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Working Paper

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GLO Discussion Paper, No. 1060

Provided in Cooperation with:
Global Labor Organization (GLO)

Suggested Citation: Lepinteur, Anthony; Yin, Rémi (2022) : Does Economic Insecurity Reduce all Types of Expenditures?, GLO Discussion Paper, No. 1060, Global Labor Organization (GLO), Essen

This Version is available at:
https://hdl.handle.net/10419/250911

Does Economic Insecurity Reduce all Types of Expenditures?*

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March 2021

Abstract

The prudence theory predicts that economic insecurity reduces all consumption expenditures. We question this prediction by estimating the effect of economic insecurity on various expenditure items using an Australian longitudinal data set (HILDA) and panel regressions. Our results confirm that total consumption declines in response to greater economic insecurity and that this decline is greater for those with high risk aversion. However, we observe a clear gradient related to the degree of necessity of goods and services: the more necessary the consumption items, the weaker the effect of insecurity.

Keywords: Household expenditures, Economic insecurity, Prudence
JEL Classification: D11, D12, E21

*The Australian data used in this paper were made available by the Household, Income and Labour Dynamics in Australia (HILDA). Neither the original collectors of the data nor the Archive bear any responsibility for the analyses or interpretations presented here. Financial support from the Fonds National de la Recherche Luxembourg (Grant C18/SC/12677653) and EUR grant ANR-17-EURE-0001 is gratefully acknowledged.
Conflicts of interest: none

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1 Introduction

Whether through the flexibilisation or dualisation of labour markets, the numerous episodes of economic recession, the globalisation of trade or the automation of tasks, economic insecurity and its consequences are a matter of concern for civil society as well as for politicians. Existing work has already linked economic insecurity to obesity (Smith, Stillman and Craig, 2013), suicide rates (Reeves et al., 2012), health (Rohde et al., 2016; Lepinteur, 2021), fertility (Clark and Lepinteur, 2022), marriage (Clark, D'Ambrosio and Lepinteur, 2020), voting attitudes and behaviours (Guiso et al., 2017; Guriev and Papaioannou, 2020; Algan et al., 2017; Dustmann et al., n.d.; Foster and Frieden, 2017; Inglehart and Norris, 2016; Mutz, 2018; Colantone and Stanig, 2018; Sampson, 2017), and gun violence in US schools (Pah et al., 2017).

Economic insecurity, if forward-looking, boils down to the concept of income uncertainty. From a theoretical point of view, economic insecurity can therefore also affect consumption expenditure. In particular, if the marginal utility of the consumer is convex (Kimball, 1990), an increase in economic insecurity should result in an increase in precautionary savings and, consequently, an immediate decrease in consumption. In this case, the consumer is considered to be "prudent". The effect of economic insecurity increases with consumer risk aversion. It is also worth noting that theoretical models illustrating the concept of "prudence" consider consumption as a monolith and that the effect of economic insecurity is implicitly the same for all types of goods and services.

We have two objectives in this article. First, we want to verify the main prediction of the prudence theory that an increase in economic insecurity leads to a decrease in consumption. Second, we want to estimate the extent to which this decline depends on the nature of the goods and services considered. To do this, we use the economic insecurity index developed by Bossert et al. (2019), which aims to capture an individual's or household's confidence in their ability to cope with future economic shocks using past changes in their financial resources, and an Australian longitudinal dataset (the Household, Income and Labour Dynamics in Australia - HILDA from now on) where the head of households are asked to report many types of expenses at the household level every year since 2001. We make use of this dataset to assess the effect of economic insecurity on expenditures at the household level using panel regressions.

Our results are the following. In line with the predictions of Kimball (1990), we first show that a greater level of economic insecurity at the household level is associated with a significant reduction in expenditures. Second, we show that this reduction is even larger for head of households with a high level of risk aversion. Last, we check whether the elasticity to economic insecurity is the same for all types of expenditures. Our results suggest the least-sensitive expenses are those pertaining to both essential needs and alcohol and cigarettes. The hierarchy of needs of Maslow may explain why the elasticity to economic insecurity of essential goods is the lowest while the addictive nature of alcohol and cigarettes may explain why their consumption is only marginally affected in case of greater insecurity.

Our analysis is not the first to focus on the effect of economic insecurity on consumption at the micro level (Dardanoni, 1991; Carroll, 1994; Guiso, Jappelli and Terlizzese, 1996; Miles, 1997; Benito, 2006; Lugilde, Bande and Riveiro, 2018). However, our results contribute to the literature on a number of key points. First, economic insecurity in the above articles is mostly derived from unemployment. The index of economic insecurity we use is not limited to labour market shocks but takes into account all events that affect the financial resources of households. Since it is practically impossible to isolate exogenous variations in economic insecurity without losing external validity, we use regressions including household fixed effects. In doing so, we attenuate time-invariant heterogeneity biases whose influence had not previously been accounted for in the existing literature. Finally, our results take a step forward compared to the theoretical and empirical literature on prudence since we reveal that the nature of goods and services mediates the relationship between consumption and uncertainty.

The remainder of the paper is organised as follows. Section 2 lays the theoretical foundations of our reasoning. The data and the main variables of interest of this paper are presented in Section 3. Section 4 describes our identification strategy and our estimation sample. The main results are shown and discussed in Section 5. Section 6 concludes.

2 Theoretical Foundations

The hypotheses we wish to test in this article come from the theoretical work of Kimball (1990) and Caballero (1990). Under the assumption that marginal utility is convex, consumer behaviour can be described as "prudent". "Prudence" here refers to the fact that the consumer has precautionary savings to face potential future income losses.

We illustrate the role of "prudence" with the following basic model where the intertemporal utility of a consumer is maximised under a budget constraint:

$$\max_{c_{t+i}} E_t\left[\sum_{i=0}^{\infty}\left(1+\delta\right)^i U(c_{t+i})\right] \tag{1}$$

$$c_{t+i} = y_{t+i} + (1+r)a_{t+i-1} - a_{t+i} \tag{2a}$$

$$\lim_{i\to+\infty} a_{t+i}(1+r)^{-i} = 0 \tag{2b}$$

where E_t represents the conditional expectancy, δ is the discount rate, U is the utility function, c_t represents consumption at time t, y is the income, a is the financial wealth and r is the risk free return of a bond. Equation (2a) is the intertemporal budget constraint. Equation (2b) is the transversality condition that implies that a consumer cannot finance consumption indefinitely through borrowing. As in Caballero (1990), we assume that the utility function is $U(c_t) = -\frac{1}{\kappa}\exp(-\kappa c_t)$ where κ is the constant absolute risk aversion.[1] We also assume that current income y_t depends on past income y_{t-1} and a deterministic part $\hat{y}$:

$$y_t = \lambda y_{t-1} + (1-\lambda)\hat{y} + \varepsilon_t$$

where λ denotes the persistence in income shocks $\varepsilon_t \rightsquigarrow i.i.d(0, \sigma^2)$.

A first implication of his model is that consumption growth can be decomposed into the sum of two components: the certainty equivalent level of consumption and the precautionary motive for savings which increases in the variance of future consumption growth.

[1] We use a CARA utility function because it accommodates income risk and offers closed form solutions for optimal consumption. However, CARA preferences also imply that precautionary savings are independent of wealth. To overcome this drawback, CRRA preferences can be used but closed form solutions cannot be yield (Lugilde, Bande and Riveiro, 2019).

If we assume, for sake of simplicity, that the interest rate is equal to the discount rate and that income shocks are normally distributed, the solution is given by:

$$c_t = ct^{CEQ} - \frac{\kappa\sigma^2}{(R-\lambda)} \tag{3}$$

where $R = 1 + r$. This solution has direct testable implications: it shows that the precautionary savings increase with the variance of income σ^2, with the shock persistence λ, and with the risk aversion κ.

Assuming that economic insecurity equates to the concept of income uncertainty, our first objective will be to test these two hypotheses:

- An increase of economic insecurity reduces the level of expenditures.
- Risk aversion exacerbates the effect of economic insecurity on economic expenditures.

The objective of models illustrating precautionary behaviours is to find the level of consumption that maximises utility under constraints. Consumption is however considered as a monolithic entity and very little attention is paid to the composition of the consumption basket as such. The elasticity of consumption with respect to economic insecurity may vary according to the type of goods and services for many reasons. The hierarchy of needs of Maslow (1943) lays the theoretical foundation of our reasoning here. Since individuals' most basic needs must be met before they become motivated to achieve higher-level needs, the hierarchy of needs could imply that the effect of economic insecurity should be weaker for goods and services reflecting basic needs. Conversely, we should expect a larger effect of economic insecurity on higher-level needs expenditures. Following this reasoning, our second objective will be to test this last hypothesis:

- The more necessary the goods and services are, the lower the effect of economic insecurity is.

3 HILDA

We here use the Household, Income and Labour Dynamics in Australia (HILDA) to investigate the relationship between expenditures and economic insecurity. HILDA is a repre-

sentative longitudinal survey of the Australian population from 2001 to 2018 follows the lives of more than 17,000 individuals each year. At each wave, the survey collects information on individual characteristics such as employment, marital status, or risk aversion, and household characteristics such as family structure, household income, and household expenditures on some specific goods.

3.A The Measurement of Economic Insecurity

According to Western et al. (2012), economic insecurity *"describes the risk of economic loss faced by workers and households as they encounter the unpredictable events of social life"* (p. 341). Although this definition is widely accepted, there is currently no consensus on the empirical measurement of economic insecurity.

In this paper, we use the objective index of individual economic insecurity recently developed by Bossert et al. (2019). It takes the following form:

$$EI^T(x) = l_0 \sum_{\substack{t\in\{0,...T\} \\ x_{-t}>x_{-(t-1)}}} \delta^{t-1}\Big(x_t - x_{t-1}\Big) + g_0 \sum_{\substack{t\in\{0,...T\} \\ x_{-t}<x_{-(t-1)}}} \delta^{t-1}\Big(x_t - x_{t-1}\Big) \quad (4)$$

where x_t refers to the individual's financial resources at time t. δ is a discount factor parameter, l_0 is a parameter associated with losses in financial resources and g_0 is the parameter associated with gains in financial resources. Under the assumption that memories of the past are key components of our current individual behaviour and feelings (Knight, 1921; Allais, 1966, 1972, 1974; Munier, 1991), this index's objective is to measure the confidence with which individuals can face any potential future economic changes using past experiences of gains and losses in resources.

According to Bossert et al. (2019), this index of economic insecurity respects the six following axioms: (i) gain-loss monotonicity, (ii) proximity monotonicity, (iii) linear homogeneity, (iv) translation invariance, (v) quasilinearity, and (vi) stationarity. To ensure that the index also respect the loss-priority condition, we also need to assume that $l_0 > g_0$ and that the discount factor δ be in the open interval $(0; g_0/l_0)$. As suggested by Bossert et al. (2019), we set $l_0 = 1$, $g_0 = 15/16$, and $\delta = 0.9$. We use the streams of annual household income of HILDA respondents to measure x_t and a five-year window to compute the

index of economic insecurity.

3.B Household Expenditures

The HILDA survey started to collect information on household items expenditures since 2005. Each year, heads of households should report the total amount of expenditure on a variety of goods and services. Consequently, expenditures are observed at the household level only once per year. In this paper, we use the 18 items that are collected yearly between 2006 and 2018. These items are: 'Cigarettes and tobacco', 'Alcohol', 'Groceries', 'Meals eaten out', 'Men's clothing and footwear', 'Women's clothing and footwear', 'Children's clothing and footwear', 'Private health insurance', 'Fees paid to health practitioners', 'Medicines, prescriptions, pharmaceuticals', 'Motor vehicle fuel', 'Motor vehicle repairs, maintenance', 'Public transport and taxis', 'Home repairs, renovations, maintenance', 'Electricity bills, gas bills and other', 'Telephone rent, calls and internet charge', 'Other insurance (home contents motors vehicle)' and 'Education fees'.

In our empirical analysis, we will first sum up the amounts of all the items reported by the heads of household to estimate the total level of household expenditures. In the second part of our analysis, a principal component analysis is performed to group these items in different categories that are studied separately. Although it cannot be argued that the HILDA survey encompasses all components of household expenditures, it still provides a list of items that covers most of the regular and necessary expenditures of a household.

4 Empirical Strategy and Estimation Sample

4.A Econometric Model

Our main objective is to understand how economic insecurity affects expenditures at the household level. To do so, we estimate the following model:

$$log(exp)_{k,t} = \Theta_1 EI_{k,t} + W'_{k,t}\beta_1 + X'_{k,t}\beta_2 + \gamma_t + \alpha_k + \varepsilon_{k,t} \tag{5}$$

where k denotes the household and t the survey year. The logarithm of the total annual expenditures of the household $log(exp)_{k,t}$ is our main dependent variable. $EI_{k,t}$ corre-

sponds to the level of economic insecurity and Θ_1 is our estimate of interest. If we assume that the third derivative of the utility function is negative and that income is uncertain (as in **?**), a household in a situation of increasing economic insecurity should reduce its consumption level. Therefore, Θ_1 must attract a negative coefficient. In a second step, we will assess the effect of economic insecurity on the composition of the expenditure basket. To do this, we will re-estimate Equation (5) and replace total expenditures by their different sub-components as dependent variables.

To minimize omitted variable bias, we add a significant number of key controls. First, we control for a vector $W'_{k,t}$ containing the following household financial variables: the annual household income equals one and a dummy variable equal to one for homeowners. We also control for $X'_{k,t}$ which is a vector containing different time-varying variables (a dummy for the head of household's marital status and employment status as well as a dummy for being above the median age and the square root of the number of adults and children in the household). γ_t are year fixed effects. Finally, we exploit the panel dimension of our dataset by including household fixed effects α_k. By doing so, we purge Θ_1 of the effect of all time-invariant variables and reduce the problems related to individual heterogeneity. Standard errors are clustered at the household level. To ease comparisons across estimates, we standardised all our continuous dependent and independent variables.

To estimate Equation (5), we use a sample of households from the HILDA survey for which we observe the level of economic insecurity, consumption expenditure and all the control variables. Since we need a 5-year window of income to measure economic insecurity, our sample starts in 2006 and ends in 2018 but with retrospective information on household income starting from 2001. We restrict the sample to households where the head of the household is between 20 and 80 years old. Last, we removed the 1st and the 99th quantile of the total expenditures distribution to avoid including outliers. We then end up with 87,965 observations (11,575 households we observe at least twice so that we can estimate household fixed-effects).

Descriptive statistics can be found in Table 1. Heads of households are predominantly men (76%) and on average 48 years old. Married heads of household represent the majority in the sample (61%), followed by single individuals (17%). The average household income is 78,013 Australian $ which is a figure in line with national averages.

Table 2 presents the descriptive statistics of the household expenditures of our estimation sample. The average annual household total expenditures of the list of selected items are $29,905 ; the minimum and maximum represents the threshold of the 1st and the 99th quantile of the original distribution. On average, food expenditures represents the highest component for households (39% of total expenditures including 9,075.88$ for groceries, and 2,729.18$ for meals eaten out) following by housing expenditures (23% of total expenditures). The predominance of food expenditures in Australian household is confirmed by the technical paper on HILDA expenditures imputation from Sun (2010).

5 Empirical Results

5.A Total Expenditures and Economic Insecurity

Table 3 asks whether economic insecurity is associated with changes in the logarithm of total household expenditures. Column (1) reports the simple bivariate association between standardized logarithm of total household expenditures and standardized economic insecurity keeping only year fixed-effects constant. We then sequentially augment our model with controls across columns to finally present the estimate attracted by economic insecurity in Equation (5) in the last column.

In column (1) of Table 3, an increase of one standard-deviation in economic insecurity is associated with a decrease of 0.22 of a standard deviation in the log of the total household expenditures. However, this figure cannot be read as causal since many of the variables that associated with economic insecurity and the level of household expenditures are not controlled for. This is why we first keep the influence of time-invariant household heterogeneity constant by adding household fixed-effects in column (2). Economic insecurity still attracts a negative and highly significant estimate but it is now three times lower than that of column (1). This confirms that the relationship between economic insecurity and expenditures is sensitive to time-invariant household heterogeneity. In the last column of Table 3, we also control for time-varying characteristics at the household level. In this specification, the estimate associated with economic insecurity remains negative and significantly different from zero at the 1% level: a one-standard deviation increase in economic insecurity produces a 0.032 standard-deviation reduction in the log of annual

expenditures. We report the estimates associated with the standardised logarithm of equivalent household income and home-ownership to benchmark our main estimate. The change in expenditures caused by a one standard-deviation increase in economic insecurity is 1.8 times larger than a one standard deviation decrease of the logarithm of household income and around roughly equal to 25% of the effect of homeowner (in absolute terms).

The reduction in expenditures associated with economic insecurity is in line with the prediction of the model of Caballero (1990) and the theory of prudence of **?**: households in greater insecurity reduces their expenditures and seek insurance through precautionary savings. To confirm our interpretation, we also ask whether the effect of economic insecurity depends on risk aversion. HILDA respondents are asked whether they are willing or unwilling to take risks. Respondents answered on the 11-points Likert scale from 0 (unwilling to take risks) to 10 (very willing to take risks). We create a risk aversion dummy variable indicating whether the respondent's answer is below the median of the risk attitude distribution of the population. Since risk attitude is asked in two years only, our sample size is drastically reduced (only 13,592 observation left).

The theory of precautionary savings predicts that for a given rise in income uncertainty, the reduction in consumption should be larger for those with high levels of risk aversion (those with the highest demand for insurance through savings). To check whether our results are in line with this prediction, we replicate our main model and interact our measure of economic insecurity with a dummy for high risk aversion. We expect the interaction to be negative and significantly different from zero. The results are displayed in Table 4. The first column simply provides the estimates of economic insecurity and the dummy of risk aversion separately. We do not find any evidence of a main significant association of risk aversion. We however suspect that the absence of evidence is attributable to the smaller sample size and a low within-variation of the risk aversion dummy in our sample.[2] The second column provides the same estimates but adding the interaction of economic insecurity and the dummy for high risk aversion. While the effect of risk aversion is still independently null, the interaction term attracts a negative and significant estimate, which is in line with our hypothesis. Keeping every else constant, a rise in economic insecurity

[2]The standard deviation of the risk aversion dummy can be decomposed into a between ($\overline{y_i}$) and a within ($y_i - \overline{y_i} + \overline{\overline{y}}$) variation. The calculations shows that the between variation (0.44) is twice as large as the within variation (0.22).

has an impact on expenditures that is twice larger for those with a high risk aversion.

5.B Expenditures Groups and Economic Insecurity

We now ask whether the effect of economic insecurity differs according to the nature of the goods and services. To avoid establishing our analysis on a *ad-hoc* classification of expenditures, we group expenditures using a principal component analysis (PCA). By doing so, we reduce the dimensionality of expenditures and construct a data-driven classification of expenditures. We use a principal component method with varimax rotation. Appendix Table A1 presents the results of the exploratory factor analysis for expenditures. The examination of the scree plot in Appendix Figure A4 of the principal component method favours a five-factors solution. Items loading more than 0.3 on a factor are kept to create a score on the factor. The Kaiser-Meyer-Olkin index (KMO) for the complete model is equal to 0.82 indicating an meritorious factor solution (Kaiser, 1974). Note that every item scores on one factor only. Given the items loading in the first dimension, the first score corresponds to what Choung, Pak and Chatterjee (2021) qualifies as "materialistic" expenditures ('Private health insurance', 'Fees paid to health practitioner', 'Medicines, prescriptions and pharmaceuticals', 'Electricity, gas bills and other heating fuel' and 'Other insurance'). The second score corresponds to expenditures that can be qualified as " experiential" ('Meals eaten out', 'Men's clothing and footwear', 'Women's clothing and footwear', 'Public transport and taxis'). The third score represents "basic" expenditures ('Groceries', 'Children's clothing and footwear' and 'Education fees'). The fourth factor seems to correspond to "social" expenditures ('Telephone rent and calls, internet charges', 'motor vehicle fuel' and 'motor vehicle repairs and maintenance'). Finally, the fifth factor corresponds to "drug expenditures" ('alcohol', 'cigarettes and tobacco').

We now use these five scores in turn as dependent variables in our main model and re-estimate the coefficients attracted by the economic insecurity index. Our objective is to assess the extent to which these coefficients change with the nature of the goods and services considered. Figure 1 presents the estimates of economic insecurity on the five PCA scores. We observe striking differences across groups of expenditures. Although significant at the 1% level, the associations between basic and social expenditures with economic insecurity are among the lowest. This is in line with the idea that these expenditures are

necessary to maintain a decent life and to meet basic needs. In contrast, experiential expenditures are associated with the largest estimate for economic insecurity. This is in line with what the idea that the least-basic needs are those subjects to adjustments in case of greater insecurity.

There is still the case of drugs expenditures. Alcohol and tobacco are arguably not as essential as the items contained in the 'basic' category and yet the effect of economic insecurity is similar. However, the limited effect of economic insecurity on alcohol and tobacco expenditures can certainly be explained by their addictive nature. Last, an increase in one standard-deviation in economic insecurity is associated with a reduction of 3% in the standardised score for 'materialistic' expenditures. However, some of the expenditures that are in this group are arguably necessary (e.g. electricity bills) while some other can be either postponed (e.g. home repairs) or may be perceived as non-essential (e.g. insurances). Re-running our main model for each item confirms our intuitions: the most necessary items are the least elastic to economic insecurity (see Appendix Figure A1 for more details).[3]

6 Conclusion

Using Australian panel data, an objective economic insecurity index and fixed-effects regressions, we establish a significant empirical link between economic insecurity and the total level of household expenditure. Specifically, an increase in one standard deviation in the economic insecurity index is associated with a 3.2% reduction in the total level of household expenditure. This result is consistent with the theory that consumption and savings choices are partly guided by "prudence" in the sense of **?**. In other words, when the risk of an income shock increases, households allocate a smaller share of their income to expenditures in order to build up more precautionary savings. Our results confirm this interpretation since we also find that the reduction in expenditure is more pronounced for those whose household head report a high degree of risk aversion.

Our analysis goes beyond the traditional theoretical framework in that we have also determined that some expenditures are more sensitive to a change in economic insecurity than others. Our results indicate that the least elastic expenditures are those related to

[3]We are aware of the problems of multiple hypothesis testing posed by the regressions reported in Figure A1. Therefore, we do not dwell on these results in detail but report them for the most curious readers.

necessity goods and services. In this sense, our findings are similar to Maslow's hierarchy of needs.

We believe that these results also have one important methodological implication. The measure of economic insecurity we use constitutes a relevant and cost-effective alternative to subjective questions assessing financial uncertainty that households face or measures assessing a partial aspect of economic insecurity such as the threat of job loss. Not only this measure is simple to construct but it also provides an objective, general and comprehensible view of households' economic insecurity in panel data.

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Figures and Tables

Table 1: Descriptive statistics of explanatory variables

	Mean	Std. deviation	Min	Max
Age	48.61	15.86	20	80
Female	0.24		0	1
Marital status				
Married	0.61		0	1
Single	0.17		0	1
Separated	0.05		0	1
Widowed	0.06		0	1
Divorced	0.11		0	1
Employment status				
Employed full-time, part-time and usual worked	0.69		0	1
Employee of own business or employer/self-employed	0.13		0	1
Unemployed, looking for full-time and part-time work	0.03		0	1
Not in the labour force	0.10		0	1
Household structure				
Number of children	0.65	1.05	0	10
Number of adults	1.81	0.76	1	8
Economic Insecurity	-6,620.90	40,695.08	-739634.50	680,236.94
Income and wealth				
Annual household income	78,002.31	59,327.84	0.00	989,669.00
Home Ownership	0.65		0	1
Observations	87965			

Source: Our estimation sample from HILDA survey using waves from 2006 to 2018,
Notes: This table provides descriptive statistics of the main control variables in the empirical analysis. The variables of marital status, employment status and home ownership are dummies variables. The means represent therefore the percentage of individuals in the sample that are in each category.

Table 2: Descriptive statistics of expenditures

	Mean	Std. deviation	Min	Max
Total household expenditures	29,905.01	16,482.91	5,465.00	108,821.00
Drugs				
Alcohol	1,495.88	2,033.69	0.00	52,140.00
Cigarettes and tobacco	871.58	2,040.36	0.00	41,191.00
Food				
Groceries	9,075.88	5,086.90	0.00	83,424.00
Meals eaten out	2,729.18	2,715.88	0.00	64,880.00
Health				
Private health insurance	1,155.76	1,487.21	0.00	36,000.00
Fees paid to health practitioner	880.49	1,830.43	0.00	90,000.00
Medicines, prescriptions and pharmaceuticals	418.80	664.15	0.00	41,549.00
Clothing				
Children's clothing and footwear	393.25	831.33	0.00	35,863.00
Men's clothing and footwear	483.41	764.03	0.00	48,000.00
Women's clothing and footwear	777.12	1,221.75	0.00	60,000.00
Home				
Repairs, renovation and maintenance to home	1,889.67	5,521.07	0.00	90,000.00
Electricity, gas bills and other heating fuel	1,583.24	1,398.26	0.00	54,000.00
Telephone rent and calls, internet charges	1,943.99	2,583.33	0.00	72,000.00
Other insurance (home/contents/motor vehicle)	1,443.51	1,622.20	0.00	81,709.00
Transport				
Public transport and taxis	461.87	1,217.49	0.00	91,245.00
Motor vehicule fuel	2,241.38	2,418.76	0.00	90,300.00
Motor vehicule repairs and maintenance	927.05	1,166.17	0.00	45,000.00
Education				
Education	1,132.97	3,699.05	0.00	69,523.00
Observations	87965			

Source: Our estimation sample from HILDA survey using waves from 2006 to 2018,
Notes: This table provides descriptive statistics of the dependent variables in the empirical analysis.

Table 3: Household level regression of economic insecurity on expenditures

	Log(Total Household Expenditures)		
	(1)	(2)	(3)
Economic Insecurity	-0.225***	-0.084***	-0.032***
	(0.004)	(0.003)	(0.003)
Log(HH Income)			0.018***
			(0.003)
Home ownership			0.134***
			(0.008)
Individual Fixed-Effects	No	Yes	Yes
Time-Varying Controls	No	No	Yes
Observations	87965	87965	87965
Adjusted R2	0.081	0.681	0.699

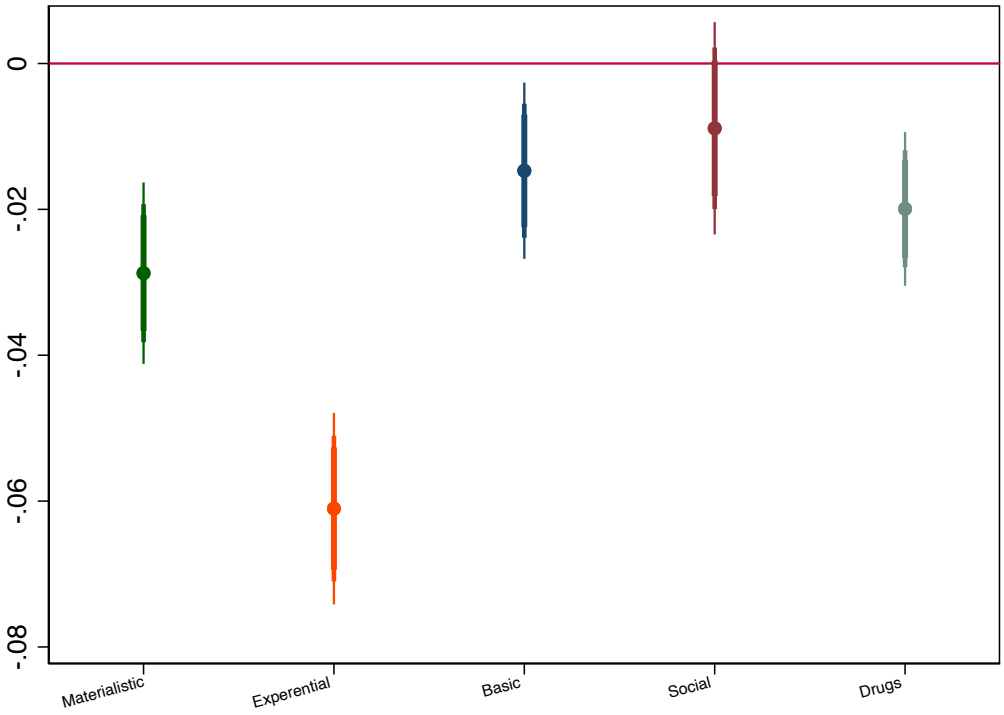
Source: Our estimation sample from the HILDA survey using waves from 2006 to 2018
Notes: This table presents the regressions of total household expenditures on economic insecurity. Controls are age, marital status and employment status. Each continuous variable in the analysis are standardized. Standard errors are clustered at the household level. Standard errors are in parentheses.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 4: Household level regression of economic insecurity on expenditures

	Log(Total Household Expenditures)	
	(1)	(2)
Economic Insecurity	-0.018***	-0.014***
	(0.005)	(0.005)
High risk aversion	0.011	0.010
	(0.008)	(0.008)
Economic Insecurity x High risk aversion		-0.016**
		(0.006)
Individual Fixed-Effects	Yes	Yes
Time Fixed-Effects	Yes	Yes
Controls	Yes	Yes
Observations	13592.00	13592.00
Adjusted R2	0.07	0.07

Source: Our estimation sample from the HILDA survey using waves from 2006 to 2018
Notes: This table presents the regressions of total household expenditures on economic insecurity. Controls for age, marital status, employment status and the square root of number of children and adults in the household. Standard errors are clustered at the household level. Standard errors are in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

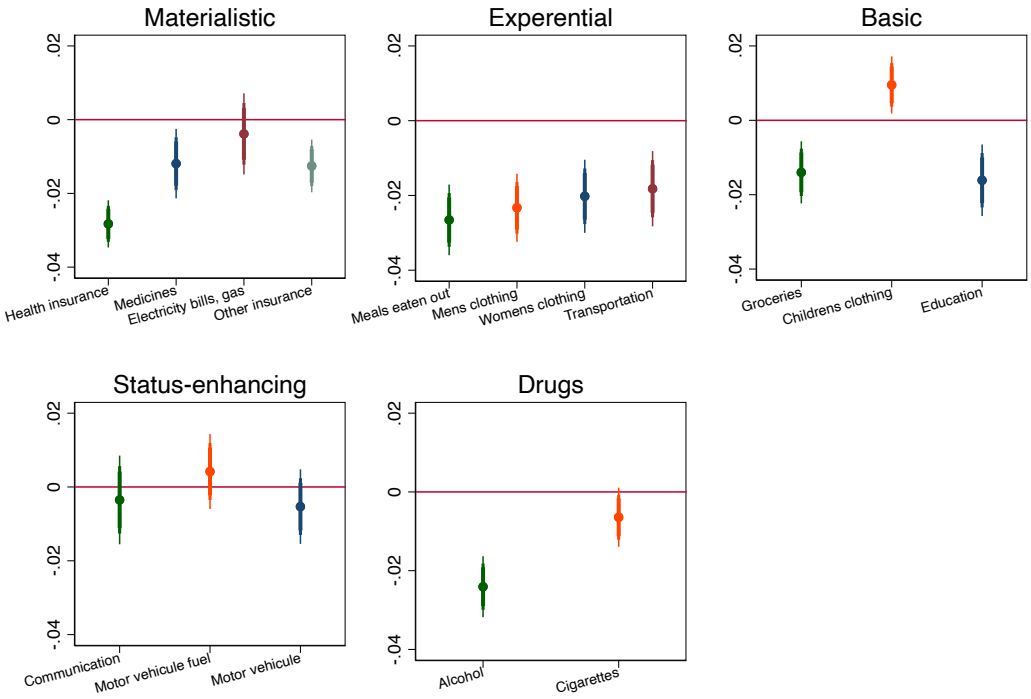
Figure 1: Effect of economic insecurity on groups of expenditures (PCA)



Source: Our estimation sample from the HILDA survey using waves from 2006 to 2018
Notes: This figure presents the coefficients of economic insecurity on groups of expenditures. Controls for age, marital status, employment status and the square root of number of children and adults in the household. Standard errors are clustered at the household level. Vertical bars represent 95% confidence intervals.

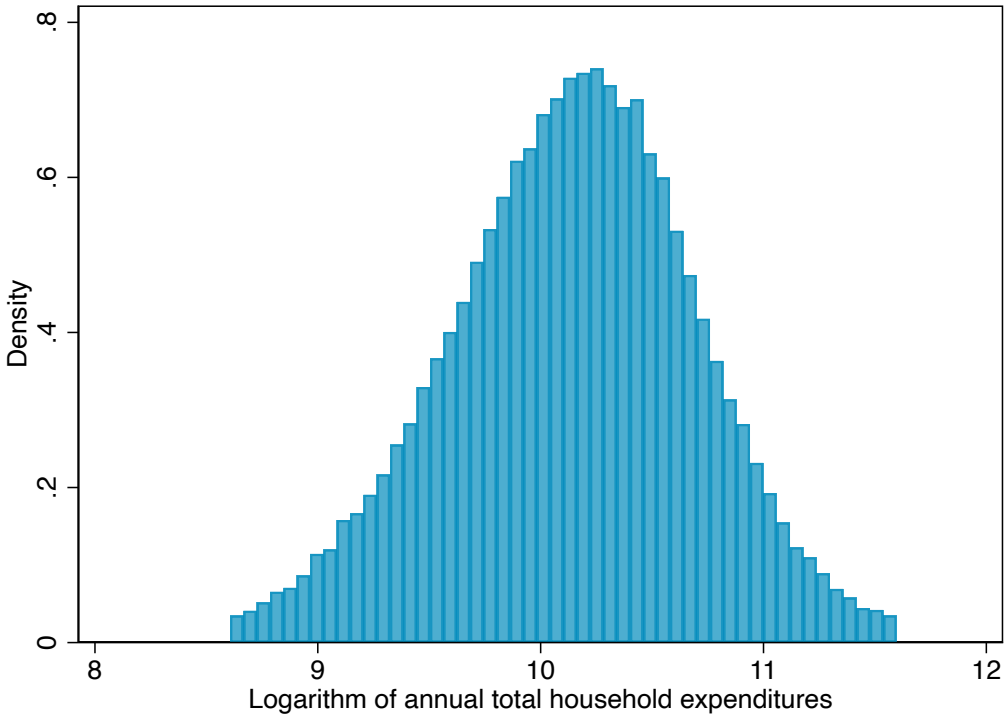
Appendix

Figure A1: Effect of economic insecurity on expenditures



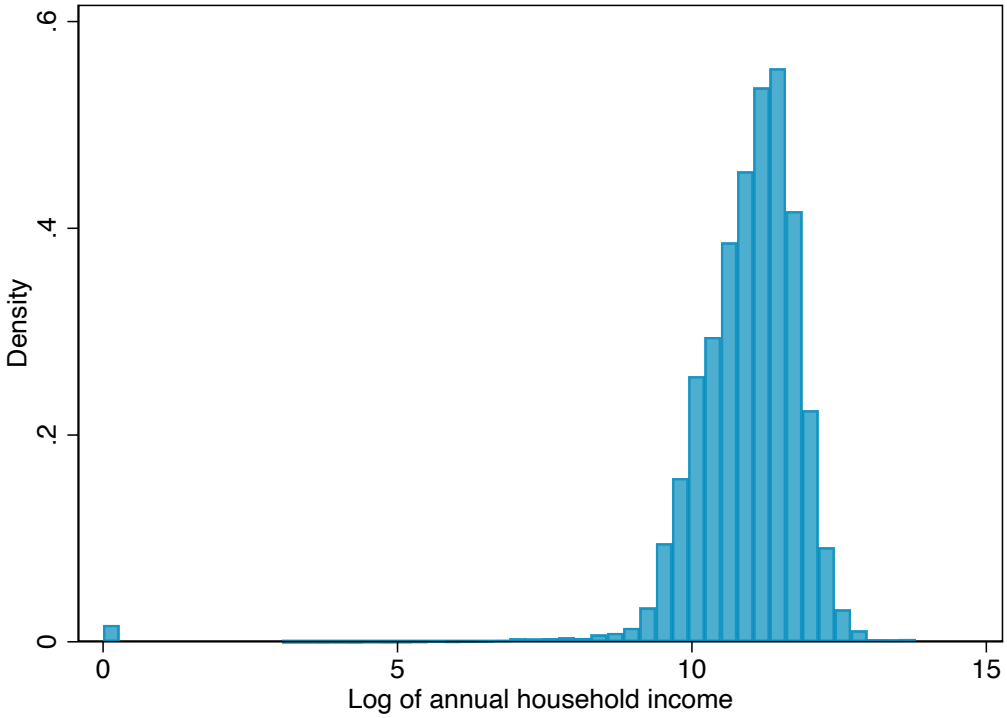
Source: Our estimation sample from the HILDA survey using waves from 2006 to 2018
Notes: This table presents the estimated coefficients of economic insecurity on item expenditures. The coefficients are resulting from the OLS-FE regression of each household expenditures items on economic insecurity. Each regression controls for household income, home ownership, number of adults and children in the household, age, marital status and employment status and square roots of the number of children and adults in the household. Standard errors are clustered at the household level. Vertical bars represent 95% confidence intervals.

Figure A2: Distribution of logarithm of household expenditures



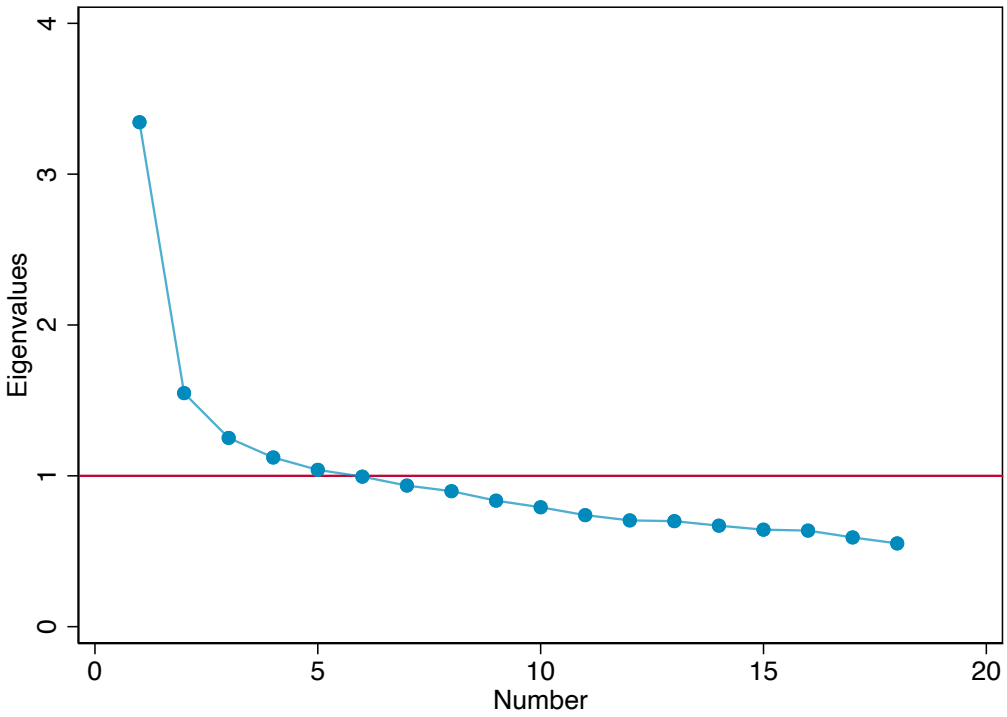
Source: Our estimation sample from HILDA survey using waves from 2006 to 2018

Figure A3: Distribution of logarithm of household income



Source: Our estimation sample from HILDA survey using waves from 2006 to 2018

Figure A4: Screeplot of PCA



Source: Our estimation sample from the HILDA survey using waves from 2006 to 2018
Notes: This graph plots the eigenvalues of a PCA with unrestricted number of factors. We use Kaiser's rule to determine the optimal number of factors based on the number of eigenvalues above the horizontal line $y = 1$.

Table A1: Exploratory factor analysis

Variables	Materialistic	Experiential	Basic	Status-enhancing	Drugs	Unexplained	KMO	SMC
Alcohol					0,58	0,39	0,70	0,13
Cigarettes and tobacco					0,68	0,39	0,55	0,06
Groceries			0,39			0,51	0,85	0,27
Meals eaten out		0,45				0,50	0,81	0,22
Private health insurance	0,45					0,49	0,83	0,28
Fees paid to health practitioner	0,39					0,64	0,83	0,15
Medicines, prescriptions and pharmaceuticals	0,38					0,67	0,81	0,13
Children's clothing and footwear			0,60			0,39	0,74	0,18
Men's clothing and footwear		0,48				0,50	0,82	0,20
Women's clothing and footwear		0,48				0,49	0,82	0,17
Repairs, renovation and maintenance to home						0,87	0,89	0,05
Electricity, gas bills and other heating fuel	0,30					0,57	0,87	0,20
Telephone rent and calls, internet charges				0,44		0,69	0,84	0,05
Other insurance (home/contents/motor vehicle)	0,41					0,53	0,83	0,26
Public transport and taxis		0,39				0,56	0,67	0,06
Motor vehicle fuel				0,59		0,46	0,81	0,16
Motor vehicle repairs and maintenance				0,35		0,59	0,85	0,18
Education			0,60			0,45	0,84	0,11
						0,45	0,82	

Source: Our estimation sample from the HILDA survey using waves from 2006 to 2018
Notes: This table presents the results from a principal component analysis using a Varimax rotation and a five factors solution. The PCA explain 55% of the variance. KMO stands for the Kaiser-Meyer-Olkin index and SMC stands for squared multiple correlation statistics.