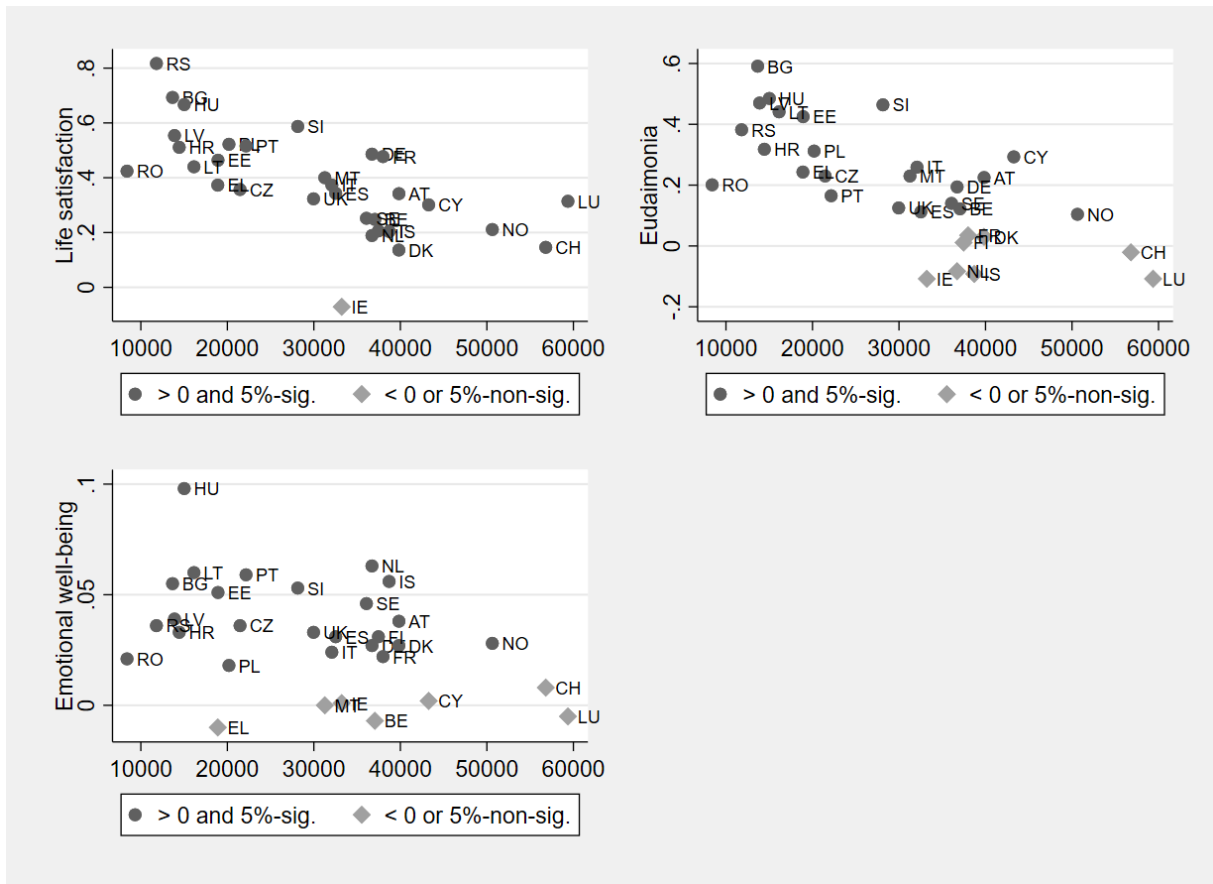
Fig. 1. Estimated life-satisfaction, eudaimonia, and emotional well-being effect of a one-unit rise in both ln(income) and ln(aspirations) by country's mean income (in 2020 EU-27 prices; source: Eurostat).

to offset income's effect in high-income countries.[4] This result is robust to alternative SWB measures. It thus seems that the Swiss result by Stutzer (2004) and Chinese result by Knight and Gunatilaka (2012) are representative of a more general pattern in which aspirations are relatively more important for well-being in high-income countries whereas in the low-income countries, actual income is more important.

Fig. 1 highlights an interesting difference between the three aspects of well-being. In line with Stutzer's (2004) result of aspirations' coefficient being about 80% of the coefficient of income in the life satisfaction equation, we find that complete offsetting of income's effect by aspirations' effect on life satisfaction is rare even in the highest-income countries. For example, we roughly reproduce Stutzer's 80%-result for Switzerland, the country with the second-highest average income in our data set. But the results on the other two aspects of well-being suggest that this result is specific to life evaluation. Namely, aspirations seem to have more potential to hinder higher incomes from making things in life feel more worthwhile (eudaimonia) and positive emotions more and negative emotions less frequent (emotional well-being). These results correspond to Kahneman and Deaton's (2010) result that high incomes are associated with more positive life evaluation but not with higher emotional well-being in the United States. Our results on high-income countries suggest that adaptation through higher aspirations may be the mechanism behind their findings. Moreover, our results are in line with D'Ambrosio et al.'s (2018) recent results for Germany that the effect of perceived fair wage offsets the effect of one's actual wage on emotional well-being but not on life satisfaction.

Before turning to estimations of how actual income and aspirations are associated,

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[4]Cross-country differences in data quality can be a cause of some differences in the coefficient of income. In contrast, the income data come from registers in some countries and surveys in others, the latter being a source of a larger measurement error (and, thus, a larger attenuation bias). Should this be behind the results, we would see larger coefficients of income (as such or as compared to the coefficients of aspirations) for the register countries. We looked into this and found no systematic differences between the register and survey countries. The aspirations data come from surveys in all countries, and are therefore arguably subject to similar errors (instead of systematically larger errors in low-income countries).

let us comment on the association of the control variables and the three aspects of well-being based on the results shown in Table 2. However, as we are not focused on the determinants of SWB in general, we will not go into details. We find that the relationship between age and all three aspects of well-being is U-shaped. Unlike life satisfaction, emotional well-being and especially eudaimonia are higher for older people than for the young. Eudaimonia starts to improve at the age of 35, emotional well-being at 39 and, roughly in line with many earlier studies, life satisfaction at 47, respectively. Higher education is generally associated with higher well-being, the only exception being that those (few) with just pre-primary education have about the same level of emotional well-being as those with upper secondary education. Women are more satisfied with life and more eudaimonic than men but their emotional well-being is lower. Better self-assessed health is positively associated with all three aspects of well-being. All aspects of well-being are lower for immigrants, especially those from outside the EU. The overall picture when it comes to labour market status is that pupils, students and those in training score highest in all aspects of well-being whereas the unemployed score lowest. Those who work are relatively satisfied with life and have high eudaimonia, but being retired is better than working for emotional well-being.[5]

4 Modelling income aspirations

Let us next turn to the analysis of how income aspirations are associated with actual incomes. It is worth noting that this link is an important one because, ultimately, rising incomes' ability to improve well-being is dampened by aspirations only if aspirations rise as incomes rise. In turn, if aspirations are determined by things not correlated with incomes,

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[5]Because of the obvious overlap between the control variables measuring household type and composition, we refrain from trying to interpret their coefficients. Notice that, for the same reason, caution should be exercised when interpreting the coefficients of e.g. gender and the old-age dummy.

income rises increase the difference between incomes and aspirations and, therefore, well-being. Various earlier papers have modelled aspirations as a function of income either as the sole purpose of research (van Praag, 1971; van Praag and Kapteyn, 1973; van Praag et al., 1982; Frijters and van Praag, 1995)[6] or as a part of a study such as ours that examines the links between income, aspirations and SWB (Stutzer, 2004; Knight and Gunatilaka, 2012). Authors have measured aspirations either based on a minimum income question such as the one found in EU-SILC, or based on some other income evaluation question.

The standard approach is simply to regress an aspirations variable on an actual-income variable and a set of control variables. Stutzer (2004) and Knight and Gunatilaka (2012) have also included measures of the average income of residents of the same region to allow for aspirations being driven by interpersonal comparisons. Cross-sectional data are routinely used in the earlier studies and we are not aware of any analyses to have identified parameters from within-individual instead of between-individual variation. As EU-SILC is a panel data set, we are able to control for possible time-invariant characteristics of individuals linked to both income and aspirations. For example, individuals' preferences for consumption are likely to be inherently different. A person whose marginal utility from income available for consumption is higher (and, thus, higher aspirations) is also likely to have higher income because it is, and has been, optimal for her to put more effort into earning more (see also the discussion in Stutzer, 2004). To our knowledge, we are the first to control for individual fixed effects and, thus, avoid possible biases arising from fixed unobservables. Our model of aspirations is similar to what earlier studies have estimated but adding individual and year fixed effets:

$$A_{ict} = \alpha_0 y_{ict-1} + \alpha_1 \bar{y}_{ct-1} + \theta_i + \pi_t + \omega X_{ict} + v_{ict}, \tag{4}$$

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[6]Van Praag and Frijters (1999) also mention 1983 and 1988 contributions by van Praag and van Weeren.

where aspirations, income and control variables are the same as in the model (3) but excluding the time-invariant ones, $\bar{y}_{ct-1}$ is the previous-year average income in country c, θ_i is an individual fixed effect and π_t is a year fixed effect, and v_{ict} is the error term, respectively.[7] We take logs of the aspirations, income and average-income variables. We, again, use previous-year rather than current-year income for various reasons. First, previous-year income is fully realised at the time of the survey. Second, as Stutzer (2004) points out, current income may lead to (more severe) endogeneity.[8] Finally, the current-year income information is linked to the next year's sample in EU-SILC which means that using it would lead to losing observations of those respondents who leave the sample after the current year.[9]

Summary information on our longitudinal sample is presented in Table 4. Table 5 presents the results from estimating equation (4) with those data. A look at the results on the control variables reveals that income aspirations rise as one's health deteriorates and those who work have higher aspirations than those who do not. Younger age and a larger household seem to be associated with higher aspirations, though due to overlap between the measures, it is difficult to draw reliable conclusions based on individual coefficients. Turning to our key regressors, both own income and average income enter positively, as expected, and with p-values well below 1%. The coefficient of the own-income variable (0.081) is considerably smaller than what Stutzer (2004) has obtained for Switzerland (about 0.4) and also what Knight and Gunatilaka (2012) have obtained for rural China (about 0.2). There are at least two potential reasons for this. First is that we control for individual fixed effects, possibly leading us to better tackle certain type of endogeneity,

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[7]The country-level average income is used because EU-SILC includes information on sub-national place-of-residence for some countries only. It should be noted that an advantage of calculating the average income for large regions (such as countries) instead of smaller localities is that the risk spillover effects from outside the region is smaller.

[8]In the case of a within-individual estimation, this would be the case should the simultaneous shocks to income and aspirations be correlated.

[9]The amount of data lost would be significant because the longitudinal EU-SILC is a rotating panel in many countries.

Table 4. Descriptive Statistics: Longitudinal Sample.

		Mean	St. Dev.	25%	Median	75%
Income (€)		2354	2563	775	1682	3235
Minimum income (€)		1705	32948	740	1400	2097
Average income (€)		2354	1404	965	2653	3333
Age (0 if >79)		44.56	19.37	31	46	60
Dummy: Age>79		0.05	0.21	0	0	0
Education	Pre-primary	0.02	0.12	0	0	0
	Primary	0.14	0.35	0	0	0
	Lower secondary	0.20	0.40	0	0	0
	Upper secondary	0.40	0.49	0	0	1
	Post-secondary non tertiary	0.03	0.18	0	0	0
	First or second stage of tertiary	0.20	0.40	0	0	0
General health	Very good	0.22	0.41	0	0	0
	Good	0.43	0.49	0	0	1
	Fair	0.24	0.43	0	0	0
	Bad	0.09	0.29	0	0	0
	Very bad	0.02	0.15	0	0	0
Employment	Working full time	0.42	0.49	0	0	1
	Working part time	0.07	0.25	0	0	0
	Unemployed	0.07	0.25	0	0	0
	Pupil/student/training	0.08	0.26	0	0	0
	Retired	0.25	0.43	0	0	0
	Disabled	0.03	0.17	0	0	0
	Military, community service	0.00	0.03	0	0	0
	Fulfilling domestic tasks	0.07	0.26	0	0	0
	Other inactive person	0.02	0.14	0	0	0
Marital status	Never married	0.28	0.45	0	0	1
	Married	0.56	0.50	0	1	1
	Separated	0.01	0.11	0	0	0
	Widowed	0.09	0.29	0	0	0
	Divorced	0.06	0.24	0	0	0
Household type	Single male, age<65	0.03	0.18	0	0	0
	Single female, age<65	0.03	0.18	0	0	0
	Single male, age>64	0.01	0.12	0	0	0
	Single female, age>64	0.05	0.21	0	0	0
	2 adults, age<65	0.14	0.34	0	0	0
	2 adults, age>64	0.14	0.35	0	0	0
	>2 adults	0.15	0.36	0	0	0
	Single person, children	0.03	0.16	0	0	0
	2 adults, one child	0.10	0.30	0	0	0
	2 adults, two children	0.12	0.32	0	0	0
	2 adults, >2 children	0.05	0.21	0	0	0
	>2 adults, children	0.13	0.34	0	0	0
	Other	0.02	0.14	0	0	0
No. of adults in the household		2.48	1.09	2	2	3
No. of children in the household		0.58	0.94	0	0	1
Year		2009.87	3.15	2007	2010	2013

N=3,675,814. Income is the total monthly disposable income of the household. Minimum income is the lowest monthly income needed for the household to make ends meet. Average income is the mean of household income in respondent's country-year cell.

as discussed above. Second, attenuation bias due to errors in income measurement might be large, and larger than in earlier studies, for some of our sample countries.[10]

Table 5. Determinants of minimum income.

	Minimum Income (ln) (1)		$\alpha_0 + \alpha_1$ (2)		$(\alpha_0 + \alpha_1) - 1$ (3)	
Household income (ln) (α_0)	0.081***	(0.001)	0.515***	(0.004)	−0.485***	(0.004)
Average income (ln) (α_1)	0.434***	(0.004)				
Age	0.001	(0.001)				
Age squared/1000	−0.029***	(0.006)				
Dummy: Age>79	−0.064	(0.055)				
Education (ref. = Pre-primary)						
Primary	−0.002	(0.005)				
Lower secondary	−0.001	(0.005)				
Upper secondary	$1.1{\times}10^{-4}$	(0.005)				
Post-secondary non tertiary	0.003	(0.006)				
First or second stage of tertiary	−0.003	(0.006)				
General health (ref. = Bad)						
Very good	−0.009***	(0.001)				
Good	−0.006***	(0.001)				
Fair	−0.005***	(0.001)				
Very bad	0.009***	(0.002)				
Employment (ref. = Military, community service)						
Working full time	0.022***	(0.008)				
Working part time	−0.002	(0.008)				
Unemployed	−0.029***	(0.008)				
Pupil/student/training	−0.009	(0.008)				
Retired	−0.017**	(0.008)				
Disabled	−0.017**	(0.008)				
Fulfilling domestic tasks	−0.022***	(0.008)				
Other inactive person	−0.018**	(0.008)				
Marital status (ref. = Separated)						
Never married	0.014***	(0.004)				
Married	0.048***	(0.004)				
Widowed	−0.037***	(0.005)				
Divorced	−0.005	(0.004)				
Household type (ref. = Single male, age>64)						
Single male, age<65	−0.005	(0.007)				
Single female, age<65	−0.055***	(0.008)				
Single female, age>64	−0.036***	(0.008)				
2 adults, age<65	0.104***	(0.007)				
2 adults, age>64	0.096***	(0.007)				
>2 adults	0.101***	(0.007)				
Single person, children	0.071***	(0.007)				
2 adults, one child	0.123***	(0.007)				
2 adults, two children	0.116***	(0.007)				
2 adults, >2 children	0.111***	(0.008)				
>2 adults, children	0.099***	(0.007)				
Other	−0.011	(0.007)				
No. of adults	0.080***	(0.001)				
No. of children	0.071***	(0.001)				

N=3,675,814. Individual and year fixed effects included. Individual-clustered standard errors in parentheses.
***, ** and * denote significance at the 1%, 5% and 10% levels, respectively.

Let us next discuss the result on others' income. The estimated coefficient is 0.434,

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[10]Notice also that a more accurate measure of income might in fact lead to larger errors in the measurement of the relevant income concept. Namely, people might put more emphasis on their permanent income items (such as salaries, pensions etc.) than to the temporary ones (such as capital gains) when thinking of their minimum income needs. In this case, more accurate measures might actually perform worse in measuring the income that determines aspirations.

which is more than twice the corresponding baseline estimate of 0.188 obtained by Stutzer (2004) for Switzerland.[11] It can be argued that, in addition to different geographical coverage of the data, the results may be different because of measurement issues: Stutzer's (2004) average income data are from a much earlier year than his aspirations data. Our estimate for the coefficient of average income is also much larger than what we got for the coefficient of own income. This might be because average incomes (in general) may suffer less from measurement error than micro-level incomes. This is especially the case if errors are symmetrically distributed with the actual income as the mean because then the positive and negative errors cancel each other out and the average income variable is an unbiased measure of the actual average income. In this case, measurement issues cause our average-income variable's coefficient to capture much of the effect of own income as well.

Whereas cross-study comparisons of own income's coefficient on one hand, and average income's coefficient on the other might not be very fruitful for the above reasons, comparing the association between incomes of all (own plus average) and aspirations could make more sense. Our results predict that as log incomes of all in a country increase by 1 unit, aspirations increase by 0.081+0.434=0.515 units. Based on the tests in Table 5., that number is statistically significantly larger than zero but smaller than one. Stutzer's (2004) results predict an increase of similar magnitude (0.591). It thus seems that as a country's income increases by 1%, aspirations increase by more than 0.5%.

Next, we allow for heterogeneous associations between incomes and aspirations across countries. Results are presented in Table 6. As was the case with SWB modelling, the estimated parameters are diverse. When it comes to the sum of the coefficients of own income and average income, it is statistically significantly (at 10% level) larger than zero for 25 out of 29 countries. With the exception of Portugal, it is also statistically significantly

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[11]Knight and Gunatilaka (2012) do not include an average income variable.

Table 6. Income and average income as determinants of minimum income by country.

		Min. income (ln) (1)		$\alpha_0 + \alpha_1$ (2)		$\alpha_0 + \alpha_1 - 1$ (3)	
Austria	Income (ln) (α_0)	0.085***	(0.004)	−0.069*	(0.036)	−1.069***	(0.036)
	Average income (ln) (α_1)	−0.154***	(0.036)				
Belgium	Income (ln) (α_0)	0.078***	(0.005)	0.334***	(0.030)	−0.666***	(0.030)
	Average income (ln) (α_1)	0.256***	(0.030)				
Bulgaria	Income (ln) (α_0)	0.098***	(0.004)	0.579***	(0.011)	−0.421***	(0.011)
	Average income (ln) (α_1)	0.481***	(0.012)				
Croatia	Income (ln) (α_0)	0.075***	(0.007)	0.053*	(0.030)	−0.947***	(0.030)
	Average income (ln) (α_1)	−0.022	(0.030)				
Cyprus	Income (ln) (α_0)	0.143***	(0.005)	0.467***	(0.017)	−0.533***	(0.017)
	Average income (ln) (α_1)	0.324***	(0.018)				
Czech	Income (ln) (α_0)	0.108***	(0.004)	0.691***	(0.009)	−0.309***	(0.009)
	Average income (ln) (α_1)	0.583***	(0.010)				
Denmark	Income (ln) (α_0)	0.137***	(0.013)	0.178***	(0.049)	−0.822***	(0.049)
	Average income (ln) (α_1)	0.040	(0.050)				
Estonia	Income (ln) (α_0)	0.134***	(0.005)	0.541***	(0.011)	−0.459***	(0.011)
	Average income (ln) (α_1)	0.407***	(0.012)				
Finland	Income (ln) (α_0)	0.231***	(0.009)	0.307***	(0.035)	−0.693***	(0.035)
	Average income (ln) (α_1)	0.076**	(0.036)				
France	Income (ln) (α_0)	0.134***	(0.004)	0.082***	(0.013)	−0.918***	(0.013)
	Average income (ln) (α_1)	−0.051***	(0.014)				
Greece	Income (ln) (α_0)	0.046***	(0.003)	0.269***	(0.012)	−0.731***	(0.012)
	Average income (ln) (α_1)	0.224***	(0.012)				
Hungary	Income (ln) (α_0)	0.126***	(0.004)	0.859***	(0.018)	−0.141***	(0.018)
	Average income (ln) (α_1)	0.734***	(0.018)				
Iceland	Income (ln) (α_0)	0.115***	(0.011)	0.824***	(0.017)	−0.176***	(0.017)
	Average income (ln) (α_1)	0.708***	(0.020)				
Ireland	Income (ln) (α_0)	0.028***	(0.008)	0.439***	(0.051)	−0.561***	(0.051)
	Average income (ln) (α_1)	0.411***	(0.052)				
Italy	Income (ln) (α_0)	0.041***	(0.002)	−0.244***	(0.034)	−1.244***	(0.034)
	Average income (ln) (α_1)	−0.286***	(0.034)				
Latvia	Income (ln) (α_0)	0.120***	(0.004)	0.468***	(0.008)	−0.532***	(0.008)
	Average income (ln) (α_1)	0.348***	(0.009)				
Lithuania	Income (ln) (α_0)	0.060***	(0.004)	0.398***	(0.010)	−0.602***	(0.010)
	Average income (ln) (α_1)	0.338***	(0.011)				
Luxembourg	Income (ln) (α_0)	0.047***	(0.005)	0.719***	(0.033)	−0.281***	(0.033)
	Average income (ln) (α_1)	0.672***	(0.034)				
Malta	Income (ln) (α_0)	0.053***	(0.007)	0.437***	(0.044)	−0.563***	(0.044)
	Average income (ln) (α_1)	0.384***	(0.045)				
Netherlands	Income (ln) (α_0)	0.129***	(0.010)	0.001	(0.036)	−0.999***	(0.036)
	Average income (ln) (α_1)	−0.128***	(0.037)				
Norway	Income (ln) (α_0)	0.174***	(0.009)	0.533***	(0.020)	−0.467***	(0.020)
	Average income (ln) (α_1)	0.359***	(0.022)				
Poland	Income (ln) (α_0)	0.093***	(0.002)	0.468***	(0.007)	−0.532***	(0.007)
	Average income (ln) (α_1)	0.375***	(0.007)				
Portugal	Income (ln) (α_0)	0.071***	(0.005)	1.434***	(0.044)	0.434***	(0.044)
	Average income (ln) (α_1)	1.363***	(0.044)				
Romania	Income (ln) (α_0)	0.042***	(0.005)	0.915***	(0.019)	−0.085***	(0.019)
	Average income (ln) (α_1)	0.873***	(0.020)				
Serbia	Income (ln) (α_0)	0.063***	(0.006)	−0.954***	(0.073)	−1.954***	(0.073)
	Average income (ln) (α_1)	−1.017***	(0.074)				
Slovenia	Income (ln) (α_0)	0.103***	(0.008)	0.074***	(0.017)	−0.926***	(0.017)
	Average income (ln) (α_1)	−0.029*	(0.017)				
Spain	Income (ln) (α_0)	0.031***	(0.002)	0.329***	(0.013)	−0.671***	(0.013)
	Average income (ln) (α_1)	0.298***	(0.014)				
Sweden	Income (ln) (α_0)	0.099***	(0.010)	0.553***	(0.023)	−0.447***	(0.023)
	Average income (ln) (α_1)	0.454***	(0.026)				
United Kingdom	Income (ln) (α_0)	0.050***	(0.005)	0.826***	(0.020)	−0.174***	(0.020)
	Average income (ln) (α_1)	0.775***	(0.020)				

N=3,675,814. Individual fixed effects included. Minimum income regressed on income and average income, both interacted with country dummies (control variables as in Table 5). Individual-clustered standard errors in parentheses. ***, ** and * denote significance at the 1%, 5% and 10% levels, respectively.

smaller than one. We looked into it, but found no apparent reason for the suspiciously large average-income coefficient of Portugal or for the negative average-income coefficients of some countries. We should note that the time-series, in general are short, and Serbia's large negative coefficient is probably explained by only three years of data in the sample for that country i.e. effectively identifying the parameter from just three different levels of average income. Any clear pattern in the overall effect of income related to countries' income levels cannot be recognised. In turn, we found out that countries with large own-income coefficient tend to to have small average-income coefficient and *vice versa*. This finding is consistent with the above discussion on poorly measured own income leading to attenuation bias in its coefficient estimate and the coefficient of average income capturing at least part of the own income's effect. This interpretation is further reinforced by the observation that many of the countries providing EU-SILC with register-based income data (e.g. the Nordic countries) are typically countries with own-income coefficient relatively large compared to the average-income coefficient. We think that due to possible undetected data problems and relatively little data (i.e. short time series) on average incomes for some countries, one cannot draw very firm conclusions about the income-aspirations nexus in individual countries based on our analysis. Rather, it seems safe to conclude that, in the European countries on average, about 50% of the income rises can be expected to be absorbed into income aspirations.

5   Conclusions

Using data from European countries, earlier findings on the negative association between income aspirations and subjective well-being are shown to hold internationally. This result holds for the three major aspects of well-being, namely life evaluation, eudaimonia, and emotional well-being. Aspirations are more impactful in offsetting income-rise induced

well-being improvements in high-income countries. Offsetting is complete or close to complete in many high-income countries when it comes to eudaimonia and emotional well-being. Higher incomes, however, have some potential to improve life evaluations in high-income countries, as has been found earlier (Kahneman and Deaton, 2010).

Aspirations prevent actualised income increases from improving well-being only if aspirations increase with incomes. We show that earlier results on such a link hold once individual fixed effects are controlled for. In the European countries on average, incomes of all rising by 1% in a country is associated with an approximate rise of 0.5% in aspirations. When it comes to the time-series association of incomes and aspirations, future studies focussing on individual countries could conduct more detailed analyses.

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