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Title: **To sandbox or not to sandbox?**
Diverging strategies of regulatory responses to FinTech

This is an Accepted Author version that lacks final copyedits and layout but is close to final.

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Drivers of FinTech policy evolution: the role of policy learning and institutions

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Abstract:

Despite the increasing importance of Financial Technology (FinTech), there is a gap in research on the drivers of countries' FinTech policy stances. This article contributes to theoretical discussions in the public policy literature by outlining how policy learning and institutions may affect the evolution of national FinTech policy stances. To test our theoretical framework, we analyse a comparative case study of the three Baltic states, which have experienced diverging FinTech policy trajectories on a national level. We find that policy learning has played a crucial role in FinTech policy evolution in the Baltic states. Various FinTech related scandals have revealed policy failures, leading policymakers to adopt a more cautious stance. The evolution of FinTech policy stance also interacts with the institutional architecture of financial supervision: an integrated model is more conducive to a proactive stance than a fragmented model. In this way, our article addresses the theoretical and empirical research gap regarding the drivers of Fintech policy by outlining how policy learning and institutions can affect its evolution.

Keywords: FinTech, policy learning, policy failure, financial policies, Baltic states, financial institutions, policy innovation, technology policy

Word count: 7998

Introduction

An important question in public policy is: how should policy react to pervasive technological transformations? Finance is one area where advancements in technology are triggering extensive changes, captured by the umbrella term

"FinTech" (Chiu, 2017a,b; Boot et al., 2021; Mention, 2021; Minto et al., 2017; Omarova, 2020). This term refers to "technologically enabled financial innovation that could result in new business models, applications, processes, or products with an associated material effect on financial markets and institutions and the provision of financial services" (Financial Stability Board 2017). FinTech can be related to payments, investment services, fundraising methods, credit scoring, client profiling, robo-advising, cryptocurrencies, and insurance, just to name some examples (Allen et al., 2021; Gurrea-Martinez and Remolina, 2020; Minto et al., 2017; Omarova, 2020). Given the systemic importance of the financial sector for the economy (e.g. Boot et al., 2021), and the potential of the FinTech sector to contribute to employment and public revenue, governments' policy stances towards FinTech is a topic of major importance.

FinTech policy is a relatively novel policy field. It emerged in the mid-2010s, when governments had to start reacting to fast-paced changes in financial technologies (Chiu, 2017a,b). FinTech policy faces important dilemmas when balancing risks and innovation, and the ensuing choices can profoundly affect financial systems and society (Chiu, 2017a,b; Bromberg et al., 2017; Ferrarini, 2017; Gurrea-Martinez and Remolina, 2020; Heritier and Schoeller, 2020; Mention, 2021; Omarova, 2020). FinTech holds the promise of enhanced competition, efficiency, and financial inclusion, but also entails risks for consumers and financial systems more broadly (Boot et al., 2021; Bromberg et al., 2017; Ganderson, 2021; Heritier and Schoeller, 2020; Kapsis, 2020; Mention, 2021; Omarova, 2020).

Hence, in choosing their national FinTech policy stances, governments are caught between competing pressures. They are expected to boost innovation while containing risks, preventing the build-up of vulnerabilities, and avoiding reputational damage to a country's financial system (Brummer and Yadav, 2019; Chiu, 2017a; Ganderson, 2021; Minto et al., 2017). This can be a challenging balancing exercise, compounded by the fast pace of change and potential disruptions created by the FinTech sector (Arner et al. 2017; Bromberg et al. 2017; Brummer and Yadav, 2019; Gurrea-Martinez and Remolina, 2020; Kapsis, 2020; Omarova, 2020).

FinTech policy stances can range from active promotion to a cautious approach. A proactive policy stance entails policy actions such as the adoption of strategies for the development of the FinTech sector, favourable approaches to licencing FinTechs, making payments infrastructure available to FinTech companies, and launching regulatory sandboxes and innovation hubs[1] (Ahern, 2022; Bromberg et al., 2017; Ganderson, 2021; Smolenska et al., 2020). A cautious FinTech policy stance is

[1] Regulatory sandboxes for FinTech "involve the grant of licensing exemptions and conditional relief from regulatory requirements to allow FinTech businesses to test their concepts in a controlled environment established by the regulator in consultation with the business" (Bromberg et al. 2017, p.70). Innovation hubs "offer a point of contact between regulators and firms, allowing the latter to make enquiries and seek formal or informal guidance on compliance" (Ganderson, 2021, p.104).

characterized by the absence of these explicit steps. It includes a wait-and-see approach towards FinTech by policymakers, the lack of an explicit FinTech policy strategy document, not launching regulatory sandboxes or innovation hubs, and the employment of strict licensing requirements for FinTech companies.

Governments in Europe have adopted varying policy stances towards FinTech, ranging from proactive promotion (like in the UK) (Ganderson 2021) to a more cautious approach (like in Germany) (Smolenska et al., 2020). In the context of the European Union (EU), the member states have had considerable leeway in choosing their FinTech policy stance over the past decade, although, increasingly, the EU level has started to play a role in FinTech policy via the FinTech Action Plan in 2018, the Crowdfunding Regulation in 2020, and the Markets in Crypto Assets Regulation in 2023 (e.g. Aben and Etti, 2023). Although the number of studies on FinTech from a legal perspective has been ballooning (see Omarova 2020), research on FinTech from a public policy perspective is lagging. While some studies outline policy recommendations for addressing FinTech (see Allen et al., 2021, Feyen et al., 2021 for overviews), we still lack research on *factors that drive* governments' FinTech policy decisions. With the exception of research on regulatory sandboxes (e.g. Tsai et al., 2020), there are no studies that examine the evolution of FinTech policy stances in different countries and investigate factors shaping FinTech policy trajectories. In our paper, we address this research gap, both theoretically and empirically.

Drawing on institutionalist research, the starting point of our theoretical analysis is that policy evolution is likely to be shaped by changes in policy beliefs and by the institutional setting in which policy choices are adopted (e.g. Beland, 2009; Campbell, 1998; Hall, 1997). Hence, in our theoretical contribution, we outline two key factors that are likely to play a role in driving the evolution of a FinTech policy stance: policy learning and institutional architecture of financial supervision. In the empirical part of our study, we probe the plausibility of these conjectures: we use the proposed theoretical lenses to examine the evolution of FinTech policy stances in the three Baltic countries in 2016-2023. Our research question is: How have policy learning and institutional structures influenced the evolution of FinTech policy stances in the Baltic states?

The three Baltic countries offer an opportunity to use the most-similar systems design of comparative analysis (Seawright and Gerring, 2008). With similar political and economic systems but different FinTech policy trajectories, they offer an excellent opportunity to examine factors that influence evolution of FinTech policy stances. As data sources, our study uses policy documents, media articles, and semi-structured interviews with key policymakers.

The paper is structured as follows. Section 2 provides the theoretical discussion. Section 3 outlines the methods, followed by empirical analysis of our cases in sections 4 and 5. Section 6 concludes.

2. Theoretical discussion: drivers of FinTech policy stance

2.1. Policy learning

Policy learning refers to the updating of beliefs about key components of policy, based on experiences, analysis, or social interactions (Dunlop and Radaelli, 2013, p. 599; Radaelli, 2009, p. 1146). It entails policy actors' "deliberate critical reflections on information and knowledge" regarding policy issues (Zaki and Radaelli, 2024, p. 5). Lessons can be drawn, and beliefs updated about the nature of policy goals and problems, how well different policy instruments work, and how politically feasible policy proposals are (Dunlop and Radaelli, 2013, 2017; May, 1992; Zaki and Radaelli, 2024). Policymakers can learn either from the policy experiences of their own country or draw lessons from abroad (Dolowitz and Marsh, 1996; Giest, 2017; Rose, 1993).

Policy learning literature has suggested that the deeper the uncertainties in a given policy domain, the more important policy learning is likely to be (e.g. Dunlop and Radaelli, 2013; Nair and Howlett, 2017). Given the novelty of FinTech policy and profound uncertainties that FinTechs entail with respect to their benefits and risks (Boot et al., 2021; Minto et al., 2017; Yuan and Xu, 2020), policy learning is likely to be a significant driver in the evolution of national FinTech policy stances. Policy actors responsible for financial regulation and supervision (i.e. officials working in finance ministries, financial supervisory agencies, and central banks) are likely to engage in various types of policy learning, which can affect their policy choices. First, policy learning can affect the *initial* FinTech policy stance, including the goals and the choice of policy instruments. Second, policy learning can lead to *revisions* of FinTech policy stances over time. We will examine these in turn.

First, policy learning can affect the *initial* FinTech policy stance policymakers choose. Drawing on the literature on policy learning (see Zaki and Radaelli 2024 for a recent overview), we can expect that FinTech policy goals can emerge from analysing issues in the *domestic* financial market or from drawing lessons about goals set for FinTech policies in *other countries*. A government's FinTech policy stance is likely to be influenced by policymakers' assessments of whether the existing level of competition in domestic financial markets should be improved and whether their FinTech policy choices can promote competition (Ahern, 2022; Chiu, 2017a). If they conclude that facilitating the FinTech sector can increase competition in the existing financial markets, they are likely to pursue a proactive policy stance (Ahern, 2022; Langley and Leyshon, 2023). In addition, the choice of FinTech policy stance is likely to be influenced by links policymakers draw between the growth of the FinTech

sector and the development of the economy as a whole (Ahern, 2022; Ganderson, 2021; Kapsis, 2020). If policymakers expect the FinTech sector to offer increased employment opportunities and generate tax revenues (Ganderson, 2021) they are likely to prefer a proactive FinTech policy stance. In their attempts to learn from other countries that are perceived to be successful (Giest, 2017), policymakers may set the goal to turn the country into a FinTech hub in the hope that it brings economic benefits (Ahern, 2022; Omarova, 2020).

Second, policy learning can lead to *changes* in the government's FinTech policy stance *over time.* The existing literature has suggested that policy learning can be an important driver of policy change: as a consequence of updated beliefs about policy goals or instruments, policymakers can adjust their policy stance (Bennett and Howlett, 1992; Busetti and Righettini, 2023; Dunlop and Radaelli, 2013; Hall, 1993; Zaki and Radaelli, 2024). In light of the information collected about the effects of enacted policies, policymakers can be expected to revise the goals and instruments (Busetti and Righettini, 2023; Zaki and Radaelli, 2024) of FinTech policy. In a novel field like FinTech policy, there is likely to be limited *initial* information about the causal effects of different policy choices and such information can only be collected over time by observing the policy in operation (Dunlop and Radaelli, 2013, 2017; Zaki and Radaelli, 2024). Observing the effects of the policy stance over time can reveal to policymakers whether policy is achieving its goals and whether there are any unintended consequences (Busetti and Righettini, 2023).

Policy learning literature has pointed out that important factors triggering policy learning are perceived policy failures, policy fiascos, and crises (Busetti and Righettini, 2023; Fenger and Quaglia, 2016; Howlett, 2012; Hulme and Hulme, 2012; Raudla et al., 2018, 2019; Stone, 2017; Zaki and Wayenberg, 2023). Policy failure refers to "the failure of policy efforts to attain policy objectives" and "the occurrence of outcomes that have adverse impacts on target populations" (Nair and Howlett, 2017, p. 103). The perception of policy failure is likely to motivate policy actors to reassess their existing policy stance and encourage them to revise it to avoid further blame (Howlett, 2012; May, 1992; Raudla et al., 2018, 2019; Zahariadis, 2016). Crises and policy fiascos reveal deficiencies in existing policy approaches and signal to policymakers that unless the existing policy stance is changed, problems may be exacerbated (Busetti and Righettini, 2023; Fenger and Quaglia, 2016; Howlett, 2012; Keeler, 1993; Bovens and d'Hart, 1995; Raudla et al., 2019; Zaki and Wayenberg, 2023). Thus, motivated by the desire to avoid the potential negative consequences from the continuation or recurrence of a crisis or a fiasco, policy actors are likely to take stock of the crisis or fiasco, and learn from it (Howlett, 2012; Raudla et al., 2019).

Given the potentially profound impacts of financial policies on the entire economy (e.g. Boot et al., 2021), we can expect that policymakers are likely to be attuned to perceived failures, fiascos and crises in the domain of FinTech policy – especially in

their own country but also in other countries (Stone, 2017). Even if a government has initially opted for a proactive FinTech policy stance, once the degree of risks FinTechs entail – for customers, the integrity of financial services, or the financial system as a whole – become more visible over time, policymakers are likely to revise their policy stance. Experiencing the negative consequences of allowing too much risk-taking in the financial sector is likely to lead policymakers to revise their causal beliefs about the effects of proactive FinTech policy choices. This is likely to lead to a more cautious policy stance towards FinTech over time (Christophers et al., 2017; Ford, 2017; Ganderson, 2021; Langley and Leyshon, 2023).

Drawing on the literature on policy learning (see Zaki and Radaelli 2024 for an overview), to assess the role of policy learning in the evolution of FinTech policy stance, we should examine the following aspects. First, how do policymakers justify their initial FinTech policy stance: do they draw on analyses and on the examples of other countries to explain the choices? Second, have policymakers revised their beliefs about the desirability of initially chosen FinTech policy stance over time in light of the information about the actual effects of initial policy choices (either in their own country or other countries)?

2.2. Institutional landscape

The country's institutional structures are likely to affect policy learning (e.g. Busetti and Righettini, 2023; Campbell, 2002; Dunlop and Radaelli, 2013, 2017; Giest, 2017; Hall, 1993, 1997; Zaki and Wayenberg, 2023). Institutions affect "which ideas penetrate the policy-making process and are adopted and implemented as policy" (Campbell, 2002, p. 30). "The presence of strong institutional obstacles can weaken the capacity of political actors to promote successfully the adoption of a concrete policy alternative" (Beland 2009, p. 702). In FinTech policy, we would expect the country's institutional architecture of financial regulation and supervision to influence the evolution of a FinTech policy stance. Financial regulators and supervisors are likely to serve as key "institutional filters" (Campbell, 2002) affecting which policy approaches to FinTech are viewed as feasible and commendable.

Ganderson (2021) suggests that different types of policy actors – elected officials vs officials working in financial supervisory agencies and central banks – are likely to have diverging aspirations regarding FinTech policy. Elected officials can be expected to be more enthusiastic about FinTech and promote a proactive policy stance, owing to their expectations that FinTech can lure investments and boost economic growth, whereas "some scandal or regulatory failure could only be blamed indirectly on them" (Ganderson, 2021, p. 107). In contrast, financial regulators and supervisors are likely to see only limited gains for themselves from increased levels of FinTech-related investments but would have much to lose from scandalous regulatory failures emanating from FinTechs. Hence, we can expect that regulators

and supervisors would prefer a more cautious FinTech policy stance than elected officials.

In light of Ganderson's (2021) arguments, we would expect those governments where politicians are more involved in financial regulation to favour more proactive FinTech policy stances. Conversely, in institutional settings where independent regulators dominate the financial policymaking, more cautious FinTech policy stances are likely to emerge. At the same time, regulatory agencies may face pressures from elected officials (e.g. in the form of a new mandate) to promote innovation and competition in the financial markets through regulatory assistance like a FinTech sandbox (Omarova, 2020; Smolenska et al., 2020; Tsai et al., 2020). Regulators may also see a proactive stance as an opportunity to enhance their status and expand their regulatory turf (Allen, 2019).

One of the key institutional design features that is likely to shape the evolution of a FinTech policy stance is whether financial supervision in a country is unified or fragmented (Bains and Wu, 2023; Buttigied and Bamber, 2021; Masciandro and Quintyn, 2016; Wymeersch, 2007). In the fully unified (or integrated) mode, the central bank handles all financial supervision; in the fragmented approach, financial regulatory authority (or authorities) is separated from the central bank (Buttigied and Bamber, 2021; Masciandro and Quintyn, 2016; Wymeersch, 2007). The level of institutional integration in financial supervision affects the supervisory mandates, resources, and skill sets (Buttigieg and Bamber, 2021; Wymeersch, 2007). All these aspects can condition attitudes towards risk in financial innovation (Rainey et al., 2021) and hence the FinTech policy stance.

In the integrated mode, the supervisors have a broader mandate and a greater number of objectives and responsibilities beyond the promotion of the safety and soundness of the financial system (Buttigieg and Bamber, 2021; Masciandro and Quintyn, 2016; Wymeersch, 2007). The goals can include the development of the financial sector, promoting efficiency, and facilitating innovation (Taylor et al., 2019). A broader mandate of the financial supervisor is likely to facilitate a proactive FinTech policy stance, since the policy can entail new statutory objectives and the need to manage delicate trade-offs between policy goals (Bechara et al., 2021; Kirakul et al., 2021). In contrast, in a fragmented mode, the mandate of the financial supervisory authority is likely to emphasise the mitigation of risks in the financial markets. Consequently, the supervisors may find it challenging to take risks and engage in innovation-promotion activities, which are inherent to a proactive FinTech policy stance (Omarova, 2020; Tsai et al., 2020).

Furthermore, a proactive FinTech policy is likely to impose considerable demands on regulators and supervisors in terms of analytical and technological capacities (Brummer and Yadav, 2019; de Koker et al., 2019). In the unified mode, supervisors possess more resources and a broader skill set in their organization (Buttigieg and

Bamber, 2020; Masciandaro and Quintyn, 2010). This, in turn, can imbue supervisors with a higher confidence to promote (or at least agree to) a proactive FinTech policy stance. The integrated model also allows the mixing of staff and blending of skills (Goodheart et al., 2002; Kirakul et al., 2021; Wymeerch, 2007), which are conducive to understanding and dealing with FinTech-related uncertainties and risks (Taylor et al., 2019).

To assess the impacts of the institutional setting on the evolution of FinTech policy stances, we should examine the following aspects. First, do the institutions responsible for financial regulation favour a pro-active or cautious FinTech policy stance? Are their preferences aligned with those of elected officials? Second, is financial supervision in the country unified or fragmented, and how does that affect FinTech policy capacities?

3. Methods

Our case selection strategy was based on the following considerations. The Baltic states can be viewed as an ideal type setting for the most-similar systems design (Seawright and Gerring 2008). The countries share a common history and are comparable in terms of economic development, political and legal systems, fiscal and financial trajectories, and regulatory culture. Furthermore, the Baltic states have spawned vibrant start-up communities, particularly in finance and technology. However, we can observe differing trajectories in the evolution of FinTech policy stances in the Baltic countries in 2016-2023. Lithuania embraced a pro-active FinTech policy in 2016-2020 but became increasingly cautious from 2021 onwards. Latvia adopted a cautious FinTech policy stance in 2016-2020 but has gradually become more proactive since 2021. Estonia initially (in 2017-2018) adopted some aspects of a proactive stance (in the domain of cryptocurrencies), followed by a cautious stance through most of the period under examination. Such diverging national policy trajectories allow us to explore the effects of the potential drivers outlined in section 2.

As data sources, we used 48 policy documents, 63 media articles, and 25 semi-structured interviews with key policymakers (from finance ministries, financial supervisory authorities, and central banks) and industry representatives, conducted between July 2022 and September 2023 (8-9 interviewees per country, see Appendix I). In order to provide background information about the cases and to prepare for the interviews, the following types of documents were analysed: policy strategies, verbatim records of legislative proceedings, annual reports of financial supervisory institutions, Moneyval evaluation reports, and regulatory guidelines. The interviewees were asked, inter alia, about how FinTech policy in their country had evolved over time and the various factors that influenced the evolution of the policy stance. The interviews were recorded and transcribed. The transcripts were qualitatively coded in light of the theoretical framework outlined in section 2. The codes included the

following aspects: changes in FinTech policy stances, policy goals and preferences of regulators and elected officials, the role and capacities of financial supervisory institutions, and identification of policy failures. To ensure the validity of interpretations, all the transcripts were analyzed by all five authors.

4. Overview of the evolution of FinTech policy stances in the Baltic countries

4.1. Lithuania

The Lithuanian FinTech approach can be divided into two periods: the active promotion in 2016-2020 and the relatively cautious stance since 2021. In the first period, Lithuania took active steps to encourage the development of the FinTech sector. The most important initiatives included the adoption of a FinTech Action plan in 2017, streamlining licensing procedures, the launch of the Newcomer Programme (Innovation Hub) in 2017, and the creation of CENTROlink payments system (infrastructure operated by the Bank of Lithuania giving access to all payment service providers registered in the European Economic Area to the Single Euro Payments Area (SEPA)) in 2015. Lithuania was also one of the first EU countries to create a FinTech regulatory sandbox in 2018. As a result, the number of FinTech companies operating in the country skyrocketed from 82 in 2016 to 230 in 2020 (Invest Lithuania, 2021). Lithuania became the leading country in continental Europe in terms of the number of Electronic Money Institutions.

The second period is marked by a considerably more cautious stance, emphasizing the quality of FinTech companies over quantity. The new leadership of the central bank and the ministry of finance advocated the need to shift the approach. In 2021, the newly appointed Central Bank Head Šimkus stated: “we need to pay more attention to growing the sector’s maturity, risk management” (Viluckas, 2021). There have also been reports of the regulator being stricter in granting licences as well as issuing penalties for compliance breaches, with market participants as well as former officials expressing concerns over excessively strict regulation, although formal rules were not altered (Grinkevičius, 2022a,b; Venckutė, 2023).

4.2. Latvia

The development of a FinTech policy stance in Latvia can be divided into two phases. The first phase (2016-2020) saw a cautious stance towards FinTech, despite the Financial Sector Development Plan’s (2016–2017) objective to create a favourable regulatory environment and the necessary infrastructure for FinTech (including a regulatory sandbox). Instead of launching a regulatory sandbox, an innovation hub, which performs a consultative function, was established in 2017.

The FinTech regulatory sandbox was eventually launched in 2021, marking the start of the second phase in the development of the FinTech policy stance, characterized by an increasingly proactive and open approach to FinTech. The effort to proactively

develop Latvian FinTech ecosystem was boosted with the adoption of the Latvian FinTech Sector Development Strategy in 2023. It envisaged Latvia becoming a FinTech centre and proposed measures improving inter-agency coordination, bolstering the efficiency and access to licensing procedures, and other measures (Hall 2023; Ministry of Finance of Latvia 2023). Unlike in Lithuania, however, the Latvian central bank does not offer direct access to payments infrastructure for FinTechs.

4.3. Estonia

The development of the FinTech policy stance in Estonia can be divided into the following phases. In 2016-2017, proactive policy steps were taken in a specific FinTech domain: cryptocurrencies. Estonia was the first country in the world that started issuing state-issued permits for cryptocurrency-companies (Ylönen et al., 2024). Once problems in the cryptocurrency domain emerged (see section 5 below), the regulation of cryptocurrency providers became considerably stricter in 2020-2021.

Although in the EU context, Estonia has stood out for its long-standing promotion of digital transformation, digital government, and the ICT sector (Kattel and Mergel, 2019), with regard to FinTech policy as a broader policy domain, Estonia has remained relatively cautious for most of the period under consideration. Although discussions have been ongoing about drafting a FinTech strategy and launching a regulatory sandbox, these have not materialized. As a key step towards a more proactive FinTech policy stance, in 2021, an innovation hub was created in the Financial Supervisory Authority (FSA), with the goal to have contacts and consultations with FinTech companies.

5. Drivers of FinTech policy stances in the Baltic states

In this section, we use the theoretical lenses proposed in section 2 to investigate the evolution of FinTech policy stances in the Baltic states in 2016-2023. We examine whether and how the evolution of their FinTech policy stances has been influenced by policy learning (section 5.1) and the institutional settings (section 5.2.). We explore an alternative explanation (the impact of lobbying) in section 5.3.

5.1. Policy learning

5.1.1. *The role of policy learning in choosing* the initial policy stance

Our comparative study shows that the role of policy learning in choosing the initial FinTech policy stance (in the second half of the 2010s) varied considerably across the Baltic countries.

In Lithuania, the adoption of the proactive policy stance in the second half of the 2010s was influenced by two factors related to policy learning: 1) analyses pointing to

limited competition in the financial sector, 2) drawing lessons from the example of the UK as a FinTech hub.

First, in Lithuania, the adoption of the initial proactive FinTech policy stance was driven by the goal to promote competition in the financial sector (Interviews Li1-Li4, Li6). Various analyses of the existing financial sector had revealed that competition in the financial sector was limited: the existing banks were too concentrated, large, and sluggish. Hence, policymakers hoped that FinTech would promote competition in the financial market, both in terms of quality and pricing of services (AFP, 2018, Wessel, 2023; Interviews Li1, Li3, Li4, Li6).

Second, our interviews indicate that policymakers viewed the UK as an important example - a “flagman” and “Mecca” of FinTech (Interview Li8). Several key actors in charge of the financial sector policy in Lithuania (from the finance ministry and the central bank) had previously worked in the UK (Interview Li3) and drew from the UK’s experience, including by directly consulting with UK policymakers on the FinTech policy design (Interview Li4). Although Lithuania had no legacy of being a financial centre before the mid-2010s, becoming a FinTech hub was set as an explicit goal by policy actors in the finance ministry and central bank from the mid-2010s onwards (AFP, 2018; Koronka, 2021; Wessel, 2023; Ministry of Finance of Lithuania, 2017; Interviews Li2, Li3, Li6).

Embracing a vision to become a FinTech hub was facilitated by the window of opportunity presented by Brexit (AFP, 2018; Koronka, 2021; Wessel, 2023; Interviews Li2, Li3, Li5, L6, L8). Brexit fostered Lithuania’s attempts to attract UK-based FinTechs (especially payments companies) who were looking for a new base in the EU. To continue providing services to European residents, they needed a licence from an EU country (Interviews Li2, Li3, Li5, Li6, Li8). Policymakers hoped that becoming a FinTech hub would boost the economy, create jobs, and improve the international reputation of Lithuania (Interview Li6). In choosing the specific policy instruments as part of the proactive FinTech policy stance, such as the FinTech regulatory sandbox, Lithuanian policymakers also emulated the UK (Interviews Li2, Li3, Li8). Other policy choices, like the creation of the CENTROlink, were, however, homegrown.

In Estonia, policy learning as a factor played a role in the government’s initial policy stance towards cryptocurrencies but the causal arrow was reversed. Policymakers opted for a proactive stance towards cryptocurrencies in order to learn about them. As one of the interviewees put it, “We thought it would be a good idea to get a good overview of crypto companies, so we wanted them to come here” (Interview Est3). In Latvia, the cautious stance towards FinTechs in the second half of 2010s was not driven by explicit policy learning about FinTechs but rather by the fact that the financial regulators were overwhelmed with money-laundering problems in the

traditional banking sector and had no cognitive space for developing more proactive FinTech policies (see section 5.2.).

5.1.2. Policy learning and changes in policy stances

Our comparative case study demonstrates that policy learning has played a significant role in driving the changes in FinTech policy stances in all three Baltic states, albeit in somewhat different ways.

Lithuania
In Lithuania, the accumulated experiences with the proactive FinTech policy during the second half of the 2010s led policymakers to shift towards a more cautious stance in the first half of the 2020s (Deveikis, 2021; Wessel, 2023; Interviews Li1-Li7). These experiences allowed policymakers to assess the causal effects of their policy choices on the economy and learn more about the risks FinTechs entail. Initially, in 2016-2020, the Lithuanian policymakers subscribed to a "quantitative approach" to FinTech, seeking to attract numerous FinTech companies to the country (Interview Li6). Over time, however, policymakers started to question the economic benefits of such an approach for Lithuania, especially given that the FinTech sector is dominated by payment firms with considerable money-laundering risks (Interviews Li1, Li5-Li7; Wessel, 2023). Consequently, since 2021, the policy has started to emphasize the "quality" of FinTech companies (Interviews Li1, Li5, Li6; Ministry of Finance, 2023). For example, the FinTech Action Plan (adopted in 2017) mentioned the goal for Lithuania to become a FinTech centre, while the FinTech strategy for 2023-2028 has qualified it and states that "by 2028 Lithuania should be universally recognised as a European *high value-added* FinTech hotspot" (p. 3) (emphasis added). In addition, policymakers have set the goal to diversify the types of FinTech companies beyond payment institutions (Interview Li1, Li5-Li7).

Furthermore, policymakers have started to monitor whether the companies actually have strong links with Lithuania and benefit its economy (Interviews Li1, Li5). Drawing on the experience that some of the FinTechs "only came for a European licence", the policy now emphasizes that FinTech companies should demonstrate that they plan to have activities in Lithuania and create jobs there (Interview Li1). We conjectured in section 2.1. that policy learning is likely to be triggered by policy failures and fiascos. The Lithuanian experience corroborates this. In particular, the "tightening of the screws" towards FinTech by the central bank occurred after a 2021 debacle where a Lithuanian FinTech called Finolita found itself in the middle of a scandal involving the German financial service company Wirecard (Wessel, 2023). The central bank revoked Finolita's licence "because of major breaches of anti-money-laundering and counter-terrorist financing rules" (Milne, 2021). Since a considerable majority of FinTech companies in Lithuania are payment companies, the policy actors became concerned about the impact of allegations of money-laundering through FinTechs in Lithuania on the correspondent relationships with

foreign banks and the entire FinTech sector (Interviews Li3, Li5, Li7). Furthermore, policymakers became concerned that money-laundering allegations might undermine the reputation of Lithuania as a country (Interviews Li3, Li5) and focused on protecting this reputation (Interview Li6).

Estonia

In Estonia, the negative experiences accumulated with a proactive policy stance towards cryptocurrencies during the second half of the 2010s led to a more cautious stance over time, not only towards cryptocurrencies but also FinTech in general. The "licences" issued to the cryptocurrency providers by the Financial Intelligence Unit (FIU) were not accompanied by adequate monitoring mechanisms. Even though it was called "licensing", it was actually just registration (Interview Est1-Est3). Such an approach led to the flocking of close to 2,000 crypto firms to Estonia (see Ylönen et al. 2024), and Estonia became the world's "crypto hub" by 2019 (Interviews Est1, Est3). Gradually, however, problems with the crypto sector became apparent and concerns with money-laundering, sanctions evasion and terrorism financing emerged (Interviews Est1-Est4). As an interviewee explained, "After a while, it turned out that most of those 2,000 crypto companies are fictitious and many are engaged in money-laundering. Quite large sums passed through Estonia from east to west." (Interview Est3)

Our interviews indicate that the finance ministry, the FSA, and the central bank in Estonia consider their "crypto experiment" to be one of the country's biggest mistakes in financial supervision (Interviews Est1-Est4). As the allegations of money-laundering started to threaten the international reputation of Estonia, the regulatory stance towards crypto assets became stricter over time and the number of cryptocurrency firms declined significantly (BNS, 2022; Ylönen et al., 2024). Given the negative experiences with cryptocurrencies, the Estonian policymakers became cautious towards other types of FinTechs (Interviews Est3, Est4, Est7). As an interviewee argued, "The crypto experience is an example of how not to act. This is also one of the reasons we don't want to rush like Latvia and Lithuania and are more conservative towards FinTech." (Interview Est3) The Lithuanian Finolita scandal also induced more caution towards FinTechs in Estonia (Interviews Est1, Est3, Est8).

Latvia

In Latvia, the shift from the initially cautious FinTech policy stance towards a more proactive one in the early 2020s can be partly explained by the desire to emulate the perceived success of other countries in pursuing proactive FinTech policies, especially Lithuania (La1-La5, La9). As one interviewee observed, "One of the first questions for policymakers always is: what is happening in Estonia or Lithuania? Or, it is asked: see what Lithuanians are doing, why can't we do the same? Since Estonia and Lithuania are the closest neighbours, it is difficult to argue why they can and we cannot." (Interview La1)

In Latvia, policymakers drew lessons about the Lithuanian experience with regard to the goals set for FinTech policy and also the policy instruments chosen. Similarly to Lithuania, the Latvian policymakers started emphasizing the goal to boost competition in the financial sector as justification for a more proactive FinTech policy (Hall, 2023; Interviews La1, L6, La7). The Latvian FinTech strategy, published in 2023, points to the need to promote competition and reduce barriers to entry in the financial sector (Hall, 2023; Ministry of Finance of Latvia, 2023; Interviews La1, L6, La7). Drawing on the Lithuanian example, Latvian policymakers included in their FinTech strategy the goal to become a regional FinTech hub (Ministry of Finance of Latvia, 2023).

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n choosing the policy instruments for a proactive FinTech policy stance, the policymakers also emulated the Lithuanian example by adopting an explicit FinTech strategy and setting up an innovation hub and a regulatory sandbox. Unlike in Lithuania, however, the Latvian central bank does not offer the FinTech firms a direct access to the payments infrastructure. The information about the money-laundering risks in the Lithuania FinTech sector have induced the Latvian policymakers to be more cautious in its FinTech policy stance (Interviews La1, La2).

5.2. Institutional setting

Drawing on Ganderson (2021), we conjectured in section 2.2. that elected officials would be likely to embrace pro-active FinTech policy stances, while financial regulators and supervisors (e.g. from financial regulatory agencies or central banks) would prefer cautious FinTech policy stances. We also expected more proactive stances in countries where politicians are more involved in financial regulation. Our cases paint a more nuanced picture.

In Lithuania, during 2016-2020, policy entrepreneurs (Kingdon, 1984) from the finance ministry and central bank were enthusiastic about adopting a proactive FinTech policy approach, with central bank officials playing a prominent role in advocating such a stance (Interviews Li2, Li3, Li6). The new government that took office in 2016 included the development of the FinTech sector in its government programme, which was also embraced by key persons in the central bank (Interviews Li2, Li3, Li8). As an interviewee noted, “It was the confluence of a strong vision of politicians in Lithuania and willing actors from the central bank that enabled the emergence of the FinTech policy” (Interview Est8). While central bankers generally tend to take a conservative stance towards financial markets (Masciandro, 2022), in Lithuania, they did not shy away from policy activism, embracing a potentially risky strategy towards FinTech.

The Lithuanian case also demonstrates that in a small country, the FinTech policy stance can strongly depend on which individuals occupy specific positions in the

central bank and finance ministry (Interviews Li3, Li4, Li7). In 2016-2020, these positions were held by officials who favoured a proactive FinTech policy. In 2020-21, however, there was turnover in key staff in the finance ministry and central bank (several of whom left to join the FinTech industry). The new officials – especially in the central bank – have taken a more cautious stance (Interviews Li2-Li4, Li7).

In Estonia, elected officials have been mostly uninterested in promoting a proactive FinTech policy (Interviews Est1, Est3-Est5, Est7, Est8; PM Majandus, 2023). The FSA and the top civil servants in the MoF did not actively promote FinTech, preferring to await initiatives from the politicians (Interview ESt4, Est7, Est8). The attitude of the FSA in Estonia towards FinTech has mostly been characterized by cautiousness, conservatism, and a desire to preserve the mandated role of the FSA (Interviews Est1, Est2, Est4, Est5, Est7, Est8). The stance of financial supervisors is well captured by this remark: “The FSA views themselves primarily as a supervisor and does not like risk. Unless there is a political mandate to start increasing the risk appetite, they would not do it: it is against their DNA.” (Interview Est8)

In Latvia, the interviewees noted that throughout 2016-2023, politicians were mostly uninvolved in FinTech policy, neither promoting nor prioritising it (Interviews La1, La2, La4, La5, La9). Recent proactive steps in this field have been undertaken by civil servants in the finance ministry, the Financial and Capital Market Commission (FCMC), and the central bank (after its merger with FCMC in 2023). For most of the period under consideration, however, policy actors in the finance ministry and the FCMC took a cautious stance towards FinTech due to their focus on de-risking the Latvian financial market after money-laundering scandals erupted in 2016-2017 and the negative Moneyval report that grey-listed Latvia in 2018 (Interviews La1-La5, La8, La9). Although money-laundering scandals emerged in the traditional banking sector, risk aversion concerning the financial sector carried over towards FinTechs.

We conjectured in section 2.2. that an integrated model of financial supervision (with a central bank being in charge of supervising the financial sector) should be more conducive to an active FinTech policy stance. Our cases corroborate this. Lithuania has an integrated structure of financial supervision and has been more proactive in its FinTech policy than the other two countries. In Latvia (until 2022) and Estonia, financial supervision has been undertaken by financial supervisory agencies. In both countries, the supervisors have preferred more cautious stances towards FinTech. The merger of the central bank and financial supervisory authority in Latvia (in 2023) coincided with the emergence of a more proactive policy stance.

We conjectured that in the integrated mode of financial supervision, the supervisory institution has a *broader mandate*, which supports adopting a proactive FinTech policy stance. In Lithuania, the institution responsible for FinTech – the central bank – has had a sufficiently broad mandate to pursue pro-active FinTech policies. Both in Estonia and Latvia, interviewees referred to the relatively narrow mandate of the

financial supervisory agencies as a potential obstacle to taking a more proactive stance (Interviews Est3-Est5, Est8, La2, La6, La7).

In section 2.2., we suggested that in the integrated model, due to a larger organization and more functions, financial supervisors have more resources and broader skill sets – which should facilitate the adoption of a pro-active FinTech policy stance. Our interviews support this. Some of the Estonian and Latvian interviewees observed that Lithuania has had an advantage in pursuing a pro-active FinTech policy owing to the central bank's resources (e.g. Interviews Est5, Est8, La1). In Estonia, the interviewees also observed that it is challenging for the FSA to undertake a proactive FinTech stance due to the existing institutional landscape, with its prevailing attitudes and limited resources (Interviews Est3-Est5).

The impacts of the institutional architecture of financial supervision on FinTech policies were reinforced by the developments in the financial sectors of Estonia and Latvia in the mid-2010s. Both countries suffered from major money-laundering scandals involving the traditional banking sector (Ylönen et al., 2024). All the interviewees in both countries concurred that this further reduced the cognitive space financial supervisors had for FinTech. In Latvia, addressing the requirements of the Moneyval report and correcting the shortcomings in the Anti-Money-Laundering (AML) policy took considerable effort and hence not much capacity was left for considering FinTech policy (Interviews La1-La3, La8). As an interviewee noted, "After the negative Moneyval report, the focus in the financial sector was on AML and not so much on development. Our objective was to revamp the financial sector and make it maximally transparent and clean. As a result, the attention to FinTech waned." (Interview La8) Similarly, the Estonian FSA has been engulfed by the efforts to battle money-laundering by Nordic banks (Ylönen et al. 2024) and to ensure that Estonia passes the Moneyval evaluation. In the words of an Estonian interviewee: "We have been overwhelmed by having to deal with acute problems like money-laundering scandals, the risk of getting greylisted by Moneyval, and so on. … When dealing with such acute pain, it is difficult to deal with bigger and more beautiful topics." (Interview Est8)

5.4. Alternative explanations?

In our study, we have focused on the influence of policy learning and institutions. In light of the literature on lobbying (e.g. Hanegraaf and Poletti 2021), it could be expected that the evolution of FinTech policy stances may also be shaped by pressures from the incumbent banking industry and the nascent FinTech sector (Heritier and Schoeller, 2020). The traditional banking sector could be expected to lobby for a more cautious stance, while the FinTech companies would advocate for more proactive policies.

Our interviews indicate that in the Baltic states, pressures from the industry have *not* played a significant role in shaping policy. The interviewees in all three countries observed that the FinTech sector is too fragmented and disorganized to provide coordinated input into policymaking. With regard to the influence of the traditional finance sector, in Lithuania policymakers resisted lobbying pressures from the sector to be more cautious (Interviews Li3, Li4). In Estonia, too, our interviews pointed to limited influence of the traditional banks on FinTech policy choices. In Latvia, after the emergence of a more proactive stance in 2021, the traditional banking sector has been vocal about the fact that FinTech companies do not have direct access to a central payment system (like the CENTROlink in Lithuania) which means that the banks remain responsible for the AML checks of FinTech companies (Interviews La2, La4, La5, La9). However, the central bank has decided not to provide direct access to the payments system for FinTechs.

6. Concluding discussion

Our paper addresses the theoretical and empirical research gap regarding the drivers of Fintech policy stances. We contributed to the theoretical discussions in the public policy literature by outlining how policy learning and institutions can affect the evolution of national FinTech policy stances. We also made an empirical contribution by probing the plausibility of these theoretical conjectures with a comparative case study of the three Baltic states.

Drawing on the growing literature on policy learning (Dunlop and Radaelli, 2013; Giest, 2017; Grin and Loeber, 2017; Hulme and Hulme, 2012; Nair and Howlett, 2017) and given deep uncertainties faced by policymakers regarding FinTech, we expected policy learning to be an important driver in the evolution of FinTech policy stances – both in terms of influencing the initial stance and changes over time. The existing literature on policy learning (e.g. Busetti and Righettini, 2023; Zaki and Radaelli, 2024) has suggested that as policymakers learn about the effects of policies over time, they are likely to revise the policy goals and instruments. Our empirical study corroborates the importance of policy learning in explaining the evolution of FinTech policy. Policy learning (drawing on the UK example and analyses of the domestic financial market) played a role in the initial proactive FinTech policy stance chosen by policymakers in Lithuania. Our comparative study also demonstrates that in Lithuania and Estonia, the accumulated information about the risks of FinTech led policymakers to *revise* their initial policy beliefs and adopt a more cautious policy stance over time.

We conjectured that as policy actors learn about the risks related to FinTech, the policy stances would become more cautious over time. Based on the existing studies on policy learning (e.g. Busetti and Righettini, 2023; Zaki and Wayenberg, 2023), we expected crises, scandals, and policy fiascos to lead to revisions in governments' FinTech policy stances. Our empirical study corroborates this expectation. The

experiences Lithuania and Estonia had with numerous payment and cryptocurrency companies, respectively, led policymakers to question the economic benefits that an indiscriminate approach to attracting FinTech companies can bring, contributing to the emergence of more cautious policy stances.

In light of existing studies (Busetti and Righettini, 2023; Hulme and Hulme, 2012; Howlett, 2012), we expected policy failures to trigger policy learning. Our study corroborates the importance of perceived policy failures in inducing policy learning. The cases of the Baltic countries reveal that money-laundering is the key FinTech-related risk policymakers have become more aware of. Owing to the scandals, policy fiascos, and crises related to money laundering, policymakers in the Baltic countries have become aware of policy failures and, subsequently, revised their policy stances.

In our theoretical discussion, drawing on Ganderson (2021), we conjectured that elected officials would be likely to embrace pro-active FinTech policy stances, while financial supervisors would prefer more cautious approaches. Our cases, however, paint a more nuanced picture. In contrast to this expectation, in Lithuania, the main proponents of the proactive FinTech policy were key officials in the central bank, although they benefited strongly from the support of a politician (the finance minister). Only after a change in the leadership at the central bank was there a shift towards a more cautious stance. In Latvia, the civil servants from the finance ministry played the key role in promoting a more proactive policy stance, while politicians have remained uninterested and the financial supervisors relatively cautious. In Estonia, politicians have shown only limited interest in promoting the FinTech sector and the financial supervisors remain cautious, maintaining the cautious stance after the cryptocurrency debacle.

Drawing on studies discussing the institutional architecture of financial supervision (Buttigieg and Bomber, 2012; Masciandro and Quintyn, 2016; Wymeersch, 2007) we conjectured that countries with an integrated model (i.e. where the central bank undertakes all financial supervision) would be better equipped to embark on proactive FinTech policies than those with a fragmented model of financial supervision. Our comparative case study confirms this prediction. The bolder approach of Lithuania toward FinTech was facilitated by having an integrated approach. The fragmented institutional architecture in Estonia and Latvia (until 2023) meant that officials of the financial supervisory authorities had fewer resources and capacity to embark on more proactive FinTech policy approaches.

Our study has several limitations. First, we have only examined the drivers of FinTech policy evolution in three Baltic states. In future studies, the sample of countries should be expanded. This would also allow more in-depth investigation of how different institutional settings affect FinTech policy learning. Second, as the motivation of our paper was to kick-start the discussion on potential drivers of governments' FinTech policy stances, we have only examined a limited set of factors.

In future studies, a more comprehensive investigation of various drivers should be undertaken. Third, we have focused on the national rather than supranational level.

Additional research would be needed on the FinTech policy developments at the EU level and how supranational choices affect member states. Finally, although our study could not identify significant influences of the FinTech or banking sectors on FinTech policy stances, they may play an important role in other countries. Future studies should examine how the dynamics of cooperation and competition between those sectors affect the evolution of FinTech policy.

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List of interviewees

Estonia

Interview Est1, Bank of Estonia, 15.12.2022

Interview Est2, Bank of Estonia, 27.01.2023

Interview Est3, Ministry of Finance, 21.12.2022

Interview Est4, Financial Supervision Authority, 9.11.2022

Interview Est5, Financial Supervision Authority, 28.10.2022

Interview Est6, Ministry of Finance, 21.10.2022

Interview Est7, Ministry of Economic Affairs and Communications, 8.07.2022

Interview Est8, Finance Estonia Association, 19.04.2023

Latvia

Interview Lv1, Ministry of Finance, 27.07.2022

Interview Lv2, Finance Latvia Association, 09.03.2023

Interview Lv3, State Revenue Service, 17.10.2022

Interview Lv4, FintechLatvia Association, 17.03.2023

Interview Lv5, Finance Latvia Association, 06.03.2023

Interview Lv6, Financial and Capital Market Commission, 03.08.2022

Interview Lv7, Financial and Capital Market Commission, 03.08.2022

Interview Lv8, Financial and Capital Market Commission, 24.08.2022

Interview Lv9, Central Bank of Latvia, 04.09.2023

Lithuania

Interview Li1, Bank of Lithuania, 05.07.2022 and 07.07.2022

Interview Li2, Bank of Lithuania, 27.09.2022

Interview Li3, Ministry of Finance, 05.12.2022 and 16.12.2022

Interview Li4, Bank of Lithuania, 27.12.2022

Interview Li5, Bank of Lithuania, 06.01.2023

Interview Li6, Ministry of Finance, 31.03.2023

Interview Li7, FinTech sector representative, 8.07.2022

Interview Li8, Bank of Lithuania, 11.08.2023