

CREDIT CREATION: RECONCILING LEGAL AND REGULATORY INCENTIVES

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I

INTRODUCTION

As international organizations adopt new legal standards to promote access to credit through the modernization of national regimes governing security interests in personal property, the lack of coordination with regulatory standards for banking institutions thwarts the effectiveness of these efforts. Banking regulation, which generally views collateral with favor, displays a strong skepticism towards transactions collateralized with personal property, which constitute the borrowing base of small and medium-sized enterprises (SMEs) in developed and developing economies alike. In recognizing the relevance of the issue during its Fiftieth Commission Session, the United Nations Commission on International Trade Law (UNCITRAL) agreed that its Working Group VI should undertake future work that results in a text to include specific guidance to national regulatory authorities on capital requirements.¹ The aim would be to coordinate the implementation of the UNCITRAL Model Law on Secured Transactions (Model Law)² with the requirements enshrined in the Basel Accords issued by the Basel Committee on Banking Supervision (BCBS).³ If UNCITRAL lives up to its promises, the future text would assist national

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1. See Rep. of the U.N. Comm'n on Int'l Trade Law (UNCITRAL), Fiftieth session (3-21 July 2017), ¶¶ 222-223, U.N. Doc. A/72/17, Supplement No. 17 (2017). One objective would be to indicate how capital regulation could be adjusted within the discretion granted by international capital standards. For further details, see *infra* note 6 and accompanying text.

2. UNCITRAL, MODEL LAW ON SECURED TRANSACTIONS, U.N. Sales No. E.17.V.1 (2016) [hereinafter UNCITRAL MODEL LAW].

3. See *infra* notes 27–28.

regulators in adapting their domestic regulatory environment so that security interests in personal property could serve more effectively as credit protection under the Basel Accords. The initiative is timely and relevant to fostering access to credit. In most jurisdictions—including all Member States of the European Union and the United States—banking activities are regulated through legislation transposing the First Basel Accord (Basel I) and the Second Basel Accord (Basel II),⁴ whereas the Third Basel Accord (Basel III) has been finalized and is entering into the implementation phase.⁵ Hence, the establishment of a regulatory environment that incentivizes banks to extend loans secured with personal property, while in compliance with the Basel Accords, is essential to ensure the effectiveness of secured transactions law reforms.⁶

Although efforts at the national level are commendable, this article shows that coordination between secured transactions law and prudential regulation, particularly capital requirements, should be addressed at the highest level of the lawmaking process—notably, when international soft-laws are defined. On one hand, international legal standards guiding secured transactions law reforms have been developed under the assumption that there is a substantial equivalence among different sources of credit and, therefore, all lenders—be they commercial banks or non-banking institutions—operate under similar sets of incentives and constraints.⁷ On the other hand, international capital requirements have been designed and applied across the world without acknowledging the potential reduction of risk that a modern secured transactions law regime would provide. As demonstrated in this article, both approaches perpetuate a lack of coordination between two fundamental pillars of the legal and economic

4. In the U.S., Basel Accords for saving associations regulated by the Office of Thrift Supervision (OTS) are codified at 12 C.F.R. §§ 567.1–567.12 (2017). For institutions supervised by the Federal Deposit Insurance Corporation (FDIC), Basel II and certain elements of Basel III are consolidated and codified at 12 C.F.R. pt. 324 (2017). In the E.U. they are consolidated in: Directive 2013/36/EU, of the European Parliament and of the Council of 26 June 2013 on Access to the Activity of Credit Institutions and the Prudential Supervision of Credit Institutions and Investment Firms, Amending Directive 2002/87/EC and Repealing Directives 2006/48/EC and 2006/49/EC, 2013 O.J. (L 176) 338 and Council Regulation 575/2013, of the European Parliament and of the Council of 26 June 2013 on Prudential Requirements for Credit Institutions and Investment Firms and Amending Regulation 648/2012, 2013 O.J. (L 176) 1 [hereinafter CRR]. These provisions apply to all banks operating in the European single market.

5. BASEL COMMITTEE ON BANKING SUPERVISION, BASEL III: FINALISING POST-CRISIS REFORMS (2017) [hereinafter BASEL III].

6. Elsewhere, we indicated that, to ensure coordination at the national level between secured transactions law and capital requirements, a regulatory strategy is necessary. See Giuliano G. Castellano & Marek Dubovec, *Bridging the Gap: The Regulatory Dimension of Secured Transactions Law Reforms*, UNIFORM L. REV. (forthcoming 2018) (noting that national regulators should, inter alia, stimulate the development of sound risk management practices, incentivize the creation of transparent and liquid secondary markets, and adopt specific regulatory measures to incentivize secured lending for small businesses).

7. See, e.g., UNCITRAL, LEGISLATIVE GUIDE ON SECURED TRANSACTIONS, ¶ 52, U.N. Sales No. E.09.V.12 (2010) [hereinafter UNCITRAL LGST] (noting that secured transactions laws are “designed to apply equally to a wide range of credit providers: financial institutions and other lenders”). The assumption influenced all UNCITRAL texts, including the Model Law.

framework sustaining credit creation. To advance this argument, the different functions and mechanisms underpinning secured transactions law and capital requirements are isolated, and a holistic understanding of the legal and regulatory rules governing the supply of credit is put forward.

This article is structured as follows. Part II, following this introduction, presents the essential roles of secured transactions laws and capital requirements in supporting the creation of credit through the management of credit risk. The conditions for security interests in personal property to reduce regulatory capital under the Basel Accords are tested against modern secured transactions laws. Particular attention is given to the rules governing priority and enforcement under the Model Law and Article 9 of the Uniform Commercial Code (U.C.C. 9). References to selected European legal systems and to the Canadian Personal Property Security Acts (PPSAs) are offered to enrich the analysis. Part III further expands on the regulatory treatment of collateral and identifies the incentives created by the Basel Accords for banks to deploy different credit protections, focusing on security interests in personal property and credit derivatives. In addition, the analysis under Part III explains how the lack of coordination between secured transactions law and capital requirements stimulates the creation of credit outside the banking system and examines the larger consequences of this phenomenon. Concluding remarks then follow.

II

CURBING CREDIT RISK: DIFFERENT VIEWS OF THE CATHEDRAL

Secured transactions law and prudential regulation are essential pillars of the legal architecture that sustains the creation and distribution of credit. Secured transactions law, by granting preferential treatment to secured creditors vis-à-vis other creditors and competing claimants, such as the insolvency trustee, is a critical element supporting lending activities and promoting access to credit in general.⁸ Prudential regulation, through its micro and macro dimensions, aims at ensuring the solvency of individual banks and the stability of the banking system as a whole, thus sustaining the supply of credit.⁹ More profoundly and drawing from a growing body of influential legal scholarship, these two sets of rules not only sustain credit creation but should be understood as constitutive components of credit markets.¹⁰ An agreement that grants a creditor a preferential right over

8. See, e.g., Grant Gilmore, *The Secured Transactions Article of the Commercial Code*, 16 LAW & CONTEMP. PROBS., Winter 1951, at 27, 29 (highlighting the relevance of secured transactions law for small and medium-sized businesses); Roy Goode, *Security in Cross-Border Transactions*, 33 TEX. INT'L L.J. 47, 47–48 (1998) (noting the increased dependence on security devices in international lending).

9. The relationship between financial stability and economic growth has been convincingly highlighted by ANAT ADMATI & MARTIN HELLWIG, *THE BANKERS' NEW CLOTHES: WHAT'S WRONG WITH BANKING AND WHAT TO DO ABOUT IT* 5 (2013). For further considerations on the connection between financial stability and access to credit policies, see Giuliano Castellano & Marek Dubovec, *Global Regulatory Standards and Secured Transactions Law Reforms: At the Crossroad between Access to Credit and Financial Stability*, 41 FORDHAM INT'L L. J. (forthcoming 2018). For an introduction to capital regulation, see JOHN ARMOUR ET AL., *PRINCIPLES OF FINANCIAL REGULATION* ch.14 (2016).

10. Through different analytical lenses, various scholars have reconsidered the relationship between

a debtor's asset requires a legal regime that recognizes its validity and enforceability between the two parties, as well as against third parties. Rules for creation (or attachment), perfection, priority, and enforcement of security interests in personal property serve this purpose, and if non-existent or outdated, this form of secured credit would not develop or flourish in the economy. In a similar vein, the regulatory framework influences and is influenced by the behaviors of economic agents, indicating that the very existence of financial markets without any sort of legal, accounting, and regulatory structures is hardly imaginable.¹¹ Prudential regulation, through capital requirements that are routinely adjusted to reflect changing market dynamics, lays the foundation for a banking system designed to support the creation of purchasing power and thus, to fund the "real economy," affecting the production and commerce of good and services.¹² Hence, a coordinated interaction—or the lack thereof—between secured transactions law and capital requirements shapes the credit market by affecting and being affected by the behaviors of its core participants, banks and non-bank entities.

At the heart of the intertwined relationship between legal rules and the market's dynamics for credit creation is risk management.¹³ Legal and regulatory norms are constitutive elements of markets, as they allow economic agents to minimize the uncertainties related to their investments.¹⁴ In this respect, both secured transactions law and capital requirements represent mechanisms to mitigate potential losses associated with lending activities; simply put, they are both concerned with curbing credit risk. However, they approach credit risk in substantially different fashions that eventually fail to reconcile.

financial markets and legal rules. *See generally* Iman Anabtawi & Steven L. Schwarcz, *Regulating Ex-Post: How Law Can Address the Inevitability of Financial Failure*, 92 TEX. L. REV. 75 (2013) (providing a system-wide perspective to explain the interaction between financial regulation, markets, and firms); Julia Black, *Reconceiving Financial Markets—From the Economic to the Social*, 13 J. CORP. L. STUD. 401 (2013) (advancing an alternative and enriched conception of financial markets); Katharina Pistor, *A Legal Theory of Finance*, 41 J. COMP. ECON. 315 (2013) (developing a "Legal Theory of Finance," holding that financial markets are legally constructed, occupying a hybrid space between public and private sectors).

11. In this respect, Professor Black notes: "Whilst legal rules may not automatically dictate behaviour in markets (if they did regulators, would be out of work), regulative rules, both non-legal and legal, play a role in providing scripts, processes and routines that influence, and are influenced by, individual behaviour." Black, *supra* note 10, at 416.

12. *See infra* note 32 and accompanying text.

13. *See* Black, *supra* note 10, at 417 (indicating how legal, regulatory and accounting rules shape market practices also by determining how risk is allocated, transferred, and ultimately priced); Pistor, *supra* note 10, at 318 (noting how the emergence of the global market for credit derivatives to manage credit risk reveals the role of the law in shaping markets).

14. New institutional economics noted that markets and legal rules have developed to reduce uncertainty. *See generally* DOUGLASS NORTH, INSTITUTIONS, INSTITUTIONAL CHANGE AND ECONOMIC PERFORMANCE (1990); Oliver Williamson, *The Theory of the Firm as Governance Structure: From Choice to Contract*, 16 J. ECON. PERSP. 171 (1985).

A. The Perspectives of Secured Transactions Laws

The benefits sought by secured transactions laws—and their reforms—stem from the ability of security interests to confer an effective device to manage credit risk.¹⁵ To this end, personal property secured transactions laws typically provide for: (i) the creation of security interests without unnecessary formalities; (ii) the perfection of security interests primarily through a streamlined filing process; (iii) clear priority rules; and (iv) effective enforcement procedures.¹⁶ Each of these elements is critical to equip creditors with a device to manage credit risk and, therefore, facilitate access to credit. Hence, legal rules are intended to design a system where credit risk is not solely expression of the creditworthiness of a borrower, as collateral offers an alternative method of repayment. However, the conditions under which personal property serves effectively as an alternative repayment method depend on national laws.

From a comparative and international perspective, secured transactions law is a heterogeneous and dynamic field of law. Its ancient origins and constant developments have resulted in a variety of nationally defined approaches and legal categories. Initiatives to harmonize this field are a relatively recent phenomenon and stem from the need to rationalize the maze of domestic legal rules in order to facilitate cross-border transactions.¹⁷ In a similar vein, legal reforms at the national level aim at equipping creditors with a more agile and effective set of rules, embodied in a single statute. Not surprisingly, simplification was also a key motivating factor driving the U.C.C. 9 pioneering reform of personal property security law—as noted by Karl Llewellyn, one of its primary proponents and drafters.¹⁸

15. See Giuliano G. Castellano, *Reforming Non-Possessory Secured Transactions Laws: A New Strategy?*, 78 MOD. L. REV. 611 (2015) (noting that new strategies for legal reforms can be identified when the management of credit risk is understood as the core economic function performed by secured transactions).

16. For a comprehensive analysis of how U.S. secured transactions law addresses attachment, perfection, priority, and enforcement of security interests, see generally STEVEN L. HARRIS & CHARLES W. MOONEY, JR., *SECURITY INTERESTS IN PERSONAL PROPERTY: CASES, PROBLEMS AND MATERIALS* (6th ed. 2016); in Canada, see RONALD C.C. CUMING, CATHERINE WALSH & RODERICK J. WOOD, *PERSONAL PROPERTY SECURITY LAW* (2005); under English law, see SIR ROY GOODE, GOODE AND GULLIFER ON LEGAL PROBLEMS OF CREDIT AND SECURITY (Louise Gullifer ed., 6th ed. 2017). Secured transactions laws might not necessarily address cohesively these four fundamental tenets, and different regimes for attachment, perfection, priority and enforcement might apply to different security devices. This is typically the case for legal systems adhering to a formalist understanding of security interests. See *infra* notes 21–22. Special rules might also apply to specific classes of financing transactions; typically this is the case for security rights in intellectual property. See, e.g., Andrea Tosato, *Secured Transactions and IP Licenses: Comparative Observations and Reform Suggestions*, 81 LAW & CONTEMP. PROBS., no. 1, 2018, at 155.

17. UNCITRAL adopted the Model Law in 2016. However, the process of harmonization and modernization started much earlier with noteworthy regional initiatives. See, e.g., Frédérique Dahan, *Law Reform in Central and Eastern Europe: The ‘Transplantation’ of Secured Transactions Laws*, 2 EUR. J.L. REFORM 369 (2000).

18. K. N. Llewellyn, *Problems of Codifying Security Law*, 13 LAW & CONTEMP. PROBS., Autumn 1948, at 687, 690.

The novelty of this reform was to embrace a unitary and functional approach, whereby different consensual arrangements that serve the common purpose of enhancing the satisfaction of obligations from the disposal of personal property were subjected to common sets of attachment, perfection, priority, and enforcement rules. U.C.C. 9 has played a pivotal role in influencing both national law reforms and international legal standards. Notably, UNCITRAL as well as the Canadian PPSAs,¹⁹ but also Australia and New Zealand, followed this approach and re-fashioned different forms of security instruments under a single category, known as “security rights” according to the terminology of the Model Law or “security interests” under the PPSAs.²⁰

The functional approach is opposed to the formalistic understanding of security interests and could be encountered in both civil law countries, such as France, Italy, and Germany, and common law jurisdictions, such as England and Wales.²¹ Pursuant to the formalistic approach, the characterization and legal treatment of a security interest depends on its legal nature, rather than on its economic effects. As a result, a variety of consensual security devices coexist and, depending on their legal nature, different rules concerning attachment, perfection, priority, and enforcement apply. Moreover, security interests that facilitate the extension of credit to finance the acquisition of specific assets (purchase money financing) typically escape the purview of secured transactions law, strictly considered, and are regulated by general property and contract law. An example of this is found in the German fiduciary transfer of ownership or retention of title arrangements commonly deployed in the legal systems of continental Europe.²²

Regardless of the different instruments and national approaches, modern secured transactions laws have been implemented and reformed under the assumption that a security interest over any collateral offers an alternative method of repayment and, thus, reduces credit risk. Secured transactions laws contain mandatory rules but leave most aspects of the bargain to the parties.

Asset-based lending practices, such as the methods for valuing the collateral or the level of acquired or transferred risk, fall outside the scope of legal regimes concerned with the establishment of security interests in personal property. Rather, secured transactions laws equip creditors and debtors with the tools to

19. In this article, the PPSA of Saskatchewan, *infra* note 20, is used as a reference. For an account of the fundamental features of different PPSAs, see Hugh Beale, *An Outline of a Typical PPSA Scheme*, in SECURED TRANSACTIONS LAW REFORM: PRINCIPLES, POLICIES AND PRACTICE 7 (Louise Gullifer & Orkun Akseli eds., 2016). On the reception of U.C.C. 9 in Canada, see Catherine Walsh, *Transplanting Article 9: The Canadian PPSA Experience*, in SECURED TRANSACTIONS LAW REFORM: PRINCIPLES, POLICIES, AND PRACTICE 49 (Louise Gullifer & Orkun Akseli eds., 2016).

20. Canadian PPSAs have expanded this approach to include long-term true leases, which is not the case for U.C.C. 9 or the UNCITRAL Model Law. See Saskatchewan Personal Property Security Act, 1993, P-6.2 R.S.S. (1995) (Can.) [hereinafter Saskatchewan PPSA].

21. For a critical assessment of the differences between these two approaches, see Michael G. Bridge et al., *Formalism, Functionalism, and Understanding the Law of Secured Transactions*, 44 MCGILL L.J. 567, 648, 661–64 (1999).

22. See Castellano, *supra* note 15, at 615.

conduct their assessments of risk exposures while exercising their contractual freedom. Secured transactions law also performs a regulatory function, broadly intended, as it defines the limits to party autonomy with the intent of protecting the debtor and third parties affected by the security interest. These limitations may be general or specific. Generally, the concept of “commercial reasonableness” dictates in which manner the parties must discharge their obligations and exercise their rights, such as when choosing the appropriate method and manner for disposal of the collateral.²³ As an example of a specific limitation, debtors and secured creditors cannot choose which law will govern the perfection and priority of the security interest.²⁴ In any respect, the level of risk that creditors assume reflects their idiosyncratic choices. Whether and, if so, to what extent, secured transactions should also be regulated to protect financial stability is cogently examined by another article in this symposium.²⁵

B. The Perspective from Basel

Effective management of credit risk is also the central theme of capital requirements that impose on banks a cushion, known as regulatory capital, for the absorption of a reasonable amount of unexpected losses. Regulatory capital is calculated through a capital adequacy ratio between a bank’s risk-weighted investments—or risk-weighted assets, in reference to the accounting distinction between assets and liabilities—and its own funds, primarily composed of shareholders’ equity and long-term subordinated debt.²⁶ The First Basel Accord (Basel I) set the minimum ratio of capital to risk-weighted assets (RWA) at 8%. In practical terms, for every loan, a bank must calculate a capital charge, a fraction of the regulatory capital, by multiplying the amount of the loan by the prescribed capital ratio and the corresponding RWA. Hence, the higher the RWA coefficient, the more capital is required. With the introduction of Basel II,²⁷ banks have been allowed to either rely on statutorily prescribed RWA coefficients, under the standardized approach, or adopt an internal-rating based (IRB) approach to calculate RWAs by adopting their own estimations. In the aftermath of the 2007–2009 financial crisis, the BCBS adopted several amendments to Basel II, with the adoption in 2011 of the first elements of Basel III.²⁸ The new Accord maintained the approach of Basel II, and although the capital ratio remained at 8%, the amount of shareholders’ equity was increased

23. CUMING, WALSH & WOOD, *supra* note 16, at 29; HARRIS & MOONEY, *supra* note 16, at 638.

24. See UNCITRAL MODEL LAW, art. 3(1).

25. Steven L. Schwarcz, *Secured Transactions and Financial Stability: Regulatory Challenges*, 81 LAW & CONTEMP. PROBS., no. 1, 2018, at 45.

26. See, e.g., ADMATI & HELLWIG, *supra* note 9, at 6; ARMOUR ET AL., *supra* note 9, at 290.

27. BASEL COMMITTEE ON BANKING SUPERVISION, *BASEL II: INTERNATIONAL CONVERGENCE OF CAPITAL MEASUREMENT AND CAPITAL STANDARDS: A REVISED FRAMEWORK* (rev. 2006) [hereinafter *BASEL II*]. For a critical examination of Basel II and its development, see DANIEL K. TARULLO, *BANKING ON BASEL: THE FUTURE OF INTERNATIONAL FINANCIAL REGULATION* (2008).

28. BASEL COMMITTEE ON BANKING SUPERVISION, *BASEL III: A GLOBAL REGULATORY FRAMEWORK FOR MORE RESILIENT BANKS AND BANKING SYSTEMS* (rev. 2011) [hereinafter *BASEL III* (2011)].

and further buffers and surcharges were added.²⁹ Given the criticisms concerning the ability of banks to game capital requirements, further changes, particularly to limit the use of IRB models, were discussed in different consultative documents issued by BCBS.³⁰ Ultimately, the consultation process led to the finalization of Basel III, which will progressively enter into force from 2022, with full implementation in 2027.³¹

The justification for capital regulation is inherent in the role played by banks, particularly commercial banks, in creating credit. Contrary to common explanations that banks perform an intermediary function by lending out deposited savings, central bankers and leading economists point out that the core economic function of banks is the creation of monetary purchasing power through loans.³² In fact, from an aggregate perspective, each time a loan is extended, a corresponding deposit is created; therefore, loans generate deposits that, in turn, are the primary form of purchasing power for any given economy.³³ At the individual level, however, banks acquire funds, such as deposits, in order to expand lending and increase profits. Hence, in performing their function of creating credit and purchasing power, banks manage a process of liquidity and maturity transformation whereby loans (assets) are illiquid, long-term investments, and deposits (liabilities) can be withdrawn mostly at-will. Regulation is thus concerned with the detrimental consequences on depositors and on the economy at large, resulting from a non-prudent management of a

29. On the main changes introduced by the first version of Basel III in 2011, see Kern Alexander, *The Role of Capital in Supporting Banking Stability*, in *THE OXFORD HANDBOOK OF FINANCIAL REGULATION* 335 (Niamh Moloney, Eilís Ferran & Jennifer Payne eds., 2015). Even if in practice the level of capital may be higher, numerical examples in this article refer to 8% for simplicity.

30. These documents were informally called “Basel IV,” although they were intended to complete Basel III, rather than present a novel accord. Of particular relevance is the proposal to amend the standardized approach. See *BASEL COMMITTEE ON BANKING SUPERVISION, SECOND CONSULTATIVE DOCUMENT: REVISIONS TO THE STANDARDISED APPROACH FOR CREDIT RISK* (2015) (issued for consultation on March 11, 2016) [hereinafter *SECOND CONSULTATIVE DOCUMENT*].

31. *BASEL III*, *supra* note 5. Although further changes might be implemented, the adoption of Basel III marks the beginning of the implementation phase for a new set of requirements to calculate credit risk, market risk, and operational risk. In particular, new standardized and IRBs approaches are set to enter into force on January 1, 2017. See Press Release, *Basel Committee on Banking Supervision, Governors and Heads of Supervision Finalise Basel III Reforms* (Dec. 7, 2017), <https://www.bis.org/press/p171207.htm> [<https://perma.cc/G2K4-LRF9>].

32. See, e.g., ADAIR TURNER, *BETWEEN DEBT AND THE DEVIL: MONEY, CREDIT, AND FIXING GLOBAL FINANCE* 137–38 (2017) (noting that early twentieth-century economists, such as Friedrich Hayek and Joseph Schumpeter, identified the creation of deposits through loans as a key feature of the banking system); Zoltan Jakab & Michael Kumhof, *Banks Are Not Intermediaries of Loanable Funds—And Why This Matters* (Bank of Eng., Working Paper No. 529, 2015).

33. Legal contributors have embraced this notion. See MORGAN RICKS, *THE MONEY PROBLEM: RETHINKING FINANCIAL REGULATION* (2016) (characterizing the relationship between banking, financial instability, and private money creation as the “money problem”); Robert Hockett & Saule Omarova, *The Finance Franchise*, 102 *CORNELL L. REV.* 1143, 1147 (2017) (describing the banking system as a public-private partnership in which public actors accommodate and monetize private liabilities); see also CHRISTINE DESAN, *MAKING MONEY: COIN, CURRENCY AND THE COMING OF CAPITALISM* 398 (2014) (noting that historically, commercial banks developed to dominate the creation of money through deposits).

business that by nature is highly leveraged. Hence, capital requirements modulate the aggregate quantity of credit available in the economy by controlling the leverage of individual banks.³⁴

Regulatory standards do not prevent banks from extending new loans; if a bank extends a new loan, it must either increase the amount of its own funds or reduce its exposure to credit risk. However, banks consider their own funds, particularly equity, to be more expensive than borrowed funds, such as deposits.³⁵ From the standpoint of individual banks, thus, capital regulation represents an additional cost or a tax.³⁶ In this respect, the Basel Accords incentivize banks to diminish their exposure to credit risk to maximize their return on equity, a result that is arithmetically achieved through lower risk-weightings.

Adding to the current literature on capital regulation, this analysis indicates that capital requirements control the quantity of credit circulating in the economy by binding its creation to an amount of equity that is proportionate to the level of risk acquired by each bank. Through this prism, risk-weighting mechanisms are the pivot steering the choices of individual banks, as they determine the costs of funding for the extension of credit. As shown in Part III, however, the effects of capital regulation transcend the regulated banking sector and affect the overall supply of credit. Therefore, whether risk-weightings accurately capture the level of risk of a given operation and how secured transactions law reforms interact with this mechanism are critical policy matters that cannot be approached discretely.

C. The Long Road from Basel to Vienna

The ultimate test of convergence between the different approaches to credit risk is to examine the conditions under which security interests in personal property reduce risk-weightings and, consequently, capital charges. Broadly, different credit risk mitigation (CRM) techniques, such as security interests or

34. See James Tobin, *Commercial Banks as Creators of "Money" 2* (Cowles Found. for Research in Econ., Discussion Paper No. 159, 1963) (also indicating reserves as one of the limits to excessive credit creation); see also Hockett & Omarova, *supra* note 33, at 1161 (noting that capital regulation is not a real limit to credit creation, because even if banks violate capital requirements, the credit already extended cannot be cancelled retroactively).

35. See ADMATI & HELLWIG, *supra* note 9, at 110–11; ARMOUR ET AL., *supra* note 9, at 310–11 (both noting that favorable tax treatment for debt instruments and guarantees protecting deposits render debt less expensive than equity, as the assumptions of the Modigliani-Miller theorem on corporate finance are not satisfied).

36. See David Jones, *Emerging Problems with the Basel Capital Accord: Regulatory Capital Arbitrage and Related Issues*, 24 J. BANKING & FIN. 35, 40 (2000) (noting that to reduce the cost of capital regulation banks engage in regulatory capital arbitrage; that is, the exploitation of the "differences between a portfolio's true economic risks and the notions and measurements of risk implicit in regulatory capital standards"); see also Viral Acharya et al., *Capital, Contingent Capital, and Liquidity Requirements*, in REGULATING WALL STREET: THE DODD-FRANK ACT AND THE NEW ARCHITECTURE OF GLOBAL FINANCE 143 (Viral Acharya et al. eds., 2011) (noting the role of capital regulatory arbitrage in the 2007–2009 financial crisis); Erik F. Gerding, *The Dialectics of Bank Capital: Regulation and Regulatory Capital Arbitrage*, 55 WASHBURN L.J. 357, 365 (2016) (indicating that "capital regulations and regulatory capital arbitrage co-evolved in a dialectical manner").

credit derivatives, are recognized in the Basel Accords to reduce the risk exposure of an operation.³⁷ When CRM techniques are employed, the resulting risk-weighted capital charge should not be higher than that imposed on an otherwise identical transaction that is not covered by a CRM.³⁸ However, if deemed inadequate in providing credit protection, any CRM would result in capital charges that correspond to those applied to unsecured credit.³⁹

In line with the general logic of capital regulation, credit protections are used to reduce RWA coefficients to lower the cost of creating new credit. Yet, given that any reduction in own funds is, by definition, a decrease of the cushion insulating depositors from unexpected losses, specific regulatory conditions must be met. In particular, a transaction collateralized with personal property is eligible to lower capital charges only if a bank, authorized to adopt an IRB model, has the highest priority and if the legal framework allows swift realization of the value of the collateral on default.⁴⁰ As much as these prescriptions appear to be straightforward, their application collides with the practical functioning of secured transactions laws. The result is that the Basel Accords are not sensitive to the variations in risk that different legal regimes or rules may induce. To illustrate this point, a few examples affecting priority and enforcement of security interests in different legal systems are provided, indicating the direction that any efforts to reconcile capital requirements and secured transactions law should take.

Under the Model Law, U.C.C. 9, and Saskatchewan PPSA, priority rules are clear and predictable.⁴¹ Creditors may acquire first priority, for instance, by filing a financing statement before a competing interest in the same collateral has been perfected. However, attaining the same result is not as plain in other legal systems. For instance, under English law, the particulars of a charge must be registered with the Companies House within twenty-one days of the creation of the charge.⁴² Given that the priority of a charge is determined by the date of creation, the collateral could be encumbered by a yet-to-be-registered competing charge that is difficult to discover. However, while this priority rule presents a risk not associated with the priority rule of U.C.C. 9 and the PPSAs—with the exception of the purchase money security interest in equipment that may be

37. BASEL II, *supra* note 27, ¶ 109; BASEL III, *supra* note 5, ¶ 117.

38. BASEL II, *supra* note 27, ¶ 113; *see also* SECOND CONSULTATIVE DOCUMENT, *supra* note 30, ¶ 104; BASEL III, *supra* note 5, ¶ 119.

39. There are some exceptions to this rule. For past-due loans, non-eligible CRMs may also result in lower capital charges. *See* BASEL II, *supra* note 27, ¶ 77. However, Basel III adopts a more conservative approach, and only eligible collateral and guarantees considered eligible for CRM purposes can be deployed to reduce capital charges. *See* BASEL III, *supra* note 5, ¶ 94. In any respect, the application of these exceptions does not affect the regulatory treatment of security interests here examined.

40. *See* BASEL II, *supra* note 27, ¶¶ 512–15, 522; BASEL III, *supra* note 5, ¶¶ 286–89, 296.

41. *See* UNCITRAL MODEL LAW, ch. V; U.C.C. Art. 9, pt. 3, subpt. 3 (2010); Saskatchewan PPSA, pt. III.

42. Companies Act, 2006, ch. 46, pt. 24 § 886, (U.K.). Pursuant to § 874, failure to register within twenty-one days renders the charge void against administrators, liquidators, and creditors of the company.

perfected twenty days after delivery under U.C.C. 9-322(a)—a prudent lender may attain the highest priority by not disbursing the credit until it is certain that potentially registrable charges have not been registered within the twenty-one-day window, thus perfecting a security interest that satisfies the Basel Accords requirement of highest priority. Accordingly, an old-fashioned priority regime may satisfy prudential expectations, but at a higher cost and delay in disbursing credit.

Furthermore, other challenges arise when a security interest may be perfected without any form of public notice, as it often occurs in jurisdictions adhering to formalism.⁴³ In this respect, jurisdictions adopting the functional approach to security interests make it easier and less costly for banks to satisfy the first priority requirement prescribed by the Basel Accords.

Nonetheless, the Basel Accords neither impose nor encourage the adoption of a unitary, functionally defined approach to secured transactions. For instance, Italian lawmakers introduced special provisions for bank loans secured with assets of companies.⁴⁴ This security device added further complexity to a non-unitary regime already plagued by intricacies by prescribing antiquated requirements, such as the priority being established through a non-centralized and paper-based filing system.⁴⁵ Although formally compliant with the Basel Accords, the effectiveness of this security device in curbing credit risk is therefore disputable.

Ensuring that a security interest enjoys the highest priority against competing (consensual) claims is, in practice, of limited relevance when non-consensual claims are taken into account. The Basel Accords consider non-consensual claims as the sole exception to the first priority rule for security interests in tangible assets.⁴⁶ Interestingly, such an exception is not contemplated in rules concerning financial receivables, thus leading to question whether security interests in financial receivables qualify as eligible credit protections only if the highest priority, even against non-consensual claims, is attained.

The scant attention given to non-consensual claims is epitomic of a regulatory approach that does not gauge the variety of risks associated with different secured transactions regimes. Non-consensual claims may render the priority ladder difficult to determine or even eviscerate the protection provided by security interests, given that secured creditors may be left with little or no value

43. Typically, security interests created by retention of title or fiduciary transfer of ownership do not condition perfection on registration. See Castellano, *supra* note 15, at 616.

44. This specific security interest is regulated by article 46 of the Italian Consolidated Law on Banking (*Testo Unico Bancario*). Decreto Legislativo, 1 settembre 1993, n.385 (It.), as most recently amended by Decreto Legislativo, 1 aprile 2016, n.72 (It.).

45. See Giuliano G. Castellano, *Reverse Engineering the Law: Reforming Secured Transactions Law in Italy*, in INTERNATIONAL AND COMPARATIVE SECURED TRANSACTIONS LAW 313 (Spiros Bazinas & Orkun Akseli eds., 2017) (presenting a possible strategy to implement the UNCITRAL Model Law in the Italian context).

46. BASEL II, *supra* note 27, ¶ 522 (referring to n. 94); BASEL III, *supra* note 5, ¶ 296 (referring to n. 31).

to recover from the collateral. To address this issue, several secured transactions laws have extended their reach to regulate the perfection and priority of specific non-consensual claims, such as judgement and tax liens. For instance, the California Secretary of State Office accepts registration of notices of judgment liens, for which the priority against competing security interests is determined by the time of filing or perfection.⁴⁷ However, in most secured transactions regimes—including U.C.C. 9 and Canadian PPSAs—there is no provision concerning the priority of employee claims. As a result, the spectrum of possibilities is large and difficult to assess a priori.⁴⁸ Under the Model Law, enacting states are invited to specify in their secured transactions laws any preferential claims affecting the priority of security interests.⁴⁹ Yet, from the point of view of capital requirements, it is irrelevant whether this solution is adopted or, instead, an intricate nexus of non-consensual claims continues to exist outside the secured transactions law, weakening the protection granted by a first-priority security interest, as the same risk-weighting would apply under either legal regime. This also means that a mere listing of preferential claims in the secured transactions law, as suggested by the Model Law, does little to approximate national secured transactions law to the Basel Accords because it does not ensure the effectiveness of security interests as credit protections.

Further considerations should be advanced with respect to enforcement rules. A security interest in personal property results in reduced capital charges only if banks can realize the value of the collateral in a timely fashion.⁵⁰ Here also, secured transactions law may approach the pre-requisites for the deployment of post-default remedies differently, expediting or delaying enforcement. For instance, pursuant to Article 78(4) of the Model Law, if the secured creditor intends to dispose of the collateral, notification must be given to the grantor and other competing claimants.⁵¹ It is left to enacting states to determine the period of time that creditors must wait before selling the collateral. Hence, depending on the choice made by national lawmakers, an excessively lengthy period may hinder the level of protection granted by security interests. Legal regimes have opted for various approaches; for instance, the Saskatchewan PPSA establishes

47. See CAL. CODE CIV. P. § 697.590(b).

48. On the treatment of employee claims in Canada, see ANTHONY J. DUGGAN & JACOB S. ZIEGEL, *SECURED TRANSACTIONS IN PERSONAL PROPERTY: CASES, TEXT, AND MATERIALS* 418 (6th ed. 2013) (noting that provincial and federal legislation provides employees with a lien on the asset of the employer). For selected European jurisdictions, see Federico M. Mucciarelli, *Employee Insolvency Priorities and Employment Protection in France, Germany, and the United Kingdom*, 44 J.L. & SOC'Y 255 (2017). In general, see José M. Garrido, *No Two Snowflakes are the Same: The Distributional Question in International Bankruptcies*, 46 TEX. INT'L L.J. 459 (2011).

49. UNCITRAL MODEL LAW, art. 34.

50. For financial receivables and physical collateral, see, respectively, BASEL II, *supra* note 27, ¶¶ 515, 522 (referring to ¶¶ 509–10). These principles have been maintained with the recent reforms. See BASEL III, *supra* note 5, ¶¶ 289, 296.

51. Notice is not required when the collateral is perishable, “may decline in value speedily or is of a kind sold on a recognized market.” UNCITRAL MODEL LAW, art. 78(8).

a period of at least twenty days,⁵² whereas U.C.C. 9 provides that notification must be sent within a reasonable time.⁵³ Arguably, some legal regimes following the formalistic approach provide creditors with more effective enforcement procedures than those commonly offered under legal regimes embracing the functional approach. As an example, retention of title arrangements generally allows creditors to terminate the contract, dispose of the collateral, and keep any surplus.⁵⁴ It is worth noting that these contractual arrangements—supporting acquisition financing in most non-functional legal regimes—may require banks to follow accounting and regulatory standards established for lease agreements. To calculate capital charges, leases are treated as exposures collateralized by the underlying asset, but higher capital charges apply if banks are exposed to the risk of excessive depreciation of the leased asset.⁵⁵ Hence, it is more convenient for banks to support acquisition financing through external leasing companies, which are not subject to capital requirements and would benefit from the protection offered by ownership rather than classical security interests.⁵⁶

From the foregoing discussion, two observations may be drawn. First, the risk-sensitivity of the Basel Accords does not factor in the diversity of legal regimes and rules pertaining to secured transactions. This means that the actual protections granted by secured transactions law are not recognized by capital requirements and, absent any form of coordination, the actual level of risk associated with transactions collateralized with personal property is not accurately reflected in regulatory capital. As a result, national lawmakers are not encouraged to embark on more comprehensive reforms to facilitate access to credit, as long as they can offer a device that formally satisfies the general conditions stated in the Basel Accords. Second, the treatment of non-consensual claims and different approaches to enforcement procedures reveal that secured transactions laws are largely oblivious to the impact of security interests on the amount of a bank's own funds required to extend credit and shield depositors.

To address these critical issues, amendments to international legal and regulatory standards are required. In regard to capital regulation, it is not necessary for the Basel Accords to indicate a preference for functionalism or formalism. It is necessary, instead, to define—in coordination with UNCITRAL or other international organizations apt for the task—what standards for attachment, perfection, priority, and enforcement of security interests would better accommodate the needs of banks. Lower risk-weightings to security interests created under those rules may be then attributed. As further explored in the next part of this article, however, coordination requires the Basel Accords

52. Saskatchewan PPSA, *supra* note 20, at § 59(6).

53. U.C.C. § 9-612(a) (AM LAW. INST. & UNIF. LAW COMM'N 2010).

54. ULRICH DROBNIG & OLE BÖGER, PROPRIETARY SECURITY IN MOVABLE ASSETS 763 (2015).

55. This form of risk is known as “residual value risk,” which is “the bank's exposure to potential loss due to the fair value of the equipment declining below its residual estimate at lease inception.” Basel II, *supra* note 27, ¶ 524; *see also* BASEL III, *supra* note 5, ¶ 299.

56. *See infra* note 98 and accompanying text.

to correct or at least attenuate their skepticism towards personal property collateral and secured transactions laws to relinquish the fallacious assumption that banks conduct their business under the same constraints and incentives as other lenders.

III

THE STRUCTURE OF INCENTIVES IN THE CREDIT MARKET

Secured transactions law and capital requirements affect the supply side of the credit market by modifying lending behaviors. The former, through the protections granted to secured creditors, incentivizes lenders to extend credit in support of the real economy. The latter, by increasing the amount of own funds to hold against risky operations, controls the creation of credit and discourages banks from taking excessive risks. As noted earlier, at the heart of this mechanism lay the risk-weighted coefficients to calculate capital charges.

Against this backdrop, the regulatory coefficients attributed to different classes of exposures and risk-mitigation techniques should reflect the actual levels of risk taken by banks. As obvious as this observation might sound, it has proven to be contentious. For instance, under the Basel Accords, national policymakers have the discretion to attribute a zero percent risk-weighting to exposures to their own central governments or to the governments of other countries.⁵⁷ In the United States, exposures to countries belonging to the Organization for Economic Cooperation and Development (OECD) are considered risk-free,⁵⁸ whereas, in the European Union, a zero-risk coefficient is attributed for exposures to Member States.⁵⁹ Theoretically, sovereign exposures are deemed risk-free because, in case of default, the competent central bank is supposed to step in, servicing the debt in full. Following this reasoning, the riskiness of a given sovereign exposure is directly linked to the ability of the relevant central bank to live up to that commitment. However, under E.U. law, the European Central Bank cannot finance the debts of Member States,⁶⁰ nor is

57. As a general rule, Basel II relates the risk-weightings for claims on sovereign entities to official ratings. BASEL II, *supra* note 27, ¶ 53. However, at national discretion, lower risk-weightings may be attributed to exposures towards a sovereign's own entities or central banks, thus allowing for a statutory zero percent risk-weighting. BASEL II, *supra* note 27, ¶ 54. The new Basel framework left the treatment of sovereign exposures unchanged. *See* BASEL III, *supra* note 5, ¶¶ 7–10. However, further consultations and possibly amendments are expected in this regard.

58. A zero-risk coefficient is attributed to “[s]ecurities issued by and other direct claims on the U.S. Government or its agencies (to the extent such securities or claims are unconditionally backed by the full faith and credit of the United States Government) or the central government of an OECD country.” 12 C.F.R. § 567.6(a)(1)(i)(B) (2017). “Claims on, and claims guaranteed by, a qualifying securities firm that are collateralized by cash on deposit in the savings association or by securities issued or guaranteed by the United States Government or its agencies, or the central government of an OECD country.” § 567.6(a)(1)(i)(H).

59. CRR, *supra* note 4, at art. 114(4).

60. This principle is stated by the Consolidated Version of the Treaty on the Functioning of the European Union art. 123(1), Oct. 26, 2012, 2012 O.J. (C 326) 47 [hereinafter TFEU] (prohibiting the European Central Bank from printing money in order to finance the public debt of Member States).

the Union liable for Member States' commitments.⁶¹ Given that more than half of the OECD countries are E.U. Member States, membership of either organization does not represent a reliable proxy for determining the actual riskiness of their commitments.

A second issue concerns the incentives that capital requirements create, particularly vis-à-vis the deployment of different risk mitigation techniques. In setting the conditions and the coefficients for different operations and credit protections, regulation steers banks towards investments and techniques to mitigate credit risk that require less capital. In this context, it is necessary to understand to what extent security interests in personal property are more expensive than other credit protections and whether the skeptical attitude of the Basel Accords towards personal property collateral is justified.

A. The Incentives of Credit Protections

As a direct manifestation of the regulatory rationale underpinning capital requirements, the Basel framework has a strong preference for highly liquid assets. This preference transpires first and foremost from the standardized approach, according to which the list of eligible collateral prescribed by regulators is limited to financial collateral, such as cash deposits, gold, corporate (and sovereign) debt securities with prescribed credit ratings, and exchange-traded equities.⁶² If one of these assets secures a loan, the corresponding capital charge is significantly reduced. In such circumstances, the risk-weight of the counterparty is replaced by the risk-weight of the collateral subject to a floor of 20%, whereas a zero percent risk-weight could be applied in specific cases.⁶³ A few examples should clarify this point. For an unsecured loan of \$1,000 extended to a corporation that does not have an official credit rating, a risk-weight of 100% applies,⁶⁴ thus resulting, in this example, in a capital charge of \$80.⁶⁵ If the loan was fully secured by an eligible collateral instead—say, by a bond with an investment-grade rating⁶⁶—the bank would reduce the required capital to \$16,

61. TFEU, art. 125(1), often described as a *no bail-out clause*, given that it bars any EU institution from “assum[ing] the commitments of central governments, regional, local or other public authorities, other bodies governed by public law, or public undertakings of any Member State.” See generally Andreja Lenar i, Dirk Mevis & Dóra Siklós, *Tackling Sovereign Risk in European Bank* (European Stability Mechanism, Discussion Paper No. 1, 2016) (advocating for a change in the risk-weightings of sovereign exposures in the EU).

62. BASEL II, *supra* note 27, ¶ 145. The same skepticism towards personal property as collateral is maintained in the new rules. BASEL III, *supra* note 5, ¶ 148.

63. BASEL II, *supra* note 27, ¶¶ 183–85 enumerates the exceptions whereby the resulting capital charge would be equal to zero; among these are securities issued by sovereign entities that are considered risk-free. The same provision is contained in Basel III. BASEL III, *supra* note 5, ¶ 150(a); see also *supra* note 57 and accompanying text.

64. BASEL II, *supra* note 27, ¶ 66; BASEL III, *supra* note 5, ¶ 39.

65. This is the result of the following calculation: \$1000 (the loaned amount) x 100% (the RWA coefficient attributed to unsecured and unrated loans) x 8% (the regulatory capital ratio).

66. BASEL II, *supra* note 27, ¶ 145(c); BASEL III, *supra* note 5, ¶ 148 (both setting the minimum ratings for bonds used as collateral).

which is 20% of \$80.⁶⁷ Supposing the loan was to be fully secured by even more liquid assets, such as a cash deposit or by securities issued by qualified sovereign entities,⁶⁸ the resulting capital charge would be zero.⁶⁹

The emphasis on liquidity also emerges from other common forms of credit protections. Unsecured undertakings offered by a third party to cover credit risk are eligible to reduce capital charges.⁷⁰ Through these mechanisms, the risk profile of a borrower is substituted with the risk profile of the entity providing the credit protection. Of particular relevance in this category are credit derivatives and, specifically, credit default swaps (CDS). Under a typical CDS contract, one party (the protection buyer) agrees to pay a fee to another party (the protection seller) in exchange for protection against a credit event, like default or insolvency, concerning an underlying entity (the reference entity). Upon the occurrence of the credit event, the protection buyer may deliver the protected asset, for example, a bond, to the protection seller who, in return, must pay an amount equal to its face value. Alternatively, CDS contracts may establish that the protection seller pays the protection buyer an amount equal to the difference between the face value and the post-default value of the underlying debt.⁷¹ Capital charges are reduced if the protection provider enjoys a lower risk rating than the reference entity.⁷²

Although the impact of CDS contracts on the stability of the financial system is and has been the subject of scrupulous investigations and debates,⁷³ their impact on credit creation deserves further attention. The massive trading of these instruments, at the heart of AIG's near-collapse and JP Morgan's massive losses,⁷⁴ has been fueled by the significant capital relief that these instruments

67. See *supra* note 65 (substituting 100% RWA with a 20% RWA).

68. See *supra* note 63.

69. This calculation assumes that the collateral is represented by cash on deposit and that there is no currency mismatch, pursuant to BASEL II, *supra* note 27, ¶ 185 and BASEL III, *supra* note 5, ¶ 154.

70. BASEL II, *supra* note 27, ¶ 189; BASEL III, *supra* note 5, ¶¶ 191–93.

71. CDS performs the same economic function as an insurance policy underwritten by the protection seller on the face value of a credit extended by the protection buyer to the reference entity. It differs from an insurance contract primarily because protection buyers are not required to suffer any actual loss to activate the protection; hence, there is no “insurable interest.” See Alberto Monti, *Cutting Across Linguistic and Regulatory Divides: On Covered Credit Default Swaps and Insurance*, 17 UNIFORM L. REV. 425 (2012); Daniel Schwarcz & Steven L. Schwarcz, *Regulating Systemic Risk in Insurance*, 81 U. CHI. L. REV. 1569 (2014).

72. BASEL II, *supra* note 27, ¶¶ 190–94; BASEL III, *supra* note 5, ¶¶ 194–96 (both indicating specific requisites concerning the obligations and the entities eligible to provide valid credit protections for regulatory purposes).

73. See Schwarcz & Schwarcz, *supra* note 71, at 1585–93 (highlighting the broader impact of CDS on the financial system); see also HAL SCOTT, *CONNECTEDNESS AND CONTAGION: PROTECTING THE FINANCIAL SYSTEM FROM PANICS* 30 *passim* (2016) (isolating the role of CDS in relation to the Lehman and AIG cases); FIN. CRISIS INQUIRY COMM'N, *THE FINANCIAL CRISIS INQUIRY REPORT* 50 (2011) (noting, *inter alia*, the risk of CDS contracts and the role they played in the financial crisis). For a summary and analysis of the recent literature in the field, see Patrick Augustin et al., *Credit Default Swaps: Past, Present, and Future*, 8 ANN. REV. FIN. ECON. 175–96 (2016).

74. Regarding JP Morgan, credited for having created these contracts in the 1990s, see a recent report covering the operations of its London branch, REPORT OF JPMORGAN CHASE & CO.

offer to banks, or the protection buyers. In fact, CDS contracts are used to shift assets from high risk-weight categories to low risk-weight categories, regardless of the actual risk borne by banks.⁷⁵ For instance, in its 2007 annual report to the U.S. Securities and Exchange Commission, AIG disclosed that the large majority of CDS contracts was sold to banks for the purpose of reducing regulatory capital, rather than effectively reducing risk.⁷⁶ In an attempt to incorporate some of the lessons from the recent financial crisis, the first amendments introduced with Basel III comprised a new capital charge known as credit valuation adjustment, or CVA.⁷⁷ However, the CVA does not apply to credit derivatives used for risk mitigation purposes. Hence, under the current Basel framework, CDS contracts still offer one of the most attractive tools for banks to reduce capital charges.

The following example illustrates this point. Bank A buys a corporate bond, hence lending \$1000 to a company with 100% risk-weight.⁷⁸ As explained above, this operation results in a capital charge equal to \$80. The bank, however, buys a CDS on that bond from another regulated bank (Bank B) which is weighted at 20%.⁷⁹ Bank A has effectively transferred the risk of the bond issuer to Bank B.

MANAGEMENT TASK FORCE REGARDING 2012 CIO LOSSES (2013) (presenting the result of an investigation into a recent CDS-related scandal, the “London Whale” case, which caused a loss for JP Morgan of no less than \$6.2 billion).

75. The problem has been debated extensively. *See, e.g.*, Viral Acharya et al., *supra* note 36, at 150; Adrian Blundell-Wignall & Paul Atkinson, *Thinking Beyond Basel III: Necessary Solutions for Capital and Liquidity*, 2010 OECD J.: FIN. MKT. TRENDS 1, 9, 12 (2010); Erik Gerding, *Credit Derivatives, Leverage, and Financial Regulation’s Missing Macroeconomic Dimension*, 8 BERKELEY BUS. L.J. 29, 32–36 (2011). More compelling evidence that CDS contracts are used to game capital regulation has been offered recently by Chenyu Shan, Dragon Yongjun Tang & Hong Yan, *Credit Default Swaps and Bank Regulatory Capital* (HKIMR Working Paper No. 20/2017).

76. In Form 10-K it was stated: “Approximately \$379 billion (consisting of the corporate loans and prime residential mortgages) of the \$527 billion in notional exposure of AIGFP [i.e. AIG Financial Product, a London-based subsidiary] super senior credit default swap portfolio as of December 31, 2007 represents derivatives written for financial institutions, principally in Europe, for the purpose of providing them with regulatory capital relief rather than risk mitigation.” Am. Int’l Grp., Inc., Annual Report (Form 10-K) (Feb. 28, 2008) (emphasis added).

77. BASEL III (2011), *supra* note 28, ¶ 14 (CVA covers the risk of mark-to-market risk—that is, possible losses resulting when financial instruments held by a financial institution are valued at the current market value, and their value falls because of the deterioration in the creditworthiness of counterparties).

78. According to BASEL II, *supra* note 27, ¶ 66, corporate claims rated between BBB+ and BB– correspond to a 100% risk-weighting. BASEL III, *supra* note 5, ¶ 39, further differentiates, attributing to corporate exposures rated between BBB+ and BBB– a 75% risk-weighting and to those between BB+ and BB– a 100% risk-weighting.

79. BASEL II, *supra* note 27, ¶¶ 60–64 introduced two approaches from which national regulators may choose. The first approach, adopted in the European Union, reflects the credit rating attributed to the bank itself. *See* CRR, art. 119. The other approach is based on the rating of the central government where the bank is incorporated and has been adopted in the U.S. for saving associations. *See* 12 C.F.R. § 567.6(a)(1)(ii)(Q) (2017). Basel III introduces a new schema under the standardized method to determine capital charges for exposure to banks. For exposures to banks incorporated in jurisdictions allowing the use of official ratings for regulatory purposes, such ratings are used to determine RWAs pursuant to BASEL III, *supra* note 5, ¶¶ 18–20. For exposures to banks that are unrated, Basel III introduces the standardized credit risk assessment approach, or SCRA, whereby banks are graded in three main categories of risks depending on their capacity to meet financial commitments. BASEL III, *supra* note 5, ¶¶ 21–31.

Therefore, instead of applying the original risk-weight of 100%, Bank A will apply a risk-weight of 20%, reducing the original capital charge from \$80 to \$16. Cumulatively, however, the regulatory capital of Bank A and Bank B should reflect the riskiness of the original corporate bond. However, Bank B may transfer the risk outside the banking system by purchasing coverage from an insurance company on the potential losses resulting from the transaction with Bank A. As a result, the risk associated with the corporate bond is moved outside the purview of banking (capital) regulation, and neither Bank A nor Bank B reflects the actual riskiness of the original operation in their respective regulatory capital.⁸⁰ Even if the insurance company—which, in this example, bears the risk—may offer adequate protection, this mechanism loosens the tie between credit creation and the level of capitalization of banks.

When credit derivatives are deployed, new credit is extended with little or no regulatory costs, in terms of the lender's own funds. The incentives to adopt these instruments are therefore extremely high, especially when compared to the capital relief that results from other credit protections. Through a CDS, an unsecured loan may require the same amount of the lender's own funds that is required for a loan secured by, say, a Treasury bond issued by the U.S. government.

The question is, then, whether security interests in personal property offer sufficiently attractive capital relief and, thus, whether the current regulatory framework encourages asset-based lending. The answer to that question is painfully banal: given that tangible assets and receivables are not included in the list of eligible credit protections, they cannot be used for credit risk mitigation purposes when banks adopt the standardized approach. Therefore, regardless of the improvements offered by a modern secured transactions law, the standardized approach requires banks to apply the same risk-weight attributed to unsecured credit to transactions collateralized by personal property.

Banks authorized to use IRBs may, at least theoretically, consider personal property collateral as eligible credit protection. To this end, IRB institutions must fulfil specific requisites.⁸¹ In addition to legal requirements, according to which a bank must enjoy first priority and the right to enforce a security interest swiftly,⁸² the bank must demonstrate that, for each asset, there is a sufficiently developed secondary market where prices are publicly available and collateral could be easily liquidated post-default.⁸³ Regarding security interests in receivables, banks are required to ascertain the credit risk of the receivable and its correlation with

80. Blundell-Wignall & Atkinson, *supra* note 75, at 12 (noting that through this mechanism “there is little point in defining an ex-ante risk bucket of company bond as 100% risk-weighted”).

81. For an analysis of the requisites set in the Basel framework in this respect, see Castellano & Dubovec, *supra* note 6.

82. See *supra* Part II

83. BASEL II, *supra* note 27, ¶¶ 521–22. BASEL III, *supra* note 5, ¶¶ 295–96, by and large reiterates these core requisites, with one notable difference: national regulators lost the discretionary power to compile a list of collateral that are automatically considered to meet the market conditions to be considered as eligible collateral.

the debtor's ability to pay.⁸⁴ Reliable data must feed the IRB models to calculate the amount of one's own funds necessary to absorb unexpected losses. Therefore, the process to reduce the risk-weights of an exposure through security interests in personal property requires banks to invest considerable resources.

The disproportionate effect that this approach has on SMEs is partially attenuated by the introduction of a special class of exposure. If loans to individuals and small businesses meet the criteria of the *regulatory retail portfolio*, they are pooled and treated as a single exposure subject to a risk-weight of 75%.⁸⁵ To qualify for this treatment, the availability of collateral is immaterial, again disregarding the reduction in credit risk offered by security interests in personal property.⁸⁶ Nonetheless, the solution does not appear to provide adequate incentives to support the needs of SMEs that are increasingly seeking financing outside the banking system.⁸⁷

From the above, several incongruences surface. First, regulators consider personal property difficult to evaluate and prone to depreciation because their value is deemed to be excessively correlated with the ability of borrowers to repay loans and affected by the cyclical movements of the economy.⁸⁸ Although theoretically sound, the argument appears at odds with the regulatory treatment of CDS as credit risk mitigation techniques. Despite the fact that credit derivatives are prone to deterioration—resulting precisely from their correlation to the creditworthiness of protection sellers—the regulatory framework still induces banks to use CDS for the purpose of reducing capital charges. Second, security interests in personal property might reduce regulatory capital only under the most sophisticated approaches available for risk-weighting purposes.⁸⁹

84. See BASEL II, *supra* note 27, ¶¶ 516–20; see also BASEL III, *supra* note 5, ¶¶ 290–94 (establishing specific risk management procedures). For instance, both BASEL II, ¶ 516 and BASEL III, ¶ 290, provide that “[w]here the bank relies on the borrower to ascertain the credit risk of the customers, the bank must review the borrower’s credit policy to ascertain its soundness and credibility.” On correlation risk, both BASEL II, ¶ 519 and BASEL III, ¶ 293 state “[t]he receivables pledged by a borrower should be diversified and not be unduly correlated with the borrower.”

85. BASEL II, *supra* note 27, ¶ 69. The BCBS, within the current Basel IV debate, proposed to apply a lower risk of 85% for direct exposures to corporate SMEs, while retaining the current regime for regulatory retail exposures. See SECOND CONSULTATIVE DOCUMENT, *supra* note 30, at Annex 1, ¶ 37. Such a proposal has been codified in Basel III, under which exposures to SMEs could receive an 85% risk-weighting or, if certain conditions are met, could be included in the regulatory retail portfolio. BASEL III, *supra* note 5, ¶ 43.

86. BASEL II, *supra* note 27, ¶ 70 requires that the claim of an individual or a small business take the form of revolving credits, lines of credit (for example, credit cards and overdrafts), personal loans and leases, including auto loans and leases, student and educational loans, and personal finance loans. The entire portfolio should be sufficiently diversified and individual claims should not exceed 1 million euros. While retaining these general principles, BASEL III, *supra* note 5, ¶¶ 55–58, introduces significant changes, allowing for lower risk-weightings in considerations of the repayment history of, say, credit cards.

87. See, e.g., *Trends in the External Financing Structure of Euro Area Non-financial Corporations*, at 29, ECB Economic Bulletin (European Central Bank, Frankfurt, Germany) (Aug. 4, 2016).

88. See, e.g., David Clementi, Deputy Governor, Bank of Eng., Speech at the Financial Services Authority Conference: Risk Sensitivity and the New Basel Accord (Apr. 10, 2001).

89. See Castellano & Dubovec, *supra* note 6 (indicating that the strategy to render effective secured

Gathering data and applying the IRB approaches are resource-intensive activities. Conversely, relying on standardized risk-weights is undoubtedly more cost-effective. Within this regulatory framework, loans secured with personal property are more expensive in terms of capital and therefore discouraged, leaving the credit needs of SMEs unmet.

B. The Uneven Incentives and Their Consequences

It could be argued that the regulatory preference towards highly liquid collateral is justified by the necessity of imposing a limit on the ability to create credit. At the core of this argument lies the idea that excess credit—and corresponding excess debt—is detrimental to the stability of the financial system.⁹⁰ However, the regulatory skepticism towards personal property does not limit the creation of credit. Empirical evidence indicates that credit and indebtedness have expanded without a corresponding increase of capital or a corresponding reduction of the overall level of risk circulating in the banking sector.⁹¹ As just discussed, banks are incentivized to use other, less transparent, credit protections to support the extension of credit, with the sole purpose of reducing regulatory capital, whereas asset-based lending is pushed outside the banking system. Although the problem primarily concerns how the Basel Accords have been engineered, a holistic perspective indicates that secured transactions laws have relevant responsibilities for promoting the extension of credit outside the banking system.

International efforts to modernize and harmonize secured transactions laws have been undertaken under the flawed assumption that the credit supply is homogeneously affected by legal rules. UNCITRAL, in fact, developed its texts dealing with secured transactions by taking as one of its key policy objectives the “equal treatment of diverse sources of credit.”⁹² The underlying belief is that there are no conflicts with or limitations imposed by banking regulation and, accordingly, that a modern legal regime governing secured transactions equally benefits banks and non-bank lenders. Aside from the considerations on the priority and enforcement of security interests, examined above, frictions between the Model Law and the Basel Accords also emerge in other aspects—for instance, concerning the description of collateral in security agreements.⁹³ More

transactions law reforms also requires promotion of the use of IRB models).

90. On this point, convincing arguments are offered by ADMATI & HELLWIG, *supra* note 9 and TURNER, *supra* note 32.

91. In the decade prior to the 2007–2009 financial crisis, the International Monetary Fund (IMF) noted that the overall assets of ten of the largest banks in the United States and Europe doubled, whereas their risk-weighted assets increased by only one-third. See IMF, *Containing Systemic Risks and Restoring Financial Soundness*, Global Financial Stability Report 31 (Apr. 2008). The global levels of debt have expanded since the financial crisis. See BANK FOR INT’L SETTLEMENTS (BIS), 87TH ANNUAL REPORT 8 (2017).

92. See UNCITRAL LGST, *supra* note 7.

93. Compare BASEL II, *supra* note 27, ¶ 522, and BASEL III, *supra* note 5, ¶ 296 (both establishing that “[t]he loan agreement must include detailed descriptions of the collateral”), with UNCITRAL MODEL LAW, *supra* note 2, at art. 9(2) (allowing for a description “that indicates that the encumbered

profoundly, absent any form of coordination with international capital requirements, the effect of secured transactions law reforms remains curtailed.

Legal and regulatory incentives affect the supply side of the credit market unevenly. Secured transactions law applies to any lender, whereas capital requirements concern only the formal banking system. Given that capital requirements induce banks to invest in operations that are less capital-intensive than asset-based lending to SMEs, non-banking institutions such as leasing and factoring companies fill the void. The expansion of commercial lending activities outside the banking system and the growth of “shadow banking activities”⁹⁴ corroborate these observations.⁹⁵ This trend is bolstered by legal reforms designed to promote access to credit through secured transactions. As the Basel Accords disregard the quality of the legal framework governing secured transactions, *ceteris paribus*, the benefits sought through reforms will be unevenly distributed among the suppliers of credit, with non-banking institutions enjoying a larger share. Although the availability of credit outside the banking system is not per se a negative phenomenon, larger policy implications should be pondered.

When non-banking institutions extend new credit in the form of loans, purchases of accounts receivable, or deferred payments for the acquisition of equipment, the amount of deposits increase, given that loans are normally credited to borrowers’ bank accounts. As deposits represent purchasing power created through loans,⁹⁶ the credit extended outside the banking system increases the general purchasing power without being subject to the risk controls associated with the creation of new loans. For banks, this is akin to free lunch, as new deposits are available without requiring a corresponding loan, and they can be invested in other operations, which is more profitable and less capital-intensive than commercial lending.⁹⁷ This mechanism may offer new liquidity and facilitate credit expansion, reaching borrowers normally excluded from the traditional banking system. However, the cost of funding for non-bank lenders is significantly higher. Therefore, the availability of credit may increase, but not at a lower cost.

assets consist of all the grantor’s movable assets, or of all the grantor’s movable assets within a generic category”).

94. In this article, shadow banking activities are only those activities of intermediation related to commercial lending that occur outside the regulated banking system. See Fin. Stability Bd., *Shadow Banking: Strengthening Oversight and Regulation* 1 (2011). For a more complete analysis of the phenomenon, see Dan Awrey, *Law and Finance in the Chinese Shadow Banking System*, 48 CORNELL INT’L L.J. 1 (2015) (applying the “Legal Theory of Finance” to explain the development of shadow banking activities in the People’s Republic of China), and Steven Schwarcz, *The Governance Structure of Shadow Banking: Rethinking Assumptions about Limited Liability*, 90 NOTRE DAME L. REV. 1 (2014).

95. See *supra* note 87 and accompanying text. On the retraction of the largest U.S. banks from small business financing, see Brian S. Chen, Samuel G. Hanson & Jeremy C. Stein, *The Decline of Big-Bank Lending to Small Business: Dynamic Impacts on Local Credit and Labor Markets* (Harvard Bus. Sch., Working Paper, 2017).

96. See *supra* note 32 and accompanying text.

97. See IMF, *supra* note 91 (indicating that banks tend to reduce commercial loans while increasing investments in securities).

Furthermore, the largest leasing companies in Europe and the United States finance their secured loans through bank loans or are directly affiliated with banks.⁹⁸ It is precisely the connection with the banking system that renders shadow banking activities, within the process of credit creation, potentially harmful for the stability of the financial system.⁹⁹ When banks engage in asset-based lending via non-banking institutions, not only new purchasing power (through deposits) is created, but banks also de facto participate in the creation of new credit. However, a corresponding increment of own funds—that is proportionate to the riskiness of the operation—does not occur.

In general terms, the involvement of non-banking institutions in the extension of credit represents an important source of liquidity and funding to support the production and consumption of goods and services. Yet, when sustained by secured transactions law reforms implemented to foster access to credit, a steady retraction of banks from asset-backed lending requires rethinking the approach to secured credit. Secured transactions laws and their reform should not be developed in a vacuum, as their interactions with capital requirements could be detrimental to a sustainable creation of credit. In the same vein, capital requirements that aim at managing risks cannot disregard the impact of different rules and regimes governing credit on the riskiness of banks and the creation of credit.

IV

CONCLUSION

Secured transactions law and capital requirements shape the supply of credit by affecting the behaviors of its participants. Notwithstanding the importance of ensuring adequate protection against credit risk to promote both access to credit and financial stability, the legal and regulatory frameworks appear to be concerned with different approaches to mitigating credit risk. Secured transactions law, on the one hand, has progressively expanded to consider all kinds of personal property that may be encumbered by a security interest as reducing credit risk; capital requirements, on the other hand, consider security interests to reduce the credit risk only when specific statutory criteria are met. These criteria are stricter than the criteria imposed on other credit protections, such as credit derivatives, which affect banks' appetite for different kinds of

98. See Dilek Bülbül, Felix Noth & Marcel Tyrell, *Why Do Banks Provide Leasing?*, 46 J. FIN. SERV. RES. 137 (2014) (noting that the role of banks in providing leasing services has progressively expanded); see also Manmohan Singh & James Aitken, *The (sizable) Role of Rehypothecation in the Shadow Banking System* (IMF, Working Paper No. 10/172, 2010).

99. See Hockett & Omarova, *supra* note 33, at 1183 (convincingly demonstrating that securitization and other forms of shadow banking activities have the effect of “amplifying” bank lending). The risks posed by the connection between the shadow banking and traditional banking activities are commonly considered a primary policy concern. See *supra* note 94; see also Yingmao Tang, *Shadow Banking or “Bank’s Shadow”: Reconceptualizing Global Shadow Banking Regulation*, in RECONCEPTUALISING GLOBAL FINANCE AND ITS REGULATION 326 (Ross P. Buckley, Emiliios Avgouleas & Douglas W. Arner eds., 2016) (noting the connection between banks and non-bank entities in the Chinese context).

investments. Yet, efforts to modernize and harmonize secured transactions laws are undertaken under the untested assumptions that legal frameworks facilitating the use of personal property as collateral would stimulate bank loans and that non-banking institutions are always in competition with banks.

The lack of coordination between these two sets of legal and regulatory rules have larger consequences than their narrowly understood perimeters, as it affects the creation of credit and purchasing power in a given economic system. Countries that were led to believe that reforms of secured transactions laws would facilitate access to bank credit might not see their hopes fulfilled, as reformed legal frameworks for secured transactions lay the foundations for non-bank lenders to expand their activities. To promote a prudent extension of secured credit also through the banking system, coordination between secured transactions law and capital requirements is of essence. In particular, capital requirements should abandon the skepticism towards personal property and recognize that secured transactions law rules may bolster the protection offered to creditors. For this to occur, however, secured transactions law should be geared to accommodate the specific needs of banking activities and achieve an effective reduction of credit risk reflected in lower capital charges. In other words, promoting access to credit and preserving financial stability should be considered as complementary objectives.