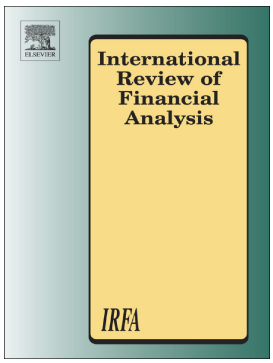
The causes and consequences of household financial strain: a systematic review

French, D., & Vigne, S. (2019). The causes and consequences of household financial strain: a systematic review. *International Review of Financial Analysis*, *62*, 150-156. https://doi.org/10.1016/j.irfa.2018.09.008

Published in:
International Review of Financial Analysis

Document Version:
Peer reviewed version



The causes and consequences of household financial strain: a systematic review

Declan French, Samuel Vigne

PII: S1057-5219(18)30143-1
DOI: doi:10.1016/j.irfa.2018.09.008
Reference: FINANA 1259

To appear in: *International Review of Financial Analysis*

Received date: 28 February 2018
Revised date: 12 September 2018
Accepted date: 12 September 2018

Please cite this article as: Declan French, Samuel Vigne , The causes and consequences of household financial strain: a systematic review. Finana (2018), doi:10.1016/j.irfa.2018.09.008

The causes and consequences of household financial strain : a systematic review

Declan French*, Samuel Vigne

Queens Management School, Belfast, UK

Abstract

The 2007-08 financial crisis caused a deep global recession with lasting effects on economies worldwide. Millions of households in developed countries currently report having difficulty making ends meet. In this paper, we systematically review finance and economics research on household financial strain to identify research gaps. We find that economists could make a valuable contribution to this literature. More analysis involving developed economic theory would provide clarity to partial and sometimes contradictory results. Research could explore aspects of the dynamics of financial strain ; heterogeneity in coping strategies and the association with health outcomes. A few themes suggested in other literatures could also be examined such as the relative importance of chronic and acute stress as well as the roles of habituation and sensitization for welfare outcomes.

Keywords: household, stress, strain

1. Introduction

The 2007-08 financial crisis caused a deep global recession putting many households under financial strain. Housing and financial wealth was eroded and financial institutions severely curtailed access to credit while many workers in developed countries experienced job loss, low wage growth or increasingly precarious employment. Deficit reduction programmes in the form of cuts to government expenditure and tax increases have often exacerbated the impact at household level. Almost one-quarter (24%) of European households currently report having difficulty making ends meet (EU-SILC, 2018).

In this paper, we systematically review finance and economics research to identify when households report financial strain and to understand the socio-economic consequences of

*Corresponding author. Queens Management School, Queen's University Belfast, Riddel Hall, 185 Stranmillis Road, Northern Ireland, UK BT9 5EE

Email address: declan.french@qub.ac.uk (Declan French)

living with financial strain. Following the definition of psychological stress given by Lazarus (1966), we define financial strain as anxiety, worry or feelings of not coping created by economic or financial events. This condition is therefore synonymous with "financial/economic hardship", "financial/economic stress" or "financial difficulties" or "inability to cope financially". We regard economic problems such as unemployment, poverty, arrears, debt or even overindebtedness as been necessary but insufficient explanatory factors for financial strain.

Vulnerable households are of interest as they pose a risk to the banking sector and the household financial position is an important determinant of consumption and hence economic activity. Also, financial pressures have wider individual, social and political consequences. Financial strain since the crisis has been associated with depression (Sweet et al., 2013), food insecurity (Balistreri, 2016), higher mortality (Karanikolos et al., 2013) and criminality (Monte, 2015) as well as recent political upheavals (Funke et al., 2016; Becker et al., 2017).

The main aim of this systematic review is to summarize studies in economics and finance on the causes and consequences of household financial strain in order to identify what is already known and to establish any research gaps. Specifically, we focus on lifetime consumption theory explaining when households report financial strain; the dynamics of financial strain over time and across generations; how households cope and the consequences for mental health, physical health, relationships and political change. The review is restricted to quantitative research in a developed country context since 2007 and includes 81 studies.

Our focus is on subjective measures of financial well-being as opposed to objective measures such as indebtedness or low income for several reasons. Firstly, studies show material hardship is only partly explained by income and debt while subjective opinion variables are often more closely associated with underlying statistical constructs of material hardship than objective measures (Heflin, 2016; Carle et al., 2009). Households have many methods of coping with economic shocks not reflected in objective measures of financial pressures (Lusardi et al., 2011). Similarly, attitudes to debt and overindebtedness vary across countries, time, socio-economic groups and individuals and therefore the objective level of debt tells us little about the impact on the welfare of the household (Whelan et al., 2017). Sec-

ondly, the broader socio-economic consequences of financial strain such as on mental health can only be understood by identifying households reporting concern about their financial circumstances. If objectively a household is under financial pressure but reporting no trouble coping with their financial situation then it is unlikely we will observe any deterioration in mental health. The objective measures are then the distal determinants of the subjective experience of feeling financially strained but the subjective responses are critical in understanding the impacts on well-being.

2. Methods

Relevant academic papers in finance and economics were identified via the EconLit database. The following terms were used in the search :

- "finance" OR "debt" OR "arrears" OR "indebtedness" OR "overindebtedness" OR "bankruptcy" OR "unemployment" OR "poverty"
  AND
- "stress" OR "strain" OR "hardship" OR "coping"
  AND
- "household" OR "personal" OR "individual"

We considered only peer-reviewed articles published from the year 2007 and included key older research identified in these papers. All duplicates were removed before the study selection step.

Articles were screened for eligibility based on the following criteria:

1. Studies in Europe and North America contexts.
2. Studies on corporate financial distress were excluded.
3. Studies of more general non-financial stresses were excluded.

4. Studies focusing on selecting indicators and statistical measurement of financial strain were excluded.

5. Studies focused on the implications of household financial strain for macroeconomic stability were excluded.

Titles and abstracts of all articles were initially screened for eligibility. The reviewers then independently evaluated the full text of potentially eligible articles to determine their suitability.

The quality of studies was assessed according to a hierarchy adapted from the Maryland Scale of Scientific Methods (Sherman et al., 1998) : systematic reviews, demonstration of causation (e.g. RCT,IV) using (i) national sample (ii) regional or population subsample, cohort studies, case control studies, pre- and post-event comparisons and correlational/cross-sectional studies. Studies not meeting the quality criteria expected for any particular research approach were also then excluded.

The study selection workflow is outlined in the Supplementary data (figure A1). The initial search with the search terms above identified 171 abstracts to be reviewed. Of these, 74 studies were eliminated as they dealt with developing country contexts, corporate financial distress or non-financial stresses. Full-text articles were obtained for the remaining studies. A further 34 articles were eliminated as their focus was not principally at the household level or their contribution was relatively minor. From the references of these articles, a further 21 articles were identified for inclusion where they clearly made an important original contribution to the literature. The final sample then included 81 peer-reviewed publications.

3. Results

The selected studies and quality assessment are outlined in the Supplementary data (table A1). About half of all studies (n=39) were exclusively conducted in the USA. Eleven studies were based in the UK. The remainder were conducted in a range of countries - some of which notably suffered severe recessions after the financial crisis (Spain, Italy, Ireland); some ex-communist countries which underwent economic upheaval on transitioning to democracy

(Poland, Russia) and others experiencing their own economic crises (Turkey, Indonesia). The remainder either took place in other developed countries or used a range of international data. Many studies were concerned with the social impact of the financial crisis and used data post-2007 (n=30). Some compared conditions before and after the crisis (n=11) while others used data from before the crisis or took a longer view looking back over the historical record.

Over half used nationally-representative survey data (n=45) while others used surveys of particular sub-populations in specific regions (n=20 mainly US), experiments (n=2) or administrative data (n=5). Many studies focused on a particular vulnerable population of interest such as low-income households (n=6), students (n=8) or mothers of young children (n=8).

The studies used a variety of different statistical techniques. There were nine review studies some of which were systematic in approach and used meta-analysis to aggregate results. A small number of studies (n=14) explicitly considered causation either by study design (e.g. RCT) or in the statistical analysis (e.g. using instrumental variable methods). Thirty studies used longitudinal data controlling for individual effects. Twenty-six studies focused on cross-sectional data using either regression techniques or simple descriptive analysis.

In the discussion below, we have also included a number of economic theory papers in order to provide an organising framework.

3.1. Causes

Why should an individual report that they feel under financial strain ? Models of lifetime consumption provide a useful organising framework for literature on the causes of financial strain. Letting c_t denote consumption in period t, $u_t(c_t)$ within-period utility, w_t the remaining wealth at the beginning of the period and the interest rate r for borrowing and saving, the head of household optimises consumption over time by solving the problem

$$\max_{c_t} E_0 \left[\sum_{t=0}^{T-1} \beta^t u_t(c_t) \right] \quad \text{subject to} \quad \beta^{t+1}(w_{t+1} - (1+r)(w_t - c_t)) = 0 \tag{1}$$

Households are permitted to hold debt in this basic model. Younger households can therefore invest in education and housing using borrowings in the knowledge they can rely on future income to pay down debt.

Current income or current levels or debt are therefore not very informative about the degree to which households are currently experiencing material hardship (Sullivan et al., 2008). Intertemporal smoothing of consumption helps explain findings that although income is related to financial strain at any point in time changes in income over time do not generally decrease financial strain (Valentino et al., 2014). Also, attitudes to debt and overindebtedness vary across countries, time, socio-economic groups and individuals and therefore the objective level of debt tells us little about the impact on the household (Whelan et al., 2017). Many authors nevertheless make the over-simple association of the stock of debt with financial difficulties (del Rio and Young, 2008; Christelis et al., 2009). The nature of the debt may be more informative with non-collateralized debt especially credit card debt or non-performing debts with frequent creditor contact generating particularly high levels of stress (Choi et al., 2016; Dunn and Mirzaie, 2016).

Writing the household's problem in the form of a Lagrangian, the household maximises

$$L = E_0\left[\sum_{t=0}^{T-1}\beta^t u_t(c_t) - \sum_{t=0}^{T-1}\beta^{t+1}\lambda_{t+1}(w_{t+1} - (1+r)(w_t - c_t))\right] \tag{2}$$

where λ_{t+1} is the Lagrange multiplier for the budget constraint in time $t+1$. The Lagrange multipliers give the change in utility for a unit change in the budget constraint or the *shadow price* of the budget constraint. This permits Hamermesh and Lee (2007) to associate subjective reports of financial strain with the Lagrange multiplier. That is, financially strained households (λ large) would be made much happier by the addition of an extra \$1 to their household budget than a household free of financial worries (λ small).

Optimality implies

$$\lambda_t = u_t'(c_t) \tag{3}$$

Financial strain is then a function of the level of consumption at any point in time.[1] Concave marginal utility would imply that strain is then higher at lower levels of consumption. Consumption theory then justifies the association of not having enough money to meet basic needs such as food, shelter, safety and medicines with increased feelings of not being able to cope (Brooks-Gunn, 1997; Jessop et al., 2005; Turunen and Hiilamo, 2014).

This simple theory also allows us to broaden out the determinants of financial strain beyond the level of consumption since the desirability of consumption also varies across time. The marginal utility of consumption may be higher in the presence of children (Deaton, 1992), health needs (Thurow, 1969) and may also vary by age (Börsch-Supan and Stahl, 1991) in ways that can be anticipated. Marginal utility of consumption may also vary across individuals according to gender or personality type (Boyce and Wood, 2011). This provides one explanation for why financial strain is experienced differently by different individuals. For example, women in the same objective financial situation as men tend to report higher stress levels than men (Choi et al., 2016).

More formally, the desirability of consumption across individuals and time is captured by a set of taste shifters ϕ_{it}

$$\lambda_{it} = u'_{it}(c_{it}) = \phi_{it}u'(c_{it}) = \phi(w_{it}, \varepsilon_{it})u'(c_{it}) \tag{4}$$

where w_{it} is a set of household variables including age of head of household and the presence of children and ε_{it} are preference shocks. The household may underestimate the risk of unemployment, unplanned pregnancy, marital breakdown, illness, or crime and the psychological effects of uncontrollable shocks may be greater than persistent financial hardship

[1]Financial strain relates to current consumption in this formulation and by intertemporal smoothing incorporates rational expectations of economic prospects such as job security or wage growth. A literature on the economic rationality of suicide more explicitly uses expected future living standards. Unhappiness is determined by the proximity of total discounted lifetime utility remaining at time τ, $E_\tau\left[\sum_{t=\tau}^{T-1}\beta^t u_t(c_t)\right]$, to a 'taste for living' threshold given by age and other individual socio-economic characteristics (Hamermesh and Soss, 1974; Daly and Wilson, 2006). This would permit the inclusion of shock measures such as redundancy which may not be instantaneously translated into lower current consumption perhaps due to habit persistence.

(Wadsworth et al., 2008; Santiago et al., 2011). Additionally, Heflin (2016) finds that the effect of shocks is asymmetric with hardship persisting even when the source of instability has been removed. She posits that financial instability undermines a household's resilience and ability to regain equilibrium in the long-run.

The inability to meet debt repayments or pay utility bills would indicate that financial commitments are becoming unsustainable but, with access to further credit, such temporary problems can be managed (Mirowsky and Ross, 1999). This would indicate that the inability to borrow or liquidity constraints are the real cause of financial strain. Lusardi et al. (2011) suggests that the majority of US households are unable to intertemporally smooth consumption as they hold little savings and have limited access to credit. For liquidity-constrained households, end of period assets can never be negative ($w_{t+1} > 0$) and they face an additional constraint that can be added to the Lagrangian. In this instance, we could argue that total financial strain in period t is then the sum of the shadow prices of both constraints i.e. $strain_t = \lambda_t + \mu_t$. Dunn and Mirzaie (2016) find that debt stress is higher when the liquidity provided by credit cards has been curtailed and legislation limiting access to payday loans increases the prevalence of food insecurity (Fitzpatrick and Coleman-Jensen, 2014). Similarly, homeownership reduces financial strain by increasing liquidity as housing wealth can be drawn down through remortgaging or equity release schemes (Deidda, 2015). On the other hand, easy access to loans which create a significant debt burden can be the cause of difficulties paying important household bills for those lacking self-control or forecasting ability (Melzer, 2011).

Most research focuses on the effects of one or other financial difficulty on financial strain but do not compare the relative influence of the range of possible determinants outlined here. In one such study, French (2018) compares the influence of low income, economic shocks and liquidity constraints on self-reports of how well UK households were managing financially. He finds that the effects of economic shocks dominate other explanatory factors for difficulties managing financially. Further research could address this question under a more rigorous elaboration of lifetime consumption theory as outlined here.

3.2. Dynamics

Financially fragile households such as those with little or no financial buffer are less likely to be able to withstand economic shocks. Lusardi et al. (2011) highlights how little is understood about how households become financially fragile in particular more research is needed on the lack of precautionary saving, the role of overspending, attitudes to risk, lack of financial literacy and the loosening of social ties in explaining inability to cope with economic shocks. Financial fragility is found to be not simply confined to those on low-incomes and the literature on material hardship also emphasises that the dynamics of income poverty and material hardship are distinct (Heflin, 2016).

Financial distress is also found to be persistent among households. Giarda (2013) find this result to be robust across a number of specifications for Italian households and Brown et al. (2014) report financial difficulties in Britain persisting across a range of areas including housing costs, loan repayments, spending and ability to save. While vulnerability to economic shocks is often persistent (Krueger and Mueller, 2011), financial strain can often be perpetuated through the responses of the household to their situation. Poverty-related concerns can reduce cognitive capacity leaving less mental resources for other tasks (Mani et al., 2013) and favouring habitual behaviours over ones more appropriate to changed circumstances (Haushofer and Fehr, 2014). Thinking processes are therefore impaired, decision-making becomes short-sighted and risk averse, others are less trusted and harmful coping strategies are adopted (Sheehy-Skeffington and Rea, 2017). Also, worse physical and mental health resulting from hardship perpetuates financial strain through increased health care expenditure and reduced job opportunities (Sullivan et al., 2008). On the other hand, Shen et al. (2014) use a US regional cross-sectional sample to show that debt worries attenuate over time due to habituation as households get used to being in debt. Follow-up studies could test this interesting hypothesis on a longitudinal sample taking account of other changes in financial circumstances.

Financial strain is also seen to be transmitted across generations (Zelinsky et al., 2016). Financial strain is associated with marital conflict and unstable relationships which, in turn, create stress for children, distract parents from nurturing and reduce the support of

fathers to the family economy retarding child development (McLanahan, 2009). Educational ability which determines income can be transmitted intragenerationally partly through the inheritance of cognitive skills but also by parents creating an environment which promotes children's self-esteem, personal efficacy and concentration levels (Blanden et al., 2007).

3.3. Coping

Individuals vary in their stress reaction to economic difficulties. This may be partly due to individual variations in the marginal utility of consumption as explained above. A resilience literature also highlights how marital support and social capital help mitigate feelings of economic pressure (Reeves et al., 2014; Masarik et al., 2016). Individuals also report lower levels of worrying about debt where a partner has assumed financial responsibility for the household thus taking on the psychological burden (Goode, 2012).

Households respond in a variety of ways to financial strain depending on whether the new financial situation is seen as temporary or permanent. Discretionary spending can be reduced and households can switch to cheaper substitutes for necessities (Thomas and Frankenberg, 2007) and consumption reduction strategies have the advantage of being implemented quickly without threatening family wellbeing (Aytaç et al., 2015). Core household expenditure such as food and energy can be more flexibly managed than relatively fixed commitments such as housing. Energy consumption can be simply cut back or energy supplier switched where feasible while both the range and quality of food may be reduced (Anderson et al., 2012). Where public healthcare provision is limited, households have also cut back on their use of non-emergency medical services and health insurance in the wake of the financial crisis (Lusardi et al., 2010; Waldron and Redmond, 2017). Households may also reduce expenditure by switching to home production especially of food (Gerry and Li, 2010). There is currently only limited research documenting the consumption trade-offs financially strained households make between food, transportation, childcare and work-related expenses (Heflin et al., 2007) and consumption under stress may also reflect a desire to restore a loss of control resulting in spending on products not conventionally considered as necessities (Durante and Laran, 2016). With more severe and more permanent economic hardship, consumption

can be supported by liquidating valuable assets such as cars and pension assets or taking on extra debt but potentially at the cost of harming long-run prospects of improving the financial situation and depleting financial buffers against future economic shocks (Aytaç et al., 2015). Longer periods of breadwinner unemployment are associated with efforts to increase earnings from work (Prawitz and Cohart, 2016). In countries with traditionally low levels of female labour force participation such as Italy, previously economically inactive women entered employment as the financial crisis progressed especially when husbands lost jobs or reduced earnings were combined with reduced working hours (Ghignoni and Verashchagina, 2016). Housing-related solutions such as renting out rooms or merging households are less common as they are often infeasible and releasing housing equity is more appropriate for large permanent shocks (Waldron and Redmond, 2017; Lusardi et al., 2011).

Individuals also turn to a number of different sources of help. Options include financial advisers, non-profit or state-provided financial assistance organizations or non-professionals such as friends, colleagues, and family (Grable and Joo, 1999). Recent literature highlights significant borrowing and lending within the family and with relatives and friends with one study estimating a quarter of US households borrowed in this way following the financial crisis (Lusardi et al., 2011). Depending on the international context, a combination of government and the non-profit sector help support low-income households in material hardship by providing food assistance, affordable housing and clothing (Guo, 2010). A sense of self-efficacy is an important determinant for seeking professional financial planning help (Letkiewicz et al., 2016) and women are more likely to seek help than men (Goode, 2012). However, evidence on the effectiveness of financial counselling in reducing financial strain is limited (Britt et al., 2015).

Sheehy-Skeffington and Rea (2017) categorize coping styles where the existence of the stressor is acknowledged, the financial situation or behaviours are reappraised and individuals adjust themselves or their situation as being healthy, adaptive forms of coping. Those with high human capital cope more successfully as they can be more resourceful in managing money and are more capable at interacting with bureaucracies (Heflin et al., 2007). Individuals maladaptively coping, on the other hand, avoid engaging with their financial

difficulties. Aspinwall (2011) report how some individuals resort to denial in order to deal with the negative emotional stimuli. No action is therefore taken as there is no recognition or response to the financial problems. Also, individuals with less internal locus of control may be concerned about the emerging problem but feel their actions have no control over future outcomes instead ascribing their financial circumstances to external factors such as luck or fate (Shim et al., 2009). Based on results from a sample of US adults, Prawitz and Cohart (2016) find that perceptions that decision-making provides control over financial circumstances are more important for financial wellness than the resources available to the household. Also, some individuals are not in a position to effect change such as those suffering mental health problems or domestic abuse (Heflin et al., 2007).

Lusardi et al. (2011) posit that the coping mechanisms used by households in the event of an economic shock may follow a pecking order determined by relative transaction costs, social costs, information costs and effort. They argue that further research is required to understand the trade-offs households make and how they are shaped by transaction costs and information asymmetries. They also pose a number of potential research questions around the relative importance of the determinants of social financial support such as the role of community cohesion, strength of friend and family ties, migration patterns as well as the social cost of asking for money. In his comments on this paper, Adair Morse suggests an international comparison of institutional differences in financial markets, pensions and labour markets as well as individual variations in social attitudes may help explain international differences in household coping strategies. A better understanding of coping mechanisms could then promote better policy initiatives and more creative responses from the financial services industry.

3.4. Effects on mental health

The clearest evidence for a health impact of financial strain comes from studies of anxiety and depression. For example, worries about debt are the strongest predictor of depression among mothers of infants (Reading and Reynolds, 2001) ; perceived financial strain worsened the mental health of individuals on the verge of bankruptcy (Selenko and Batinic, 2011) and

economic hardship explains historical suicide patterns in Finland (Korhonen et al., 2016). Turunen and Hiilamo (2014) provide an excellent review of the literature on the mental health effects of indebtedness and establish that financial problems are related to suicidal ideation and depression.

Bridges and Disney (2010) take a dissenting view arguing that any association between subjective financial circumstances and psychological well-being can be attributed to a person-specific tendency to report having difficulties in both areas. Financial problems could provide a socially acceptable justification for having mental health difficulties while psychological morbidity may make financial problems seem more severe. This would appear to be overstated as a number of other longitudinal studies would indicate that a strong association between financial strain and mental health persists even when controlling for individual effects (Latif, 2015; French, 2018).

Dew (2007) argues that the relationship of debt in particular to depression is ambiguous. Debts are only injurious to mental health when they exacerbate economic pressures but households may also use debt to consume at levels equal to their reference group and derive a sense of well-being from 'keeping up with the Joneses'. This reinforces the need to focus on the subjectivity of experiencing financial strain to understand health and wider social consequences.

Aytaç et al. (2015) show that the number of coping adjustments Turkish households employed during the recent economic crisis was positively associated with higher depression levels and greater physical health problems. Similarly, a US study reports young adults who had to make more economic adjustments as a result of the financial crisis suffered higher levels of both anxiety and depressed mood (Stein, 2013). This suggests a more nuanced research agenda exploring the relationship between mental health and the types and combinations of adjustments households make in time use and consumption which would further our understanding and guide interventions.

3.5. Effects on physical health

Similar results have been found for the effects of financial difficulties on physical health e.g. debt-stress causes physical impairment (Drentea and Lavrakas, 2000) ; financial strain leads to worse self-care, problems performing usual activities and pain problems (French and McKillop, 2017) ; unemployment is associated with worse self-assessed health (Urbanos-Garrido and Lopez-Valcarcel, 2015) and overindebtedness leads to poorer subjective health and worse health-related behaviours (Turunen and Hiilamo, 2014). The health effects of recessions tend to be worse in the USA than in other advanced economies due to its weaker welfare state (Burgard et al., 2013).

The causal pathway from financial strain to poor health could be mediated through direct effects on biological processes. Economic stresses such as job loss and income decline cause dysregulation of multiple biological systems (Lipowicz et al., 2016). Hormones released in response to stressful events can interfere with control of physiological processes such as anti-inflammatory responses; metabolism of carbohydrates, fats and proteins and gluconeogenesis as well as the regulation of cardiovascular, pulmonary, hepatic, skeletal muscle and immune systems resulting in increased disease risk (Cohen et al., 2007). The consequences of stress for health are increased risk of cardiovascular disease (Richardson et al., 2012), faster deterioration with HIV/AIDS (Remor et al., 2007), slower wound healing response (Broadbent et al., 2012), upper respiratory infections (Pedersen et al., 2010) and autoimmune diseases (Porcelli et al., 2016).

Alternatively, worse health could result from changes in health behaviours. Individuals become more present-biased when stressed (Haushofer and Fehr, 2014) and impulsivity has been associated with a range of unhealthy behaviours (Prentice et al., 2017). Recession can also lead to reductions in consumption with proximal links to poorer health outcomes such as food insecurity or foregoing medical care (Barcellos and Jacobson, 2015). Financial strain is associated with worse diets (Nelson et al., 2008), sedentary lifestyles (Turunen and Hiilamo, 2014), obesity (Bilger et al., 2017), smoking (Grafova, 2011), excessive alcohol consumption (Davalos et al., 2012) and fighting (Nelson et al., 2008).

Little work has been done on establishing the relative importance of these mediating

channels. Prentice et al. (2017) indicate that the health behavioural response to financial difficulties appears relatively minor but a full analysis of how financial strain affects health as mediated by health behavioural change compared to higher allostatic load has yet to be carried out. More work is also required on understanding how increased unhealthy consumption due to impulsivity resulting from financial strain can be reconciled with reduced unhealthy consumption due to lower spending power.

3.6. Social and political consequences

The consequences of financial strain are not confined to the individual. Economic pressures make marriage less likely for poor women (Schneider and Hastings, 2015) while lowering couple quality time (Gudmunson et al., 2007) and increasing controlling behaviour (Schneider et al., 2016), intimate partner violence (Lucero et al., 2016), marital conflict (Dew, 2007) and the intensity of disagreements (Gudmunson and Danes, 2011). However, the effects on divorce are ambiguous, at least in the US (Cohen, 2014).

Economic hardship has negative consequences also for social life. Falling into poverty weakens social support, reduces social contact and reduces civic organizational activity and political participation (Mood and Jonsson, 2016; Corman et al., 2012). Financial difficulties are also significantly associated with an increased hazard of criminal behaviour (Monte, 2015).

Political views have also been shaped by the recent financial crisis. In a review of the political consequences of historical and recent financial crises, Funke et al. (2016) find that far-right parties increase their vote share by 30% after a financial crisis but they do not observe similar political dynamics in normal recessions or after severe macroeconomic shocks that are not financial in nature. Becker et al. (2017) find that low income, deprivation and high unemployment were key drivers of the UK vote to leave the EU while immigration exposure and the youth vote were of relatively little importance. Comparing the UK results to voting patterns for the far-right in the 2017 French presidential election produced similar results.

4. Discussion

A number of excellent reviews related to financial strain have been carried out in other disciplines. Turunen and Hiilamo (2014) review the physical and mental health effects of indebtedness and Sheehy-Skeffington and Rea (2017) systematically review psychological and sociological literature on the impact of low socio-economic status on decision-making. In this review, we have focused on studies in finance and economics on financial strain with the intent of highlighting where economists could make an important contribution to this literature.

Although there have been a substantial number of finance and economics papers produced on household financial strain since the financial crisis, many report findings already reported elsewhere and do not bring an economist's perspective to understanding relationships in any depth. A consideration of lifetime consumption theory, processes of income smoothing and liquidity constraints would help clarify the determinants of household financial strain and resolve some contradictory findings. For example, Hameresh and colleagues have developed a formulation based on equating the level of financial strain experienced by the household to the shadow price of the budget constraint which provides a simple but powerful organising framework. Backed by sound economic theory, further research could investigate the relative influence of debt, arrears, low income, liquidity constraints, economic shocks and future prospects on feelings of financial pressure to clarify their relative importance. It is also unclear as to how much of the individual variation in the experience of financial strain is due to variation in economic circumstances and economic characteristics and how much is due to other factors such as personality type or social capital.

Further research is also required to understand how households become financially strained and why they remain strained over time. Lusardi and authors highlight our lack of understanding of financially fragile households and why they do not invest in a financial buffer against economic shocks. Financial distress is persistent across time and across generations. But what is less clear are the mediating factors involved and the relative importance of those highlighted by the literature thus far. The underlying determinants of financial strain

such as education and household composition are undoubtedly persistent whereas financial strain also affects economic behaviours, marital conflict and health thus perpetuating difficulties. A more thorough understanding of the dynamic processes could help in the design of appropriate policy interventions. Another interesting line of research is suggested by Shen and colleagues on the roles of sensitisation and habituation to financial problems. Does the household become more worried or less worried about a persistent financial difficulty over time ?

The heterogeneous responses of households to financial strain are not well understood. A number of research questions could usefully be addressed on how consumption changes when household are financially stressed. When do households choose to forego insurance, childcare, job search costs and adequate nutrition ? Is there any evidence of increased spending on non-necessities which give unexpected utility ? Coping mechanisms such as reducing consumption, liquidating assets or increasing labour hours may follow a pecking order determined by relative transaction costs, social costs, information costs and effort. Some households do not appear to address their financial difficulties through an economic response. Is this purely for psychological reasons or are the costs of change prohibitively high ? Are those reporting higher levels of financial strain relative to their objective financial circumstances more or less likely to take action. A better understanding of coping mechanisms could help the development of better-targeted government policy and perhaps innovative financial products.

There is an extensive but repetitive literature on the mental health consequences of financial strain. An interesting direction suggested by a few studies is to explore the relationship between how households adjust their circumstances to financial hardship and how the number and variety of these adjustments impact on psychological morbidity.

Although strain is associated with worse physical health outcomes, it is not clear to what extent financial strain is different from other stresses. Do all forms of stress influence health behaviours such as smoking, drinking and fast food consumption in the same way ? In which case, how can we understand the mix of financial strain causing impulsivity and worse health behaviours versus a reduction in the ability to afford unhealthy consumption due to lower

spending power. The biological response as in other forms of stress or a reduction in healthcare expenditure are also plausible mediating pathways from financial strain to worse health but we do not as yet know which of these pathways is most important. A psychological literature would also indicate that the relationship between stress and health is non-linear. It is clear that being highly financially strained is injurious to health but perhaps it is also equally damaging when households in ostensibly difficult financial circumstances report no financial strain (Hughes et al., 2018). Likewise, very few papers distinguish between the welfare impacts of chronic and acute but transient strain. A sociological and a medical literature would argue that the effects are quite different with chronic stress being particularly damaging for health. Alternatively, habituation may blunt the effects of financial strain over time.

5. Conclusions

In this paper, we systematically review 81 finance and economics papers on household financial strain to identify research gaps. We find that economists could make a valuable contribution to this literature. More analysis involving developed economic theory would provide clarity to partial and sometimes contradictory results. The persistence of financial strain has been established but the dynamic processes are not well understood. The heterogeneous household responses to financial strain and the different coping strategies used also require further investigation. Although strain is associated with worse mental and physical health outcomes, work is required to clarify the mechanisms involved. A few themes suggested in other literatures could also be examined such as the relative importance of chronic and acute stress as well as the roles of habituation and sensitization to financial strain for welfare outcomes.

Acknowledgement

The authors would like to acknowledge helpful comments and suggestions from participants at the IRFA Symposium on MetaAnalysis in International Finance at Poznan June 9th 2018.

References

Anderson, W., White, V., Finney, A., 2012. Coping with low incomes and cold homes. Energy Policy 49 (1), 40 – 52.

Aspinwall, L. G., 2011. Future-oriented thinking, proactive coping, and the management of potential threats to health and well-being. The Oxford Handbook of Stress, Health and Coping, 334–365.

Aytaç, I. A., Rankin, B. H., İbikoğlu, A., 2015. The social impact of the 2008 global economic crisis on neighborhoods, households, and individuals in Turkey. Social Indicators Research 124 (1), 1–19.

Balistreri, K. S., 2016. A Decade of Change: Measuring the Extent, Depth and Severity of Food Insecurity. Journal of Family and Economic Issues 37 (3), 373–382.

Barcellos, S. H., Jacobson, M., 2015. The effects of medicare on medical expenditure risk and financial strain. American Economic Journal: Economic Policy 7 (4), 41 – 70.

Becker, S. O., Fetzer, T., Novy, D., 2017. Who voted for Brexit? A comprehensive district-level analysis. Economic Policy 32 (92), 601–650.

Bilger, M., Kruger, E. J., Finkelstein, E. A., 2017. Measuring socioeconomic inequality in obesity: Looking beyond the obesity threshold. Health Economics 26 (8), 1052 – 1066.

Blanden, J., Gregg, P., Macmillan, L., 2007. Accounting for intergenerational income persistence: noncognitive skills, ability and education. The Economic Journal 117 (519).

Börsch-Supan, A., Stahl, K., 1991. Life cycle savings and consumption constraints. Journal of Population Economics 4 (3), 233–255.

Boyce, C. J., Wood, A. M., 2011. Personality and the marginal utility of income: Personality interacts with increases in household income to determine life satisfaction. Journal of Economic Behavior & Organization 78 (1-2), 183–191.

Bridges, S., Disney, R., 2010. Debt and depression. Journal of Health Economics 29 (3), 388 – 403.

Britt, S. L., Canale, A., Fernatt, F., Stutz, K., Tibbetts, R., 2015. Financial stress and financial counseling: Helping college students. Journal of Financial Counseling and Planning 26 (2), 172 – 186.

Broadbent, E., Kahokehr, A., Booth, R. J., Thomas, J., Windsor, J. A., Buchanan, C. M., Wheeler, B. R., Sammour, T., Hill, A. G., 2012. A brief relaxation intervention reduces stress and improves surgical wound healing response: a randomised trial. Brain, Behavior, and Immunity 26 (2), 212–217.

Brooks-Gunn, J., 1997. Neighborhood poverty, volume 1: Context and consequences for children. Vol. 1. Russell Sage Foundation.

Brown, S., Ghosh, P., Taylor, K., 2014. The Existence and Persistence of Household Financial Hardship: A Bayesian Multivariate Dynamic Logit Framework. Journal of Banking and Finance 46, 285 – 298.

Burgard, S. A., Ailshire, J. A., Kalousova, L., 2013. The great recession and health: People, populations, and disparities. Annals of the American Academy of Political and Social Science 650, 194 – 213.

Carle, A. C., Bauman, K. J., Short, K., 2009. Assessing the measurement and structure of material hardship in the United States. Social Indicators Research 92 (1), 35.

Choi, S., Gudmunson, C. G., Griesdorn, T. S., Hong, G.-S., 2016. Assessing college student needs for comprehensive financial counseling. Journal of Financial Counseling and Planning 27 (2), 158 – 171.

Christelis, D., Jappelli, T., Paccagnella, O., Weber, G., 2009. Income, wealth and financial fragility in Europe. Journal of European Social Policy 19 (4), 359–376.

Cohen, P. N., 2014. Recession and Divorce in the United States, 2008-2011. Population Research and Policy Review 33 (5), 615 – 628.

Cohen, S., Janicki-Deverts, D., Miller, G. E., 2007. Psychological stress and disease. Journal of the American Medical Association 298 (14), 1685–1687.

Corman, H., Noonan, K., Reichman, N. E., Schultz, J., 2012. Effects of financial insecurity on social interactions. Journal of Socio-Economics 41 (5), 574 – 583.

Daly, M., Wilson, D., 2006. Keeping Up with the Joneses and Staying Ahead of the Smiths: Evidence from Suicide Data. Federal Reserve Bank of San Francisco Working Paper 2006-12.

Davalos, M. E., Fang, H., French, M. T., 2012. Easing the pain of an economic downturn: Macroeconomic conditions and excessive alcohol consumption. Health Economics 21 (11), 1318 – 1335.

Deaton, A., 1992. Understanding consumption. Oxford University Press.

Deidda, M., 2015. Economic Hardship, Housing Cost Burden and Tenure Status: Evidence from EU-SILC. Journal of Family and Economic Issues 36 (4), 531 – 556.

del Rio, A., Young, G., 2008. The impact of unsecured debt on financial pressure among British households. Applied Financial Economics 18 (15), 1209–1220.

Dew, J., 2007. Two Sides of the Same Coin? The Differing Roles of Assets and Consumer Debt in Marriage. Journal of Family and Economic Issues 28 (1), 89 – 104.

Drentea, P., Lavrakas, P. J., 2000. Over the limit: the association among health, race and debt. Social Science & Medicine 50 (4), 517–529.

Dunn, L. F., Mirzaie, I. A., 2016. Consumer Debt Stress, Changes in Household Debt, and the Great Recession. Economic Inquiry 54 (1), 201 – 214.

Durante, K. M., Laran, J., 2016. The effect of stress on consumer saving and spending. Journal of Marketing Research 53 (5), 814 – 828.

EU-SILC, 2018. Inability to make ends meet. Data retrieved from EU-SILC survey, `http://appsso.eurostat.ec.europa.eu`.

Fitzpatrick, K., Coleman-Jensen, A., 2014. Food on the fringe: Food insecurity and the use of payday loans. Social Service Review 88 (4), 553 – 593.

French, D., 2018. Financial strain in the United Kingdom. Oxford Economic Papers 70 (1), 163–182.

French, D., McKillop, D., 2017. The impact of debt and financial stress on health in Northern Irish households. Journal of European Social Policy 27 (5), 458–473.

Funke, M., Schularick, M., Trebesch, C., 2016. Going to extremes: Politics after financial crises, 1870–2014. European Economic Review 88, 227–260.

Gerry, C. J., Li, C. A., 2010. Consumption Smoothing and Vulnerability in Russia. Applied Economics 42 (16-18), 1995 – 2007.

Ghignoni, E., Verashchagina, A., 2016. Added Worker Effect during the Great Recession: Evidence from Italy. International Journal of Manpower 37 (8), 1264 – 1285.

Giarda, E., 2013. Persistency of Financial Distress amongst Italian Households: Evidence from Dynamic Models for Binary Panel Data. Journal of Banking and Finance 37 (9), 3425 – 3434.

Goode, J., 2012. Brothers are doing it for themselves?: Men's experiences of getting into and getting out of debt. Journal of Socio-Economics 41 (3), 327 – 335.

Grable, J. E., Joo, S.-h., 1999. Financial help-seeking behavior: Theory and implications. Journal of Financial Counseling and Planning 10 (1), 14.

Grafova, I. B., 2011. Financial strain and smoking. Journal of Family and Economic Issues 32 (2), 327 – 340.

Gudmunson, C. G., Beutler, I. F., Israelsen, C. L., McCoy, J. K., Hill, E. J., 2007. Linking financial strain to marital instability: Examining the roles of emotional distress and marital interaction. Journal of Family and Economic Issues 28 (3), 357 – 376.

Gudmunson, C. G., Danes, S. M., 2011. Family financial socialization: Theory and critical review. Journal of family and economic issues 32 (4), 644–667.

Guo, B., 2010. Beyond the public safety net: The role of nonprofits in addressing material hardship of low-income households. Nonprofit and Voluntary Sector Quarterly 39 (5), 784 – 801.

Hamermesh, D. S., Lee, J., 2007. Stressed out on four continents: Time crunch or yuppie kvetch? The Review of Economics and Statistics 89 (2), 374–383.

Hamermesh, D. S., Soss, N. M., 1974. An economic theory of suicide. Journal of Political Economy 82 (1), 83–98.

Haushofer, J., Fehr, E., 2014. On the psychology of poverty. Science 344 (6186), 862–867.

Heflin, C., 2016. Family Instability and Material Hardship: Results from the 2008 Survey of Income and Program Participation. Journal of Family and Economic Issues 37 (3), 359 – 372.

Heflin, C. M., Corcoran, M. E., Siefert, K. A., 2007. Work Trajectories, Income Changes, and Food Insufficiency in a Michigan Welfare Population. Social Service Review 81 (1), 3 – 25.

Hughes, B. M., Lü, W., Howard, S., 2018. Cardiovascular stress-response adaptation: Conceptual basis, empirical findings, and implications for disease processes. International Journal of Psychophysiology.

Jessop, D. C., Herberts, C., Solomon, L., 2005. The impact of financial circumstances on student health. British Journal of Health Psychology 10 (3), 421–439.

Karanikolos, M., Mladovsky, P., Cylus, J., Thomson, S., Basu, S., Stuckler, D., Mackenbach, J. P., McKee, M., 2013. Financial crisis, austerity, and health in Europe. The Lancet 381 (9874), 1323–1331.

Korhonen, M., Puhakka, M., Viren, M., 2016. Economic Hardship and Suicide Mortality in Finland, 1875-2010. European Journal of Health Economics 17 (2), 129 – 137.

Krueger, A. B., Mueller, A., 2011. Job search, emotional well-being, and job finding in a period of mass unemployment: Evidence from high-frequency longitudinal data. Brookings Papers on Economic Activity 2011 (1), 1–57.

Latif, E., 2015. The Impact of Economic Downturn on Mental Health in Canada. International Journal of Social Economics 42 (1), 33 – 46.

Lazarus, R. S., 1966. Psychological stress and the coping process. McGraw-Hill.

Letkiewicz, J., Robinson, C., Domian, D., 2016. Behavioral and wealth considerations for seeking professional financial planning help. Financial Services Review 25 (2), 105 – 126.

Lipowicz, A., Szklarska, A., Mitas, A. W., 2016. Biological Costs of Economic Transition: Stress Levels during the Transition from Communism to Capitalism in Poland. Economics and Human Biology 21, 90 – 99.

Lucero, J. L., Lim, S., Santiago, A. M., 2016. Changes in economic hardship and intimate partner violence: a family stress framework. Journal of Family and Economic Issues 37 (3), 395–406.

Lusardi, A., Schneider, D., Tufano, P., 2011. Financially fragile households: Evidence and implications. Brookings Papers on Economic Activity, 83 – 134.

Lusardi, A., Schneider, D. J., Tufano, P., 2010. The economic crisis and medical care usage. Tech. rep., National Bureau of Economic Research.

Mani, A., Mullainathan, S., Shafir, E., Zhao, J., 2013. Poverty impedes cognitive function. Science 341 (6149), 976–980.

Masarik, A. S., Martin, M. J., Ferrer, E., Lorenz, F. O., Conger, K. J., Conger, R. D., 2016. Couple resilience to economic pressure over time and across generations. Journal of Marriage and Family 78 (2), 326–345.

McLanahan, S., 2009. Fragile families and the reproduction of poverty. Annals of the American Academy of Political and Social Science 621, 111 – 131.

Melzer, B. T., 2011. The real costs of credit access: Evidence from the payday lending market. Quarterly Journal of Economics 126 (1), 517 – 555.

Mirowsky, J., Ross, C. E., 1999. Economic hardship across the life course. American Sociological Review 64 (4), 548–569.

Monte, L. M., 2015. In the Absence of Leave: The Financial Coping Strategies of Disadvantaged New Mothers in the Great Recession. Poverty and Public Policy 7 (4), 420 – 435.

Mood, C., Jonsson, J. O., 2016. The social consequences of poverty: An empirical test on longitudinal data. Social Indicators Research 127 (2), 633 – 652.

Nelson, M. C., Lust, K., Story, M., Ehlinger, E., 2008. Credit card debt, stress and key health risk behaviors among college students. American Journal of Health Promotion 22 (6), 400–407.

Pedersen, A., Zachariae, R., Bovbjerg, D. H., 2010. Influence of psychological stress on upper respiratory infection?a meta-analysis of prospective studies. Psychosomatic Medicine 72 (8), 823–832.

Porcelli, B., Pozza, A., Bizzaro, N., Fagiolini, A., Costantini, M.-C., Terzuoli, L., Ferretti, F., 2016. Association between stressful life events and autoimmune diseases: A systematic review and meta-analysis of retrospective case–control studies. Autoimmunity Reviews 15 (4), 325–334.

Prawitz, A. D., Cohart, J., 2016. Financial management competency, financial resources, locus of control, and financial wellness. Journal of Financial Counseling and Planning 27 (2), 142 – 157.

Prentice, C., McKillop, D., French, D., 2017. How financial strain affects health: evidence from the Dutch National Bank Household Survey. Social Science & Medicine 178, 127–135.

Reading, R., Reynolds, S., 2001. Debt, social disadvantage and maternal depression. Social Science & Medicine 53 (4), 441–453.

Reeves, A., McKee, M., Gunnell, D., Chang, S.-S., Basu, S., Barr, B., Stuckler, D., 2014. Economic shocks,

resilience, and male suicides in the great recession: cross-national analysis of 20 eu countries. The European Journal of Public Health 25 (3), 404–409.

Remor, E., Penedo, F., Shen, B., Schneiderman, N., 2007. Perceived stress is associated with CD4+ cell decline in men and women living with HIV/AIDS in Spain. AIDS Care 19 (2), 215–219.

Richardson, S., Shaffer, J. A., Falzon, L., Krupka, D., Davidson, K. W., Edmondson, D., 2012. Meta-analysis of perceived stress and its association with incident coronary heart disease. The American Journal of Cardiology 110 (12), 1711–1716.

Santiago, C. D., Wadsworth, M. E., Stump, J., 2011. Socioeconomic status, neighborhood disadvantage, and poverty-related stress: Prospective effects on psychological syndromes among diverse low-income families. Journal of Economic Psychology 32 (2), 218–230.

Schneider, D., Harknett, K., McLanahan, S., 2016. Intimate partner violence in the great recession. Demography 53 (2), 471 – 505.

Schneider, D., Hastings, O. P., 2015. Socioeconomic variation in the effect of economic conditions on marriage and nonmarital fertility in the United States: Evidence from the Great Recession. Demography 52 (6), 1893–1915.

Selenko, E., Batinic, B., 2011. Beyond debt. A moderator analysis of the relationship between perceived financial strain and mental health. Social Science & Medicine 73 (12), 1725–1732.

Sheehy-Skeffington, J., Rea, J., 2017. How Poverty Affects People's Decision-making Processes. Joseph Rowntree Foundation York.

Shen, S., Sam, A. G., Jones, E., 2014. Credit card indebtedness and psychological well-being over time: Empirical evidence from a household survey. Journal of Consumer Affairs 48 (3), 431 – 456.

Sherman, L. W., Gottfredson, D. C., MacKenzie, D. L., Eck, J., Reuter, P., Bushway, S. D., 1998. Preventing Crime: What Works, What Doesn't, What's Promising. Research in Brief. National Institute of Justice.

Shim, S., Xiao, J. J., Barber, B. L., Lyons, A. C., 2009. Pathways to life success: A conceptual model of financial well-being for young adults. Journal of Applied Developmental Psychology 30 (6), 708–723.

Stein, C. H., 2013. The united states economic crisis: Young adults' reports of economic pressures, financial and religious coping and psychological well-being. Journal of Family and Economic Issues 34 (2), 200 – 210.

Sullivan, J. X., Turner, L., Danziger, S., 2008. The relationship between income and material hardship. Journal of Policy Analysis and Management 27 (1), 63 – 81.

Sweet, E., Nandi, A., Adam, E. K., McDade, T. W., 2013. The high price of debt: Household financial debt and its impact on mental and physical health. Social Science & Medicine 91, 94–100.

Thomas, D., Frankenberg, E., 2007. Household responses to the financial crisis in Indonesia: Longitudinal evidence on poverty, resources, and well-being. In: Globalization and poverty. University of Chicago Press, pp. 517–560.

Thurow, L. C., 1969. The optimum lifetime distribution of consumption expenditures. The American Economic Review 59 (3), 324–330.

Turunen, E., Hiilamo, H., 2014. Health effects of indebtedness: a systematic review. BMC Public Health 14 (1), 489.

Urbanos-Garrido, R. M., Lopez-Valcarcel, B. G., 2015. The Influence of the Economic Crisis on the Association between Unemployment and Health: An Empirical Analysis for Spain. European Journal of Health Economics 16 (2), 175 – 184.

Valentino, S. W., Moore, J. E., Cleveland, M. J., Greenberg, M. T., Tan, X., 2014. Profiles of Financial Stress over Time Using Subgroup Analysis. Journal of Family and Economic Issues 35 (1), 51 – 64.

Wadsworth, M. E., Raviv, T., Reinhard, C., Wolff, B., Santiago, C. D., Einhorn, L., 2008. An indirect effects model of the association between poverty and child functioning: The role of children's poverty-related stress. Journal of Loss and Trauma 13 (2-3), 156–185.

Waldron, R., Redmond, D., 2017. 'We're Just Existing, Not Living!' Mortgage Stress and the Concealed Costs of Coping with Crisis. Housing Studies 32 (5), 584 – 612.

Whelan, C. T., Nolan, B., Maitre, B., 2017. Polarization or 'Squeezed Middle' in the Great Recession?: A Comparative European Analysis of the Distribution of Economic Stress. Social Indicators Research

133 (1), 163–184.

Zelinsky, T., Mysikova, M., Vecernik, J., 2016. Occupational Mobility, Educational Mobility and Intergenerational Transmission of Disadvantages in Europe. Ekonomicky Casopis/Journal of Economics 64 (3), 197 – 217.

Highlights

- We systematically review 81 finance and economics studies on household financial strain to identify research gaps
- We find that more analysis involving developed economic theory would provide clarity to partial and sometimes contradictory results.
- Other research gaps are the dynamics of financial strain; heterogeneity in coping strategies; the association with health outcomes; the relative importance of chronic and acute stress and the roles of habituation and sensitization for welfare outcomes.