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without capital[ists]?**

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# A capital markets union without capital[ists]?

Robert Holzmann,  
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*With the capital markets union (CMU), the European Union embarked on one of its yet most ambitious and potentially most relevant reform projects. However, the huge potential for the European economy by a genuine CMU has not yet been realized. The key reason for this is that an important prerequisite for the establishment of a deep and integrated capital market is still missing, namely powerful investors. With the recent contributions of Enrico Letta (2024) and Christian Noyer (2024), there are important proposals on the table. These welcome initiatives notwithstanding, the issue of private institutional investors who can deploy very large volumes of capital in risky markets for the longer term needs to get much more attention from policymakers and financial institutions. In an aging Europe, this role could increasingly be played by European pension funds – as resource aggregators and wholesale investors - and large-scale European investment funds – as investors in innovation in Europe and beyond.*

## I Why does the EU need a deep capital market?

After the financial crisis had hit Europe, policymakers were taking extraordinary measures to develop European financial markets and make them more resilient. Next to the banking union, the second arguably most important step was – or could have been – the launch of the capital markets union (CMU). CMU represented a pivotal initiative aimed at fostering economic growth and financial stability within the European Union. Most recently, the imperative to deepen and advance this endeavor has grown increasingly urgent. This urgency stems not least from the lack of market-based risk-sharing among member countries, the lack of financing for large-scale innovations and productivity growth, and the escalating financing requirements essential for a successful transition to green growth.

**The more conventional but still valid argument for the CMU is that a genuine capital market union would be able to significantly improve risk-sharing across European economies and at various dimensions.** Currently, a mixture of bank- and market-based national financing systems dominates the reality of financial markets in Europe, with the ratio of bank-finance to capital market finance in Europe being almost the inverse of that in the USA. While proponents of bank-based financial systems stress the importance of the monitoring function of banks for the economy, it should be noted that bank crises tend to be substantially more devastating than, for instance, stock market crashes (see e.g. Reinhard and Rogoff, 2009) particularly because of the vicious circle between banks and sovereigns that often emerges in their wake (Brunnermeier et al., 2016). Also, the unfinished European banking union has deficiencies (Beck et al., 2022) and many local banking hubs remain.

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As a result, in the European financial landscape, we still see local mini-hubs with hypertrophic banking sectors in some economies. Deepening the financing base would help to diversify risks in this regard. A genuine CMU can allow investors to diversify their portfolios across a broader range of assets and markets, thereby reducing their exposure to idiosyncratic risk and helping to mitigate the impact of asymmetric shocks (Bathia et al., 2019), and thus reduce the need for fiscal interventions, extraordinary measures by the ECB and emergency loans by the IMF. In the USA, broadly half of an asymmetric shock to a union state is neutralized by market-based capital flows. Such a setup deepens the liquidity available in the market and thus makes it less reactive to individual developments and therefore also more stable (High Level Forum, 2020). Finally, the deepening of CMU would help to create more sophisticated financial products, which again broadens the risk spectrum that can be covered by the financial market.

**A deeper and genuine European capital market is also critical for fostering innovations and thus productivity amid a rapidly aging population and local demographic decline.** Europe is not lacking the savings to finance innovations. In fact, savings in Europe exceed EUR 35 trillion (Christie et al., 2024; Noyer, 2024). This is still way below total savings in the USA and almost half of them represent guaranteed deposits, saving accounts and life insurance funds. This demonstrates the strong risk aversion of European savers. Instead of trying to address the risk aversion by better financial education and increased financial literacy, policymakers are often eager to accommodate the prevailing preferences with the provision of guarantees and preferential tax treatment.

**As a result of the lack of an institutional environment to transform these excess savings, Europe exports these funds to a large extent to the USA for investments in lower-risk and -return assets while importing equity investment capital from the USA (Noyer, 2024).** This can take the form of US-owned equity investment in start-ups and promising growth enterprises or the straight listing of promising, innovative European firms on US stock markets<sup>2</sup> that distributes European value added to US-based investment institutions that may be financed by cheap European savings. If Europe is not willing to invest its own capital in all three stages of the financial funding escalator – the early stage (start-up), growth stage (scale-up) and later stage (established, listed companies) – Europe is losing at least at three levels: European savers are not profiting from the risk premium of large-scale capital market investments; European savers are not profiting from equity investments in growth enterprises at vibrant European stock markets. And Europe is losing out through the lack of large-scale investment capacity in early and risky yet very promising investment opportunities such as AI nowadays or innovative digital developments in the recent past. These lacking large-scale investments in promising yet risky new technologies are conjectured to be the origin of the productivity malaise of Europe (which is deepened by too little and too slow Schumpeterian creative destruction).

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<sup>2</sup> This is even more attractive as there is an investor bias yielding a higher valuation of US enterprises as compared to European enterprises.

**Last but not least, the broadening of the available base of financial instruments is intrinsically linked to the more recent and increasingly pressing motivation for the furthering of the CMU project: financing the green transition.** By now it is common knowledge that ever more capital will be required to finance the green transition and that excessively high capital costs could retard it. Estimates for the additional investment required for the transition range from EUR 450 billion (Born et al., 2024) to EUR 600 billion per year for the period up to 2050 (Demertzis, 2023). Being somewhat more generally focused on staying competitive in a sustainable way, the recent Draghi report even puts additional financing needs for the EU at EUR 750 billion to EUR 800 billion (Draghi, 2024). This financial challenge does not only apply to investment in established technologies, even more crucial will be the financing of green innovations. Yet, as of spring 2024, outstanding green debt securities amounted only to 7% of total debt issuance (ECB, 2024) and served essentially for the investment in existing technologies. This is little compared to the financing challenge. To finance old and in particular new technologies for the green transition, Europe will need to tap into the larger pool of a vibrant CMU to be successful.

**While the need for a well-functioning CMU is a view increasingly – and some claim widely – shared by politicians, entrepreneurs, economists and the broader public in Europe, the view on the necessary ingredients seems less so.** The bureaucratic approach of the European Commission focuses on the administrative impediments and the perceived need for the harmonization of country-specific rules, e.g. on bankruptcy, to achieve a common capital market. This endeavor is extremely challenging and time consuming, which has raised the very useful suggestion to add a 28th regime for financial services as an alternative regulatory concept to which 27 national enterprises can voluntarily adhere in order to profit from CMU gains. Yet, whatever the approach adopted, the claim of this paper is that it would still not create the expected capital market that could compete with the USA in terms of risk-sharing, returns and innovations. What we need is new players and political attitude – a capital market requires capitalists in the best sense of the world as well as Schumpeterian creative destruction.

The remainder of the paper will first review the past, current and envisaged approaches to establish a CMU, before elaborating on missing investors and the challenges of creating a larger investor base and ending with Schumpeter.

## 2 What has been done so far and where are we standing?

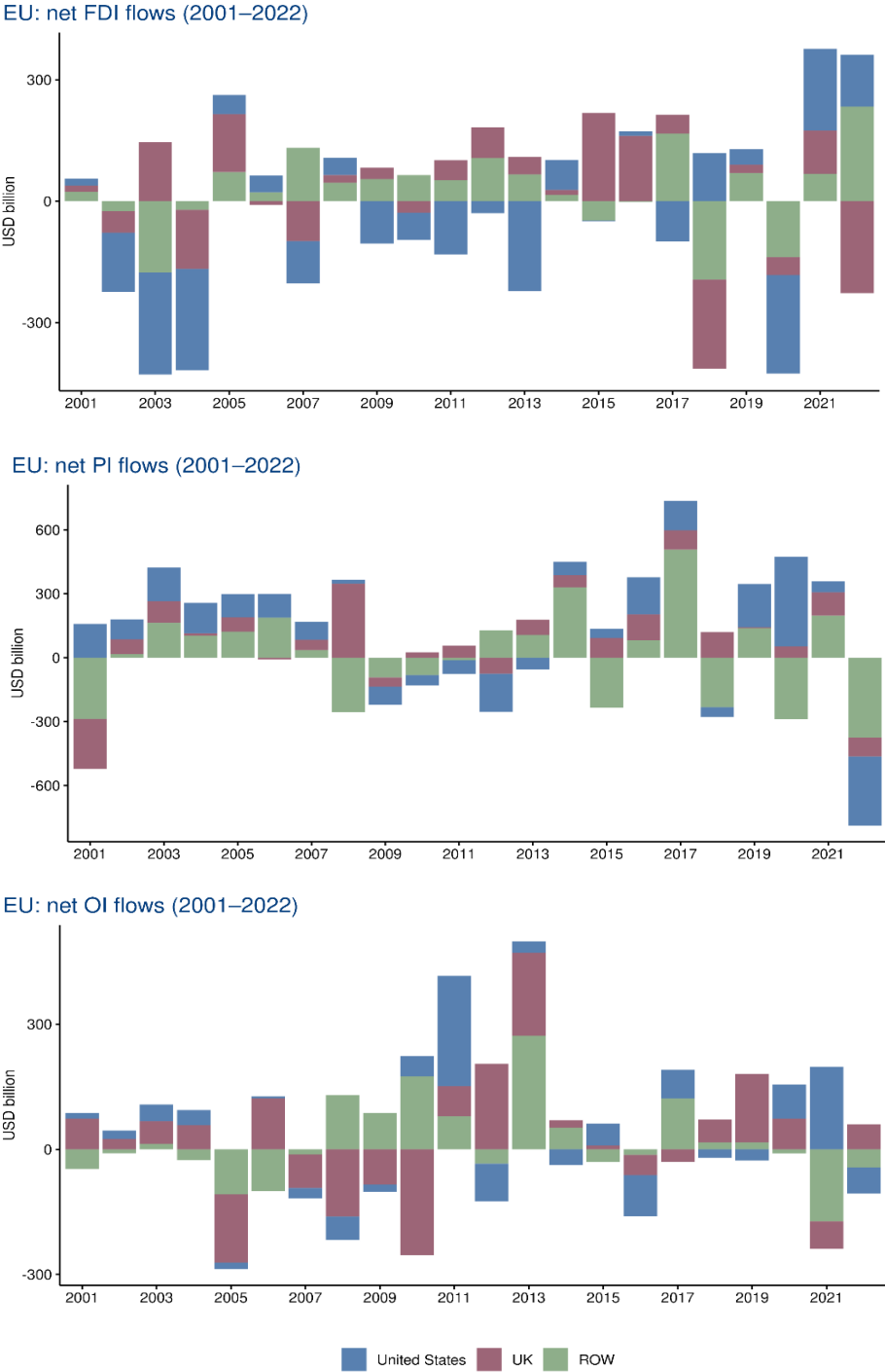
**Since its inception in 2015, capital market integration has been advanced by a series of measures (European Commission, 2015).** Legislative reforms have been pivotal, with significant legislative acts such as MiFID II (Directive 2014/65), the Prospectus Regulation (Regulation (EU) 2017/1129) and the Securitization Regulation (Regulation (EU) 2017/2402) having been introduced to harmonize rules and standards across member states. Ongoing efforts are focused on further enhancing the regulatory framework for financial markets, thereby bolstering the resilience and cohesion of the European capital market. These reforms aim to improve transparency, investor protection and market efficiency by establishing a more uniform regulatory framework. These efforts should be extended to remove remaining administrative barriers. Additionally, more progress on the harmonization of insolvency rules across Europe could prove useful (Kliatskova et al., 2023), particularly given the fact that Schumpeterian innovation is furthered by frequent and quick capital reallocation (Keuschnigg and Kogler, 2021). However, while these measures represent and would represent significant progress toward the harmonization of European capital markets, it is important to acknowledge that establishing rules is a necessary, but not sufficient, precondition for market creation.

**There have been notable initiatives indicating that some policymakers have recognized and addressed this challenge.** For instance, initiatives like the European Fund for Strategic Investments (EFSI) and, later, the InvestEU fund have been established to mobilize private investment in sectors such as infrastructure, innovation and renewable energy with the help of public guarantees. Additionally, the introduction of financial instruments like European Long-Term Investment Funds (ELTIFs) tried to help channel funds to long-term investment. Similarly, the Sustainable Finance Action Plan, introduced in 2018, aims to promote sustainable investments and redirect capital flows toward environmentally friendly projects. Measures such as the EU Taxonomy and the Green Bond Standard are a first effort trying to provide more clarity and transparency for sustainable investment opportunities, aligning financial activities with broader environmental and social objectives.

**Further, recent developments include the European Commission's proposal of a Capital Markets Recovery Package (European Council 2021, essentially amendments to MiFID II and to the prospectus directive) in response to the economic challenges posed by the COVID-19 pandemic.** Additionally, the European Commission unveiled a Digital Finance Strategy aimed at promoting innovation and digitalization in the financial sector. This strategy includes proposals to facilitate fintech adoption, promote digital innovation in payment services and address regulatory challenges associated with emerging technologies such as blockchain and crypto assets, aimed at ensuring that the EU remains at the forefront of financial innovation and digital transformation.

**These initiatives have to be applauded, yet none of these initiatives really can be considered as a great breakthrough.** They fail to address the critical foundational flaw of the CMU: the lack of capital depth. This is not due to a shortage of resources, given the staggering EUR 33 trillion in private savings predominantly held in current accounts (Letta, 2024). Thus, there is ample financial lever, but it is not used to leverage and subsequently invest into innovation and hence Europe’s future.

Figure 1: Capital flow categories from an EU perspective

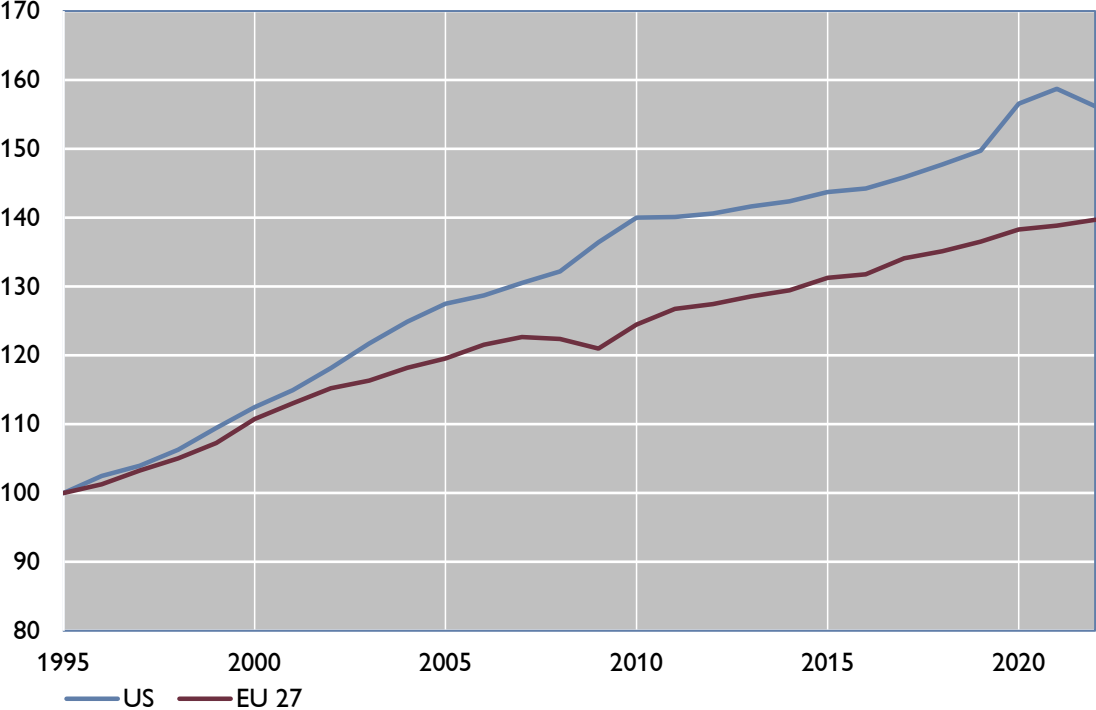


Source: Eurostat, OECD FDI Statistics, BIS Locational banking statistics, FinFlows.

**Conversely, a significant proportion of the savings in Europe is still invested in the US capital market.** Analyzing the flow of capital between the United States and Europe (figure 1), we see a close relationship between the two regions. Yet, it is a highly unequal one. While Europe primarily engages in portfolio and other forms of investment directed toward the USA<sup>3</sup> – often obscured by offshore centers – the USA remains one of the most significant international direct investors in Europe (Alcidi et al., 2023). This is conjectured to explain the productivity gap between the USA and Europe (see figure 2 and Arnold et al., 2024). Why does this disparity exist?

**Figure 2: Real output per hour**

1995=100



Source: Macrobond.

**Christian Noyer's latest reports (Noyer et al., 2024a; Noyer et al., 2024b) introduce a collection of new and compelling proposals.** Among other insights, Noyer et al. clearly demonstrate that there is a strong saving bias in the European Union, and that there exists an excessive allocation in foreign debt securities. Put differently, the liquidity bias in Europe is excessive, which is not necessarily improved by some regulatory provisions. Thus the most classic and basic function capital markets should procure – the term transformation – remains inadequately fulfilled. Consequently, Noyer et al. (2024a) advocate long-term products with a strong European bias tied to pension plans.

<sup>3</sup> Other investment is a residual category that includes all financial transactions not considered direct investment, portfolio investment, or reserve assets.



Most importantly, they argue that 'without a massive investor base, deep capital markets cannot emerge.' In other words, Noyer et al. have realized where the crucial problem of the CMU lies.

**It is important to acknowledge that there have been initiatives in this area, but they have been falling short of expectations so far.** A notable example is the idea of a Pan-European Personal Pension Product (PEPPs), entailed in Regulation (EU) 2019/1238, which seeks to facilitate long-term investment across the EU, thereby supporting economic growth and job creation. First, it should be noted that, as of now, according to the website, PEPPs are available in Croatia, Slovakia and Czechia – an outcome without significant impact. Europe needs more than that. Second, and this is even more decisive: the PEPP has never been designed to create individual and intentional market actors that could play the role of entrepreneurial investors. In the end, it is just another product that can be sold by long established actors, and this will hardly yield significant behavioral changes at the macroeconomic level. Put differently, the PEPP does little to tackle the issue of the missing investor base in the EU.

### **3 Where is the problem, what needs and could be done, and what are the key challenges? The missing investor ...**

In this section we will dig deeper into the potential merits of a genuine CMU and into the driving forces that should help achieve it.

#### **3.1 Capital markets and innovation, and the US-EU divide – some conceptual issues and stylized facts**

**The differences in capital flows between the USA and Europe suggest major implications in terms of capital market structure and capital availability for technical and commercial innovations, which are at the heart of productivity and economic growth in countries and regions.** It is also conjectured that the same mechanisms are also highly relevant for assisting in the green transition through innovations in green energy production, energy savings and facilitating a circular economy.

**As far as innovations and commercial breakthroughs are concerned, three key phases in the financial escalator can be distinguished where a differentiated financial access to and support from capital market institutions is needed.** In all three phases, capital market institutions have a critical role to play that– at times – will need to be supported by government-sponsored institution building.

**In the first – the start-up – phase, emerging and small enterprises need financial support from various sources, ranging from family members and friends to crowdsourcing to specialized capital market institutions capable of vetting the endeavor and distributing their risks across different enterprises (Nofsinger and Wang, 2011; Arnold et al., 2024).** Banks have little or no role at this stage unless a bank loan can be backed by relevant personal collateral, which is likely due to banks' disadvantages in terms of monitoring capacities required for entrepreneurial firms vis-à-vis venture capitalists (Winton and Yerramilli, 2008). The volume of financial start-up support in Europe has grown over time but is still less than a tenth of that in the USA. (figure 6). Note though that the International Energy Agency (IEA) estimates that about half of the emissions reductions in 2050 will come from technologies that are now at prototype or demonstration stages (IEA, 2023). This calls for decisive measures to strengthen start-up capital provisions – without many more start-ups at the bottom, the capital market above will remain shallow or nonexistent. The academic literature confirms the economic links. For instance, angel finance at early stages is positively correlated with additional receipt of follow-up finance in later rounds (Croce et al., 2016). The literature recommends improving financial integration but also stepping up public financial institutions and developing private and competitive pensions schemes while at the same time relaxing remaining quantitative and foreign asset restrictions (Arnold et al., 2024).

**Enterprises that survived the start-up phase<sup>4</sup> and are well established in their market, with prospects of high growth (i.e. 20% p.a. or more for a number of years) are limited in their growth if their only source of expansion is bank loans.** Due to regulatory requirements, banks do not have the capacity for more lending to high-risk companies. Enterprises that emerge from the start-up phase need equity capital alongside bank loans to grow fast. Yet the options for the owner(s) to access equity capital are limited essentially to selling out to a hedge fund or similar or taking in a majority owner and losing control over their lifetime project or finding a patient minority co-owner that offers not only equity but also guidance, advice and governance until they both decide to be ready to list on the stock market. Several countries in Europe (such as Germany<sup>5</sup>, France<sup>6</sup> and the UK<sup>7</sup>) and outside Europe (such as Canada<sup>8</sup> and Australia<sup>9</sup>) have created or encouraged the creation of business growth funds to fulfil this role. The creation of an Austrian Business Growth Fund with local capital continues to be my pet project and my hopes lie with the next federal government.

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<sup>4</sup> In the US roughly 56% of all new enterprises survived the first 5 years of their existence in 2018, the figure was only 45% in the EU, with the differential between the two areas growing quickly over the life-span of a company.

<sup>5</sup> <https://www.kfw-capital.de/Newsroom/Growth-Fund-Germany/>.

<sup>6</sup> <https://capitalcroissance.fr/>.

<sup>7</sup> <https://www.bgf.co.uk/about/>.

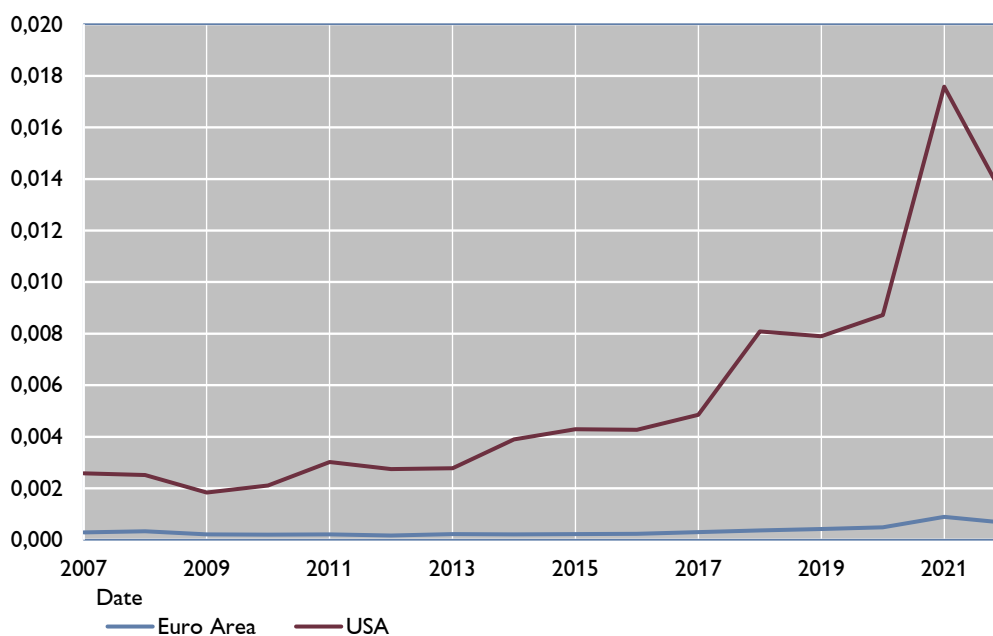
<sup>8</sup> <https://cbgf.com/>.

<sup>9</sup> [www.abgf.com.au/](http://www.abgf.com.au/).

It would be an important step to have a dedicated business growth fund for promising yet equity-constrained enterprises in Austria and its Eastern neighbors and the development of a comprehensive venture capital market in Austria and beyond. In the USA, the much more developed capital market offers many more opportunities for such a growth capital support. In Europe, clever and targeted support is needed for a promising start. Research and the academic literature on the role of equity capital for growth seems pretty limited, just as the understanding of policymakers ... Yet, without a strong pipeline of growth and enterprises targeting a listing on the local or a European stock market, the potential for capital market development, innovation, productivity and economic growth will be very, very limited, which in turn will also hamper innovation, productivity and economic growth.

**Figure 3: Venture capital**

*in % of GDP*

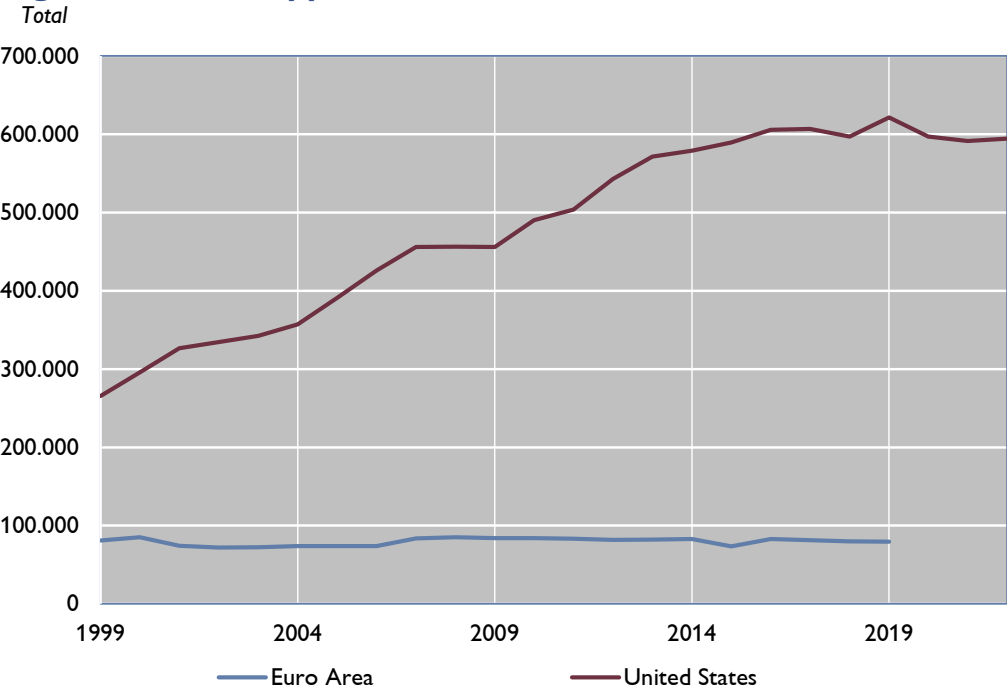


Source: Eurostat, OECD.

**For innovations, and their translation into market success and economic growth, it is crucial to have listed and unlisted enterprises with access to equity capital and loans are crucial (Sorin and Bostan, 2017).** The listing of an enterprise, with the related regulatory reporting requirements (earning reports, business plans etc.), offers a framework for highly efficient capital supply and allocation. The funds of listed enterprises come from individual savers that are attracted by the expected higher rates of return but in deep capital markets such as the USA but also Australia, these funds come to a large extent from pension funds that aggregate individual enterprise-sponsored or voluntary retirement savings. As a result, they can have a large impact on capital market modernization and development as soon as some minimum legal requirements are met (Vittas, 1999; Thomas and Spataro, 2014).

The origin of this setup in the USA is ERISA 1974, a legislative act that encouraged private enterprises to provide retirement savings plan for their employees and crucially allows for deductions on deposits (as opposed to deductions on withdrawals as is currently the case, e.g., in Austria). However, to garner tax deductions for the enterprise’s contributions, not only the upper hierarchy of employees needs to be covered but also the lower hierarchy. This setup can be claimed to be at the origin of the explosion in interest in behavioral economics in the USA and diverse ingenious setups to entice employees at all levels to participate. The approach was successful, and by around 2014, the annual payments from private pension funds to retirees exceeded those of the US “social security” pension scheme (Burtless and Koepke, 2018), with the total pension payment amount as a percentage of GDP at the level of or exceeding that of Austria<sup>10</sup>. The approach of tax-deductible (matching) contributions by employees and employers to incentivize participation was copied in many countries across the world (see Holzmann et al., 2013).

**Figure 4: Patent applications**



Source: Macrobond.

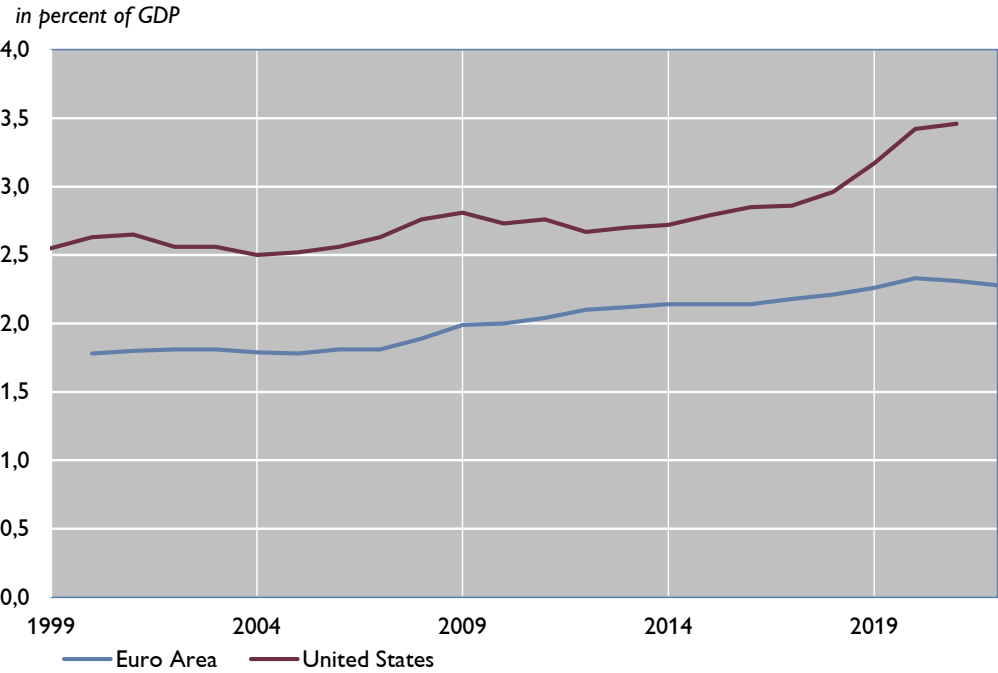
**The scope of pension fund resources in the USA (but also in other countries such as Australia, Chile, Canada, the Netherlands and Sweden) is at the origin of the high level of market capitalization and the capacity to finance innovation from the initial stage in start-ups to growth firms and ultimately to listed firms.**

<sup>10</sup> The US social security pension scheme is highly redistributive, with the lowest income group garnering a replacement rate of 100%, while the replacement rate (see e.g. Martin, 2004) at the contribution ceiling is some 38%; hence the interest in higher-income groups of employees joining the voluntary system.

Once private pension funds reach a critical size, they benefit from economies of scale and crucially contribute to the evolution of the capital market as can be seen in the leading European examples like Sweden or Denmark. They contribute to the liquidity of the capital market and the vetting of enterprises but also outsource the support of large-scale innovations to specialized investments funds such as Blackrock. Their asset level of over USD 10 trillion is financed to the tune of about USD 6 trillion from pension funds. Whatever the origins of these funds, the scope and use of these resources is claimed to explain the difference in dynamics in innovation between the USA and Europe – be it the available venture capital already alluded to (figure 3), the number of patent application (figure 4), the level of expenditure on R&D (figure 5), or the size of market capitalization of listed firms (figure 6).

**The differences in capital flows between the USA and Europe suggest major implications for technical and commercial innovation and the transformation to a greener economy, with innovation being one of the most important cornerstones (OECD, 2019).** Note that while internal financing is often seen as the main funding avenue for innovation-projects, firms tend to innovate more when they are also able to obtain funds externally. Particularly, it appears that smaller, younger firms face constraints in accessing external finance and thus could benefit most strongly from exploring a more diverse set of funding options (De Nicola et al., 2021).

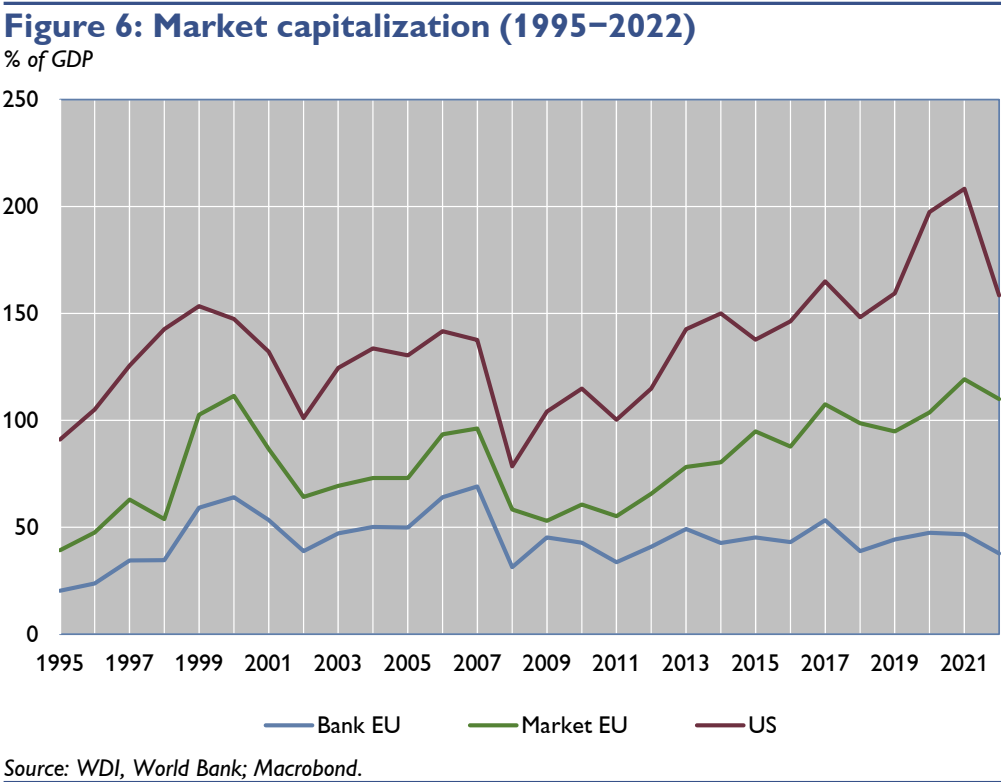
**Figure 5: Expenditure on R&D**



Quelle: Macrobond.

**This links the fate of the innovative edge of entire economies more strongly to the fate of the banks in these economies than is necessary.** However, even worse is the fact that on top of bureaucratic hurdles, this certainly holds back innovation. This problem could be overcome by the existence of significant venture capital markets that help to partly understand the productivity wedge between the USA and the EU (Arnold et al., 2024). Of course, introducing a venture capital sector into an economy demands the collaboration of investors, experienced fund managers and an IPO market (Hall and Lerner, 2010).

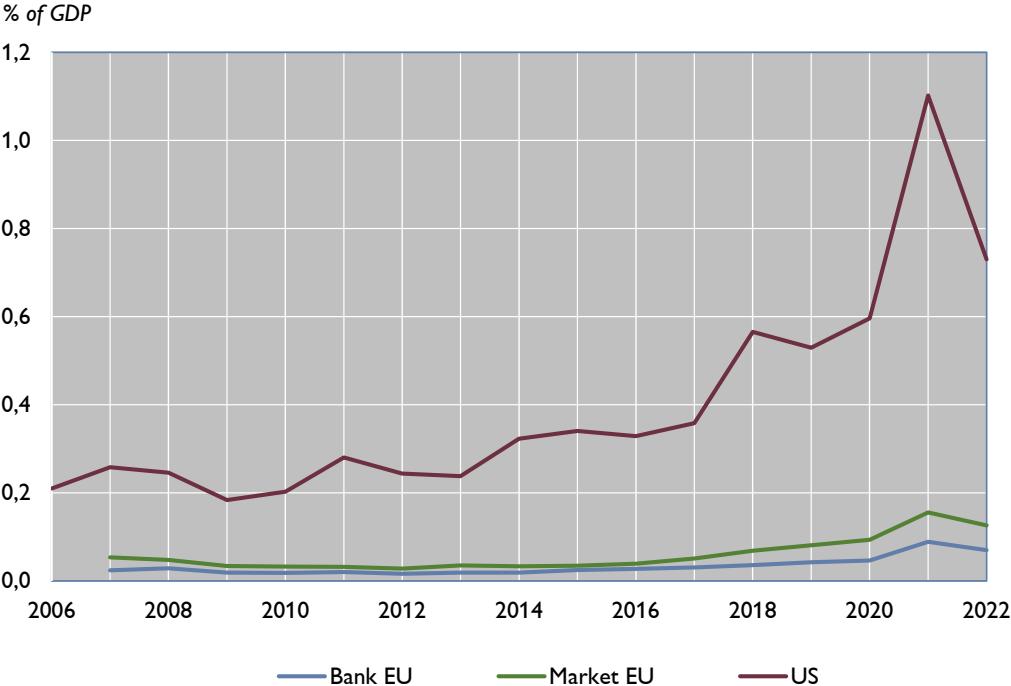
**Over and above the issue of access to finance for innovative SMEs, there is an R&D gap between the US and Europe (see figure 3), and it widened significantly over the last decade (Moncada-Paternò-Castello, 2020).** A major reason for this is likely that R&D financing is often constrained by the availability of internal cash flows in Europe while this is not the case in the USA. Or put differently, the access to external capital, i.e. both debt and equity, is far more difficult in the EU (Cincerra and Ravet, 2010). Then again, financial deepening has proven to be conducive to innovation (see e.g. the literature discussed in Peneder, 2008), particularly strongly against the backdrop of sound democratic institutions (Ho et al., 2018) such as those in the EU.



Green industries, it should be noted, do have a cutting-edge character at the current juncture. SMEs are important eco-innovators (Koirala, 2019) and green innovators tend to attract venture capital (Bellucci et al., 2021); at least if enough venture capital is around.

Unfortunately, though, even in the best performing European economies, venture capital as a share of GDP currently only accounts for half of the level available in the USA (Bhatia et al., 2019; Arnold et al., 2023) and as an aggregate the euro area vastly underperforms the USA in this regard (see figure 8)<sup>11</sup>. The lack of venture capital certainly hurts the innovative potential of green industries in Europe.

**Figure 7: Venture capital investment (2006–2022)**



Source: OECD.

Even more generally, survey results indicate that the availability of equity capital in general is conducive to fostering firm investment in the mitigation of natural hazard risks and their own negative environmental impact (Ferrando, Groß and Rariga, 2023) not exclusively in green industries. As a result, carbon-intensive industries tend to reduce emissions faster in economies with deep stock markets (De Haas and Popov, 2023). Given the divergence in the access to equity, it is thus not overly surprising that the long-run rate of patenting of green technologies is three times lower in the EU than in the USA (Aghion et al., 2022) (see figure 1). Not trying to deepen capital markets thus would imply not to be reaping some low hanging fruits in the area of innovation and productivity growth.

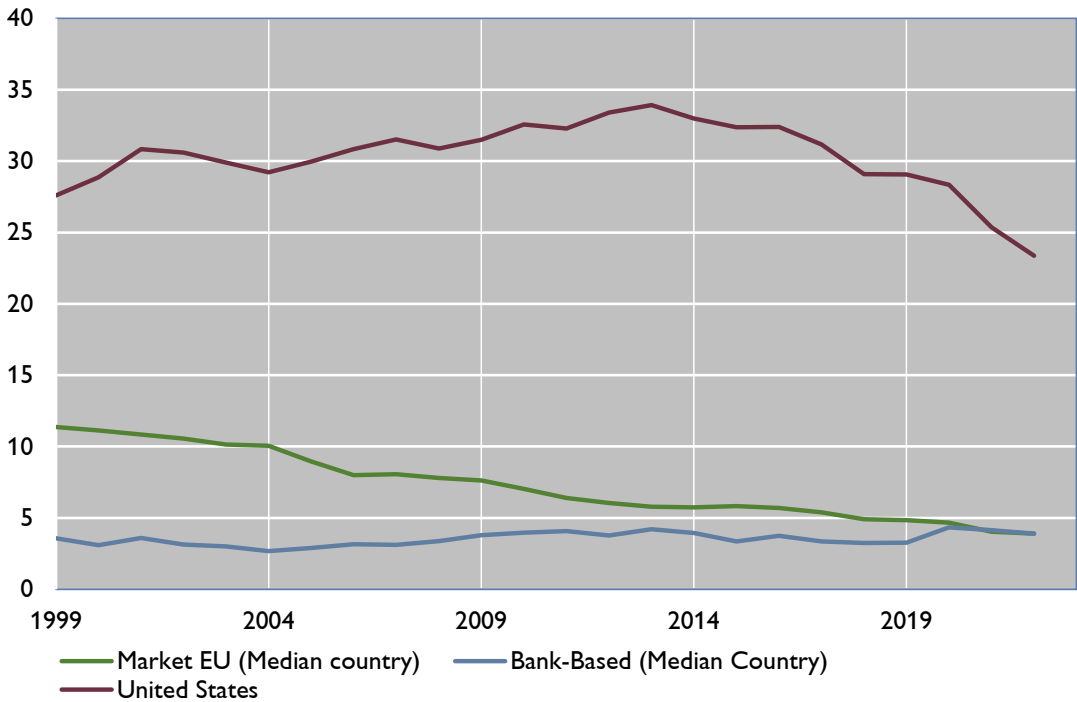
**To sum up, Europe is way behind the USA in terms of innovation and in the adoption of new technologies.** A major reason for this is that European capital markets are very risk averse, yielding a worse capital allocation compared to the USA as they do not have the capacity to carry the risks associated with R&D and the adoption of new technologies.

<sup>11</sup> Data end in 2019 for the EA because of missing data for the Netherlands, Italy and Slovakia.

### 3.2 The EU institutional background – some comparative consideration

The comparison between the USA and Europe above offered already strong hints about the relevance of the existence and depth of capital markets for innovation. We are now taking a deeper look into the existing European landscape. Clearly, all of Europe is lagging behind the USA in terms of innovation but to different degrees. As we could see from figures 5 to 8, there appears to be a clear link to the financial base of the economy here. Yet, in Europe, we do have some countries that have deeper, more developed capital markets than others. According to the data, these are Belgium, Denmark, France, the Netherlands, Sweden and Finland, following an earlier analysis (Kalara and Zhang, 2018), while the more bank-based economies in the EU include Austria, Germany, Portugal, Ireland, Spain, Italy and Greece. We see that the capital-based countries are characterized by substantially more corporate bond debt, deeper market capitalization and more venture capital. Except for the most recent period, this went hand in hand with a higher degree of innovation (as measured by patents, see figure 9). But what is driving the differences in capital depth in Europe?

**Figure 8: Patents per 10bn GDP in EUR**



Source: Europäische Kommission. World Bank.

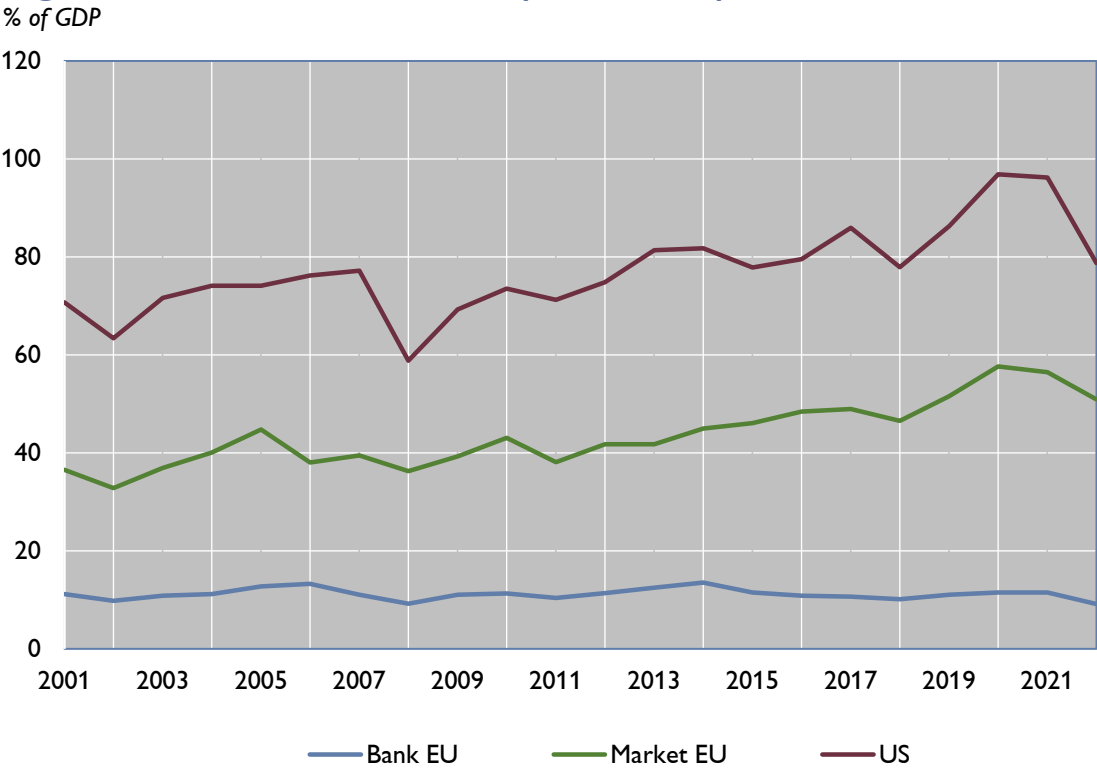
**Institutional investors naturally come to mind here.** They possess the capacity to significantly contribute to the promotion of long-term investment and to foster growth. As financial markets require participants with diverse investment timeframes for optimal functioning, long-term investors can potentially act in a countercyclical manner and play a pivotal role in implementing crisis recovery strategies (Wehinger, 2011).



Theoretical considerations also point to the fact that the presence of institutional investors in general may be conducive to innovation (Aghion et al., 2013), and this is underlined by evidence that institutional investors significantly increase firm innovation (Duppati et al., 2022).

**A special case in point here are pension funds (see figure 10). It has been shown that pension fund assets do bolster stock and private bond market depth as well as liquidity.** This is the reason for the depth and success of Sweden’s capital market (FT, 2024), and it is notably the case in countries with high financial development (Meng and Pfau, 2010), which is a crucial precondition for innovation and investment in R&D, as discussed above. Detailed firm-level evidence from Denmark shows that pension fund investment can directly raise firm productivity and innovation (Beetsma et al., 2022; Pozzoli et al., 2022). This is the connection to Noyer’s argument that the key step to the completion of the CMU would be the introduction of institutions that direct the vast pools of short-term savings into more productive uses. Specifically, supplementing unfunded with funded retirement schemes, particularly for middle- and higher-income earners, will be crucial. This will not only help to convert existing savings into long-term assets but likely attract additional savings, helping households to smooth consumption over their life cycles.

**Figure 9: Pension fund assets (2001–2022)**



Source: OECD.

**Pension reforms are conducive to investment and growth.** This is not to say that pension funds are a self-regulated panacea for all capital market problems. The 2022 turmoil in the UK gilt market has in fact counterintuitively been triggered by excessively leveraged pension funds being caught by surprise by margin calls (Ito et al., 2023). This shows that the regulatory structure must be carefully thought through, which might also explain why the literature is not unequivocal on the question of the effect of pension systems on economic growth (see e.g. the literature discussed in Bijlsma et al., 2014). However, there are many examples of successful and growth-enhancing introductions of pension funds, where pension funds have become stable and stabilizing long-term investors (IMF, 2023). A model case of course is Chile, where an early and pathbreaking pension reform in 1971 was very conducive to capital accumulation, financial market development, productivity and economic growth (Holzmann, 1997a and 1997b), with further estimates showing that a 1% increase in pension assets correlated with an increase of economic growth by 0.14% (Davis and Hu, 2008). This indeed, can serve as a model example of financial market reforms conducive to innovation and growth.

**Yet, establishing a capital market via the fostering of pension funds across Europe is not an easy task, as experiences across the world, including in a number of former transition economies, have shown.** To be relevant in size and scope, such an approach would need to replace a share of the current unfunded public pension obligations with funded private ones – offering only add-ons to existing public pensions may help to broaden the investor base a bit but would not create the envisaged scope and depth. However, a comprehensive attempt creates a major fiscal challenge for countries as part of the implicit pension debt needs to be repaid over a protracted period of time (and the outstanding obligations are large). To this end, such an approach would require a major streamlining of the way in which funded pensions are taxed across Europe, an area where Europe has failed over recent decades. Besides agreeing on a common new tax regime for funded pensions, it will furthermore require the review (and change) of all tax treaties between EU countries with the aim of simplifying and standardizing the tax treatment of pension funds that operate transnationally, similar to the cooperation in areas such as withholding taxes (Wieser et al., 2024). This constitutes a daunting task (see Holzmann and Genser, 2018). Last but not least, the new pension funds will need to operate in a way that minimizes the costs for contributors; the good news here is that there are good examples, such as Sweden.

#### 4 Conclusion – Be thorough and deliberate, and don't try to cut corners!

**In the context of strengthening Europe's financial infrastructure and ensuring sustainable economic growth, it is imperative to create independently managed institutions capable of handling risks in a diversified manner and managing significant capital volumes over the long term (see Breyer et al., 2021; Arnold et al., 2024).** This structural transformation is critical for bolstering the capital base of companies, thereby enhancing their long-term innovative capacities.

Drawing inspiration from the institutional framework of private pension provisions in the USA, where since about 2014, monetary benefits from private pensions have surpassed state pensions, offers a valuable blueprint. Notably, US pension funds possess capital amounting to approximately 170% of GDP, a stark contrast to Austria's 7%. The investment capacity of large funds, such as BlackRock's current USD 10.5 trillion, underscores the pivotal role of pension funds, which contribute USD 6 trillion to this volume. Obviously, such vast amounts of capital combined with the entrepreneurial skills assembled in such professional investment funds can give a much more positive impetus to the entire economy, boosting innovation, productivity and thus ultimately growth. Larger pension funds typically invest more heavily in equities and exhibit lower risk aversion compared to their smaller counterparts (Bikker et al., 2012), and furthering the rise of these entities could largely expand the pool of available private capital with risk carrying capacity (Arnold et al., 2024).

**However, even with the complete implementation of current EU ambitions for the CMU, the essential preconditions for its realization would not be met without a robust and deep capital base. The formation of a CMU needs capitalists.** To address this, life-cycle saving, particularly from middle- and higher-income brackets, must be proportionately redirected into long-term, decentralized products within suitable institutions. Enhancing the attractiveness of private pension savings, including through consistent, incentive-oriented and thought-through taxation across EU member states, is crucial and represents one of the most significant challenges within the EU context (Holzmann and Piggott, 2018).

**Moreover, improving the financial infrastructure is essential. This improvement encompasses several key aspects: a broad understanding among politicians of the significant and lasting benefits of a deep and efficient CMU, not only for companies and the economy at large, but also for institutional and retail investors, especially pension funds and their beneficiaries.** In addition, enhancing financial literacy across broad sections of the population, fostering a mutual understanding between employees and employers about the benefits of the CMU and providing innovative long-term investment products will be of the essence. We will need products designed to meet long-term care needs, the development of new mortgage products as well as a broader take-up of broadly diversified, very cost-efficient investment vehicles, such as ETFs.

Additionally, it is necessary to provide scaling-up capital for growth companies to ensure a broad local presence, exemplified by initiatives such as the Austrian Business Growth Fund. Last but not least, if all the above happens, the translation of more innovation created by a broader capital base and active capitalists into higher productivity requires also changes at enterprise level and a much faster shift of human and financial resources from declining to expanding enterprises, i.e. we need more Schumpeter.

**In essence, these reforms need fundamental changes both at the national and trans-European level.** Achieving a robust and sustainable financial framework requires a long-term vision and commitment. Too often have crucial steps in the direction of more harmonized tax and pension systems been prevented by lacking political will. Embracing these structural changes will pave the way for a resilient and dynamic economic environment in Europe. A capital union needs capitalists, and it might be necessary to start with leading regional examples. Therefore, we need fundamental change. Don't try to cut corners!

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