VARIETIES OF CREDITOR PROTECTION: INSOLVENCY LAW REFORM AND CREDIT EXPANSION IN DEVELOPED MARKET ECONOMIES

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Abstract

We examine the relationship between creditor protection, law reform and credit expansion using longitudinal data for four developed market economies between 1970 and 2005. By decomposing the different elements of creditor protection, we show that civil law countries (France and Germany) have developed a high level of protection for creditors in the form of controls over the management of debtor firms, while common law countries (UK and USA) have arrived at a high degree of protection in relation to secured creditors' contractual rights over firms' assets. Using panel causality tests and dynamic panel data modelling, we show that laws strengthening creditors' control over debtor firms in these four countries had a long-term positive effect on credit expansion, while reforms increasing secured creditors' rights had a negative effect. We explore the implications of our findings for legal origin theory and the varieties of capitalism approach.

Keywords: economic policy, financial development, varieties of capitalism, institutional complementarities

JEL Codes: G30, G38, K22, K40

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1. Introduction

The idea that law matters for effective capitalist development can be traced back to the writings of Max Weber (1978). Comparing the experience of industrialising countries of Western Europe with other countries, he concluded that a rational legal system is a precondition for the emergence of capitalism. This perspective treats the legal system as an endowment, created by a fixed investment, which determines the path of development 'without itself being subject to change' (Milhaupt and Pistor, 2008: 18-22). Douglass North (1990) presents a similar viewpoint. He has argued that rich nations are those which have succeeded in forming institutions which are able to protect property rights and provide an environment for the enforcement of contracts. Less developed nations lack these institutions.

The foundational works of La Porta, Lopez-de-Silanes, Shleifer and Vishny (henceforth, 'LLSV', 1998) and the subsequent analyses by this group and their co-authors have infused a strong quantitative flavour to the study of law as 'endowment' (see La Porta et al., 1998, 2008; Djankov et al., 2007; Botero et al., 2004). In constructing quantitative measures of legal rules, LLSV mostly used binary variables (0, 1) to capture the quality of types of law protecting the interests of shareholders, creditors and workers. Lele and Siems (2007), extending and modifying LLSV's methodology, refer to these data coding techniques as 'leximetric'. A large literature, spanning the legal and economic research fields, has since developed, extending and modifying these methods (see Siems, 2014).

A further feature of LLSV's approach was their classification of countries according to their 'legal origin'. By this, LLSV referred to the distinction between the English common law and the mainly French- and German-influenced civil law. LLSV divided the civil law world into systems of French, German and Scandinavian origin. Through various cross-sectional regression studies of their leximetric data, LLSV concluded that English common law systems were more market-friendly: they provide higher levels of shareholder and creditor protection, and this legal support has led to an increased level of financial development (La Porta et al., 2008).

The legal origin literature has connected with other contemporary analyses which claim to show that financial development promotes economic growth (Levine, 1997). The conclusion drawn from this wider literature is that legal origin matters for economic development. Some

studies claim to have found empirical evidence showing that common law countries grow faster than civil law countries (Mahoney, 2001). The current consensus is that this claim has not yet been made out (La Porta et al., 2008; Klerman et al., 2011). Nevertheless, legal origin theory has been advanced as a superior explanatory model to that provided by the varieties of capitalism (VOC) approach (Hall and Soskice, 2001): thus it has been suggested that supporters of the VOC model, having searched in vain for an 'objective measure of different types', need have 'looked no further than legal origins' (La Porta et al., 2008: 303).

In this paper, we re-examine the claims that 'law matters' for financial development and that common law systems are, on the whole, more protective of financial interests than civil law ones. We focus on the issue of creditor protection. While considerable attention has been paid, within the corporate governance literature, to growing shareholder influence over managers and to claims that market economies are converging on a type of shareholder-centric corporate law (Hansmann and Kraakman, 2001), the relationship between creditors and the firm is arguably of equal importance to understanding the legal underpinning of the business enterprise (Deakin, 2012), while bank-based lending, which is legally structured by insolvency (or 'corporate bankruptcy') law, is by no means confined in its importance to systems characterised as having 'coordinated markets' (Wood, 1997).

Djankov et al. (2007), building on the analysis in La Porta et al. (1998), construct a longitudinal dataset of creditor rights in 129 countries over the period 1978 to 2003, to test the claim that insolvency law impacts on the extent of private credit in an economy, that is, the scale of lending to firms by banks and other financial institutions. They find that improvements in creditor protection are correlated with higher ratios of private credit to GDP, and that the common law provides superior protection for creditors than the civil law. However, their analysis is not the last word on the subject because the legal dataset they rely on does not contain all relevant variables of interest. In this paper we use a more extensive legal index which allows us to code for the differences between distinct forms of creditor control over debtor firms and their assets, the CBR Creditor Protection Index (Armour et al., 2006). We then focus our analysis on four individual country cases – France, Germany, the UK and the USA – in a way which enables us to provide detailed data on patterns of legal change, something which is much harder to achieve when data from over 100 countries are analysed as in Djankov et al. (2007).

Our analysis shows a number of things. Firstly, insolvency law reform is much more common than Djankov et al. (2007), who refer to the 'stability' of this area of law, suggest. Secondly, we demonstrate that the effects of the law differ according to which type of creditor protection predominates in a given country. Thirdly, we show that the strengthening of certain types of creditor rights can be negative for the growth of private credit.

The rest of the paper is organised as follows. The next section provides an overview of legal origin theory and of the current state of methodological debates in this area. Section 3 outlines our legal data and section 4 sets out the econometric analysis. Section 5 discusses the findings, placing them in the context of the theoretical development of the legal origin hypothesis, and of its relation to the varieties of capitalism approach. Section 6 concludes.

2. Legal origins: theory and evidence

There are two inter-linked claims driving the legal origin literature, which can be referred to in terms of (i) the 'quality of law' or 'law matters' hypothesis, and (ii) the 'legal origin' hypothesis proper (see Armour et al., 2009a).

(i) *Quality of law*: this is the claim that legal rules shape economic outcomes according to how far they support market-based economic activity as suggested in new institutional economics (North, 1990). It is argued that legal protection of the interests of the shareholders and creditors will increase the flow of investments and enhance the availability of external finance to firms (La Porta et al., 1998, 2008).

(ii) *Legal origin*: This is the claim that the quality of legal institutions varies systematically with the 'origin' of a country's legal system—that is, whether it falls into the Anglo-American 'common law', or French, German or Scandinavian 'civil law' systems (La Porta et al., 2008).

LLSV and others have asserted the superiority of the common law by reference to the so-called 'adaptability' and 'political' channels (Botero et al., 2004). The 'adaptability' argument is related to the process of framing new rules. Judges, it is argued, are principally responsible for interpreting and developing the law in common law countries; this ability to shape the law on a case-by-case basis helps to make legal regulation more adaptable to changing circumstances. In civil law countries, by contrast, judges are bound by explicit statutes and codes,

leaving them with little discretion. The result is that civil law systems suffer from excessive rigidity, as changes may only be made by fits and starts through legislation.

The 'political' channel focuses on the supposedly greater independence enjoyed by the judiciary in common law systems (Rajan and Zingales, 2003). According to this view, common law judges are less susceptible to influence by the legislature, and are better able to protect individual property rights from encroachment by the state. By contrast, in a civil law system, the legislature and executive are said to have greater control over legal institutions, including judicial appointment, selection and tenure. Hence, the civil law judiciary is less able to protect individual property rights from the predation by the state (Mahoney, 2001).

The mechanisms by which legal origins exert their influence through the 'adaptability' and 'political' channels have been questioned in legal scholarship. For example, under current French and German practice, judges do interpret the law through concepts such as good faith; English judges on the other hand, have less scope than they once did to develop the law, in view of the development of highly detailed and specific statutory interventions in areas which include insolvency law (Ahlering and Deakin, 2007).

The methodological base of legal origin theory has also been challenged on a number of grounds (see Armour et al, 2009a). To some degree, these are criticisms of leximetric coding methods in general. Any attempt to put measurements on legal rules is going to be subject to multiple objections. Laws are open to many interpretations, and subjective judgements come into play in the choice of variables, the aggregation of scores, and the weighting given (or not) to particular indicators. Leximetric indices, while they may tell us much about the formal or de jure content of legal rules, cannot tell us anything directly about their implementation or reception.

These are all valid methodological criticisms, but they do not lead inexorably to the conclusion that leximetric data coding is inevitably defective or illegitimate as a technique. Leximetric method can be improved by the sourcing of data to original legal texts and by transparency in the weighting and aggregation of data, while appropriate econometric techniques, coupled with the use of complementary datasets on institutional effectiveness, can help to minimise the risk that legal indices are simply coding for 'law on the

books' as opposed to 'law in action' (see Buchanan, Chai and Deakin, 2013).

The dataset we are using here, the CBR Creditor Protection Index, is one of several constructed at the Centre for Business Research at Cambridge with a view to addressing some of the objections raised by legal scholars and others to the initial studies of LLSV and their colleagues (see Siems, 2014). The CBR datasets differ from LLSV's in considering a wider range of values for legal variables. Much of the coding undertaken by LLSV uses binary variables (0, 1): for the existence of a given rule, the code is 1, otherwise it is 0. This procedure does not take into account the possibility of ambiguity or uncertainty in the interpretation of a legal provision. In the CBR data, intermediate values between 0 and 1 are generally used to capture more of the complexity of legal rules. A further feature of the CBR datasets on creditor protection is that they are more detailed than those used by LLSV, allowing a greater range of legal data to be captured. Thus the longitudinal index relied on by Djankov et al. (2007) to measure creditor rights, following the template first set out by La Porta et al. (2008), has only four indicators in it. The CBR dataset which we use here contains 44 indicators across three sub-indices, each of which deals with a distinct area of creditor protection (Armour et al., 2009a).

3. Coding for varieties of creditor protection

3.1 Avoiding home-country bias

The creditor rights index constructed by La Porta et al. (1998) and applied to an extended sample of countries by Djankov et al. (2007) contains four measures of the powers of secured lenders: (i) whether a creditor can restrict or prevent the debtor firm filing for reorganisation and thereby achieving protection from claims; (ii) whether secured creditors have the right to seize assets given as collateral once the bankruptcy process begins (the 'automatic stay' rule); (iiii) whether secured creditors have priority over other creditors in claiming from the proceeds of the liquidated firm; and (iv) whether an administrator, as opposed to the firm's management, is responsible for running the firm as it is being reorganised. These aspects of corporate insolvency are significant, but the La Porta et al. (1998) index neglects other means by which the law may affect the relationship between creditors and firms. These include minimum capital requirements and, more generally, capital maintenance rules which seek to prevent depletion of the firm's asset pool, in addition to rules placing the firm's directors under a duty

to creditors as insolvency nears, and allowing a court to 'pierce the veil' of corporate personality in order to avoid the partitioning of corporate assets in a which defeats creditors' claims (Finch, 1991).

In constructing a cross-national measure of creditor protection, it is in principle important to code for rules of different types, and in particular to avoid an exclusive focus on the rights of secured creditors, which because of their association with the common law can give rise to a 'home-country bias' in the coding process (Cools, 2006). Minimum capital rules have traditionally been relied on to protect creditors in civil law countries, while the taking of non-possessory security over the entire assets of the firm was originally an English law practice and remains influenced by common law concepts (Wood, 2008). Jurisdictions derived from the French *Code civil* have been slow to adopt concepts such as the set-off and commercial trust which have been used to impart flexibility to insolvency planning in systems derived from English law (Wood, 1997). Disregarding limited liability and separate corporate personality by piercing the veil in insolvencies involving parent-subsidiaries relations and corporate groups is a well established practice in the USA, but has been controversial in the UK (Miller, 1998; Ottolenghi, 1990), and has seen only limited use in civil law countries (Thompson, 1991).

Djankov et al. (2007) note that the period of their study, from the late 1970s to the mid-2000s, was one of change in corporate insolvency law, but the scores in their index show relatively little change over time and they refer to this area of law being relatively stable. This result suggests that their choice of indicators excluded some relevant variables of interest. The similar period covered by the CBR index, 1970 to 2005, was one in which insolvency law was changing rapidly as a result of factors including an increase in cross-border and international insolvency proceedings (Westbrook, 1991) and the rise of a reorganization and rescue culture in many countries (Belcher, 1997). Reforms made to the rehabilitation and liquidation of companies at this time were not minor juridical adjustments, but reflected economic pressures and changing social and political values (Uttamchandani, 2004).

3.2 Three types of creditor protection: debtor control, credit contracts, and insolvency procedures

The CBR index (Armour et al., 2006) attempts to capture the complexity of insolvency law in this period of change by dividing the generic category of creditor rights into three sub-categories which reflect the distinct ways in which creditors may be protected by the law: debtor control, credit contracts, and insolvency procedures. Taken together, the different components of the index reflect the ways in which creditors may be protected while the firm is still a going concern, as well as via the reorganisation process itself (Armour et al., 2009a).

(i) *Debtor control*. This part of the index (15 variables) refers to restrictions imposed on the activities of firms while they are going concerns, with the aim of reducing the risk of default. It focuses on transactions and operations by the shareholders and directors which may render the company vulnerable to failure and may deprive creditors of access to all or part of the company's assets (Armour and Bennett, 2003). It also takes into account remedies potentially available to creditors. Included in the coding are provisions relating to the amount of minimum capital required to start a firm, restrictions on the payment of dividends defined by reference to the firm's capital, the rights of courts to pierce the corporate veil to protect creditors, directors' duties to take into account the interests of creditors, which can be particularly important for the protection of unsecured creditors (Finch, 1991), and public enforcement of directors' liabilities in the event of insolvency through, among other things, disqualification of directors for wrongful trading Finally, this sub-category includes provisions which are intended to protect the collective nature of liquidation proceedings (Keay, 2000), whose goal is to achieve equal treatment of similarly situated creditors (McCormack, 2006) and to minimise the costs of insolvency proceedings (Mevorach, 2011).

(ii) Credit contracts. This part of the index deals with the existence, feasibility and enforcement of 'self-help' mechanisms which creditors use to protect their interests. They include laws which protect the ability to take various forms of security or collateral. The variables covered include those relating to mortgages, floating charges, financial collateral, and retention of title clauses; the enforcement of those interests through the seizure and sale of assets; the appointment of receivers without a court order; and insolvency set-off clauses which entrench secured creditors' interests. How the law recognises and ranks such claims is at the core of its role in replacing 'the free-for-all

attendant upon the pursuit of individual claims by different creditors' (Goode, 2011) with a regime in which creditors' rights and remedies are coordinated and a wasteful 'race to collect' avoided. The rise of new and complex financial instruments available on the market and the contested status of proprietary claims in an increasingly globalised legal environment have been reshaping this aspect of insolvency law in the period of our study (see; Jackson, 1982, Westbrook, 2004; Lopucki, 1999; Mokal, 2001; Schillig, 2014).

(iii) Insolvency procedures. This sub-index (19 variables) concerns the procedures governing corporate reorganisations and liquidations. It deals with the rules relating to the triggering of insolvency (or 'corporate bankruptcy') proceedings by shareholders and directors; whether creditors can file for insolvency proceedings on a balance-sheet basis, which may make the firm more vulnerable to being broken-up; whether a single creditor can initiate liquidation proceedings; the availability to the firm of a stay or moratorium in liquidation and rehabilitation proceedings, deflecting creditors' claims; whether directors can retain control during rehabilitation proceedings; whether secured creditors alone, unsecured creditors, shareholders, or courts have the power to appoint a bankruptcy trustee or administrator; rules on voting over the firm's exit from bankruptcy; and priorities between different creditor groups in liquidation and rehabilitation proceedings.

3.3 Different national pathways

Coded legal data need to be understood against the backdrop of the long-run evolution of national legal systems if the trends made visible by leximetric coding are to be properly contextualised. Laws protecting creditors' rights reflect distinct pathways to industrial development as well as the influence of political values and legal cultures which influence drafting styles and may frame judicial and statutory responses to changing business environments (Pistor, 2005). Where insolvency law is perceived as a collectivised debt collection device, its aims tend to be defined in terms of creditor wealth maximization (Jackson, 1986). However, other values can be found underlying insolvency laws of different countries or the same country at different times, including broader-based contractarian approaches (Korobkin, 1993) and communitarian ones (Warren, 1987; Gross, 1994). Jurisdictions change at varying speeds (Elliott, 2000) and those responding more quickly to a 'period of turbulence' (Finch, 2009) may as a result become models for others. Credit crunches, corporate scandals, stagnation in lending markets, global or regional recessionsm and crises in particular

corporate sectors are among the factors which may generate legal change. There are numerous examples of cross-fertilisation between legal families, a recent example being the influence of the US Bankruptcy Code on the German *Insolvenzordnung (*'*InsO*') reforms of the late 1990s, a process which nevertheless saw Germany law retain major differences from the original US model (Eidenmüller, 2006).

In the period of our study between 1970 and 2005, the insolvency law of four leading industrial economies countries changed at different rates. France was one of the first countries in the world to create a rescue regime, in the late 1960s, and a series of reforms since then have responded to criticisms of the rigidity of the law from lenders and financial institutions. French insolvency law is nevertheless still imbued with the idea that the law should serve a 'general interest' rather than just those of creditors. Decisions on reorganisations mostly rest with courts, with creditors having relatively few powers (Dennis and Fox, 2004). This tendency reflects a republican conception of the role of commercial law going back to the nineteenth century, which sees corporate failure as a threat to public order as much as to private interests (Hautcoeur and Di Martino, 2011).

Germany experienced a relatively late introduction of a statutory modern insolvency law and rescue regime. Until 1999, the original legislation of 1877, itself heavily influenced by the French *Code de commerce* of 1807, was still mostly in force. Prior to the reforms of the 1990s, informal arrangements had developed to allow firms to continue to trade with the consent of secured creditors so that they could be sold as going concerns; this arrangement was formalised by the new legislation. The aim of the insolvency code introduced in 1999 was wealth maximization and 'allowing the market to work' (Balz, 1997), but creditors complained that procedures remained complex and formalistic, and German companies began to make use of English schemes of arrangement, which were deemed more flexible.

In the US, the nineteenth century was a period of 'redefinition of insolvency from sin to risk, from moral failure to economic failure' (Mann, 2002). US law inherited from the English common law a flexible approach to the recognition of creditors' security interests. However, departing from the original English model, American bankruptcy law developed distinct doctrines allowing incumbent owner-managers to trigger a protective reorganisation procedure before the company became insolvent, and granting 'super-priority' to new lenders during a moratorium on claims. In the period of our study there was

little change to this model notwithstanding rising numbers of large-scale corporate failures, which led to questioning of the 'debtor in possession' approach (Kilborn, 2009).

The English courts developed the notions of the lien, set-off, trust and mortgage to allow for the creation of multiple and overlapping security interests over firm assets from an early stage of the country's industrial development (Dennis and Fox, 2004). However, since the 1980s there have been numerous legislative changes, some led by concern over the effects on creditors of director misconduct, others driven by a perception that rules designed mostly for closely-held firms were not working well in the context of the liquidation of large enterprises (Ratford and Smith, 1985). Legislation from the mid-1980s created new rescue-orientated procedures and in the early 2000s there was a revision of creditors' rankings and a downgrading of the rights of secured lenders to trigger liquidation, making rescue-orientated administration the procedure of choice (Dennis and Fox, 2004).

These distinct trajectories map incompletely, at best, on to the typologies proposed by legal origin theory. It is true that the path followed by English law was largely one developed by the courts, which allowed the creation of new types of collateral over the assets of firms and developed remedies which favoured the interests of secured creditors. Yet the US, while also a common law system, developed a mostly statute-led bankruptcy code which placed the interests of incumbent management ahead of those of creditors. The US model went on to inspire various national versions of a 'rescue culture', with English law eventually being reshaped by legislative interventions, its common law heritage notwithstanding. French law has historically downplayed creditors' interests in a way which reflects a view of the firm as publicly-ordered and containing multiple interests. This perspective may be compatible with an understanding of the civil law as paying limited regard to private property rights. However, the historical emphasis in French insolvency law on the preservation of the firm as a going concern, under the supervision of the court, has much in common with the debtor-protective approach of US law. Germany, although a civil law system initially influenced by the French *Code de commerce*, went on to recognise secured creditors' property rights in ways which approximated the approach of English law.

3.4 Trends in the data, 1970-2005

We are now in a position to describe the trends in the four countries as indicated by our leximetric data. In Table 1, we present quinquennial averages of the overall index and sub-indices for the four countries under study. The scores are averages of all the relevant variables and assume the range of values between 0 and 1, with higher scores indicating more protection for creditors. Through simple averaging, we also calculate the quinquennial averages for creditor protection across the common law group (UK and USA) and the civil law group (France and Germany). These data are plotted on to a number of figures (Figures 1 to 8).

Table 1. Creditor protection in four developed market economies, 1970-2005: period averages

Table 1A. Aggregate creditor protection

	France	Germany	UK	USA	Common law	Civil law
1970-74	0.44	0.58	0.55	0.52	0.53	0.51
1975-89	0.44	0.58	0.58	0.52	0.55	0.51
1980-84	0.46	0.60	0.60	0.52	0.56	0.53
1984-89	0.50	0.61	0.63	0.52	0.57	0.56
1990-94	0.50	0.61	0.65	0.54	0.60	0.56
1995-99	0.54	0.62	0.65	0.55	0.60	0.58
2000-05	0.53	0.68	0.66	0.55	0.61	0.61

Table 1B. Debtor control laws

	France	Germany	UK	USA	Common law	Civil law
1970-74	0.47	0.77	0.30	0.31	0.31	0.62
1975-89	0.47	0.77	0.33	0.31	0.32	0.62
1980-84	0.49	0.83	0.42	0.31	0.37	0.66
1984-89	0.46	0.88	0.50	0.31	0.40	0.67
1990-94	0.46	0.88	0.57	0.45	0.51	0.67
1995-99	0.46	0.85	0.57	0.48	0.53	0.66
2000-05	0.45	0.77	0.55	0.48	0.51	0.61

Table 1C. Credit contract laws

	France	Germany	UK	USA	Common law	Civil law
1970-74	0.38	0.65	0.67	0.83	0.75	0.52
1975-89	0.38	0.65	0.80	0.81	0.81	0.52
1980-84	0.45	0.65	0.81	0.73	0.77	0.55
1984-89	0.48	0.65	0.77	0.73	0.75	0.57
1990-94	0.49	0.65	0.77	0.73	0.75	0.57
1995-99	0.58	0.66	0.77	0.73	0.75	0.62
2000-05	0.58	0.67	0.77	0.73	0.75	0.63

Table 1D. Insolvency procedures

	France	Germany	UK	USA	Common law	Civil law
1970-74	0.45	0.46	0.56	0.49	0.53	0.46
1975-89	0.45	0.46	0.56	0.49	0.53	0.46
1980-84	0.45	0.46	0.56	0.51	0.54	0.46
1984-89	0.53	0.46	0.58	0.51	0.55	0.50
1990-94	0.53	0.46	0.60	0.51	0.56	0.50
1995-99	0.55	0.50	0.60	0.51	0.56	0.52
2000-05	0.54	0.62	0.63	0.51	0.57	0.58

Source: CBR Creditor Protection Index for the UK, US, Germany, France and India (Armour et al., 2006): http://www.cbr.cam.ac.uk/research/research-projects/completed-projects/law-finance-development/ (last accessed on 29th October 2015).

In the first quinquennium (1970-74), Germany had the highest level of aggregate creditor protection, closely followed by the UK and the USA, while France had much lower levels of overall protection. Subsequently, the level of creditor protection strengthened in all countries. In the process, France converged on US levels of protection, while the UK overtook Germany. However, in the last period (2000-5), Germany regained its leading position, thanks to the enactment of the *InsO* law (Figure 1). Our aggregation at the level of legal origin shows that in each five year period, creditor protection was higher in the common law countries than in the civil law countries (Figure 2). However, the civil law group showed a tendency to catch up in different quinquennia; during 2000-5, the two groups have around the same level of overall creditor protection (0.61).

When we look more closely at different sub-categories of creditor protection, we can see that in the field of debtor control Germany has the highest degree of protection throughout the period of our study (Figure 3). Thanks to the German score, the civil law group has been

most highly placed in this aspect of creditor protection throughout the period under review. However, the common law group can be observed catching up, as both the German and French debtor control scores show a slow declining trend since the mid-1980s, while the UK shows a steady increase throughout the period and the US shows a similar tendency from 1985-89 (Figures 3 and 4).

In the field of creditor contract protection the USA initially had the highest score; subsequently the UK took that position while Germany and France remained far behind the two common law countries (Figure 5). The common law group has higher scores throughout the period of study but there is a tendency for the civil law group to catch up, thanks mostly to legal changes in France throughout the period since 1975-79 (Figure 6).

In relation to creditor protection in insolvency procedures, the UK maintained the leading position, far above the others, in all the five year periods between 1970 and 1999. Initially Germany had the weakest creditor protection relating to insolvency procedures, but more recently, as a result of the *InsO* law, it has reached the level of protection provided in the UK. France also strengthened its insolvency procedures in favour of creditors in the 1980s and 1990s, and the USA made some minor changes in the 1970s (Figure 7). In view of all these reforms, since the early 1980s, the insolvency law regime in the civil law countries can be seen to have begun to converge with that in the common law (read UK), and by 2000-5 it had overtaken it (Figure 8).

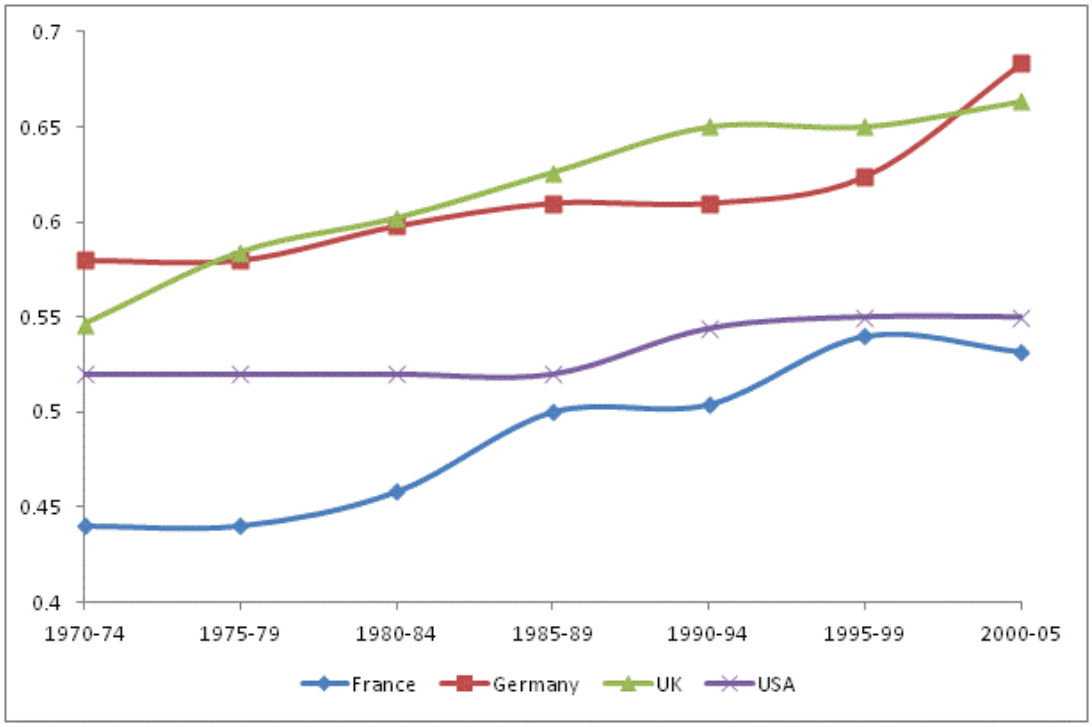

Figure 1. Aggregate creditor protection by country.

Source: CBR Creditor Protection Index for the UK, US, Germany, France and India (Armour et al., 2006): http://www.cbr.cam.ac.uk/research/research-projects/completed-projects/law-finance-development/ (last accessed on 29th October 2015).

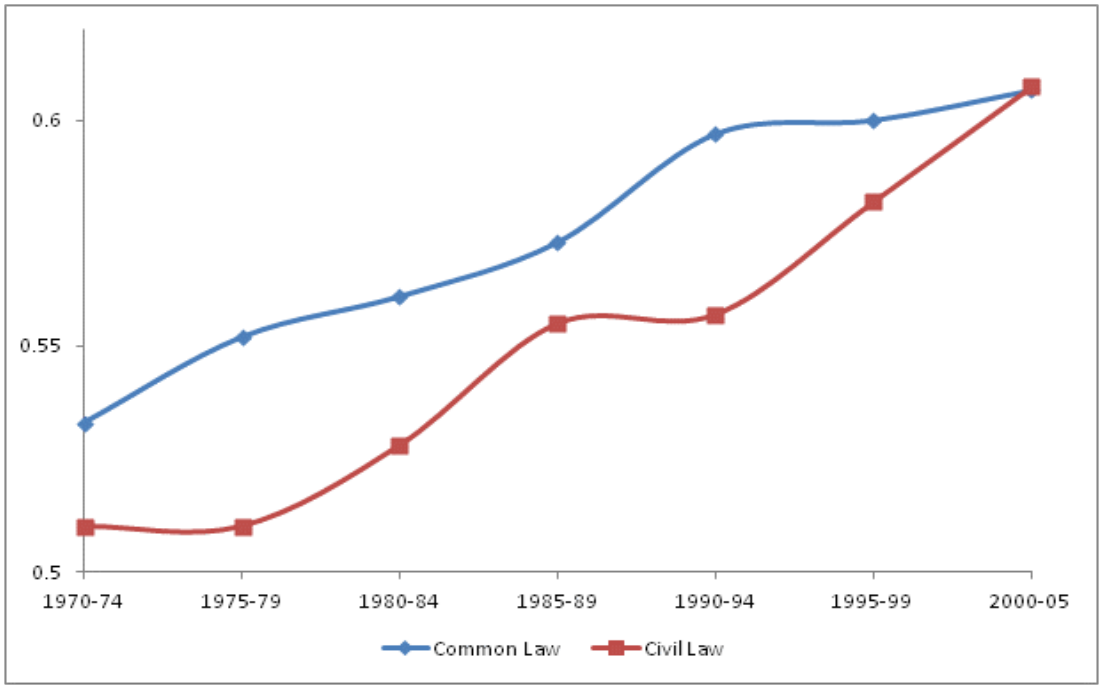

Figure 2. Aggregate creditor protection by legal origin. Source: see Figure 1.

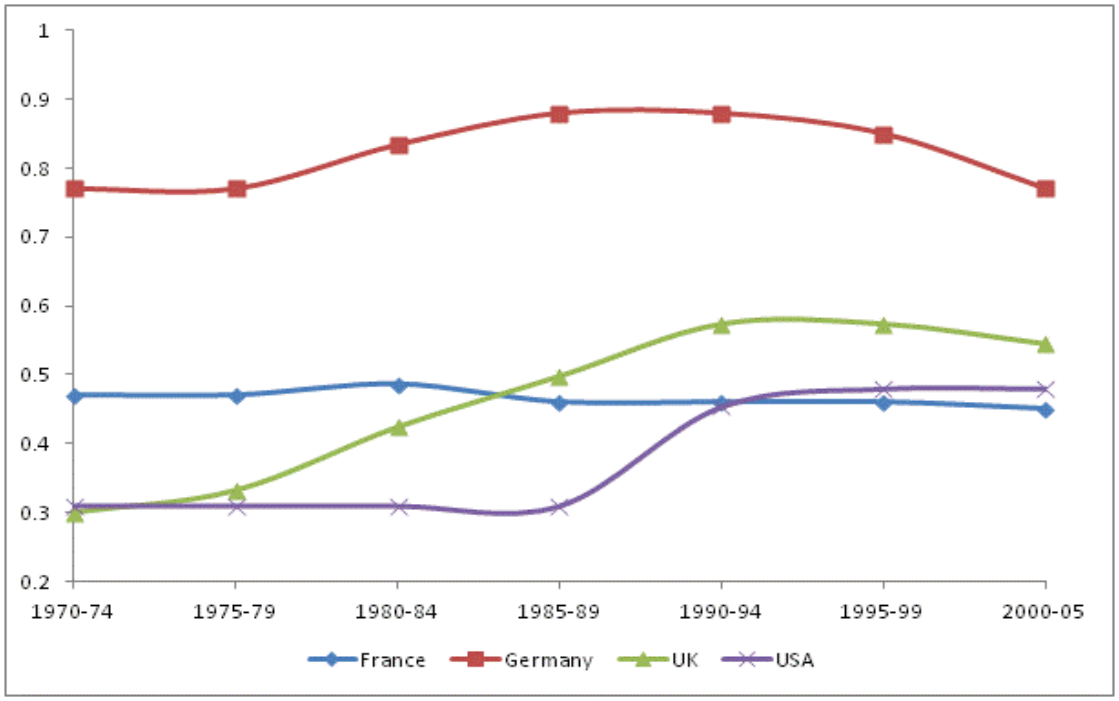

Figure 3. Debtor control laws by country. Source: see Figure 1.

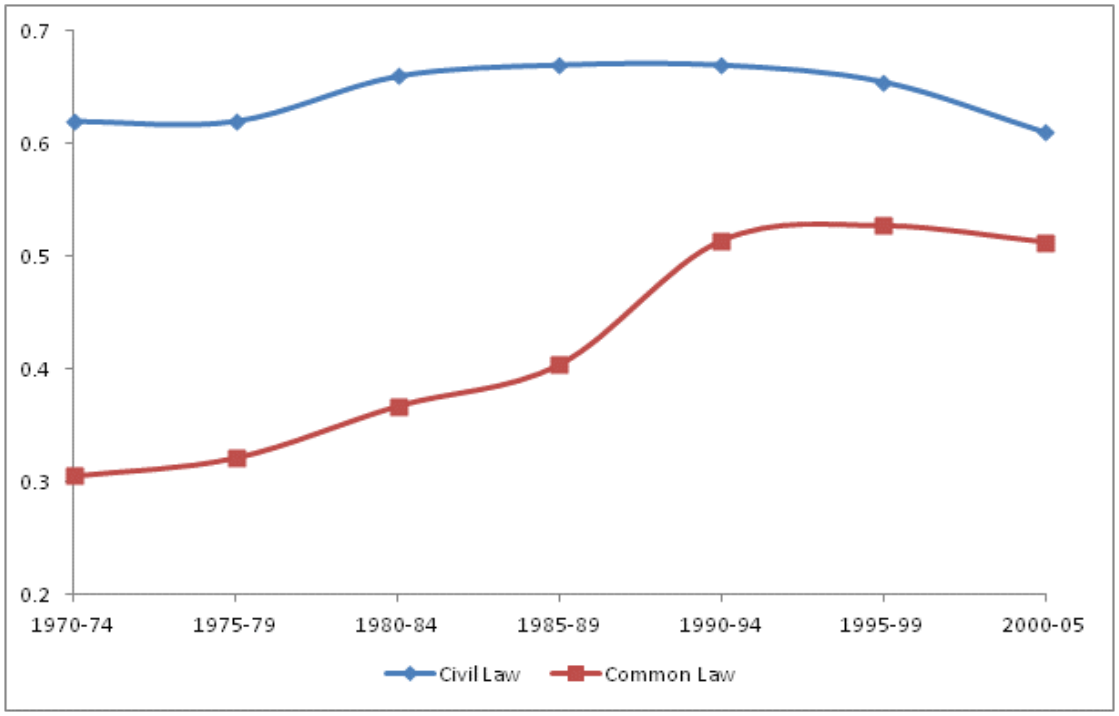

Figure 4. Debtor control laws by legal origin. Source: see Figure 1.

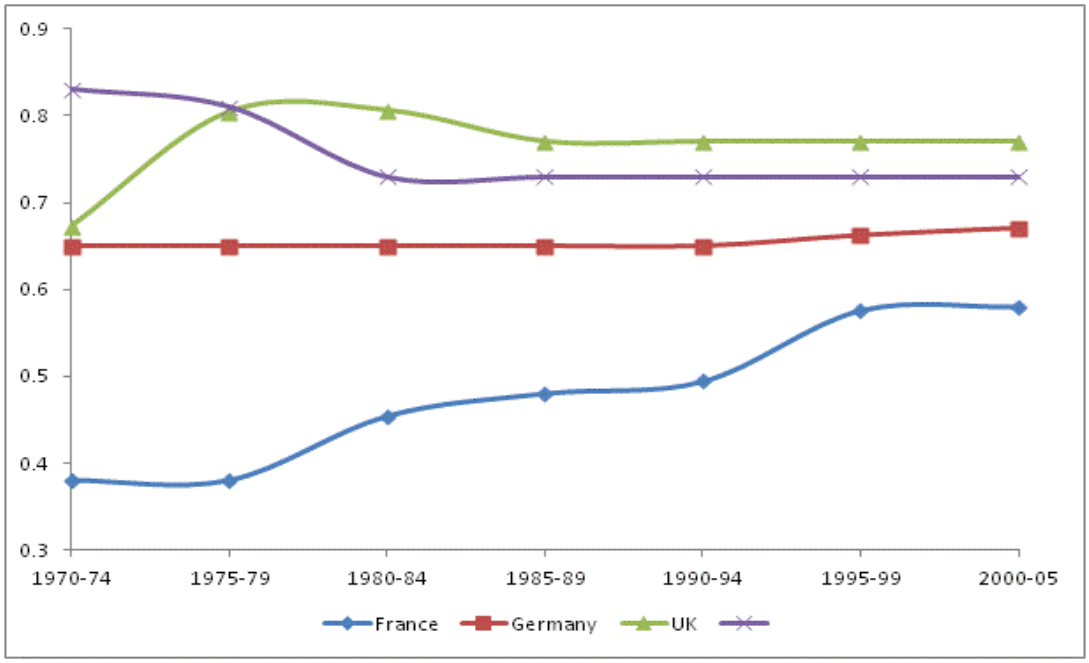

Figure 5. Credit contract laws by country. Source: see Figure 1.

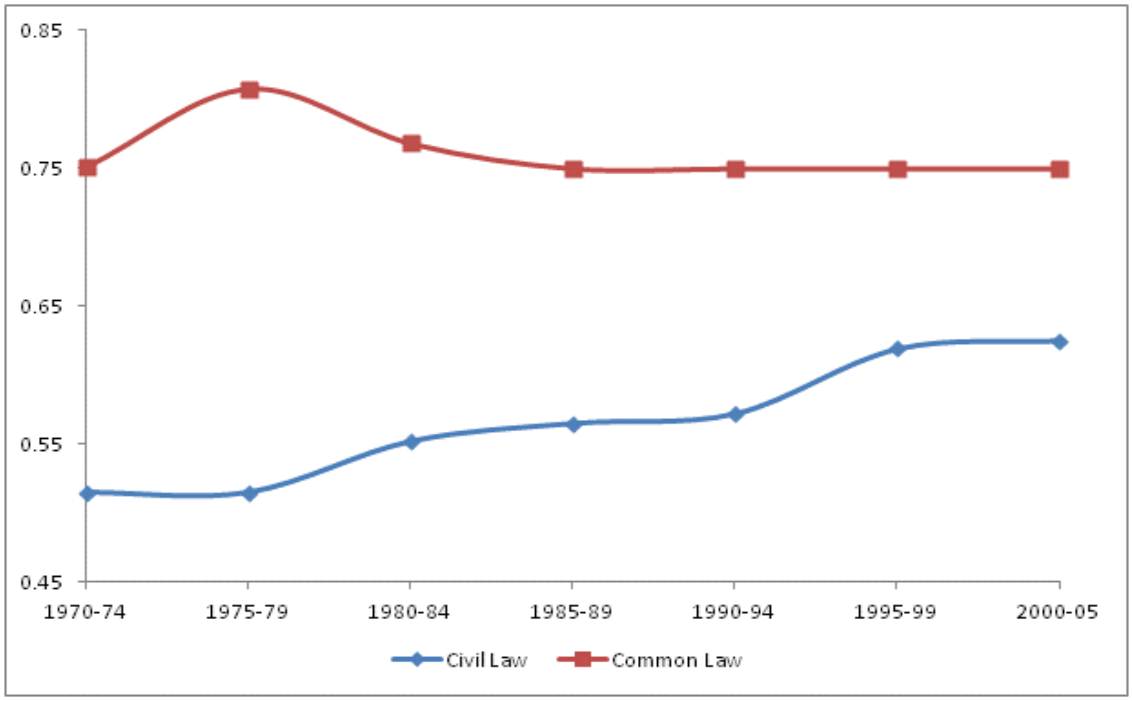

Figure 6. Credit contract laws by legal origin. Source: see Figure 1.

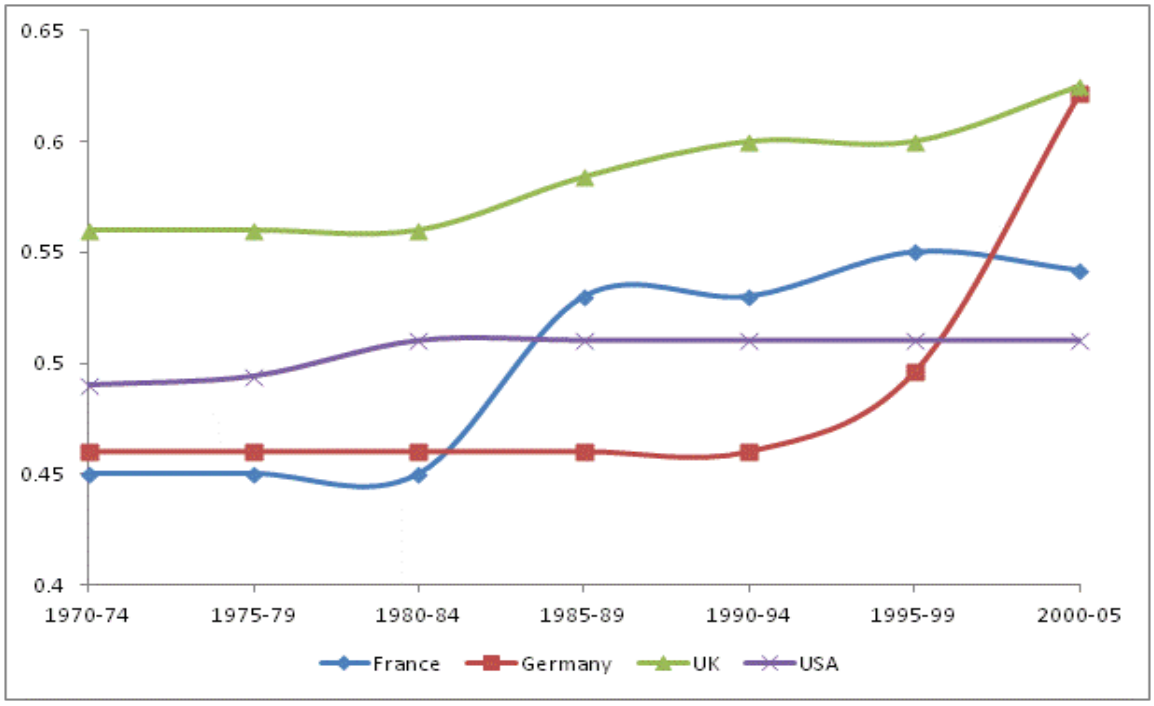

Figure 7. Insolvency procedures by country. Source: see Figure 1.

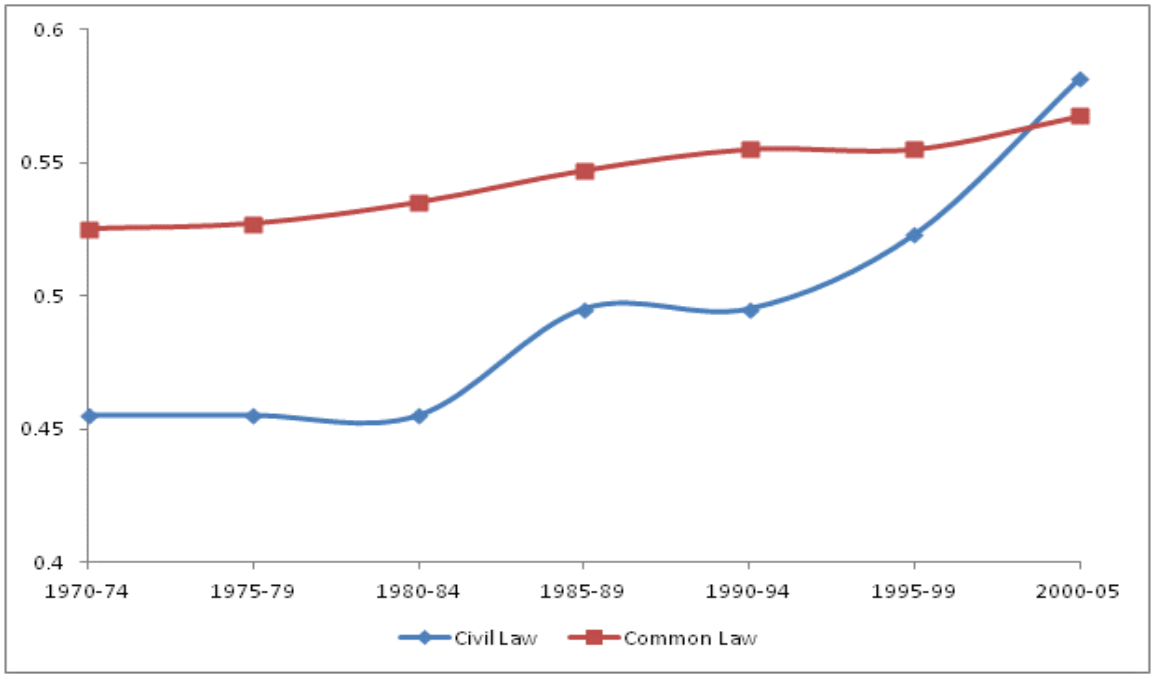

Figure 8. Insolvency procedures by legal origin. Source: see Figure 1.

4. Does creditor protection matter for financial development?

We now turn to examine whether 'law matters' that is, whether a country with higher creditor protection experiences an increased volume of credit flows from banks and other financial institutions to business firms. In principle, the effects of creditor protection laws could go either way. The granting of collateral to the firm's lenders may result in a loss of control for incumbent managers and the elimination of shareholders' claims over the firm's capital. Thus laws which grant secured lenders extensive rights to seize assets and instigate a reorganisation without the consent of management or shareholders may reduce demand for this type of credit (Lee, Peng and Barney, 2007; Acharya, Amihud and Litov, 2009). On the other hand, such laws could help stimulate lending by banks and financial institutions by providing them with protection against the consequences of firm failure, in particular where their security interests are ranked ahead of claims of unsecured creditors (Houston et al., 2010; Haselmann, Pistor and Vig, 2010).

These hypotheses can be tested by regressing our legal indices against measures of the extent of lending by banks and financial institutions to business firms. To capture the latter we rely on two widely-used indicators of credit market development, namely domestic credit provided by the banking sector and domestic credit to the private sector, in each case expressed as a percentage of GDP). Domestic credit to the private sector is a wider category than bank-derived credit which includes financial resources in the form of purchases of nonequity securities, trade credits and other accounts receivable. These data are drawn from the World Bank's World Development Indicators (World Bank, 2015).

Periodic (mostly quinquennial) averages of these indicators of financial development are plotted in Figures 9 and 10. For both indicators, the USA maintained a leading position throughout the period of study, while the UK remained the least expansionary up to 1990 but experience growth after that point. The two measures of private credit are closely related and show similar trends and largely the same values for some of the countries.

4.1 Tests of Panel Causality

The first question to consider in our econometric analysis is how far higher levels of private credit in the common-law group are due to their laws on creditor protection. To address this question we use panel causality tests and dynamic panel data modelling. These methods allow us to examine the causal impact of creditor protection laws on the expansion (or contraction) of credit. To control for the level of economic activity of a country we use real GDP in purchasing power parity constant US dollars, deflated by population, a similar approach to that of Djankov et al. (2007) which enables us to compare our results with theirs. The relevant data are also drawn from the World Development Indicators (World Bank, 2015). As each of the countries is a developed market economy with a high level of general respect for legal rules, we do not include a separate control for differences in the extent of legal enforcement, as some other leximetric studies have done (see Armour et al., 2009b).

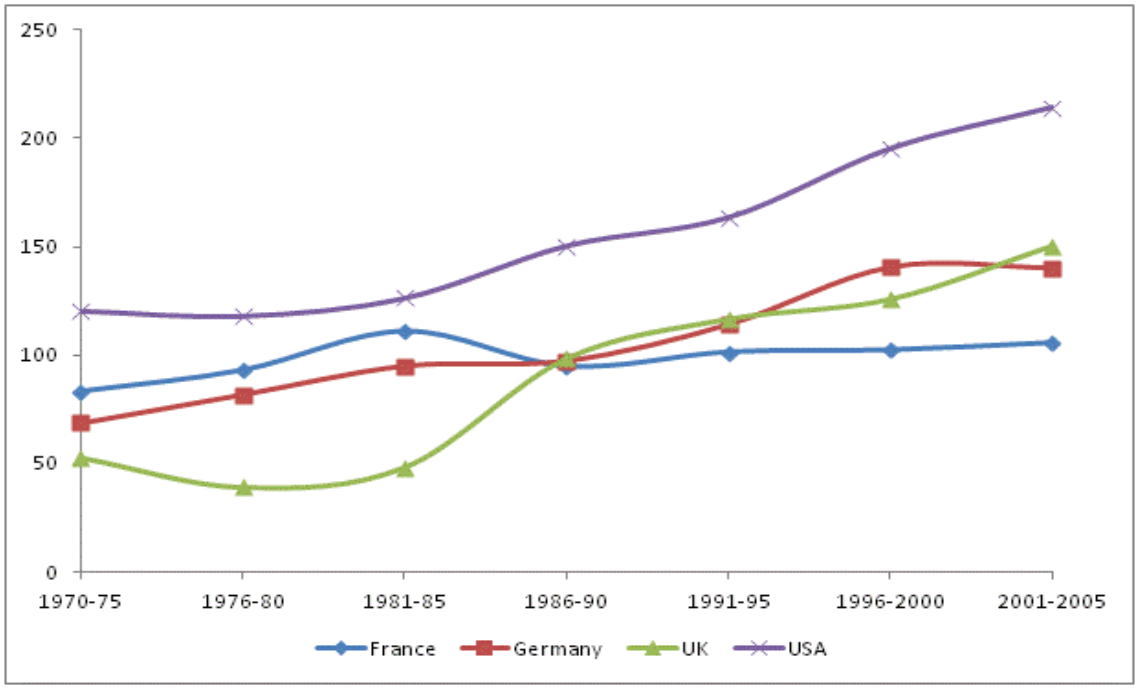

Figure 9. Bank credit by country. Source: World Bank, *World Development Indicators* (World Bank, 2015).

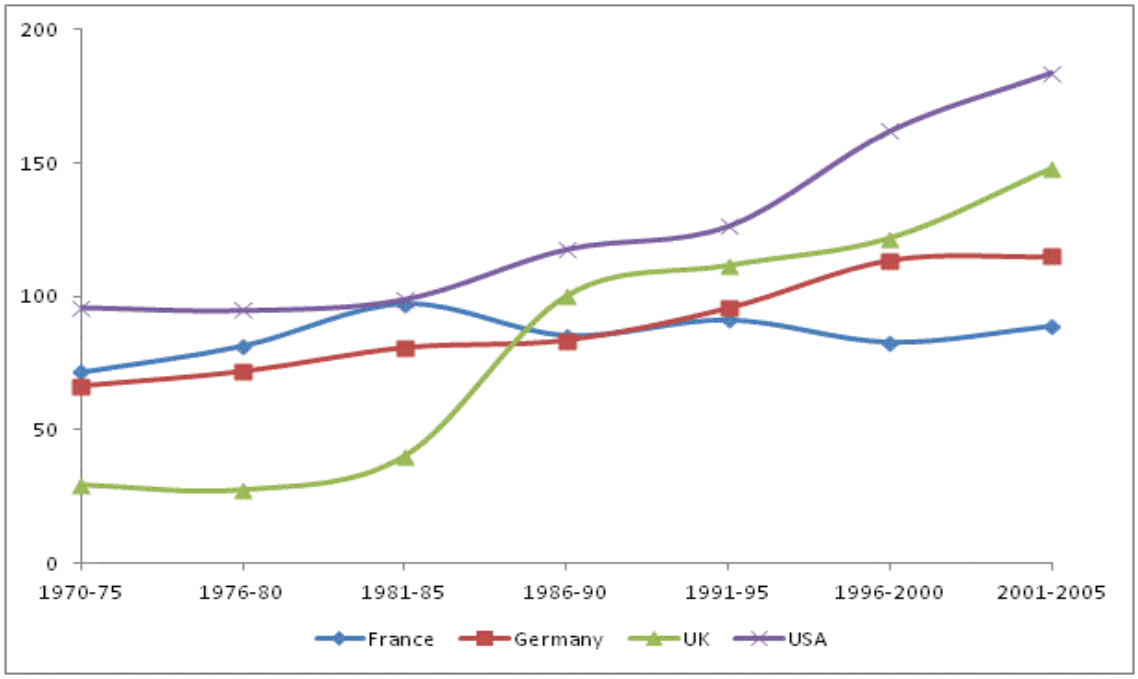

Figure 10. Private credit by country. Source: see Figure 9.

To understand whether the direction of causality runs from creditor protection to credit expansion or the opposite (reverse causation), or both (mutual causation), we use a panel VAR (Vector-Autoregressive) Granger causality test. VAR and VEC tests would have been inappropriate to the initial studies carried out by La Porta et al. (1998) as they did not have a time-series element. The later study by Djankov et al. (2007) did use a time-series, but relied on a standard difference-in-differences approach to address issues of reverse causation and endogeneity. The use of VAR and VEC causality tests is another way of testing for endogeneity, which takes into account the risk of false or spurious correlations which can arise in very long time series characterised by non-stationarity. Non-stationarity is the tendency for a time trend to move away from an established equilibrium or path as a result of an external event (Juselius, 2006), which for present purposes could be a legal intervention or reform. Because legal time trends and long-run financial data are often both non-stationary (Deakin, Sarkar and Singh, 2012), cointegration techniques involving VAR and VEC models are in principle well suited to analysing them. Granger causality tests have previously been used in the analysis of leximetric data (Armour et al., 2009b).

To ascertain whether the independent variable Z causes the outcome variable X, we fit a regression where X (alternative financial variables, that is, bank credit and private credit, taken one at a time in natural log) is a function of its own past values and of past values of the control

variable Y (real GDP per capita in natural log) and Z (the creditor protection indices taken one at a time):

$$(1)\quad X_{it} = \alpha + \sum_{j=1}^{p} \lambda_j X_{i,t-j} + \sum_{k=1}^{q} \psi_k Y_{i,t-k} + \sum_{l=1}^{r} \pi_l Z_{i,t-l} + \varepsilon_{it}$$

In fitting the above equation, we have to test whether the coefficients of the lags of Z are jointly significant (that is, different from zero) using the Wald-test statistic. The null hypothesis is that $\pi_1 = \pi_2 = \ldots = \pi_k = 0$. If the Wald test statistic calculated on the basis of this null hypothesis is very high (higher than a critical value), we can say that Z causes X (rejecting the null hypothesis of no causality).

Similarly, to test whether X causes Z, we fit a regression where Z is a function of its past values and the past values of X and Y and test the joint significance of the coefficients of the lags of X. Instead of fitting the equation in level terms we can fit the equation in first-difference terms (ΔX, ΔY and ΔZ) and their various lags. Replicating the VAR test in terms of first-difference we can get a VEC causality test.

For the choice of lag (that is, how many past years are to be included in the causality test), we use a number of criteria including the sequential modified LR test statistic (LRM), the final prediction error (FPE), the Akaike information criterion (AIC), the Schwarz information criterion (SC), and the Hannan-Quinn information criterion (HQ). Different criteria tend to suggest different lag lengths. We have taken the maximum of the alternative lag lengths chosen by these criteria as the order of the VAR causality tests. Subtracting one from the order of the VAR test we get the order of the VEC test.

Table 2. Causal relationships between creditor protection and credit expansion in a panel of four developed market economies, 1970-2005: panel VAR and VEC Granger causality tests

Table 2A. Influence of creditor protection on credit expansion

(i) Panel VAR causality tests

Dependent variable: credit expansion	Causal variable: creditor protection	Test-statistic: Chi-square	Lag chosen
BANKCRED	DEBTCL	20.2*	8
	CREDCONTS	25.743*	5
	INSOLV	0.735	8
	ALL	3.448	5
PRIVCRED	DEBTCL	18.043*	8
	CREDCONTS	28.565*	5
	INSOLV	2.515	8
	ALL	4.642	5

(ii) Panel VEC causality tests

Dependent variable: credit expansion	Causal variable: creditor protection	Test-statistic: Chi-square	Lag chosen
BANKCRED	DEBTCL	19.145*	7
	CREDCONTS	22.671*	4
	INSOLV	0.709	7
	ALL	3.089	4
PRIVCRED	DEBTCL	18.285*	7
	CREDCONTS	23.253*	4
	INSOLV	1.256	7
	ALL	2.524	4

Table 2B. Influence of credit expansion on creditor protection

(i) Panel VAR causality tests

Dependent variable: creditor protection	Causal variable: credit expansion	Test-statistic: Chi-square	Lag chosen
DEBTCL	BANKCRED	7.342	8
	PRIVCRED	7.242	8
CREDCONTS	BANKCRED	60.68*	5
	PRIVCRED	68.96*	5
INSOLV	BANKCRED	11.133	8
	PRIVCRED	12.551	8
ALL	BANKCRED	3.237	5
	PRIVCRED	5.744	5

(ii) Panel VEC causality tests

Dependent variable: creditor protection	Causal variable: credit expansion	Test-statistic: Chi-square	Lag chosen
DEBTCL	BANKCRED	6.894	7
	PRIVCRED	7.359	7
CREDCONTS	BANKCRED	57.119*	4
	PRIVCRED	64.446*	4
INSOLV	BANKCRED	8.662	7
	PRIVCRED	8.345	7
ALL	BANKCRED	2.591	4
	PRIVCRED	4.594	4

* The null hypothesis of no causality is rejected at the 5 % level.

The following abbreviations are used:

DEBTCL: laws on debtor control

CREDCONT: laws on credit contracts

INSOLV: laws on insolvency procedures

ALL: aggregate creditor protection

BANKCRED: ratio of bank credit (lending by banks) to GDP

PRIVCRED: ratio of private credit (lending to the private sector) to GDP.

Sources: data on legal variables are drawn from the CBR Creditor Protection for the UK, US, France, Germany and India (Armour et al.,, 2006). Data on bank credit and private credit are drawn from the World Bank's *World Development Indicators* (World Bank, 2015).

Results from the panel VAR and VEC causality tests (Table 2) reveal no causal relationship between credit expansion and aggregate creditor protection scores. The same finding (namely no causality) is valid for one component of the aggregate creditor protection index, namely the sub-index relating to creditor protection in the area of insolvency procedures. For the two other components of creditor protection, namely creditor protection relating to debtor control and that relating to credit contracts, both the VAR and VEC tests show a causal impact on credit expansion (as measured by both indicators). We can also see some evidence of reverse causality: this suggests that an expansion of credit (as indicated by the two indicators considered here) can stimulate changes in the law relating to credit contracts. This result calls for further investigation regarding the nature of the influence exerted by the two components of creditor protection which are seen to have a causal impact on financial development.

4.2 Estimates of short-run and long-run relationships

We can supplement the Granger causality tests just reported by carrying out further analysis of the impact of creditor protection on private credit using alternative dynamic panel data models. In our causality test we assumed that an identical relationship between the variables prevails in each country; however, this assumption can be altered.

In a case where, as here, there is an extended time dimension to panel data, Pesaran and Smith (1995) show that the traditional procedures for estimation of pooled models, such as fixed effects models, instrumental variables, and generalized method of moments (GMM) models, 'can produce inconsistent, and potentially very misleading estimates of the average values of the parameters in dynamic panel data models unless the slope coefficients are in fact identical (Pesaran and Shin, 1999: 622). Their dynamic panel data analysis offers a more complete set of tests for determining the nature of the relationships between institutional and economic outcome variables over time in panels characterised by unobservable cross-country heterogeneity. An intuitive way of thinking about this is that the models attempt to deal with the presence of 'unknown unknowns' in the real-life relationships between variables. They also make it possible to distinguish between short-run and long-run effects of a change in one or more of the variables of interest.

We start with a postulate of a long-run relationship involving X (bank credit and private credit taken one at a time, in natural log), Y (real per capita GDP in natural log) and Z (the various creditor protection indexes taken one at a time):

$$X_{it} = \psi_i Y_{it} + \pi_i Z_{it} + \eta_{it} \quad (2)$$

where i (=1,2,3,4) represents the different countries, t (=1,2,… T) represents periods (years), ψ_i and π_i are the long-run parameters and η_{it} is the error term.

The dynamic panel data approach enables us to establish whether there exist long-term and short-term effects of Z (creditor protection) along with Y (per capita real GDP) on X (credit expansion) and whether there exists a stable adjustment path from the short-term relationship (if any) to the long-run relationship. Following Pesaran and Shin (1999), our panel data analysis is based on the following error correction representation:

$$\Delta X_{it} = \theta_i(\eta_{it-1}) + \sum_{j=1}^{p-1} \lambda_{ij} \Delta X_{i,t-j} + \sum_{k=0}^{q-1} \psi_{ik} \Delta Y_{i,t-k} + \sum_{l=0}^{r-1} \pi_{il} \Delta Z_{i,t-l} + \mu_i + \phi_{it} \quad (3)$$

where Δ is the difference operator, θ_i is the country-specific error-correcting speed of adjustment term, λ_{ij}, ψ_{ik} and π_{ij} are the coefficients of the lagged variables, μ_i is the country fixed effect and ϕ_{it} is the disturbances term. The existence of a meaningful long-run relationship with a stable adjustment dynamics requires that $\theta_i < 0$.

Within this general structure, there are three alternative models, which build in different assumptions about cross-country heterogeneity. At one extreme, we can use a dynamic fixed effect estimator (DFE) in which intercepts are allowed to vary across the countries, but all other parameters and error variances are constrained to be the same. At the other extreme, we can estimate separate equations for each country and calculate the mean of the estimates. This is the mean group estimator (MG). The intermediate alternative is the pooled mean group (PMG) estimator. This model allows intercepts, short-run coefficients and error variances to differ freely across the countries but constrains the long run coefficients to be the same; in other words, $\psi_i = \psi$ and $\pi_i = \pi$ for all i while θ_i may differ from group to group.

Using the STATA model developed by Blackburne and Frank (2007) we can estimate each of the three alternative models. We use the Lag Exclusion Wald Test for each variable separately to determine the lag structure which is represented as (p, q, r).[1]

Both the MG and DFE models show no short-term or long-term effect of aggregate creditor protection on credit expansion. The PMG model, however, shows a *negative* long-term impact of aggregate creditor protection on both bank credit and private credit, but there exists no stable adjustment path from the short-term (positive relationship in one case and no relationship in another case) to the long-term (Table 3A). The Hausman tests do not support the PMG model, however, so this result needs to be treated with caution.

Two models (PMG and DFE) show long-term *positive* effects of debtor control laws on credit expansion; there is, however, no short-term effect. It is only in the DFE model that we see evidence of an adjustment process from an insignificant short-term effect to a significant positive long-term effect: here the adjustment path is stable for both bank credit and private credit. The Hausman test, which enables us to identify which of the models is statistically preferred, supports the DFE model for the case of private credit (Table 3B).

As regards the impact of creditor protection relating to credit contracts, we see the opposite result: two models (PMG and DFE) show long-term *negative* effects of credit contract laws (with no significant short-term effect) on both bank credit and private credit. In each case, the Hausman test supports the DFE model, which shows a stable adjustment process from no short-term relationship to a negative long-term relationship (Table 3C).

The PMG model shows that the long-term impact of creditor protection relating to insolvency procedures is *negative* on both bank credit and private credit, and that there exists a stable adjustment process from an insignificant short-term relationship to long-term negative relationship. Neither the MG model nor the DFE model shows a significant short-term or long-term effect. However, the Hausman test again supports the DFE model (Table 3D), so this result cannot be regarded as definitive.

Table 3. Short-run and long-run impacts of creditor protection on credit expansion in four developed market economies, 1970-2005: dynamic panel models

Table 3A. Short-run and long-run effects of aggregate creditor protection (ALL)

(i) Dependent variable: bank credit (BANKCRED)

Independent variables	PMG Model	MG Model	DFE Model
Long-term relationship			
GDP	1.855***	1.629***	1.898***
ALL	-6.738**	-2.321	-2.859
Short-term Relationship			
θ	-0.291	-0.519**	-0.27***
ΔGDP_t	0.159	0.136	0.344
ΔGDP_{t-1}	-0.751	-0.836	-0.034
ΔALL_t	2.713**	1.266	0.899
μ	-3.014	-3.8***	-3.423***
Chosen model		MG	

(ii) Dependent variable: private credit (PRIVCRED)

Independent variables	PMG Model	MG Model	DFE Model
Long-term relationship			
GDP	1.916***	0.725**	1.237
ALL	-7.674***	5.781	3.483
Short-term relationship			
θ	0.276	0.477	0.218***
ΔGDP_t	1.349	1.099	0.321
ΔGDP_{t-1}	0.386***	0.316***	-0.135
ΔALL_t	-3.396	-1.618	-1.047
μ	3.003	2.739	2.174
Chosen model			DFE

Table 3B. Short-run and long-run effects of debtor control laws (DEBTCL)

(i) Dependent variable: bank credit (BANKCRED)

Independent variables	PMG Model	MG Model	DFE Model
Long-term relationship			
GDP	0.652***	1.05***	1.104***
DEBTCL	4.738***	3.373	1.923***
Short-term relationship			
θ	-0.368	-0.644***	-0.36***
ΔGDP_t	-0.192	-0.285	0.283
ΔGDP_{t-1}	-0.439	-0.725	0.232
$\Delta DEBTCL_t$	0.548	-0.253***	-0.082
μ	-1.518	-5.285***	-2.669***
Chosen model	PMG		

(ii) Dependent variable: private credit (PRIVCRED)

Independent variables	PMG Model	MG Model	DFE Model
Long-term relationship			
GDP	0.429*	1.017***	1.14***
DEBTCL	3.294**	3.037	2.198***
Short-term relationship			
θ	-0.314	-0.441*	-0.327***
ΔGDP_t	-0.263	-0.295	0.502
ΔGDP_{t-1}	-0.561	-0.661	0.487
$\Delta DEBTCL_t$	0.933	0.098	-0.277
μ	-0.394	-3.195**	-2.652**
Chosen model			DFE

Table 3C. Short-run and long-run effects of credit contract laws (CREDCONT)

(i) Dependent variable: bank credit (BANKCRED)

Independent variables	PMG Model	MG Model	DFE Model
Long-term relationship			
GDP	1.131***	0.932***	1.647***
CREDCONT	-1.986**	-4.407	-3.811***
Short-term relationship			
θ	-0.32*	-0.616***	-0.309***
$\Delta BANKCRED_{t-1}$	0.149	0.194*	-0.24***
ΔGDP_t	-0.001	-1.122*	0.506
ΔGDP_{t-1}	-0.568	-0.527	-0.002
$\Delta CREDCONT_t$	0.229	1.351*	0.7
μ	-1.742*	-0.661	-2.85***
Chosen model			DFE

(ii) Dependent variable: private credit (PRIVCRED)

Independent variables	PMG Model	MG Model	DFE Model
Long-term relationship			
GDP	1.128***	1.014***	1.761***
CREDCONT	-2.747***	-5.089	-4.579***
Short-term relationship			
θ	-0.306	-0.564***	-0.274***
$\Delta PRIVCRED_{t-1}$	0.027	-0.009	-0.299***
ΔGDP_t	-0.137	-1.159*	0.837
ΔGDP_{t-1}	-0.966	-0.581	0.194
$\Delta CREDCONT_t$	0.419	3.05	0.544
μ	-1.563	0.212	-2.746**
Chosen model[4]			DFE

Table 3D. Short-run and long-run effects of laws on insolvency procedures (INSOLV)

(i) Dependent variable: bank credit (BANKCRED)

Independent variables	PMG Model	MG Model	DFE Model
Long-term relationship			
GDP	1.309***	1.287***	1.713***
INSOLV	-3.28***	-0.474	-1.498
Short-term relationship			
θ	-0.466*	-0.485**	-0.274***
ΔGDP_t	0.086	-0.099	0.323
ΔGDP_{t-1}	-0.573	-0.788	0.043
$\Delta INSOLV_t$	1.254	0.827	0.245
μ	-3.115*	-2.774**	-3.192***
Chosen model			DFE

(ii) Dependent variable: private credit (PRIVCRED)

Independent variables	PMG Model	MG Model	DFE Model
Long-term relationship			
GDP	1.536***	2.911**	1.879***
INSOLV	-4.549***	-17.314	-1.955
Short-term relationship			
θ	-0.379*	-0.375	-0.248***
ΔGDP_t	0.245	-0.192	0.583
ΔGDP_{t-1}	-0.538	-0.756	0.224
$\Delta INSOLV_t$	0.685	0.379	-0.109
μ	-3.208*	-1.866**	-3.293**
Chosen model			DFE

* Significant at 10 per cent level.
** Significant at 5 per cent level.
*** Significant at 1 per cent level.

Notes:

The regressors are estimated from the following long-term relationship and its error correction form.

Long-run relationship:

$$X_{it} = \psi_i Y_{it} + \pi_i Z_{it} + \eta_{it}$$

Error correction form:

$$\Delta X_{it} = \theta_i(\eta_{it-1}) + \sum_{j=1}^{p-1} \lambda_{ij} \Delta X_{i,t-j} + \sum_{k=0}^{q-1} \psi_{ik} \Delta Y_{i,t-k} + \sum_{l=0}^{r-1} \pi_{il} \Delta Z_{i,t-l} + \mu_t + \phi_{it}$$

where Δ is the difference operator, θ_i is the group-specific error-correcting speed of adjustment term, λ_{ij}, ψ_{ik} and π_{ij} are the coefficients of the lagged variables, μ_i is the country-specific effect and ϕ_{it} is the disturbances term. The existence of a meaningful long-run relationship with a stable adjustment dynamics requires $\theta_i < 0$.

Real per capita GDP is in purchasing power parity constant (2005) US dollars. Credit market variables and per capita GDP are in natural log. An appropriate model is chosen on the basis of a series of Hausman tests.

Abbreviations and sources: see Table 2.

5. Discussion

Analysing the available data of four OECD countries over a long time span, 1970-2005, our study finds no clear verdict in favour of the proposition that the common law countries provide for a higher overall level of protection of creditors across the different types of legal regime which can be used to safeguard creditor rights. The civil law countries (France and Germany) provide more creditor protection relating to the issue of debtor control; the common law countries (UK and USA) provide stronger creditor protection in the field of credit contracts and insolvency procedures.

On the proposition that 'law matters', we find no clear evidence in favour of a positive link between aggregate creditor protection and credit expansion. Using dynamic panel data modelling, however, we find that different components of creditor protection law *do* matter, but, that they have *different* effects on private credit. Increases in the *debtor control* component of creditor protection, which is more strongly present in the *civil-law* countries, have a long-term *positive* effect on private credit. By contrast, increases in the *credit contract* aspect of creditor protection, which is more prevalent in *common-law countries*, have a long-term *negative* effect.

The finding that different aspects of creditor protection laws may have different effects on private credit has implications for bankruptcy law reform. Rules which our index characterizes in terms of debtor control are those which are imposed by law on active firms for the protection of third party creditors. They constrain options on capital structure in various ways, for example by requiring firms to have a minimum of paid up capital and by limiting their options to pay dividends out of retained earnings. Other examples of laws of this kind are those which impose duties on directors to have regard to the interests of creditors as the firm approaches insolvency, and which allow the court to pierce the

veil of corporate personality in order to protect creditors. A common thread running through these laws is that they tilt the balance of power away from shareholders and incumbent managers, and towards creditors, while the firm is a going concern. Thus one reading of our analysis is that the law can increase the *supply* of credit by strengthening the position of creditors in distributional conflicts within the firm.

Laws of the type that the CBR index describes in terms of credit contract rights are those which enable creditors to protect their rights through transactional devices of various kinds which are triggered when the firm is in, or is approaching, insolvency. For example, these rules include the laws governing the use of the firm's assets as collateral, and the ease with which creditors can enforce security interests. They mostly operate when the firm has ceased, or is in danger of ceasing, to be a going concern. The finding that laws of this kind have a dampening or negative effect on private credit suggests that laws strengthening creditors' security rights may depress *demand* for credit, as managers and shareholders find the terms on which security rights are enforced to be excessively onerous.

A relevant factor in our results is the nature of our sample, which consists of industrialized countries with mature banking and corporate systems. It is in this specific context that the addition of new rights to secured creditors may tip the law beyond the point where firms regard the granting of collateral as an acceptable trade-off for access to finance. Other work has shown that extending the rights of secured creditors may lead to an increase in private credit in countries where banking systems are less highly developed and legal support for collateral may therefore be important in stimulating bank-based lending, such as former socialist countries in central and eastern Europe (Haselmann et al., 2010). Our own different findings suggest that this result may be specific to the experience of transition systems.

Our results can be put in the context of the wider debate over the relevance of legal origins to an understanding of different varieties of capitalism. Legal origin theory claims that underlying legal forces help to shape outcomes and determine cross-national variations across market systems (La Porta et al., 2008). The evidence we have presented here suggests that legal origin may help to explain features of some systems which are often taken to typify a given legal family (England and France, in the case of the common law and civil law respectively), but it also shows that other systems among large industrial economies

do not conform to their legal-origin type (Germany and the USA). If legal origin does have some residual effect on the pathway of legal and economic change, the case of insolvency law suggests that it is not a very strong one: US bankruptcy law diverged radically from its English 'parent' in the course of the nineteenth century, while the influence of the courts on the English law of insolvency has recently been in decline, as legislation has re-aligned the relationship between the management of the firm and its creditors in favour of the former.

The VOC approach is based on the notion of complementarities across institutions of different types, including those characteristic of different forms of financing of business firms (Hall and Soskice, 2001), rather than on the type of mono-causal explanation posited by legal origin theory (La Porta et al., 2008). On the basis of the evidence we have presented, insolvency law represents a context in which a multi-causal, non-linear approach to the understanding of comparative capitalisms looks more plausible than the identification of a single overriding cause of national differences.

6. Conclusion

Legal origin studies maintain that a higher level of creditor protection, which is characteristic of common law countries, leads to credit expansion in the form of increased levels of private credit and bank lending (La Porta et al., 2008; Djankov et al., 2007). In this paper we have presented evidence from the CBR's Creditor Protection Index (Armour et al., 2006) which measures legal support for creditor rights between 1970 and 2005, replicating the period analysed in Djankov et al. (2007), but with a more detailed coverage of relevant laws. Taking an in-depth look at four developed countries (France, Germany, the UK and the USA) permits us to put these legal data in context.

We find that common law countries do not provide, in aggregate, a higher level of legal protection for creditors than civil law ones. The picture is different when we consider different components of creditor protection, however. Then we find that laws controlling the activities of active firms in order to minimize the risk of default – debtor control laws – are stronger in the civil law, while laws enabling creditors to use transactional devices to protect their security interests at the point of insolvency or liquidation – credit contract laws – are stronger in the common law.

When we carry out a longitudinal panel data analysis of the relationship between creditor protection and credit expansion in national economies, we find that debtor control laws are associated with a long-run increase in both bank credit and private credit, whereas credit contract laws have an opposite effect. We interpret this result as throwing light on the different corporate governance dynamics involved in the operation of laws protecting creditor rights. Debtor control laws are largely about shifting the balance of power within the firm from shareholders to creditors while the firm is a going concern, and thereby operate to increase the supply of debt finance to firms. By contrast, credit contract laws give external creditors enhanced power over the managers of the firm by enabling them to seize corporate assets in the event of default. Laws of this kind, once they pass a certain threshold, depress the demand for credit, hence the negative correlation we find between reforms strengthening secured creditors' rights and the extent of private credit in advanced industrial economies.

There are limitations inherent in our approach and scope for further analysis. Focusing on a few countries and examining their cases in detail may be at least as revealing, and perhaps more so, than engaging in cross-national studies involving over one hundred countries, but the results obtained here could be tested in future by extending the detailed dataset we have employed, to cover more countries.

We used regression models which did not present an over-complicated picture of the relationship between institutions and economic growth. The merit of this approach is that relationship between the causal and outcome variables is clear from the design of the regression equation, and controls are kept to a minimum. There is scope to include additional institutional variables in this type of analysis in future, although bearing in mind the presence of trade-offs between the quantity of information contained in a regression and the clarity and robustness of the results.

Our results raise theoretical and conceptual issues for future research. We see little evidence in our study to support the mono-causal claim that path-dependent legal origin effects are the root causes of cross-national differences. If there is a legal origin effect which associates the judge-made common law with a particular approach to the constitution and regulation of markets, it is a very weak and attenuated one. It is more plausible to think of complementarities between certain legal institutions and distinct national pathways to industrialization. Although only a few studies have so far explicitly linked the varieties of

capitalism approach to the legal origin hypothesis (Pistor, 2005; Ahlering and Deakin, 2007), this is an issue which should repay further analysis.

Notes

[1] We have used a uniform lag-structure for all the countries, as the STATA model used here does not provide the option of doing otherwise. It is theoretically possible to consider different lag structures for different countries on the basis of some information criteria.

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