Theoretical Frameworks for investigating

consumer over-indebtedness and bankruptcy risk

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Abstract

Debt relief systems are implemented by governments to manage the problem of over-indebtedness, however, differences in systems exist across nations. Some systems, such as that in the United States, are favourable towards the consumer and enable a quick discharge of debts through bankruptcy and a fresh start for the consumer. Other systems, such as that in Germany, are more favourable towards the creditor. They require the consumer to lock into a minimum period of debt repayments before their debts can be formally discharged through bankruptcy. This paper forwards three theoretical frameworks to provide insights on debt relief systems and bankruptcy risk. The first framework models the influence of the environment, including the financial system and social welfare support system on choice of design of debt relief system (consumer or creditor). The second follows on from the first framework and predicts the likely impact of debt relief system types on national consumer bankruptcy rates, given the financial and welfare support environments. The last is at the consumer level and predicts that the risk of consumer over-indebtedness and bankruptcy is determined by both structural and cultural factors, with the risk increasing as a result of uncertain adverse events, irrespective of the structural and cultural environment. The latter framework also includes consumer demographic characteristics, as the literature suggests that these are related to the likelihood of bankruptcy. These models provide insights for policymakers when designing a debt relief system and form a foundation for empirical testing in future studies.

JEL classification: D11; F34; G28; K35; P36

Keywords: bankruptcy law; consumer bankruptcy risk; consumer over-indebtedness risk; debt relief systems; emulative consumption; hyperbolic discounting function.

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THEORETICAL FRAMEWORKS FOR INVESTIGATING CONSUMER OVER-INDEBTEDNESS AND BANKRUPTCY RISK[1]

1. Introduction

The financial market deregulation in Europe in the 1980s resulted in increased competition between financial institutions, a wider range of consumer products and easier access to credit. The result was an increase in consumer debt levels that has been causing concern for European policymakers due to perceived links between consumer debt levels and national social and economic development (Raijas et al., 2010). According to a study by Eurofound (2013), about 44% of the population in the European Union (EU) have substantial debt levels and many of these experience financial difficulties. The problem varies across countries within the EU, but nations with the greatest levels of consumer debt include France (debt levels exceeded net disposable income at 106% in 2014), Germany (debt amounted to 94% of net disposable income) and Italy (debt amounted to 90% of net disposable income in 2014) (OECD, 2017).

Though consumer debt is widely considered beneficial for consumers (Raijas et al., 2010), over-indebtedness can have long-term negative consequences. It is a prominent cause of poverty and consumers that have high levels of debt are more likely to experience severe financial difficulties when exposed to adverse shocks that disrupt the flow of their income; for example, the financial crisis in 2008 caused an increase in bankruptcy filings (Anderson et al., 2011). Over-indebtedness does not just cause financial problems, it can also affect the physical and mental well-being of individuals and is associated with increased social and financial exclusion (Haas, 2006). In order to manage the growing problem, European policymakers started to introduce consumer debt relief systems. The first of these was introduced in Denmark in 1984[2]. Though debt relief systems typically require that consumers discharge at least some of their total debt, the underlying aim is to assist them in their debt management by debt reconstruction (Anderson et al., 2011). As a tool for managing consumer over-indebtedness, policymakers and academics have undertaken studies to measure and identify the influences on consumer over-indebtedness (Braucher, 2006; Betti et al., 2007; Davydoff et al., 2008; Disney et al., 2008; Schicks 2013; Agarwal et al., 2016). Noted influences include mortgage debt (Del-Rio and Young, 2005; Georgarakos et al., 2009; Zhu, 2011), and ease of access to the credit markets (Gross and Souleles, 2002; Athreya, 2005; Dick and Lehnert, 2010; Narajabad, 2012). It has also been suggested that debt relief design is influential and that consumer bankruptcy is more likely when there are financial benefits to the consumer from filing for bankruptcy (Fay et al., 2002; White, 2011; Mikhed, 2013). Personal traits are also deemed to be influential, with empirical studies reporting evidence of emulative consumption[3] and irrational consumer spending (Adkisson and Saucedo, 2012; Gathergood, 2012; Luzzetti and Neumuller, 2016). Finally, the cultural environment is deemed to be important, with bankruptcy predicted to be more likely when society

[1] In this paper, a consumer is regarded as over-indebted when the consumer's income is not sufficient to repay all his/her debt obligations in the foreseeable future (Haas, 2006) and bankruptcy refers to the legal procedure whereby an individual applies through the courts for a discharge of his/her debt liabilities as well as when creditors apply bankruptcy procedures to recover their debt before a court. The term "consumer" represents all individual debtors including persons and households. Other studies also refer to 'consumer bankruptcy' as 'personal bankruptcy' or 'consumer insolvency' (Dick and Lehnert, 2010; Niemi, 2012) and to 'consumer over-indebtedness' as 'household over-indebtedness' (Raijas et al., 2010).

[2] This was followed by France in 1989, Finland and Austria in 1993, Sweden in 1994 and Germany in 1999. See Anderson et al. (2011) for a detailed description on timelines of the establishment of debt relief systems in EU member countries.

[3] Overspending to improve perceived status (Mason, 1998)

is more acceptable of it, i.e. there is a decrease in the social stigma related to bankruptcy filings (Fay et al., 2002; Gross and Souleles, 2002; Athreya, 2004; Efrat, 2006).

To our knowledge only one study, Braucher (2006), has developed a framework to capture influences on bankruptcy at individual consumer level. Braucher (2006) classifies the potential influences on bankruptcy filings into two categories: structural (including social and economic settings) and cultural (including consumer behaviours and socio-economic characteristics of consumers). However, Braucher did not consider adverse shocks or demographic characteristics. The literature defines 'adverse shocks' as unexpected shifts to consumer income and expenditure that can trigger bankruptcy filings. These unpredictable events include illness, an accident or job loss (Athreya, 2005; Disney et al., 2008; Himmelstein et al., 2009; Livshits, 2015). In addition, consumer demographic characteristics are considered important; in particular, a lifecycle effect is noted, with younger individuals more likely to be classified as over-indebted relative to older people (Bridges and Disney, 2004; Agarwal et al., 2011; Schicks, 2013; Agarwal et al., 2016). Finally, no study to date has developed a framework that explains differences in bankruptcy risk at a national level.

Therefore, this paper aims to make a contribution to the literature by proposing three theoretical frameworks. The first identifies the association between two related macro-economic variables, financial and welfare, and choice of debt relief system at a national level. The second predicts the impact of choice of debt relief system on consumer bankruptcy rates at a national level, across a range of financial and welfare environments. The third extends Braucher's (2006) dual perspective framework to include adverse events and demographic characteristics. The theoretical frameworks provide insights for policy makers when deciding on a debt relief system for their country and can be applied in future studies to examine differences in consumer over-indebtedness and bankruptcy risk at national and at individual level.

The remainder of the paper is organised as follows. Section 2 provides justification from the literature for a theoretical framework that predicts the type of debt relief system to implement, that equitably balances the cost of bankruptcy between consumers and creditors, given differing financial and welfare environments. As examples of the framework in practice, section 2 provides insights from the literature on the United States (US) (consumer friendly) and European (creditor friendly) debt relief systems and concludes by extending the framework to produce a second framework that predicts bankruptcy risk, given differing financial and welfare environments and differing debt relief systems. Section 3 evaluates the literature on consumer over-indebtedness and bankruptcy at consumer level and uses this justify a theoretical framework for predicting consumer bankruptcy risk. Finally, conclusions are drawn in Section 4.

2. The Influence of Financial, Welfare and Regulatory Debt Relief Systems on National Consumer Bankruptcy Risk

Three main stakeholder groupings are affected by bankruptcy regulation – consumers (debtors), creditors and bankruptcy professionals (Zywicki, 2003). This paper focuses on consumers and creditors. When a consumer becomes indebted, there are social and financial consequences, both for the consumer and for the creditor (Raijas et al., 2010). When designing debt relief systems, policymakers have to balance protection of creditors' rights with assisting consumers in getting a 'fresh start'. However, there is conflict in this decision as a fresh start for the consumer is usually at the expense of the creditor. Debt relief systems try to provide a solution to the impasse, by enabling a fair allocation of the loss between the consumer and the creditor. There is a debate in the literature on the level of relief that should be afforded to the consumer and the consequential loss to the creditor. This discourse is used to inform the development of a theoretical framework (Figure 1) to identify the most appropriate debt relief system under a particular financial and welfare environment. The discussion assumes two polar environments for each variable: the financial environment is either 'bank-based' or 'market-based' and the welfare environment is either strong or weak.

In 'bank-based' financial systems consumers typically enter into long-term credit contracts with creditors, whose rights are lower relative to creditors in market-based systems, hence consumers face lower levels of bankruptcy risk when economic conditions change and require less protection (Konig, 2016). In this type of financial environment, debt relief systems should provide protection for creditors, as consumer-friendly debt relief systems, that enable an immediate discharge of unsecured debts, may encourage dysfunctional behaviour, such as filing for bankruptcy when consumers have the ability to repay their debts (Grant and Koeniger, 2009). In these circumstances over-indebtedness is likely to occur as a consequence of consumers' own behaviours and life choices. These life choices are influenced by social and moral issues that are engrained and are unlikely to change (Oksanen et al., 2015). The problem is accentuated when welfare systems are relatively strong, as basic 'needs' are typically covered by welfare and credit is more likely to be used for 'wants'. Therefore, when the financial environment is 'bank-based' and the welfare system is strong, over-consumption is more likely to occur as a result of cultural preferences rather than from poverty, irresponsible credit practices by creditors or adverse shocks. In these circumstances, a creditor-friendly debt relief system is deemed to be more effective as it does not result in an additional cost burden on creditors (Athreya, 2005) and may deter irresponsible consumption (Zhu, 2011) as the consumer will be held accountable for their debts. The relationship is modelled in Figure 1. Under a consumer-friendly debt relief system, consumers will have to sell assets and commit to repaying the debt from future earnings for a set period of time, after which the debts are discharged (Athreya, 2005).

In 'market-based' financial systems, competition increases, credit availability increases and financial risk shifts to the consumer. There is also an emphasis on profitable short-term credit products. These contracts are volatile as economic conditions often dictate contract conditions. In addition, in 'market-based' financial systems, consumer bankruptcy is more likely to result from market failures, for example, irresponsible lending practices by creditors. Under these circumstances, it can be argued that the creditor is responsible for the consumer's demise, therefore they should be responsible for a greater proportion of the loss. When social welfare systems are not supportive, the negative social consequences of bankruptcy are accentuated as the consumer does not have a guaranteed minimum income source. In addition, when social welfare fails to provide insurance against adverse events, such as illness, a consumer-friendly debt relief system can be regarded as a form of insurance that reduces the financial impact of the adverse event for the consumer. It is argued that a creditor-friendly debt relief system can jeopardise the social welfare of consumers in these circumstances as they are already financially vulnerable (Warren, 2004). Grant and Koeniger (2009) provide empirical evidence to support this assertion. In a study examining differing levels of bankruptcy exemptions on consumers' consumption patterns, Grant and Koeniger (2009) report that consumer-friendly debt relief systems benefit consumers by protecting them against adverse events. Therefore, when there is a strong 'market-based' financial system and limited social welfare support, a consumer-friendly debt relief system is deemed most appropriate (Konig, 2016). This predicted relationship is modelled in Figure 1. The emphasis of consumer-friendly debt relief systems is on enabling consumers to restart their life without debt (Lechner, 2011), therefore, debts are written-off quickly and the consumer may receive support or guidance.

In practice, financial regulation and social welfare levels differ across countries and cannot be dichotomised cleanly into 'bank-based' and 'market-based' or 'strong' and 'weak'. Therefore, a 'one shoe-size fits all' approach is not appropriate. Variation across countries and even within countries is expected and debt relief systems will typically not be clearly pigeonholed as being purely consumer-friendly or creditor-friendly as is suggested in figure 1. Therefore, debt relief systems are more likely to be mixed. A mixed debt relief system allocates the cost of bankruptcy between the consumer and creditor. In Figure 1 this is identified when the financial environment is market-based and social welfare support is strong and when the financial environment is bank-based and social welfare support is weak. In these instances, the debt relief system will contain some flexibility, depending on the environment, and may require the consumer to refund the creditor from the sale of surplus assets and a series of repayments over a set period of time before being awarded a full discharge of debts. This means the creditor and the consumer share the cost of bankruptcy. The extent of repayment will differ across countries. Examples of countries with systems that are considered to be more consumer friendly include the US and England and Wales and countries with systems that are considered to be more creditor-friendly include Finland and Germany.

Social welfare support system / Financial Environment	Strong social welfare support	Weak social welfare support
Bank-based financial system (government regulated)	Creditor-friendly debt relief system	Mixed debt relief system
Market-based financial system (regulated by market forces)	Mixed debt relief system	Consumer-friendly debt relief system

Figure 1: *Framework depicting the relationship between social welfare support, the financial environment and debt relief regulatory design*

2.1 Consumer-friendly debt relief systems: The US and England and Wales

The US and England and Wales are considered to have market based financial systems (Konig, 2016) and therefore a more consumer-friendly debt relief system is recommended under Figure 1 and by Konig (2016). This is particularly the case for the US due to the presence of weaker social welfare support. In particular, there is no uniform healthcare system or universal healthcare coverage in the US (Department for Professional Employees, 2016). Medical bills can be expensive, and some consumers do not have insurance. Indeed, in a study on consumer bankruptcy in the US over the period 2005 to 2013, Austin (2014) found that approximately 25% of consumer bankruptcy cases were caused by medical debt, which was the largest contributor to consumer bankruptcy during that period.

In the US, consumer bankruptcy laws can be traced back to the 1800s, with the current debt relief system, the Bankruptcy Code, established in 1978. Under this Code, consumers have two options. They can file for bankruptcy under Chapter 7 or Chapter 13. Bankruptcy under Chapter 7 involves the consumer liquidating all their non-exempt assets with the proceeds being used to payback their unsecured debts. Any outstanding debts after this process are discharged. Bankruptcy under Chapter 13 does not require asset sales, instead consumers agree to make payments towards their unsecured debts for a period of up to five years (Dick and Lehnert, 2010; Nakajima, 2017). Compared to Chapter 13, Chapter 7 is considered to be more of a 'fresh start' option for consumers as it results in a 'near-complete' discharge of debt for consumers (Zywicki, 2003). However, in response to claims that the Code was unduly lenient towards consumers to the detriment of creditors, the Bankruptcy Abuse Prevention and Consumer Protection Act was enacted in 2005. Since this Act came into force, a means test[4] has been applied to determine consumer eligibility for a Chapter 7 filing (Dick and Lehnert, 2010; Nakajima, 2017).

Dick and Lehnert (2010) argue that although the reform has limited the accessibility of immediate discharge for consumers, thus better protecting creditors' rights, there have been negative consequences, as consumers who become bankrupt as a result of an adverse unexpected event, are no longer protected. Nonetheless, the reform is regarded as successful, as the number of bankruptcy filings in the US declined after 2005 and consumers now exhibit a stronger commitment to repay their debts (Nakajima, 2017). An another example of consumer-friendly bankruptcy law is regulation in England and Wales (Konig, 2016). Although the legislation doesn't provide an immediate discharge of debt like Chapter 7 in the US, it allows a discharge of debts, that are not included in a bankruptcy repayment plan, after one year (Ferretti et al., 2016). Unlike most European countries, the repayment period in England is considered to be relatively short (see Table 1) and therefore it has the most consumer-friendly bankruptcy law in Europe.

[4] Means test: If a consumer's household income over the last six months prior to the filing is above the median income of the state in which he/she lives, then the consumer can't file for a Chapter 7 bankruptcy, and can only file for bankruptcy under Chapter 13 (Nakajima, 2017).

2.2 Creditor-friendly debt relief systems: Finland and Germany

In contrast to the US, most European countries historically didn't have regulatory debt relief systems, though this started changing as a result of financial market deregulation in the 1980s (Betti et al., 2007). In response to the more laissez-faire financial environment, policy makers in European countries started introducing regulatory debt relief systems (Niemi-Kiesilainen, 1999). However, unlike the US, European regulatory debt relief systems are more favourable towards creditors' rights, with less emphasis on providing a fresh start for consumers. European regulatory debt relief systems typically require consumers to sign up to a mandatory debt repayment plan, which is more rigorous to that required under a Chapter 13 filing in the US (Niemi, 2012). In general, the aim of European consumer debt relief regulation is to balance the loss associated with over-indebtedness between creditors and consumers (Backert et al., 2009). However, there is little consistency across countries as can be seen in Table 1. For example, in Ireland the 1988 Bankruptcy Act allowed the discharge of unsecured debts for consumers who participated in a debt repayment plan that involved mandatory repayments for a period of up to twelve years. The repayment period was reduced to three years in 2012, hence the system became more consumer-friendly.

Finland has a relatively strong social welfare system including free education, healthcare and has low income inequality (Oksanen et al., 2015). In this environment, it is assumed that consumer behaviour and life choices are the main causes of bankruptcy and an easy discharge of debt will not change the consumer behaviour (Oksanen et al., 2015). Consistent with the predictions under the theoretical framework in Figure 1, the debt relief regulatory system in Finland is creditor-friendly and is aimed at limiting the loss incurred by the creditor from the consumer's dysfunctional behaviours. Bankrupt consumers are not entitled to debt discharge at all (Table 1). Konig (2016) identifies that the financial system in Germany is bank-based and the healthcare system is considered to be one of the most successful in the world in terms of cost and quality (DPE, 2016). Therefore, the framework in Figure 1 suggests that a debt relief system that is more creditor-friendly than consumer-friendly is appropriate and this is the case (see also, Konig, 2016). In Germany, over-indebted consumers commit to debt repayments for periods of up to six years before any discharge of debts is allowed[5] (Pannen et al., 1999).

[5] Before 1999, consumers could only seek advisory services for debt reconstruction and had to live their entire lives with the threat of asset seizures.

Table 1: Overview of consumer debt relief systems in the US and selected European countries.

Country	USA	Finland	Germany	Ireland	England
Legislation	US code title 11: Bankruptcy	Bankruptcy Act 2004	Insolvenzordnung	Personal Bankruptcy Act 2012	Insolvency Act and Insolvency Rules 1986
Eligibility	**Chapter 7:** Consumers who pass the means test **Chapter 13:** Consumers with unsecured debt less than $ 383,175.00 and secured debt less than $ 1,149,525.00	Any consumer who is insolvent	Any consumer who is (or is about to be) insolvent	Any consumer who has assets available that are sufficient to produce at least € 1,900.00	Any consumer who is insolvent
Purpose	To give the honest consumer a fresh start and to repay creditors in an orderly manner	Realising consumers' assets and distributing the proceeds to the creditors	To satisfy creditors' claims, while giving the honest consumer the chance to have remaining debt discharged	To satisfy creditors' claims by selling consumers' assets	To free consumers from overwhelming debt, and sell their assets to repay creditors
Exemption	**Chapter 7:** Varies between different states. Consumers can normally keep a share of home and personal property **Chapter 13:** Consumers can typically keep their property.	Income and property received after the commencement of bankruptcy proceedings	Part of consumer's property and income are exempted to assure a life in dignity	Essentials up to a value of € 3,100 or more if approved by court	Trade tools and other essentials
Good conduct and discharge	**Chapter 7:** No period of good conduct **Chapter 13:** Debt discharged after a repayment period of 3-5 years.	Bankruptcy doesn't have the effect of discharging a consumer from his/her debt	Period from 3 to 6 years, possibly followed by debt discharge	The 2012 bankruptcy act shortened the discharge period from previously 12 years to 3 years.	Debt discharged within 12 months or less generally
Country	**Spain**	**Italy**	**France**	**Netherlands**	**Sweden**
Legislation	Law of Second Opportunity 2015	No consumer bankruptcy law	Code de la consummation	Bankruptcy Act 2007	Bankruptcy Act
Eligibility	Any physical consumer who has filed an insolvency procedure previously	-	Any well-intentioned consumer who cannot meet his/her personal debt	Any consumer who has ceased his/her payments	Any consumer who is insolvent
Purpose	To satisfy creditors' claims while protecting the consumer from the consequences of over-indebtedness	-	To address the issue of over-indebtedness of natural persons	Liquidation of available equity to distribute among the creditors	Liquidation of consumers' available assets while reducing consumers' debt obligations
Exemption	Exemptions are not explicitly mentioned	-	Part of consumer's property and income are exempted to provide for enough to cover living expenses	Essential maintenance	Certain personal belongings which under the seizure rules in the debt enforcement code may not be seized
Good conduct and discharge	Five years repayment period, after which debt will be discharged, except debt owed to privileged creditors	-	Debt settlement plan of max. 10 years, but typically 5 years. Partial and total debt discharge are possible	No explicit period is given in the Act	A repayment plan normally runs for five years

** Source: Adopted from Gerhardt (2009).*

2.3 Standardisation of debt relief systems

Though differences in debt relief systems are expected across countries due to differences in the financial and social welfare environments, a negative consequence in Europe is the establishment of a market for bankruptcy proceedings, with demand for bankruptcy in countries with debt relief systems that are more consumer-friendly from consumers located in countries with creditor-friendly debt relief systems. For example, in 2011, Irish businessman Sean Quinn, applied through the courts in Northern Ireland for his bankruptcy proceedings to take place there instead of Ireland (BBC, 2012) and Tashiro (2012) reported a similar pattern in other countries, with consumers from Germany filing for bankruptcy in England and Wales, where they can discharge their remaining debt after twelve months, instead of six years as is the case in Germany. This supports the call for a common approach to debt relief to be adopted at a European level to avoid such tactical behaviour (Gerhardt, 2009); however, our framework suggests that a common approach is not appropriate given the differences in financial and social welfare environments across countries and that policymakers should instead legislate to avoid such tactical behaviour.

2.4 Framework for predicting bankruptcy risk at national level

As identified in the framework in Figure 1, when designing national consumer debt relief systems, policymakers should take account of the financial market and the level of support given by social welfare systems to determine if over-indebtedness or bankruptcy is more likely to occur as a result of inappropriate credit granting decision-making, poverty or dysfunctional consumer behaviour. Differences in expected bankruptcy rates will result when different debt-relief systems are introduced in different financial and social welfare environments. The possible

National regulatory system / National social welfare/financial system	Creditor-friendly debt relief system	Consumer-friendly debt relief system
Strong social welfare support/bank-based financial system	Low risk	Medium risk
Strong social welfare support/market based financial system	Low to medium risk	Medium risk
Weak social welfare support/bank-based financial system	Medium risk	High risk
Weak social welfare support/market based financial system	Medium risk	Very high risk

Figure 2: *Model depicting the expected relationship between national social welfare support/financial system and debt relief regulatory environment and consumer bankruptcy risk*[6]

[6] *Risk is a relative measure.*

impact, in terms of bankruptcy risk, is modelled in Figure 2. Konig (2016) finds that compared to a creditor-friendly debt relief system, a consumer-friendly debt relief system results in more consumers filing for bankruptcy. This expected outcome is portrayed in Figure 2, wherein, consumer-friendly debt relief systems (column 2) are predicted to have a relatively higher risk of bankruptcy when compared to creditor-friendly debt relief systems (Figure 2; column 1).

Moreover, consumers who reside in countries with low levels of social welfare support are at a greater risk of bankruptcy relative to countries with strong social welfare support as minimum levels of income, education and health cover are guaranteed (Figure 2, rows 3 and 4 relative to rows 1 and 2). Finally, consumers residing in countries subject to market-based financial systems are more subject to greater levels of risk due to more financial volatility and less controlled regulation (Figure 2, rows 2 and 4 relative to rows 1 and 3).

3. Determinants of consumer over-indebtedness and bankruptcy

Though the risk of bankruptcy differs across countries depending on the financial and social welfare environment and debt relief systems in place, empirical studies have reported a number of factors at consumer level that suggest that individual characteristics and environment at a more localised level may also cause differences in the likelihood of the consumer becoming over-indebted or bankrupted (Adkisson and Saucedo, 2012). Braucher (2006) categorised the influential factors into two types: structural factors, and cultural factors. In addition, studies refer to the role of adverse shocks. Structural influences include ease of access to credit due to technological changes, access to financial services and financial market deregulation (Sullivan et al., 2000). Cultural influences include societal and behavioural norms (Braucher, 2006). Adverse shocks include changes to an individual's life that can result in financial upheaval, and include illness, divorce and job loss (Athreya, 2005). Finally, studies on human subjects typically identify differences in behaviour across demographic characteristics and prior consumer indebtedness studies have included factors such as age, gender, marital status, employment, migrant status and number of children (Agarwal et al., 2011). The framework portrayed in Figure 3 extends the work of Braucher (2006), by creating a more comprehensive model for predicting consumer over-indebtedness and bankruptcy risk that includes adverse shocks and demographic characteristics. This framework is justified in the forthcoming sections.

Influences on over-indebtedness/bankruptcy risk			**Relative risk level**	
Demographic characteristics	Tolerant cultural environment	Adverse Shocks	High risk	Very high risk
		No adverse Shocks	Medium risk	High risk
	Intolerant cultural environment	Adverse Shocks	Medium risk	High risk
		No adverse Shocks	Low risk	Medium risk
Structural environment (debt relief system/access to credit)			Weak structural environment	Strong structural environment

Figure 3: *Framework depicting environmental and individual influences on consumer over-indebtedness and bankruptcy risk*

3.1 Structural environment and consumer bankruptcy risk

For the purpose of creating a framework, the structural environment is categorised as being 'strong' or 'weak' (bottom row of Figure 3). Strong structural influences identified in the literature as having a positive association with consumer over-indebtedness and bankruptcy include consumer-friendly debt relief systems (Fay et al., 2002; White, 2011; Mikhed, 2013) and ease of access to credit (Marsellou and Bassiakos, 2016). Literature examining the supply side of the consumer credit market has identified major, global changes over the last few decades due to financial deregulation. This deregulation has resulted in more financial products, lower interest rates, easier access to credit and aggressive loan practices by banks (Marsellou and Bassiakos, 2016). This increase in the supply of unsecured credit is argued to have led to an increase in consumer default and bankruptcy filings (Dick and Lehnert, 2010). On the demand side, empirical studies have identified several factors that contribute to over-indebtedness and bankruptcy, including: having mortgage debt (Del-Rio and Young, 2005; Georgarakos et al., 2009; Zhu, 2011); ease of access including credit cards; and the use of credit scores due to developments in information technology (Gross and Souleles, 2002; Athreya, 2005; Dick and Lehnert, 2010; Livshits et al., 2010; Narajabad, 2012). Therefore, there is a higher risk of consumer over-indebtedness and bankruptcy when the environment is classified as being of strong structural influence relative to an environment that is considered to have weak structural influence (creditor-friendly debt relief system and restricted access to credit). This is depicted by the higher risk ratings in column 5 relative to column 4 in Figure 3.

3.2 Cultural environment and consumer bankruptcy risk

For the purpose of creating a framework, the cultural environment is categorised as being 'tolerant' or 'intolerant' to consumers who file for bankruptcy (Figure 3, row 2 and 3). Tolerance is at community or individual level. Social stigma towards bankrupt consumers and consumption behaviour are commonly used as proxies to capture tolerance in the cultural environment. Some studies have identified social stigma as being related to consumer bankruptcy (Fay et al., 2002; Gross and Souleles, 2002), though the findings are not consistent across all empirical studies (Athreya, 2004; Efrat, 2006). Social stigma refers to non-pecuniary loss that could occur to an individual. In the context of consumer bankruptcy, it is defined by Athreya (2005, p92) as 'all costs of social disapproval associated with filing for bankruptcy'. A common measure used to proxy for social stigma is former bankruptcy rates in the region (Efrat, 2006; Athreya, 2004; Gross and Souleles, 2002; Fay et al., 2002).

Braucher (2006) argues that socio-economic characteristics and consumption behaviours are associated with the likelihood of the consumer becoming over-indebted and/or bankrupt. The human dimension has attracted attention in the psychology literature with a number of different consumer behaviour theories used to explain decision-making that results in consumers' becoming over-indebted (Schicks,

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[7] The hyperbolic discount function is applied to explain certain human behaviours including consumption behaviours, for example, addiction and self-control (for a full description and discussion of hyperbolic discounting see Kirby and Herrnstein (1995), Laibson (1997; 1998) and Frederick et al. (2002)).

2013), including time-inconsistent consumption behaviour with a pattern similar to the hyperbolic discount function (Laibson, 1997)[7]. Accordingly, some individuals apply higher discount factors to evaluate rewards that they are to receive in the near-term when the wait for the reward is short, but lower discount factors if there is a delay in the receipt of the reward, hence they would be less willing to save and wait for a larger reward that is to be received in the future and more willing to incur charges to receive the reward now (Redden, 2007). This behaviour continues because the future becomes the individual's present and hence the individual continues to accumulate credit, eventually becoming over-indebted. Tolerance for over-indebtedness and bankruptcy is also explained by emulative consumption theory (Veblen, 1899). This theory suggests that in order to improve their perceived status (Mason, 1998) consumers consider their ideal consumption level as being in the next higher level of their affordability (Adkisson and Saucedo, 2012). Over time consumers take on more debt than they can afford, and eventually end up bankrupt (Dwyer, 2009). The problem is accentuated when income inequality, a proxy for the next higher level of affordability, is greater, as identified in empirical studies (Zhu, 2011; Adkisson and Saucedo, 2012; Mikhed, 2013). Therefore, consumer bankruptcy risk is greater in tolerant cultural environments as modelled by rows 2 and 3 in Figure 3, relative to intolerant cultural environments (Figure 3; rows 4 and 5).

Braucher (2006) emphasises that structural changes also affect consumer culture. Structural and cultural factors should not be regarded as opposing explanations. For example, if there is a decrease in borrowing costs in the financial markets, it may encourage consumers to increase their consumption on credit. Thus, structural settings have influenced consumer behaviour. According to Braucher (2006), policies that are designed to influence consumer culture should not be pitted against strong structural causes of over-indebtedness. So if a policy is intended to promote a culture of responsible and rational consumption, then changes from the structural side, for example, stricter screening process, can assist. Braucher (2006) concludes that the problem of over-indebtedness is complicated, and structural and cultural causes are often reinforced by one another. The link between structural and cultural influences is captured in Figure 3, with for example, the greatest risk of bankruptcy arising for consumers when they have easy access to credit (strong structural environment) and when they live in a region that has high historic levels of bankruptcy (tolerant cultural environment).

3.3 Adverse shocks and consumer bankruptcy risk

There is discourse in the literature about the influence of adverse shocks on consumer over-indebtedness and bankruptcy. On the one hand, Livshits et al. (2010) argues that adverse shocks should only play a small role in explaining bankruptcies, as their impact is mitigated by the presence of precautionary savings. On the other hand, Weil (1993) contends that precautionary savings levels cannot be assumed as they differ across consumers who have different attitudes towards risk aversion; moreover most studies report that adverse shocks are influential and are key triggers of bankruptcy (Disney et al., 2008; Himmelstein et al. 2009; Zhu, 2011; Gross and Notowidigdo, 2011; Oksanen et al., 2015). Our framework models both stances regarding adverse shocks. We contend that adverse shocks are not the sole cause of bankruptcy but they have an incremental increasing effect on bankruptcy risk. Therefore, where a consumer's environment and individual characteristics identifies them as being at low risk of becoming bankrupt (Figure 3: column 4, row 5), then an adverse shock will increase their relative risk level to medium (Figure 3: column 4, rows 4), similarly when a consumer who is at high risk of becoming bankrupt (Figure 3: column 5, row 3) experiences an adverse shock their relative risk level increases to very high risk (Figure 3: column 5, row 2).

3.4 Demographic characteristics

Finally, as identified in figure 3, irrespective of environment, studies have also reported links between demographic characteristics and consumer over-indebtedness and bankruptcy, including age, gender, marital status, number of children, education, home ownership, employment status, financial education and migrant status (Bridges and Disney, 2004; Agarwal et al., 2011; Livshits et al., 2010; Schicks, 2013; Agarwal et al., 2016). Any empirical study investigating consumer bankruptcy should control for these variables.

4. Conclusion

Debt can lead to economic and social betterment for consumers and the wider economy. However, excessive debt may have the opposite effect. Consumers could end up in a poverty trap with consequential social welfare problems, such as social exclusion or mental illness. Negative consequences also arise for the creditor as they dedicate more time to chasing up the debt with little hope of repayment. To minimise the cost of chasing up the consumer, the creditor has the option of writing off the debt; however, this may create moral hazard, as other consumers, who may not be over-indebted, try to manoeuvre the same outcome.

When creditors provide credit irresponsibly then it could be argued that they should bear the burden of bankruptcy loss, likewise, when irrational consumer spending choices create the situation then it could be argued that they should bear the burden of bankruptcy loss. A debt relief system needs to consider the contribution of the key stakeholders, the consumer and the creditor, to the problem and to provide a solution that equitably allocates the loss between the two taking into account the relative contribution of each party to the issue. The debt relief system should not make bankruptcy an attractive option for consumers to the detriment of creditors, nor should it promote irresponsible lending practices by the creditor to the detriment of the consumer. It should be balanced so as to deter dysfunctional behaviour in both stakeholders.

Designing an appropriate debt relief system is complex and is affected by macro-economic factors, in particular, financial regulation and differences in social welfare systems, as these have a direct influence on ease of access to credit by consumers and the maintenance of minimum levels of income for the consumer. Our first contribution to the literature is a framework that predicts the type of debt relief system (consumer-friendly or creditor-friendly) best suited according to the financial environment and social welfare system (Figure 1). In general, we theorise that when countries have bank-based financial systems (controlled credit) and strong social welfare support (less poverty) then a more creditor-friendly debt relief system is appropriate as over-indebtedness is more likely to be as a result of irrational spending habits of the consumer. Conversely, when countries have market-based financial systems (easy access to credit) and weak social welfare support for consumers (more poverty), then a consumer friendly debt relief system is more appropriate, as this environment supports irresponsible lending by creditors and little support for consumers in terms of social welfare when their financial situation deteriorates.

Our second contribution to the literature is a model that predicts the relative impact of either creditor-friendly or consumer-friendly debt relief systems on bankruptcy risk given the different social welfare and financial environments (Figure 2). In general, we predict that any country with weak social welfare support and market-based financial systems that introduces a consumer-friendly debt relief system will experience very high levels of bankruptcy. However, competition between creditors may dampen the effect, as creditors are more likely to suffer losses when they get their credit decisions wrong, alternatively, they may cover their losses by increasing credit rates for those who are most vulnerable. Bankruptcy risk is lowest in countries with strong social welfare and bank-based financial systems and with a creditor-friendly debt relief system. Credit is restricted by regulation, consumers have guaranteed minimum levels of income (social welfare) and the creditor-friendly debt relief system acts as a deterrent.

Finally, irrespective of international differences, differences in bankruptcy risk also occur at consumer level and we model the potential effect of these influences in Figure 3. The model identifies the increasing risk faced by consumers depending on their demographics, structural and cultural environment and experience of an adverse event. In terms of demographics, age, gender, marital status, and employment status respectively are considered influential on over-indebtedness and bankruptcy risk, irrespective of environment. However, the environment can accentuate the risks. The structural environment including, whether the debt relief system is consumer-friendly or creditor-friendly, use of mortgage debt, credit cards and the prevalence of information technology are predicted to influence over-indebtedness and bankruptcy risk. The cultural environment is also important and the model predicts that the relative risk of over-indebtedness and bankruptcy is increased when, for example, there is little social stigma attached with being over-indebted or bankrupt. In these circumstances, some individuals will overspend in an attempt to align their social status with a higher income group. Finally, the model identifies an increase in financial precariousness when a consumer experiences an adverse financial event, the effect of which is dependent on the consumer's exposure to the other risk contributors.

Our research has policy implications. It provides insights into the influence of two macroeconomic influences on the type of debt relief system and expected bankruptcy rates. This should help policymakers to better evaluate their debt relief systems to design an equitable system that aligns the cost of bankruptcy with the cause of bankruptcy, whilst also considering the financial and social consequences of both the consumer and creditor. There are weaknesses in our models in that they are designed following a review of existing literature and they split the environments into dichotomous categories which is unrealistic. Qualitative research could provide deeper insights on other factors influencing the design of debt relief systems at country level. This may involve interviews with policymakers, figure heads within the debt relief institutions and consultants. In addition, empirical research is required to test the framework, to see if debt relief system type is related to the financial environment and social welfare system in place and to test if type of debt-relief system affects bankruptcy risk across different environments.

The second part of the paper considers over-indebtedness and bankruptcy at the consumer level and provides an analytical framework that can be used in future studies to examine consumer-specific determinants of indebtedness and bankruptcy. This information is of importance to policymakers as it can identify whether certain aspects of the structural environment, which can be influenced by policy makers, affects over-indebtedness and bankruptcy at consumer level. It is more difficult for policymakers to make changes to the cultural environment, however, the identification of the problem is a start and further research on this topic could provide insights into possible solutions for the problem. Financial education is one means of altering culture. Therefore, government support initiatives or the promotion of insurance products to alleviate financial problems in the event of one-off adverse shocks may also provide a solution, however, this area also requires further in-depth investigation and discussion. Finally, in several countries, there is a two-tier system where consumers enter the debt relief system and either exit, better able to manage their debt burden or progress to bankruptcy. Research on factors that influence the successful exit or progression to bankruptcy could provide insights for proactive debt management schemes that could be introduced when debt is granted at the outset.

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