4

Savings, Finance, and Capital for Entrepreneurial Ventures

4.1 General Principles

The nature and estimated cost of innovations foregone as a result of institutional obstacles will always be shrouded in uncertainty because we can only speculate about what is "not seen," in the words of Frédéric Bastiat (1850). In a given institutional setting, we see only those market transactions and those entrepreneurial activities that the institutional setting allows and supports; innovations that do not conform to the existing economic order will not attract the required skills and resources and therefore not materialize. Thinking in terms of what is seen and unseen is valuable when pondering how existing rules governing savings, finance, and capital in Europe affect entrepreneurial activity and how they should change.

Europe certainly has no shortage of savings (OECD 2019a). However, as we have already mentioned, the nature of entrepreneurial venturing makes some forms of finance more suitable than others. In other words, the problem is not quantitative but qualitative: the allocation, rather than the volume, of European savings is what matters for entrepreneurial activity. Though plentiful, financial resources in the EU are mainly intermediated through universal banks and institutional investors who prefer large, low-risk, debt-based assets and blue-chip stock over small, risky equity-based investments (Westerhuis 2016). This systemic problem has considerable ramifications for collaborative innovation blocs; one can only speculate as to the number of fundamentally sound entrepreneurial projects that never got off the ground because the financial playing field was tilted against them.

N. Elert et al., *The Entrepreneurial Society*, International Studies in Entrepreneurship 98,
https://doi.org/10.1007/978-3-662-59586-2_4

In this chapter, we present reform proposals intended to increase the flow of financial resources to small and new firms with high potential for entrepreneurial venturing. Our proposals aim to ensure that more of the existing resources become available to new ventures at the right time and in the appropriate form and quantities. For these goals to materialize, policymakers should reform existing institutions governing the allocation of capital in Europe. While proven recipes from outside Europe can be adopted, digital platform technology allows entirely new ones to be tried. As such, the reform proposals will enable vested institutions, promote proven alternatives, and experiment with new technologies to allocate more of the available capital to innovative entrepreneurs.

Again, a few basic principles underlie our proposals. First, because the framework surrounding savings and finance often puts entrepreneurs at a disadvantage, we adhere to the principle of neutrality by creating a level playing field for entrepreneurial ventures in the competition for financial resources. When followed, the principle guarantees that entrepreneurs are given a fair shot without being pampered. Second, we aim for increased transparency to reduce asymmetric information problems for investors. Adhering to this principle ensures that entrepreneurs know the criteria upon which the success of their venture will be evaluated, reducing a substantial source of uncertainty in entrepreneurial venturing. Finally, the principle of justifiability enters the discussion when we consider enabling reforms in the banking sector and pension funds. Given the seemingly conflicting aims of providing financial stability and financing productive venturing, the justifiability principle helps balance important functions, thus increasing the probability that reforms are effectively implemented and respected.

As stated, financial resources are not in short supply in Europe; the problem is the way in which they are intermediated. Therefore, we first discuss reforms that prevent some savings from ending up with institutionalized intermediaries, as this would free up resources for start-ups in the form of private and informal investments. Then, we consider whether and how Europe might emulate the successful American model of business angels and VC before addressing reforms that would enable Europe's historically dominant banking sector and more recently built up pension funds to invest parts of their vast portfolios in growing entrepreneurial firms. Because some of the proposals touch upon the so-called FinTech innovations, we conclude the chapter with a discussion of business models for alternative finance on digital platforms.

Proposals referring to private wealth accumulation and pension funds are primarily addressed to the member state level, as the European treaties do not

give strong and effective competencies to European policymakers in these areas (Suse and Hachez 2017, pp. 40–41).[1] However, it does seem that the European policy level has ample competencies and instruments to implement reforms for the banking sector and FinTech innovation, while lower levels of policymaking are better suited to promote small-scale, arm's length financing for early-stage start-ups and the development of vibrant local and regional VC sectors.

4.2 Proposals

4.2.1 Financing Early-Stage Venturing

A large share of savings in European economies currently goes into banks and pension funds (OECD 2018a). This share can be expected to grow in the future, as funded systems increasingly substitute for pay-as-you-go systems and an increasing number of European workers opt for voluntary or collectively agreed upon supplementary pension plans (PensionsEurope 2017). These institutions primarily invest the funds of their clients and beneficiaries in liquid debt-based assets or tradable equities. This preference is unsurprising given the inability of such investors to take an active role in firm management.[2] The large economies of scale in managing loan portfolios (e.g., Philpot et al. 1998; Hughes and Mester 1998; Piketty 2014; Fagereng et al. 2016) also cause a bias towards "big ticket" investments and tradable securities. As a result, the resources managed by banks and pension funds can typically not be used for the type of smaller, long-run, equity-based investments that are so central to small and young ventures in collaborative innovation blocs (Kramer-Eis et al. 2017).

The lack of equity capital in smaller ticket sizes constrains (potential) high-growth firms more than others because such firms require regular infusions of

[1] Still, the EU has some coordination tools available, and the Commission has substantial powers whenever proposals relate to the internal market for financial services. For example, in 2013, the Commission adopted a proposal establishing uniform rules to enable venture capital funds to "market their funds and raise capital on a pan-European basis across the Single Market." Moreover, since the financial crisis, European coordinating, supervisory, and legislative powers have been expanded through the establishment of the Banking Union in 2012 and the Capital Markets Union. The aim of the latter is "to *deepen and further integrate the capital markets* of the 28 EU member states" and its gradual buildup is projected to be completed in 2019 (https://www.consilium.europa.eu/en/policies/capital-markets-union/).

[2] The 23 associations in 21 European countries that are members of PensionsEurope (2017, p. 12) hold some 30% of assets in equity, but these holdings are typically passive. When pension funds actively engage with the firms in which they invest, it is usually to promote corporate social responsibility (e.g., O'Rourke 2003).

external equity to sustain growth (Baumol et al. 2007, p. 205). This reliance increases (relative to debt) with the degree of risk and opacity, both of which are greater among younger and more innovative firms. Therefore, entrepreneurial start-ups usually struggle to raise funds in general and funds from large financial institutions in particular (Tilburg 2009). Part of the problem is that wealth-constrained would-be entrepreneurs do not have a track record, cannot put up collateral or make sizable equity infusions of their own to credibly signal their project's worth to outside investors. Higher levels of private wealth accumulation could remedy this problem of asymmetric information (Nykvist 2008; Parker 2018) or even enable the entrepreneur to make equity infusions that are large enough to capitalize the firm at inception. Such capitalization is essential for later venture success and performance (Henrekson and Sanandaji 2016).

Moreover, greater private or family-based savings could increase the pool of potential business angels and other informal investors who can help entrepreneurs overcome liquidity constraints in the early stages of venture creation (Ho and Wong 2007). The entrepreneur's family can be crucial in this respect, especially in regions where family ties are strong (Dilli and Westerhuis 2018). Conversely, a lack of private wealth impedes entrepreneurial venturing; any arrangement channeling savings and asset control away from large institutional investors and back to private individuals is, therefore, likely to increase the supply of equity capital and "soft" loans in smaller ticket sizes with early-stage entrepreneurs, even if much of it will end up in lower mortgages and savings deposits at banks.

A first best option for institutional reform is to reduce the share of institutionalized savings: the flow of finance into entrepreneurial venturing would potentially increase if less European wealth were tied up in compartmentalized institutional investment funds. The best way to ensure entrepreneurial financing is the pursuit of policies that encourage private wealth accumulation and the free flow of that wealth into entrepreneurial ventures (Pelikan 1988).

> Proposal 13: Allow more wealth to accumulate and remain in private hands and make it possible, easy, and attractive to invest such wealth in entrepreneurial ventures.

This proposal complements Proposal 9, which argues for the moderate taxation of private wealth holdings and transfers. While fiscal incentives matter, soft measures can be instrumental in developing a vibrant investment climate, especially when they take the form of information campaigns, matchmaking events, and the development of an effective support and information

infrastructure for informal investors. To the extent that private investors allocate their capital towards small equity ticket deals, this corrects for the bias in Europe's financial system, returning it to neutrality by increasing transparency.

Unfortunately, financial markets show a growing tendency towards institutionalization with funds managed on behalf of individual investors (e.g., Pilbeam 2018). And even if policymakers adopted Proposal 13, it would take time for private wealth to accumulate in significant amounts. Therefore, we should consider other initiatives to make more savings available to early-stage start-ups. Indeed, with increasing shares of savings going into pension funds and in light of demographic trends, most member states of the EU are contemplating reforms.[3] A crucial ingredient of such reforms should be to give participants more discretion over their pension savings, enabling them to buy unlisted stock, and invest part of their pension savings in start-ups if they want to.[4]

> Proposal 14: Allow people to individually choose how and where to invest part of their pension savings.

Not everyone has the inclination and skill to manage a portfolio of early-stage equity investments. Moreover, financial literacy remains low, and people are generally susceptible to behavioral biases and have a hard time selecting the products and services that best fit their preferences and risk attitudes (Rooij et al. 2011; Madrian et al. 2017). This justifies significant regulation on how different options should be presented and those who prefer that their pension savings be invested in low-risk assets should, consequently, always have a secure alternative. But while policymakers must strike a balance between public and private interests to justify the reforms, allowing people to invest some of their pension savings in entrepreneurial ventures can democratize capitalism, especially when combined with, e.g., crowd investing platforms (Shiller 2013; Mollick and Robb 2016; Stevenson et al. 2019). This facilitation could help jumpstart Europe's embryonic professional angel and VC sector, to which we turn next.

[3] See Ebbinghaus (2011, 2015), Hinrichs (2016), Carone et al. (2016), and PensionsEurope (2017) regarding the trend away from pay-as-you-go and towards the privatization of pension systems in Europe and reforms proposed to introduce risk-sharing by participants through defined contribution schemes.

[4] This goes against the grain of, for example, the Pan-European Pension Product initiative of the European Council that aims to develop a European market for pension products, which will increase the level of savings tied up in professionally managed funds. See, for example, European Commission (2017a) and European Council (2018).

4.2.2 Financing Scale Ups

Beyond the early stage, business angels and VC can play a crucial role for high-performing entrepreneurial firms with growth ambitions (Cumming 2012). Their funding is considered superior to bank finance because it comes with expertise and access to crucial networks (Keuschnigg and Nielsen 2004a; Ho and Wong 2007). As Table 4.1 shows, substantial differences exist in the size of VC investments across Europe, with Eastern European and Mediterranean countries at the bottom, while the UK, Sweden, Finland, and France are clearly in the lead. Nevertheless, these differences pale in comparison to the huge gap with the USA—arguably a major reason why US firms grow faster than their European counterparts (Bottazzi and Da Rin 2002; Scarpetta et al. 2002; Da Rin et al. 2006; Henrekson and Sanandaji 2018b).

Table 4.1 Venture capital investments as a share of GDP, and the ease of getting credit in EU member countries and the USA, 2017

Country	VC investment, % of GDP	Ease of getting credit score (0–100)	Country	VC investment, % of GDP	Ease of getting credit score (0–100)
USA	0.400	95	Belgium	0.033	65
Denmark	0.032	70	Spain	0.043	60
Luxembourg	0.030	15	Austria	0.026	55
Finland	0.055	65	Poland	0.011	75
Ireland	0.040	70	Bulgaria	0.010	65
Portugal	0.010	45	Czech Rep.	0.002	70
France	0.055	50	Italy	0.005	45
Sweden	0.060	55	Romania	0.003	80
Netherlands	0.044	45	Greece	0.000	50
UK	0.076	75	Croatia	n/a	55
Germany	0.035	70	Cyprus	n/a	60
Estonia	0.006[a]	70	Malta	n/a	35
Latvia	0.006[a]	85	Slovakia	n/a	70
Lithuania	0.006[a]	70	Slovenia	n/a	45
Hungary	0.021	75			

Note: The ranking of economies on the ease of getting credit is determined by their distance to the leading country for getting credit. These scores are the distance to frontier score for the sum of the strength of legal rights index (range 0–10); and the depth of credit information index (range 0–8). New Zealand is the leading country
Sources: Invest Europe (2018, p. 47) for venture capital and World Bank, *Doing Business* 2018 for ease of getting credit. Data for venture capital for the USA is from OECD, *Entrepreneurship at a Glance: Highlights 2018*
[a]For VC-investments, values for Estonia, Latvia, and Lithuania are a Baltic average

More private wealth is but a first step towards developing a VC industry. Here, policymakers ought to learn from the US experience of the 1970s and 1980s and adopt a broad-based policy approach: an encouraging legal framework allowing pension funds to invest in high-risk securities issued by small and new firms as well as VC funds (Gompers and Lerner 1999; cf. Keuschnigg and Nielsen 2004a, b). Because the current trend of a progressively larger share of savings going into pension funds is unlikely to reverse anytime soon (OECD 2018a), a wise policy measure would allow at least part of these assets to be invested in entrepreneurial firms and not just in real estate, public stocks, and high-rated bonds. Moreover, since large financial institutions do not have the competence to invest directly in small and new firms, such a measure would create a demand for a professional VC sector.

> Proposal 15: Pension funds and other institutional investors should, on an experimental basis, be allowed to invest more in equity in general and in venture capital specifically.

In implementing a reform of this kind, policymakers should judiciously consider the balance between public and private interests. Crucially, such a scheme should be combined with cuts in capital gains taxes and the effective tax treatment of stock options in young entrepreneurial firms, as discussed in Chap. 3. Only a broad-based policy effort would enable VC firms and other actors in the entrepreneurial ecosystem to supply their services profitably and design the appropriate incentive contracts needed to build innovative firms (Henrekson and Rosenberg 2001; Kaplan and Strömberg 2003; Lerner and Tåg 2013; Udell 2015). A sizable and efficient VC sector cannot evolve without significant demand and a favorable fiscal climate.

By contrast, promoting VC in Europe by directing more public funds to VC investors will likely not result in more productive entrepreneurial venturing. Granted, European VC firms are at best moderately successful in picking the winners among high-risk projects (Gompers and Lerner 2004; Birch 2006; Svensson 2008; Gompers et al. 2009), but there is little to suggest that subsidized organizations are better placed in this respect (Baumol et al. 2007, p. 220). Such organizations may—directly or indirectly, openly or furtively, partly or completely—base their decisions on political rather than commercial considerations and therefore underperform. It may be possible to channel some additional funding into VC by matching private investment, but it is of key importance that decision makers in the VC industry retain a substantial personal stake in their decisions (Grilli and Murtinu 2014a, b; Cumming

et al. 2017). Instead of throwing public money at the sector, we believe these resources are best spent developing the skills and competencies to allocate venture capital. The business model of carefully selecting and coaching ventures resists efficient scaling. For the VC sector to grow, therefore, we need more people who can do the job. The absence of VC expertise currently biases the flow of capital against high-growth firms; promoting its formation in Europe would return financial markets to neutrality. We therefore propose:

> Proposal 16: Develop competencies for private equity and venture capital investment in the field and avoid promoting VC capital with funding directly.

At the same time, this proposal calls into question the approach suggested under, e.g., the Investment Plan for Europe, the so-called Juncker Plan (European Commission 2015a), which provides sizable additional public funding. The plan's target now stands at 500 billion euros by 2020, some 32% of which was allocated to small firms up to 2019 (European Commission 2019b). Unfortunately, the requisite competence to channel these funds to young, high-growth firms is lacking (Schneider 2015b). The problem with VC is not a lack of money or skills per se. Rather, a substantial degree of "skin in the game" needs to be retained to avoid moral hazard as returns and the risk of failure are likely to depend on entrepreneurial effort and investors' commitment to the venture. Too much "easy" public funding may actually reduce the chances of success. Even professional fund managers will make expensive mistakes and invest in projects with high risks and low returns if allowed to play with "other people's money" (Kay 2015). Therefore, reforms should aim at strengthening the demand and supply of private VC funds and ensure that incentives to invest are strong while the potential to offload losses onto taxpayers is kept to a minimum.[5]

After all, a VC fund is involved in a venture's lifespan for a relatively short but crucial period, after which it strives to find a quick and profitable exit opportunity. Strengthening such opportunities would be a valuable complement to the aforementioned tax reforms.

[5] Germany, for example, does not seem to suffer from a direct lack of VC funds and its geographical distribution nicely matches the entrepreneurial ecosystem (Klagge et al. 2017). However, the German market remains small, arguably because of low demand. Direct subsidies under these circumstances will only cause too much cheap money to chase too few projects. Moreover, as public funds necessarily come with rules and regulations to ensure accountability, they would introduce a bias against the radically innovative start-ups that need this type of investment.

Proposal 17: Reduce barriers to the sale, acquisition, and IPO of VC-funded start-ups to facilitate profitable exits.

It may seem, with mostly large incumbent firms currently buying up small ventures for strategic reasons, that this proposal would strengthen their position. However, what we intend here is that improved access to exit markets will intensify competition among potential buyers, which will then increase the value of innovative entrepreneurial ventures. If policymakers help build the skills, enhance the incentives, and create the demand for VC, the European VC sector is likely to flourish to the benefit of all venture creation. This sector is urgently needed to restore a level playing field in the competition for available financial resources, but we warn against propping up VC with (more) public funds.

4.2.3 The Role of Banks

Although Europe's financial system remains predominantly bank-based, significant deleveraging in all euro countries since 2008 caused the average share of banks in total financial market assets to drop from 57% to approximately 45% in 2016 (ECB 2017, p. 7). As can be seen in Fig. 4.1, the Eurozone average hides considerable variety across national jurisdictions. The banks' total assets as share of GDP ranges from 2500% in 2008 for Luxemburg down to approximately 75% for Lithuania in 2016. Overall, the banking sector has deleveraged and contracted between 2008 and 2016 in all euro countries. Nevertheless, banking in Europe (especially Germany and France) continues to dominate in finance and is large relative to GDP. The share of bank assets in the top countries is high by international standards, and recent research (Hassan et al. 2011; Arcand et al. 2012) has shown that shares well above 100% of GDP tend to become a drag on growth. More important than the size of the banking sector relative to GDP, however, is its share in the total intermediation of national savings. Financial development typically increases with GDP, whereas banking's share in the financial mix first rises (capturing market share from informal finance) and then declines (losing market share to bond and stock markets) as financial markets develop (Levine 1997; Dufey 1998). The share of banking in total financial market assets also varies substantially across euro countries, with approximately 10% in Luxemburg and over 90% in Greece (ECB 2017, p. 9), but it lies well above 50% in most Eurozone countries. Moreover, when controlling for the size of the corporate

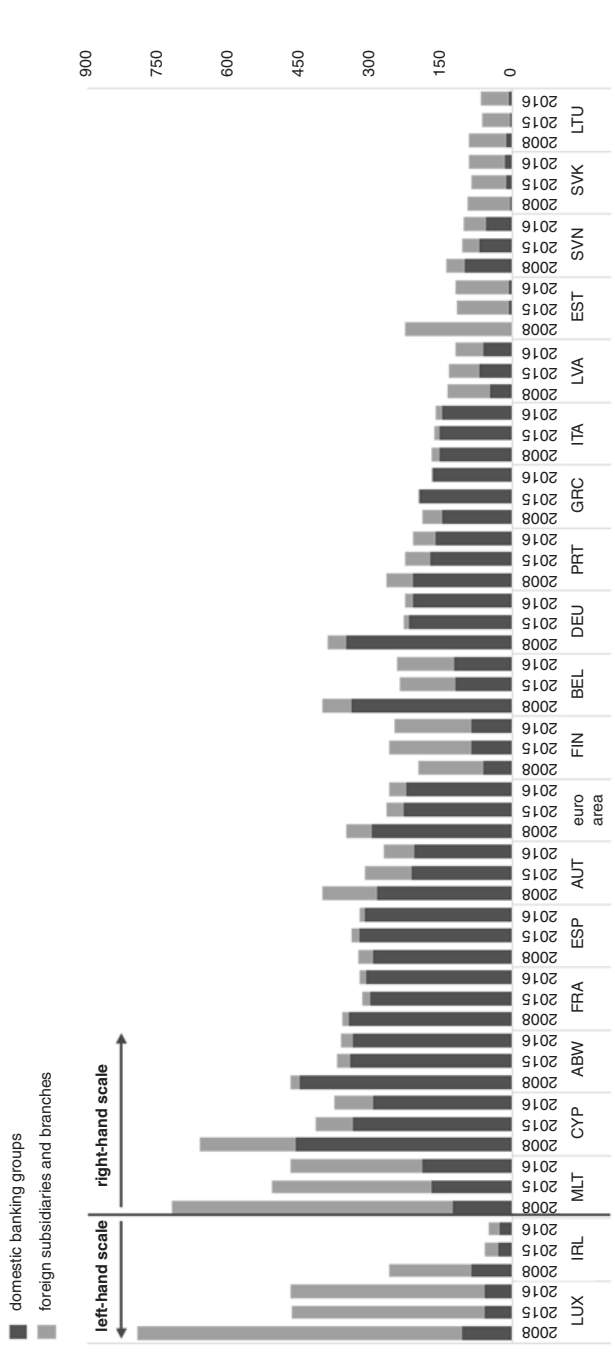

Fig. 4.1 Total assets of domestic banking groups and foreign-controlled subsidiaries and branches in relation to GDP in euro area countries in 2008, 2015, and 2016. Note: Data for domestic banking groups and foreign subsidiaries are consolidated, and hence include branches and subsidiaries that can be classified as other financial institutions (OFIs), except insurance companies. Source: ECB (2017)

loan book, most European countries still rely heavily on banking as a channel for intermediation (Kraemer-Eis et al. 2017, e.g., Fig. 40).

As a result, more than 50% of European SMEs report bank loans and overdrafts as relevant sources of finance (Lee et al. 2015; Udell 2015; Kraemer-Eis et al. 2017). While the absolute size of the banking system is not problematic from the perspective of an entrepreneurial society, how banks allocate their credit is (Hernández-Cánovas and Martínez-Solano 2010). Here, Europe's banking system exhibits some worrying trends with respect to regulation, consolidation, leveraging, and lending practices. While the roots of these developments can be traced back decades (Westerhuis 2016), they are far from irreversible; the EU has already used its significant competencies to implement reforms in the banking sector. For example, under the Banking Union and Capital Markets Union programs, European banks can offer their services across the Union when they obtain a "passport."[6] The recent financial crisis can be used as a cautionary tale to motivate the implementation of more initiatives.

It is well established that Europe's universal bank-based system mixes inherently public with private functions (Liikanen et al. 2012; Vickers Commission 2013; Bordo and Levin 2017). The system combines the public function of providing access to a payment system based on secure assets free of default risk with the for-profit allocation of capital to viable projects. The combination implies that regulations to secure the first objective may limit banks' ability to achieve the second. While (implicit or explicit) public guarantees to (large) banks serve a public function, they also mean that banks can finance their assets at a significant discount in the market (Davis and Tracey 2014; Schich and Aydin 2014; Toader 2015). In a competitive market, this would be good news for customers because competition would force banks to pass on their lowered funding costs by providing cheaper credit to all. Public guarantees without such competitive pressures give banks a strong incentive to take on high risks and play a "heads I win, tails you lose" strategy (Gropp et al. 2013).

Unfortunately, the European banking sector is far from competitive (Apergis et al. 2016). Due to economies of scale and scope, aggregate market shares of 80% or more for the five largest banks in a country are not uncommon (ECB 2017, p. 32). The result is not cheap credit but monopoly rents for bank employees and shareholders (Molyneux et al. 1994; Carbó et al. 2009).

[6] The Capital Requirements Directive and Regulation (CRD IV and CRR IV respectively) regulate these bank passports. Their investment banking is generally covered under the Markets in Financial Instruments Directive (MiFID II), which was updated and came into effect in January 2018. Non-banks can obtain similar passport rights under the Alternative Investment Fund Managers Directive (AIFMD) and Undertakings for Collective Investment in Transferable Securities Directive (UCITS).

Moreover, because public guarantees mean that taxpayers are ultimately liable for any losses beyond a small equity buffer, regulators must strictly supervise the lending practices of banks, especially those deemed "systemically important." Following the financial crisis of 2008, European regulators tightened their supervision and now enforce a harmonized set of stricter European rules (e.g., European Banking Authority 2019). The regulation aims to reduce the risk of a single bank collapsing by imposing risk-weighted reserve requirements and subjecting banks to stress tests (Focarelli and Pozzolo 2016).[7] However, the unintended consequences of such tightened regulation are further bank concentration and even less credit flowing to ventures that cannot offer high-quality collateral, strong and long track records, or reliable cash flow predictions.

As previously mentioned, Europe's fiscal and social security systems are also strongly biased towards large portfolios of professionally managed assets and debt-based finance (Kay 2015). The imbalance makes financial markets in Europe highly concentrated, largely debt- and bank-based, and biased against small- and medium-sized firms in general and young, innovative ventures in particular (Liikanen et al. 2012; Pohl and Tortella 2017; Miklaszewska 2017). Ironically, regulation to limit the micro risk for individual banks, funds, and portfolios thus creates systemic and macro risks by eliminating diversity and shifting investment away from small-scale experimental ventures. To maintain a competitive return on equity, the system as a whole is highly leveraged, and citizens end up investing their savings in liquid, marketable assets. These assets have a low real return because they do not finance innovative and productive ventures (Bezemer and Hudson 2016) but instead go to large incumbent firms with strong balance sheets, further entrenching the status quo.

Policymakers can take many steps to address this bias and make some of Europe's abundant savings available to entrepreneurs, also through bank credit. One option would be to set up a system of loan guarantees for entrepreneurs and SMEs; such schemes are already in place in several member states and work reasonably well in channeling financial resources into small- and medium-sized firms.[8] Second, the Union has already established a legal

[7] Under the auspices of the Banking Union (BU), for example, the Commission has prioritized safety. The key pillars of the BU are stronger prudential regulation, improved depositor protection, and the single resolution mechanism aimed at preventing the need for taxpayer bailouts. No doubt unintentionally, these measures make bank finance even less accessible for entrepreneurial ventures.

[8] The evidence on SME loan guarantee schemes is mixed (Udell 2015). While schemes seem to have been successful in channeling additional resources to SMEs in Italy (Zecchini and Ventura 2009) and Korea (Oh et al. 2009), a similar scheme in Japan seems to have caused firm performance to deteriorate (Uesugi et al. 2010). Also, UK evidence shows that the impacts may differ substantially across regions (Craig et al. 2007).

right to feedback from credit institutions on their credit decision under Article 431 in the EU Capital Requirements Regulation (European Parliament and Council of the European Union 2013). This initiative is laudable because it helps entrepreneurs and individuals understand their financial position and improve their chances of obtaining financing in the future (European Commission 2018a; cf. European Banking Federation 2017). This information is valuable to third parties as well, but it is presently not common practice to demand such disclosure: Irish banks, for example, currently do not disclose information about any publicly guaranteed credit they grant or turn down under the credit guarantee scheme (see, e.g., Strategic Banking Corporation of Ireland 2019). In line with the principle of transparency, we propose the following:

> Proposal 18: Maintain the systems of bank loan guarantees for start-ups and ensure that (appropriately anonymized) credit decision information becomes publicly available.

Strictly speaking, this proposal violates the neutrality principle, but given the existing biases against start-ups in banking, the risk is small that it would tilt the playing field far in their favor. The proposal would gain further traction if policymakers linked it to provisions enhancing transparency for other types of investors.

Nevertheless, it would be preferable to address the issue at a more fundamental level, notably by increasing banks' mandatory equity ratios, i.e., the minimum proportion of a bank's lending and other investments that has to be financed by its own equity (equity/total assets). Under the new Basel IV agreement, ratios stand at 3% of unweighted assets. These levels of equity are thought to be sufficient to absorb the risks on current bank balance sheets, but they severely limit the risk banks can responsibly assume in their lending.[9] Therefore, these balance sheets are currently dominated by mortgages, government bonds, and corporate loans with low credit risk. If European banks are to take on more micro risk by increasing their lending to innovation-based entrepreneurial firms, they will (first) need larger buffers to avoid putting their clients' deposits at risk.

[9] The Basel IV agreement also details risk weights and sets reserve requirements for risk-weighted assets. As weights cannot be objectively determined or immediately translated into profits and returns, they are subject to intense lobbying. Banks frequently underestimate risks and have even been known to manipulate weights (Mariathasan and Merrouche 2014). This matter is beyond the scope of this book, but as risk weights tend to disadvantage SME lending, we would prefer a simple unweighted equity ratio in line with the principles of transparency and neutrality.

Proposal 19: Increase the mandatory equity ratio in banking gradually to 10–15% to allow them to responsibly take on more risk in their lending portfolios.

We do not expect this measure to cause banks to start lending massively to early-stage, high-risk ventures. That is the province of venture capitalists. However, this proposed change will make it easier for entrepreneurial ventures to acquire additional funding and grow in the later, less risky stages of their life cycle. With more "skin in the game," banks will be able to enter earlier in a firm's life cycle, responsibly assuming slightly more risk (Admati et al. 2010). Mandatory higher equity ratios also give them the incentive to do so. Lower leverage implies lower returns on equity, which should lead banks' shareholders to push for higher returns on the bank's portfolio and shift credit towards riskier, but more rewarding ventures that can on average afford higher interest rates and risk premia.[10] Of course, the rates for mortgages, large corporations, and governments would also rise—but credit to these sectors of the economy is currently too cheap, arguably fueling unproductive speculative bubbles rather than productive investment (Bezemer and Hudson 2016). The gradual phasing-in of the proposal would enable banks to use retained profits to increase equity, and portfolio impacts should be closely monitored during the transition. As such, the proposal is justifiable as it serves both private and public interests, while its simplicity satisfies the principles of transparency and neutrality.

Nevertheless, a higher equity ratio across the board is a second-best solution, as it is unable to yield the more diverse banking system we need to cater to the diverse demand for financing in the entrepreneurial society. Traces of diversity in banking are still found in Europe: in Germany, for example, a few very large and highly leveraged banks (e.g., Deutsche Bank and Commerzbank) coexist with many small, often locally operating banks (*Sparkassen*) that operate in different niches. A multitude of small, locally embedded banks survive in Italy as well.[11]

In such situations, there is a risk that minimum equity ratios cause a reduction in diversity that makes the entire system more vulnerable (Haldane and

[10] Of course, it is also true that banks' shareholders would like the bank to take on very high risks when leverage is high, especially once the little equity remaining is wiped out but the bank remains liquid (Fox 2010). However, this type of speculation at the expense of depositors is not the kind of productive risk taking we refer to here.

[11] Verdier (2002) gives an excellent historical account of the development of diversity in banking systems across Europe. These historical processes explain how diversity in banking has emerged and hold important lessons on how it can be retained or fostered.

May 2011). A first best approach would, therefore, allow some banks to operate in a low-risk low-return niche with high leverage, while others could opt for a smaller, riskier, and high-yielding portfolio with more equity on their balance sheet. The market, rather than the regulator, would then determine each bank's required equity ratio. This end state is desirable but would require that banks cease the essential public good functions that currently justify and motivate their strong regulation and supervision. Only when the public interest is firmly secured can banks be set free to intermediate the savings they attract as they see fit based on their customers' and financiers' risk-return preferences, with contestability and competition leading to the best business models in a variety of niche markets.

The more diverse and entrepreneurial banking sector envisioned above sits uncomfortably with banks' legally sanctioned ability to attract deposits in current accounts. Due to public guarantees and technological development, these deposits have largely replaced the publicly issued alternative—cash—as the preferred medium of exchange and store of value. Thus, commercial banks finance a substantial part of their balance sheet with the type of monetized debt that has come to circulate in the economy as money.[12] In the wake of the financial crisis, many have questioned banks' prerogative to create money by giving credit, and monetary reform has been proposed for a variety of reasons (e.g., Benes and Kumhof 2012; Vickers Commission 2013; Wolf 2014; Dyson et al. 2016). Our point here is that freeing up the balance sheets of Europe's banking industry just a little would help channel a small share of total savings to young and innovative ventures—a change that could have a huge impact on promoting an entrepreneurial society.

When considering ways to secure public functions while freeing up resources in the banking sector, we believe the introduction of central bank digital currency (CBDC) is the most suitable candidate for exploration.[13] CBDC is a digital form of fiat money that is a currency established as money by government regulation or law; its introduction would provide consumers and firms with a risk-free alternative to bank deposits for transactions and as a store of value (Barrdear and Kumhof 2016; Kumhof and Noone 2018;

[12] The share of cash in circulation has been falling in the monetary aggregates of all European countries for decades and has now reached less than 15% of M1 in the Eurozone in 2017 (ECB 2019). The share of cash in transactions, especially among young people, has also fallen below 20% in countries like the Netherlands and Sweden (DNB 2018).

[13] This subject is a matter of debate among central bankers. For example, the IMF's Christine Lagarde (2018) has argued that experiments with CBDC be explored globally. European central banks (e.g., the Bank of England and the Dutch Central Bank) are looking into the issue, and the Swedish Central Bank (Riksbanken 2018) is working towards a field experiment with a digital Krona.

Bordo and Levin 2019). Gradually abandoning the deposit insurance scheme would cause money held for transaction and store-of-value purposes to flow from commercial banks' balance sheets to central banks' balance sheets and force commercial banks to return to a pure intermediation role: borrowing to lend and paying and charging appropriate risk premia. Once the security of citizens' wealth is no longer tied to the survival of their bank, regulators can reduce the strict supervision and regulation of banks' asset side, ushering in increased differentiation and diversity. When available, CDBC provides everybody with a secure alternative for storing wealth and settling transactions, and the need to justify public guarantees for commercial bank deposits disappears. In the absence of such guarantees, commercial banks can revert to investing for their own risk and return. They can therefore be deregulated so that they can take on the important role Schumpeter (1934 [1911]) foresaw for them in the entrepreneurial society: that of selecting viable ventures for investment.

> Proposal 20: Introduce central bank digital currency to replace deposits at commercial banks as the dominant risk-free store of value and medium of exchange.

The implementation of such a fundamental reform close to the heart of the European economy should not be rushed. The operation can be compared in scope and complexity with the introduction of the euro two decades ago and will require a comparable amount of planning and a broad public discussion before it can be implemented. Some technical issues will need to be addressed to realize this proposal, but bitcoin and other cryptocurrencies show that the technology is there for central banks to use. The advantage of CDBC over private cryptocurrencies should be obvious, as central banks are the only party that can guarantee and stabilize the value of a digital currency, eliminating the kind of volatile and speculative trading plaguing private cryptocurrencies. That being said, an implementation of the proposal would be nothing short of a monetary paradigm shift, and such shifts are not to be implemented lightly. However, once completed the reform would also make monetary policy more effective, by (re)establishing a more direct link between the money supply (M1) and the monetary base (M0) (Bordo and Levin 2017). It is therefore encouraging that central banks inside and outside the EU are currently discussing and researching this issue, with several experiments being planned or under way. Such developments will help achieve a more diverse banking sector that can cater to the diverse financial needs of small and large, young, and old firms in Europe to the benefit of entrepreneurial society.[14]

[14] With its Capital Markets Union (CMU), the Commission shows a keen awareness of the unintended consequences for entrepreneurial finance stemming from tight regulation (see, e.g., European Commission

Overall, the focus of the discussion in this section has been on creating a situation in which banks and institutional investors can responsibly intermediate funds, directing more of Europe's savings to deserving new ventures without jeopardizing the stability of the system. If banks are to play a role in the financing of tomorrow's firms, they should perhaps (be forced to) withdraw from also providing our medium of exchange, as the two activities seem incompatible. Modern technology offers the opportunity to rebalance public and private interests in the banking sector and correct this apparent flaw in our current financial system. But new technology also allows for alternatives to banking altogether. We now turn to a discussion of such "alternative finance."

4.2.4 Experimenting with New Technology to Finance Venturing in All Stages

Alternative modes of financing are on the rise as sources of entrepreneurial funding (Bruton et al. 2015; Vulkan et al. 2016; Block et al. 2018). Notably, today's small firms can access large pools of financial resources through crowdfunding and peer-to-business platforms, which are characterized by many small investments adding up to a large and growing total. Modern platform technology can even decentralize informal finance and help entrepreneurs, especially in business-to-consumer markets, to combine finance, marketing, and sales. Evidence from London's equity crowdfunding scene suggests that (regulated and well-managed) alternative finance helps to address the entrepreneurial equity gap and bridge the infamous "valley of death" in venture finance (Estrin et al. 2018; cf. Frank et al. 1996; Auerswald and Branscomb 2003), especially in new sectors (Polzin 2017). For these benefits to materialize, it is essential that regulators and supervisors resist their instinct to protect small-scale investors. One cannot regulate equity crowdfunding with the goal of eliminating all risks involved. Taking on risk is an essential part of such activities.

> Proposal 21: Implement a light-touch regulatory regime for equity crowdfunding and peer-to-business lending.

Vigilance on this matter is well founded: German regulation (the *Kleinanlegergesetz*) recently threatened to limit crowdfunding for real estate

2017b). The CMU pushes for a European venture capital market and considers passporting for FinTech firms, which could help yield a level playing field between entrants and incumbents.

investments and was averted only at the last moment (Crowdfunding Insider 2017). While its proponents typically cite stability, investor protection, and other seemingly compelling reasons, restrictive regulation risks preventing valuable services from emerging in the first place. In our view, a regime of tight supervision but loose regulation, akin to the one implemented in the UK, would better encourage experimentation with this new form of finance. Peer-to-business lending warrants a similar approach, especially considering that it proved to be an important buffer against the impact of the financial crisis in countries where it existed (Mills and McCarthy 2014).

Moreover, these systems of alternative finance benefit entrepreneurial start-ups more than they do large, incumbent firms and corporate groups. Crowdfunding platforms are better than traditional finance channels at handling smaller ticket investments (Polzin et al. 2017). They also reduce opacity and information asymmetry because their open character generates access to valuable information in addition to handling financial resources (Polzin et al. 2018b; Toxopeus 2019).

The principle of neutrality warns against using public funding for entrepreneurial finance: administrative procedures to allocate funding risk being gamed or biased against exactly the type of players that such programs intend to support. That said, the decentralized decision characteristics of crowd financing can be a useful tool for improving access to public funding for small, innovative ventures (Hervé and Schwienbacher 2018). Such financing could, for example, be beneficial for the Juncker Fund, a high-profile public funding scheme that has been criticized for emphasizing "shovel-ready" projects over smaller, more risky, innovative ventures (Schneider 2015b).

> Proposal 22: As part of its efforts to allocate the Juncker Fund, the European Investment Bank could experiment with a euro-denominated European crowdfunding platform and match successful campaigns with public funds.

Member states and local authorities running similar national and local support schemes could adopt this proposal's logic as well. It fits well under the neutrality principle, given that projects in the platforms compete on a level playing field that is not biased against small, risky, and radically innovative projects.

4.3 Summary

The financial system plays a central role in any modern economy; its primary functions include the efficient allocation of available savings and the provision of a secure payment system. In Europe, this system is bank-dominated and

Table 4.2 Summary of proposals regarding savings, capital, and finance, specifying the level in the governance hierarchy where the necessary decisions should be made

No.	Principle(s)	Policy area	Proposal	Policy level[a]
13	Neutrality and transparency	Private wealth	Allow for more wealth to accumulate and remain in private hands and make it possible, easy, and attractive to invest such wealth in entrepreneurial ventures.	MS, REG, LOC
14	Neutrality and justifiability	Pension funds	Allow people to choose how and where to invest part of their pension savings individually.	EU, MS
15	Neutrality and justifiability	Pension funds	Pension funds and other institutional investors should, on an experimental basis, be allowed to invest more in equity in general and in venture capital specifically.	EU, MS
16	Neutrality and justifiability	VC	Develop competencies for private equity and venture capital investment in the field and avoid promoting VC capital with public funding directly.	MS, REG, LOC
17	Neutrality	VC	Reduce barriers to the sale, acquisition, and IPO of VC-funded start-ups to facilitate profitable exits.	EU, MS
18	Neutrality and transparency	Banks	Ensure that (appropriately anonymized) credit decision information becomes publicly available in the system of bank loan guarantees for start-ups.	MS, REG
19	Neutrality and justifiability	Banks	Increase the mandatory equity ratio in banking gradually to 10–15% to allow them to take on more risk responsibly in their lending portfolios.	EU
20	Neutrality and justifiability	Banks	Introduce central bank digital currency to replace deposits at commercial banks as the dominant medium of exchange.	EU, MS
21	Neutrality	FinTech	Implement a light-touch regulatory regime for equity crowdfunding and peer-to-business lending.	EU, MS
22	Neutrality and transparency	FinTech	As part of its efforts to allocate the Juncker Fund, the European Investment Bank could experiment with a euro-denominated European crowdfunding platform and match successful campaigns with public funds.	EU

[a]*EU* federal level, *MS* member state level, *REG* regional government level, *LOC* local/municipal level

heavily institutionalized, with tight regulation and economies of scale conspiring to bias access to financial resources against small, young, and rapidly growing businesses. Since adequate capitalization in the early stages of

development is a major driver of venture survival and success, the proposals in this section attempt to rebalance the financial sector. They do so, on one hand, by preventing resources from being "institutionalized" in the first place and freeing them up once they are; on the other hand, the proposals develop and facilitate the evolution of alternative channels that have proven effective in the USA and hold promise for Europe as well. Table 4.2 provides a summary of our proposals and the level(s) of the governance hierarchy at which political action should take place to make them a reality.