Well-being and financial decisions

Selected issues

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Outline of the presentation

- Measuring household financial conditions
- Consequences of debt and benefits of savings
- Falling into arrears and its impact on well-being
- The impact of carry trade on well-being

Approaching the measurement of household financial conditions

- Objective indicators → based on monetary assessment

- Subjective indicators → based on survey questions about perceived financial situation

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The Index of Household Financial Condition, Combining Subjective and Objective Indicators: An Appraisal of Italian Households

Piotr Bialowolski · Dorota Weziak-Bialowolska

Accepted: 8 July 2013 / Published online: 23 July 2013

Abstract With data from the Italian Survey of Household Income and Wealth, we present an Index of Household Financial Condition and quantify with it the position of households between 2004 and 2010. The Index of Household Financial Condition is composed of subjective and objective indicators, which enable to capture differently the existing uncertainty concerning the future development of a household's financial situation. We show with a measurement model based on multi-group confirmatory factor analysis (MGCFA) that the proposed Index is two-dimensional and comprises financial position and financial prudence. Through application of the MGCFA, we show that the interrelations between the indicators had not changed at four measurement occasions (2004–2010), and thus the proposed set comprises a coherent and time-invariant framework for measuring two dimensions of the latent concept: financial condition. Established measurement invariance in the MGCFA framework allows an assessment of trend in financial position and financial prudence of Italian households. We show that the financial position of Italian households improved in the period 2004–2006 and later declined. Improvement of the financial prudence was observed, however, till 2008. Finally, we incorporate a set of socioeconomic features of Italian households into a structural equation model. With the provided set of indicators, we find positive relation between age and both financial position and prudence, but also we show the positive impact of white-collar jobs on scores in each of the dimensions of the financial condition.

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Subjective and objective indicators – examples

- Examples of objective indicators
  - Brunetti et al. (2012) → the amount held by households in fully liquid assets such as bank or postal accounts, total yearly disposable income, expected expenses and unexpected expenses,
  - Jappelli et al. (2008) → household debt to GDP ratio,
  - Brown and Taylor (2008) and Dey et al. (2008) → The debt service ratio and liabilities-to-income ratio.

- Examples of subjective indicators of household financial conditions
  - Anderloni et al. (2012); Keese (2012); McCarthy (2011); Cobb-Clark and Ribar (2009); Jappelli et al. (2008) → self-reported and perceived debt burden, perceived financial hardship, opinion on repayment difficulties or financial situation stability, evaluation of difficulty level in making ends meet and other qualitative assessments of financial problems.

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Why merging subjective and objective indicators?

- In a period of financial instability (example: Great Recession) → discrepancies between the two types of indicators emerge

- Objective measures usually do not change rapidly during the crisis period, whereas subjective ones do → they seem to play complementary roles

- By using both objective and subjective indicators to assess household financial conditions we get
  - a broader picture
  - more reliable basis for forecasts and policy assessments
  - a tool to compensate for their different sensitivity to economic events (with indicators from one group only, it is not easy to assess the critical levels pointing to the existence of financial problems).

Measuring financial conditions in Italy – two dimensions emerging

Measures (questions)

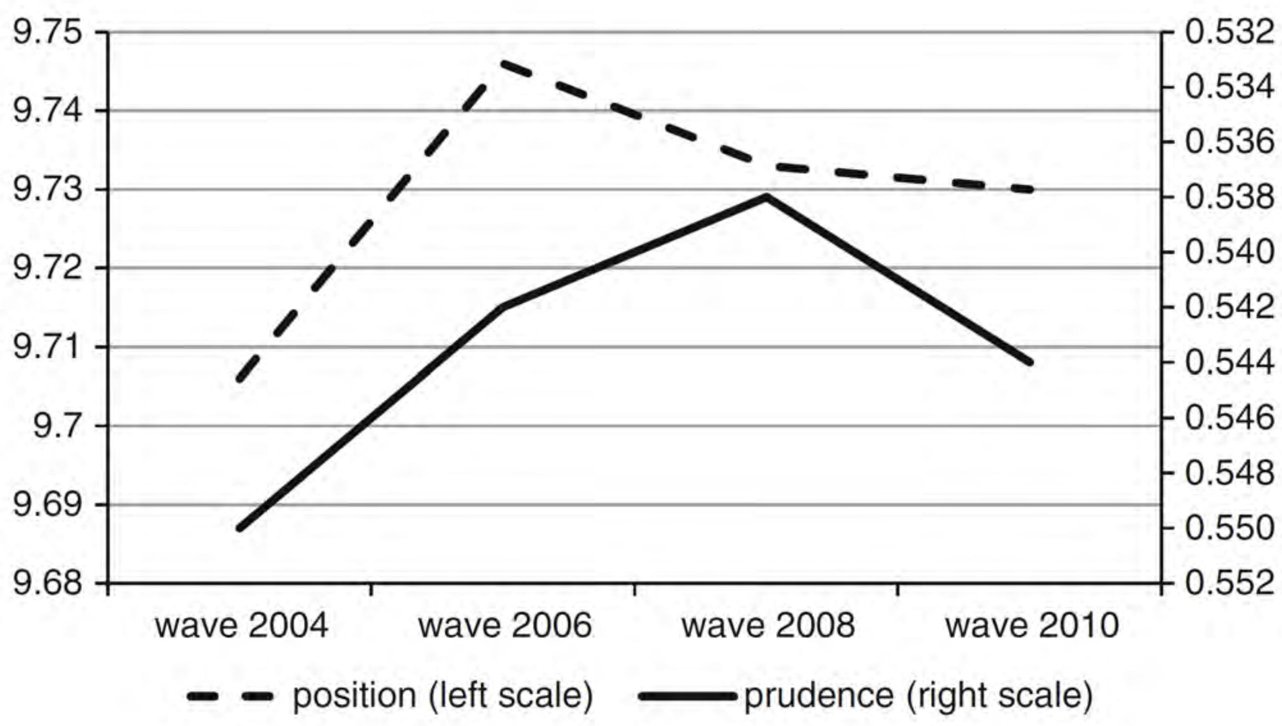
- Ability to make ends meet (condgen);
- Amount of income necessary for a household to live well, but not in luxury, related to household income (inc_suff);
- Logarithm of average yearly equivalent income expressed in real terms (log_y);
- Logarithm of equivalent wealth expressed in real terms (log_w);
- Average savings divided by income (sav);
- Relation of total consumption expenditures to average income (c_total);
- Relation of food consumption to average income (c_food).

	Position	Imprudence
log_y	1.000	
log_w	2.318***	
c_total		1.000
c_food	−0.090***	0.221***
inc_suff	−0.478***	0.624***
Sav		−0.990***
Condgen	1.500***	
RMSEA	0.051	
CFI	0.967	
TLI	0.966	

Evolution of household financial conditions in Italy

The financial position of Italian households was improving only between 2004 and 2006. Starting from 2008, it gradually deteriorated.

Financial prudence increased till 2008, i.e., when financial positions were already declining. This indicates that households even if exposed to financial problems, managed their current incomes better. In 2010, financial prudence decreased, which might have, on the one hand, resulted from worse financial position and, on the other hand, brought about an increase in the financial stress caused by income management, in particular, drop in savings.



Debt and savings – impact on well-being and health

- Despite claims that debt that can be repaid or managed is not problematic (Fitch et al. 2007), all types of debt (not only problem debt) can be detrimental to well-being.
- Earlier studies confirmed the impact of debt on
  - depression and suicidal thoughts (Fitch et al. 2007; Richardson et al. 2013; Turunen and Hiilamo 2014),
  - various coping behaviours, including alcohol, tobacco and drug dependence (Richardson et al. 2013; Turunen and Hiilamo 2014; Angel 2016).

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ORIGINAL ARTICLE

The impact of savings and credit on health and health behaviours: an outcome-wide longitudinal approach

Piotr Białowolski[1,2,3] · Dorota Węziak-Białowolska[2] · Tyler J. VanderWeele[4]

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Abstract

Objectives This study evaluated decisions related to debt and savings on physical health, emotional health and health behaviours.

Methods The longitudinal data from the Polish biennial household panel—Social Diagnosis Survey—were used. Evidence for a link between credit/savings and health/health behaviours was presented using three waves of the data and an outcome-wide regression analysis. To circumvent endogeneity, variables temporally prior to exposure were used as controls. Sensitivity analysis for unmeasured confounding, conducted using *E*-values, provided a check for robustness.

Results Debt proved a significant stressor, affecting three of five physical health measures. Over-indebted individuals suffered even more in terms of physical health outcomes. The role of savings in physical health was much less significant, yet had significant bearing on measures of emotional health. In terms of emotional health, debt (over-indebtedness in particular) influenced loneliness and increased suicidal thoughts. With respect to health behaviours, savings appeared significant in reducing smoking and increasing uptake of sport activities, while debt had no significant effect in these areas.

Conclusions Recommendations are formulated to foster saving activity and develop institutional solutions for over-indebtedness.

Keywords Credit · Savings · Health behaviour · Health · Longitudinal study · Outcome-wide regression

Introduction

Bertola and Hochguertel (2007, p. 120) claimed that in ideal circumstances, "there would not even be a need to distinguish (…) savings from borrowing, as each of them could be costlessly and instantly converted from one form to another and from there to consumption". This reasoning is common in economics and stems from state-of-the-art modelling principles for consumer behaviour but includes a hidden assumption that financial decisions are irrelevant to utility and, consequently, have no bearing on well-being. In reality, saving and borrowing decisions affect and are affected by individual health and well-being. Decisions about credit and savings follow consumption choices. These choices are frequently emotional but, despite being made in a particular moment in time, have long-lasting consequences for health and well-being (Loewenstein 2000).

Despite claims that debt that can be repaid or managed is not problematic (Fitch et al. 2007), all types of debt (not only problem debt) can be detrimental to health. In

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Debt and savings – impact on well-being and health

- Especially non-mortgage debts are likely to affect well-being (Brown et al. 2005; Tay et al. 2017) with "over-indebtedness" being a particular stressor.

- Over-indebtedness
  - increases the likelihood of ill health independently of other dimensions of socio-economic status (Angel 2016),
  - is detrimental to well-being (D'Alessio and Iezzi 2013) with particular impact on psychological stress (Gathergood 2012),
  - leads to mental disorders (Emami 2010), poverty and consequent social exclusion (D'Alessio and Iezzi 2013),
  - Is associated with overweight and obesity (Münster et al. 2009; Emami 2010).

Debt and savings – impact on well-being and health

- Savings play protective role for well-being:
  - Predict higher life satisfaction (Berlin and Kaunitz 2015),
  - Facilitate progress towards stated goals and thus lead to positive affect (Diener and Fujita 1995),
- Savings are often associated with individual time preferences (Komlos et al. 2004), providing an indicator for value assigned to future emotional health outcomes. Higher savings correspond to activities that lead to favourable outcomes (e.g., positive health behaviours such as healthier eating, sporting activity or not smoking).

Data, Methods and Outcomes

- Social Diagnosis Survey – 3 waves (2011, 2013, 2015)
  - The largest socio-economic household panel study in Poland,
  - Almost 12,000 households and more than 35,000 individuals examined in each wave.

- Modeling approach
  - An outcome-wide approach was applied, in which multiple outcomes were considered simultaneously for a single exposure (VanderWeele 2017),
  - Over-indebtedness identified via the latent class approach – over-indebted individuals have numerous consumer related loans, loans for repayment of previous debts, loans from pay-day lenders.

- Outcomes: 14 health outcomes classified as either physical (5) and emotional (9) health; 3 health behavior outcomes complemented the analysis.

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Results – savings, debt and over-indebtedness on well-being

Debt proved a significant stressor, affecting three of five physical health measures. Over-indebted individuals suffered even more in terms of physical health outcomes. The role of savings in physical health was much less significant

Savings significantly improved emotional health. Debt (over-indebtedness in particular) influenced loneliness and increased suicidal thoughts.

Savings appeared significant for health behaviours reducing smoking and increasing uptake of sport activities, while debt had no significant effect in these areas.

Outcome		Credit (ref.=no credit) and savings (ref. no savings) in 2013			N
		Credit - not overindebted	Credit - overindebted	Savings	
Physical health					
satisfaction with health	est.	-0.056*	-0.255**~	0.065*	8705
count of psychosomatic symptoms in the month preceding the survey	est.	0.449***	0.723*	0.019	8726
not being worried about health conditions	OR	0.866*	0.463***~	1.042	8722
sleeping well	OR	0.915	0.583*~	1.04	8724
not feeling tired	OR	0.865	0.753	0.966	8775
Emotional health					
happiness	est.	-0.034*	-0.085	0.030*	8773
life satisfaction	est.	-0.037	-0.181*	0.084***	8689
life perception	est.	-0.052*	-0.09	0.078***	8768
the last year was a good one for you	OR	0.914	0.586*	1.316***	8227
being full of energy	OR	0.916	0.856	1.013	8773
having visited a psychologist or a psychiatrist in the last year	OR	1.091	1.283	1.191	8761
having thoughts about suicide in the recent months due to feeling depressed	OR	1.490*	2.385*	0.888	8752
willingness to live	est.	-0.052	-0.199	0.062	8775
feeling lonely	OR	1.218*	1.627*	0.922	8641
Health behaviours					
smoking tobacco products every day	OR	1.053	1.06	0.784*	8754
drinking too much alcohol in the last year	OR	1.244	1.428	0.944	8773
practicing sport or other physical activity	OR	1.006	1.039	1.250**	8608

Slightly different approach for the US

(not published yet)

- Data: Panel Study of Income Dynamics (2011, 2013, 2015, 2017)
  - a nationally representative sample of over 18,000 individuals living in 5,000 families in the United States.

- Methods: Difference-in-differences propensity score matching approach (Heckman et al. 1997) to investigate the impact of different forms of increase in indebtedness on well-being (treatment group – households experiencing increase in indebtedness in a given debt category, control group – households with zero debt between two consecutive waves of the study).

- Outcome: a well-being measure – life satisfaction.

Results …

Depending on the type of debt, different impact on well-being was noted.

Mortgages, car loans or loans from relatives do not have impact on well-being

Credit card debt and student loans decrease life satisfaction

Arrears pose even larger threat to well-being.

	Life satisfaction
Credit card debt	-.08**
Student loans	-.09**
Mortgage	NS
Car loans	NS
Credit from relatives	NS
At least 3 months behind on mortgage	-.54***

NS – not significant; significance levels *<0.1, **<0.05, ***<0.001

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Arrears – when hard times come

- Arrears are mostly associated with factors beyond household control (Nettleton & Burrows, 2001) and can easily evolve into a social problem.
- Contrary to common beliefs, households rarely acquire debt, which subsequently transforms into arrears, in order just to improve their living standards.
- Falling into arrears is usually a consequence of past decisions and accumulated problems (Whitfield & Dearden, 2011)
  - partly explained by a *keeping up with the Joneses* attitude (Christen & Morgan, 2005), since households satisfied with their material situation and comparing favourably to others are less likely to overspend and fall into debt (Walker, 1996).

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Hard Times! How do Households Cope with Financial Difficulties? Evidence from the Swiss Household Panel

Piotr Białowolski[1,2]

Accepted: 24 July 2017

Abstract This study investigates impact of debt arrears and various consequential compensatory actions on self-reported satisfaction with life and the financial situation. The link between financial difficulties and the responses they demand has rarely been translated into satisfaction measures in the past. This study informs the literature about actual consequences of problems with arrears and impact of different coping strategies on household satisfaction measures. To address the questions at hand, data from the six (2010–2015) waves of the Swiss Household Panel were examined. A panel data model with fixed effects estimator was applied to account for unobserved population heterogeneity and mitigate the issues of omitted variables. The study confirmed that severe debt problems disproportionally affected self-reported satisfaction measures. Responses to arrears, if representing likely long-term solutions, did not signify further deterioration in self-reported measures. However, if arrears required resort to bank credit, disposal of household valuables or borrowing from family and friends, satisfaction with the household financial situation and household head life satisfaction were likely to suffer more.

Keywords Arrears · Financial situation · Life satisfaction · Longitudinal data · Swiss Household Panel

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Arrears – likely response

- Households are rarely passive in response to arrears (Nettleton & Burrows, 2001) and usually adopt one (or more) of numerous strategies for coping with debt (Waldron & Redmond, 2017).

In response to arrears households can:

- reduce expenditures and/or increase incomes (it requires space for expenditure cut and/or labor market opportunities),
- take on additional debt to cover earlier obligations or at least prioritize immediate bills in order to maintain the appearance of financial liquidity (likely not a long-term solution and possibility of a vicious circle of debt emerging),
- refinance their debt by acquiring financial products with lower interest or extended repayment period - reduced financial pressure,
- liquidate assets,
- ask family members for assistance.

Arrears – data, method, outcomes

- Aim: to model the relationship between arrears (including response to arrears) and well-being.

- Data: 6 waves of the Swiss Household Panel (SHP) (yearly data 2010-2015). In 2010-2012, around 4500 households were surveyed in each wave from 2013 to 2015; subsequently the sample was significantly increased – the number of participating households reached 8335, 7333, 6775 in the waves of 2013, 2014 and 2015 respectively.

- Method: fixed effects panel regression.

- Outcomes: Two well-being measures: (1) satisfaction with the household financial situation and (2) general life satisfaction of the household head. Both outcomes were measured on 11-point Likert scale.

Arrears – results

Severe debt problems disproportionally affect self-reported satisfaction measures.

If households had a safety cushion in the form of savings or were able to cope with arrears by restricting to essentials, further deterioration in self-reported well-being was not observed.

If arrears required resort to bank credit, disposal of household valuables or borrowing from family and friends, satisfaction with the household financial situation and household head's life satisfaction were likely to suffer additionally.

	Satisfaction with household financial situation (FIN)	Satisfaction with life – household head (LIFE)
Constant	1.212***	6.305***
Arrears (ref. never)		
sometimes	-0.419***	-0.232***
Often	-1.162***	-0.738***
restriction to essentials	-0.095	0.075
search for a second job	-0.136*	-0.042
drawing up on savings	0	-0.001
borrowing from relatives or friends	-0.144**	-0.222***
borrowing from a bank	-0.493***	-0.193**
selling consumer goods or valuable items	-0.321***	-0.143*
Observations	29,039	28,626

*** significant at 0.01; ** significant at 0.05; * significant at 0.1; standard errors of all estimates were obtained with robust estimator

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The impact of carry trade on well-being is mostly unknown

- Relatively little is known about the consequences to well-being of households having mortgages denominated in foreign currencies
  - in the literature the group of households with such mortgages is referred to as "carry traders" (Beer et al. 2010; Galati et al. 2007),
  - numerous in almost all Central and Eastern European (CEE) countries.

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What Does a Swiss Franc Mortgage Cost? The Tale of Polish Trust for Foreign Currency Denominated Mortgages: Implications for Well-Being and Health

Piotr Białowolski[1] · Dorota Węziak-Białowolska[2]

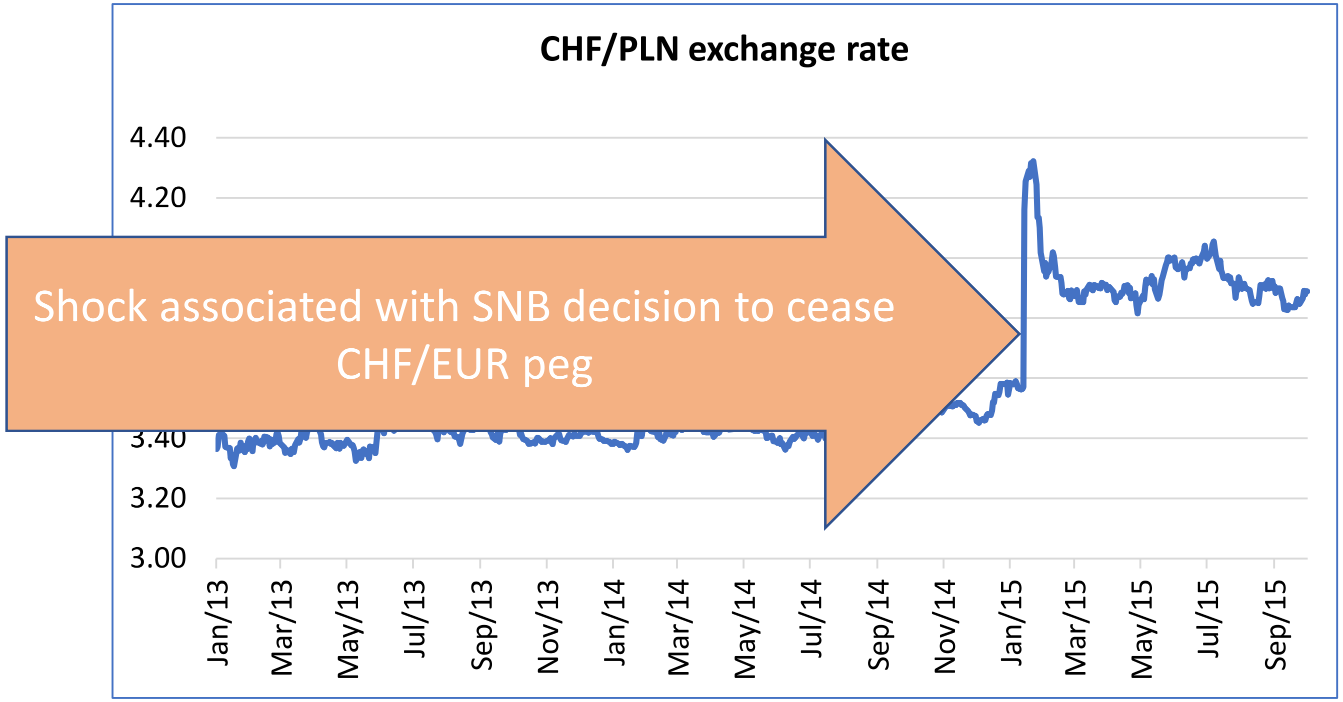
Accepted: 13 May 2016 / Published online: 20 May 2016

Abstract It is commonly agreed that excessive household financial debts are detrimental to psychological and physical health. Research also demonstrates that housing instability, mortgage indebtedness and mortgage foreclosure negatively influence subjective well-being. In Poland at the beginning of 2015, homeowners with Swiss franc denominated mortgages suffered from an abrupt swing in the Swiss franc/Polish zloty (CHF/PLN) exchange rate, which resulted in considerable increase in the local currency value of their mortgages. These adverse financial circumstances were hypothesised to affect not only household finance but also negatively affect the psychological well-being and physical health of peoples. The 2013 and 2015 waves of the Polish representative household panel 'Social Diagnosis' were used to examine impact of the abrupt change in the CHF/PLN exchange rate in Jan. 2015 on well-being and health. Causal inference was investigated using a difference-in-differences matching estimator. Results showed that although impact of Swiss franc appreciation on the mortgage related financial burden was considerable, it did not affect well-being or health outcomes. Any manifestation of adverse effects was absent in the short term, which does not however preclude their long term existence.

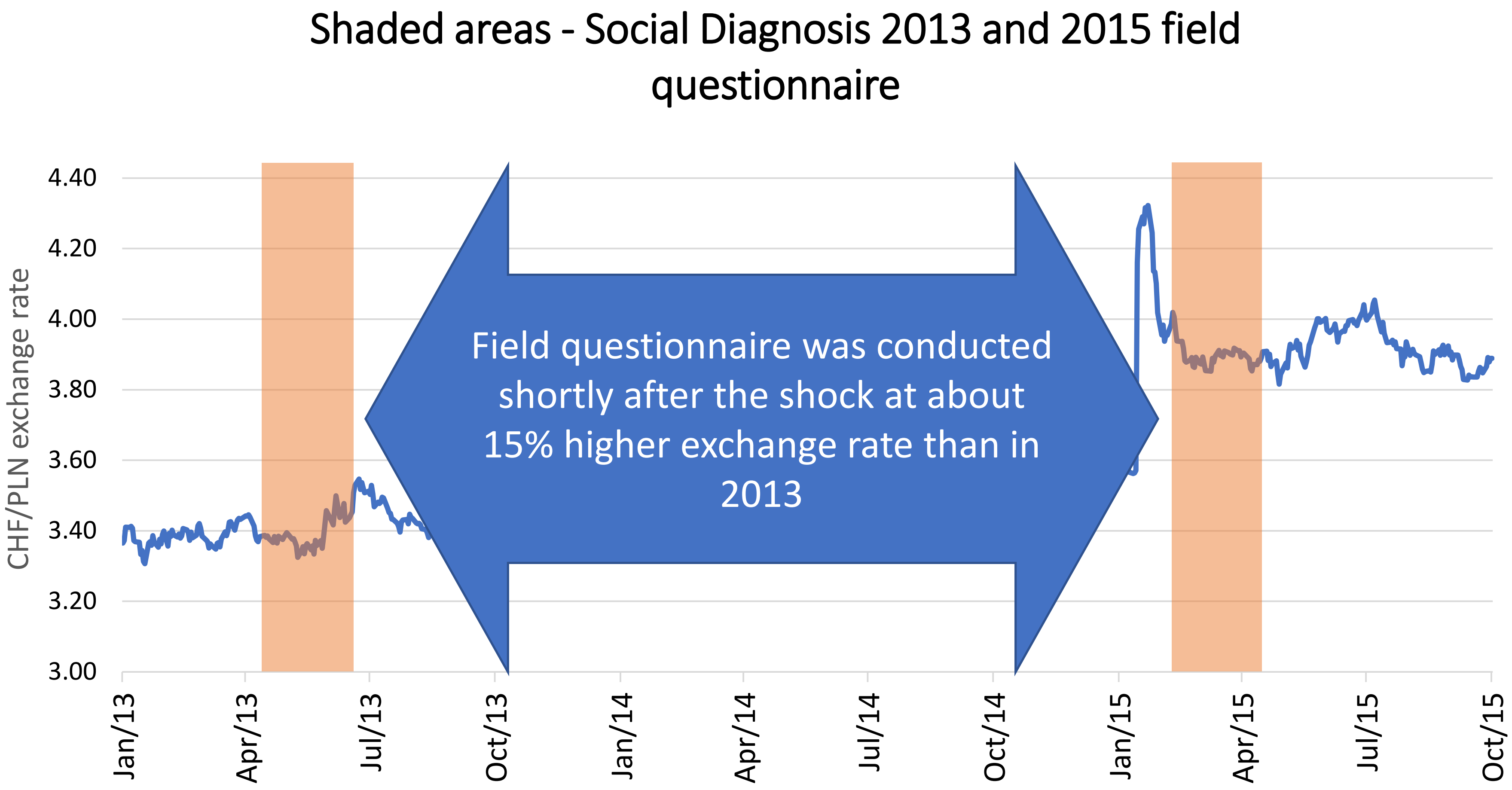
Keywords Causal effect · Carry trade · Panel data · Health · Mortgage debt · Well-being

Research problem

- January 2015 in Poland - homeowners with Swiss franc denominated mortgages exposed to a significant currency exchange rate shock – appreciation of the Swiss franc against Polish zloty
  - considerable increase of the local currency value of their mortgages.
- Hypothesised to negatively impact
  - household finance (obvious),
  - the psychological well-being and physical health of people.

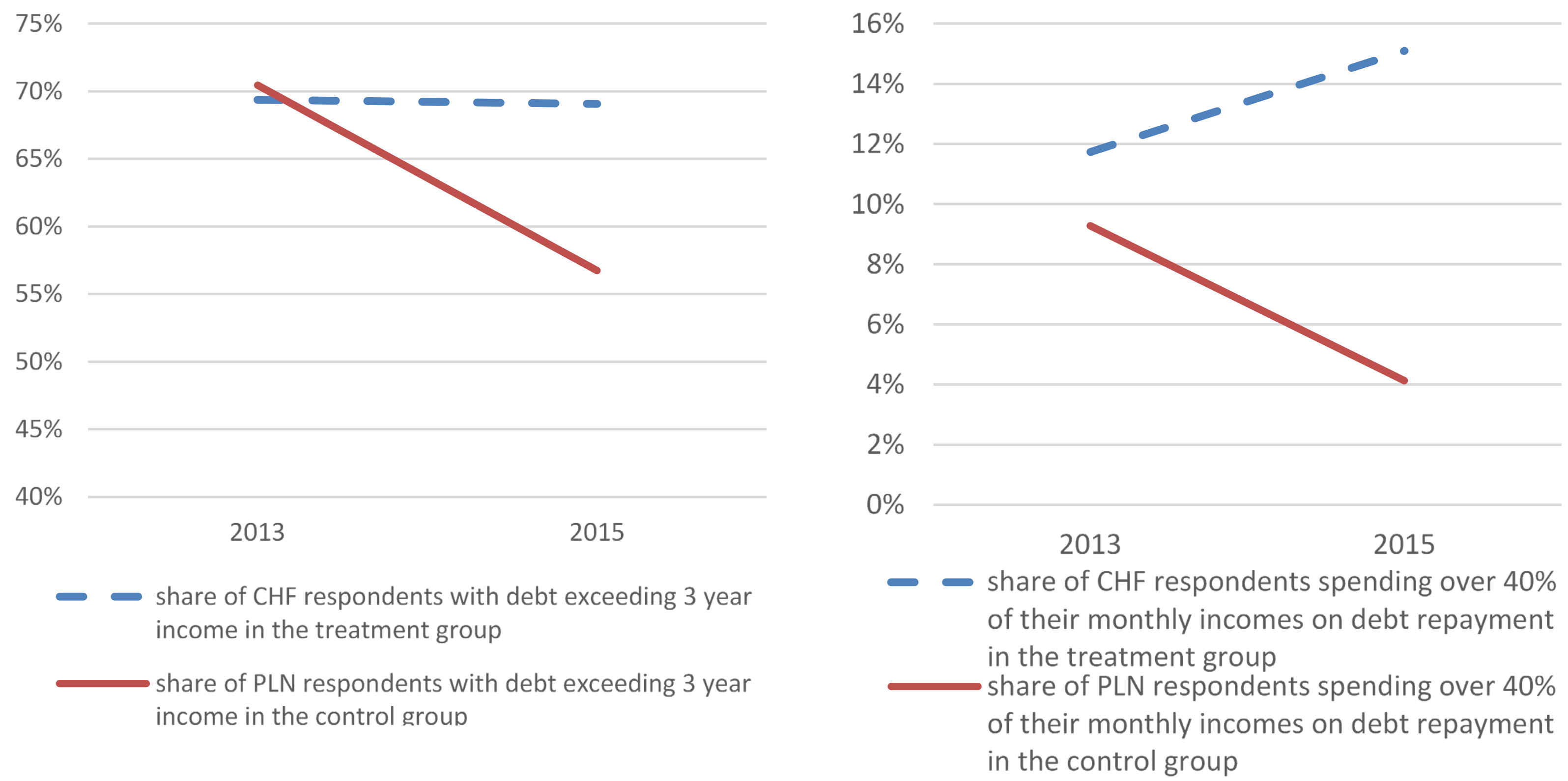


Unique window of opportunity



Financial outcomes

- Decision by the Swiss National Bank – influential from the financial perspective
  - The value of debt and instalment payments in relation to household income diverged between treatment and control groups.



Data, Methods and Measures

- Mortgage debtors – from the Social Diagnosis Survey:
  - analysis addressed the situation of 1,159 Poles aged 25 and over, who in 2015, had either Swiss franc (322) or Polish zloty (837) mortgages.
- Difference-in-differences propensity score matching approach to investigate the impact of sudden Swiss franc appreciation (treatment group – households with mortgages in Swiss Francs, control group – mortgages in Polish zloty).
- Three complementary outcomes: (1) self-reported health (SRH); (2) number of somatic symptoms measured using the Patient Health Questionnaire (PHQ-15); (3) willingness to live (WL)

Well-being and health outcomes

- SNB decision – lack of significant impact on psychological and physical aspects of individual well-being, i.e., health and willingness to live.

ATT estimates

	ATT	SE	Z	p-value	95% Confidence Interval
Model 1 – SRH	-.178	0.132	-1.34	0.181	(-0.438; 0.083)
Model 2 – PHQ-15	0.078	0.486	0.16	0.873	(-0.875; 1.030)
Model 3 – WL	-0.104	0.176	-0.59	0.556	(-0.448; 0.241)

Coefficients reported for all difference-in-difference effects, despite pointing to relative worsening of the situation for Swiss franc mortgage owners, are not significant.

Conclusions (reflections)

- Interconnection between financial decisions and well-being are relevant for policy
  - The aggregated US household debt amounts to $13.5 trillion being at the all time high (Federal Reserve Bank of New York, 2019) and amounts to 80% of the US GDP (International Monetary Fund, 2019);
  - Levels of student loans have increased along with the transitions into serious delinquency for credit card accounts (Federal Reserve Bank of New York, 2019). Those types of debt were shown earlier to be particularly important for well-being.
- High levels of debt are likely caused by lack of financial planning, poor financial management skills and detrimental consumption behaviors resulting from beliefs that material things can lead to happiness (Donnelly, Iyer, & Howell, 2012; O’Neill, Xiao, & Ensle, 2017).
  - Such behaviors lead to vulnerability

Conclusions (Reflections)

- Despite having one of the highest personal disposable incomes in the World, American adults are often financially fragile.
  - Various estimates show that between 46% (Gupta et al., 2018) and 59% (*Report on the Economic Well-Being of U.S. Households in 2017*, 2018) of American adults are incapable of immediately coping with a $400 emergency expense utilizing their available financial resources.