Innovation in open banking: Lessons from the recent wave of payment institutions that have been authorised to provide payment initiation and account information services

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Abstract

The Revised Payment Services Directive (PSD2) came into force in all EU member states in 2018. One stated aim of this legislation was to create room for innovations in technology and business models in order to give account holders more choices and more direct control regarding access to their account information and ways of initiating payment transactions. Although an evolving array of new services and service providers has emerged over the past few years, the market remains in an early phase of experimentation. Nevertheless, information about the range of newly licensed service providers in the EU, and their business models, provides some insights into how the market is evolving and how it is reacting to recent regulatory and market infrastructure changes introduced through the PSD2 and open banking architecture. This paper reviews the population of payment institutions that have recently obtained authorisation to provide payment initiation or account information services in the EEA. It examines the (1) geographic reach, (2) company origins and investors, and (3) business function of these new actors to provide early insights into the changing economics of banking and payments.

Keywords: open banking, PSD2, PISP, AISP, payment service licence, new entrants, EUCLID database, payment institutions, payment service passporting, FinTech investment

INTRODUCTION

This paper reviews the population of companies that have obtained authorisation to provide payment initiation or account information services in the European Economic Area (EEA). It examines the (1) geography, (2) company origins and investors and (3) business function of these new actors to provide early insights into the changing economics of banking and payments.

CONTEXT

Innovations in technology and business models have gradually weakened legacy

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banks' control over the choices account holders have for accessing account information and initiating transactions. Although an evolving array of new services and service providers has emerged over the past few years, the market remains in an early phase of experimentation. Nevertheless, information about the range of newly licensed service providers in the EU, and their business models, provides some insights into how the market is evolving and how it is reacting to recent regulatory and market infrastructure changes introduced through the Revised Payments Services Directive (PSD2) and open banking architecture.

The introduction of the PSD2 has formalised and structured the role of 'payment initiation' and 'account information' service providers. Although these functions began already to appear much earlier, both within and beyond the EU, the regulation of these activities has required companies operating in the EEA to be licensed. The EUCLID database, managed by the European Banking Authority (EBA), provides a comprehensive list of such entities, the services that they are licensed to provide, and the jurisdictions in which they may provide them.

This short empirical paper exposes some of the key features of this evolving market space, drawing on data collected about these companies from diverse public sources. It provides some initial insight into the sources of efficiency gains, consumers' needs and forms of economies of scope that are being targeted, as well as the types of strategic investors involved and some of the bets investors are placing on business models in AISP and PISP services.

THE DATA

This study uses data taken from the EUCLID register of payment institutions authorised by competent authorities in the EEA. The sample looks at those institutions (payment institutions and electronic money institutes) that have obtained authorisation to provide, as per PSD2 Annex 1, payment initiation (#7) or account information (#8) services. In the EUCLID database, institutions can be registered as payment initiation service providers (PISPs) or account information service providers (AISPs). In the Netherlands and Germany, organisations that provide account information services only are recorded as payment institutions rather than AISPs. The data sample used for the present study also includes electronic money institutes.

EUCLID data contain the name of the institution, the country in which it is registered and authorised, the additional EEA countries in which it has specific authorisations (eg through passporting rights), the date of authorisation and the services it is authorised to provide in each EEA member state. The data in the sample relate to the state of current authorisations at the beginning of June 2020. New registrations continue to be made on an ongoing basis.

Additional business-related data were obtained from various public sources including official registries (Belgium: Carrefour des Entreprises and the Centrale des bilans hosted at the BNB; France: Infogreffe; Germany: Bundesanzeiger; Ireland: Companies Register Office; UK: Companies House), company websites, investment portals and other open sources.

By selecting this particular sample, the scope of this analysis is focused on reviewing the activities of *new entrants*, ie those companies with a newly issued licence for service #7 or #8. Some of these are newly formed businesses, others have been launched as a spin-off or a new business initiative of an existing company, which may or may not be a financial services company. It should be noted that credit institutions (CIs, commonly referred to as 'banks') are also active in this space, but these are not included in the sample. Under PSD2, all existing CIs have automatically been granted the right to

Table 1: Data summary

Type of institution	*No. institutions*
Payment institutions authorised to provide service #7 or #8	154
of which	
Payment institutions *not authorised* for payment initiation services (#7)	26
Payment institutions *not authorised* for account information services (#8)	13
Account information service providers (AISPs)	123
Electronic money institutes	39
of which	
Electronic money institutes *not* providing account info services (#8)	4

act as PISPs and/or AISPs. Several CIs have indeed started to offer such services, either under their existing brand name, or under a newly established brand name. These CIs undoubtedly contribute to the competitive dynamics in the emerging market of PISPs and AISPs, and a deeper analysis of this group might well uncover some interesting insights into how the incumbent banks are responding to the new competition. However, with over 5,600 CIs listed in the EUCLID CI register, many of which are not active in the AISP or PISP space, such analysis is left for future research.

Overview

The data cover a total of 316 institutions. The data sample is summarised in Table 1 and covers (1) payment institutions and electronic money institutions licensed to provide payment initiation services (service #7), and (2) payment institutions and account information service providers licensed to provide account information services (service #8). While there were, as of the date of research, 1,071 authorised payment institutions in the EEA, the subset of those that are authorised for the provision of service #7 or #8 (ie payment initiation and account information) is much smaller. Nevertheless, the rate of growth in these areas is greater than the rate of growth in the area of electronic money institutions.

Some entities and groups have multiple authorisations. Six institutions appear twice in the database with different authorisations. Corporate groups may hold different licences through subsidiaries or related companies, as is the case with Google, Revolut and Klarna/Sofort, among others. Of the 39 electronic money institutes, only three corporate groups also have payment institution licences. This is the case for Fire Financial (which has a payment institution licence in Ireland), Google (which has payment institution licences in the UK and Poland) and First Data (which has a payment institution licence in Ireland).

The majority of firms are authorised in one EEA member state only (see Figure 1). The next biggest contingent have obtained authorisation to operate across 26 or more EEA jurisdictions. Very few companies in the sample are in between.

A cursory view of the data reveals how significant the creation of and investment in new businesses has been. The vast majority of companies in the sample are relatively young, having been established in the last ten years (where the company was established as a subsidiary of another company,

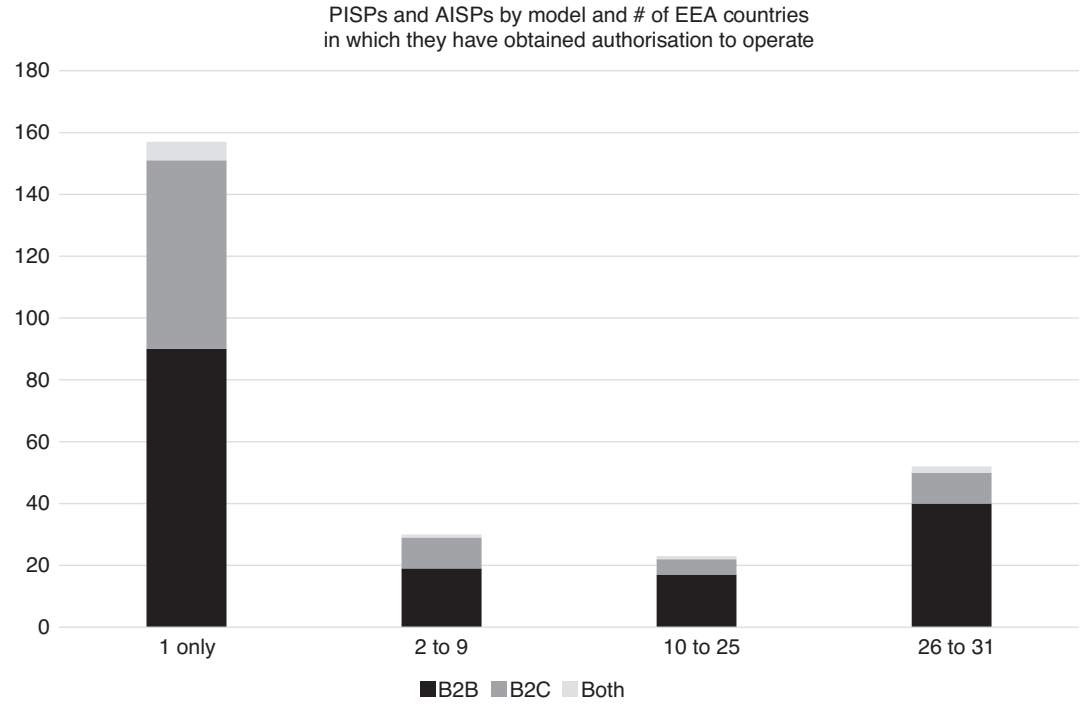

Figure 1: Distribution of PISPs and AISPs by model and number of EEA countries in which they have obtained authorisation to operate

the date of establishment of the parent company is used). The oldest companies include the ICA Spara AB supermarket, Amex, Transunion, First Data, Bankomat, CRIF, Sage, Wolters Kluwer and B+S Bankensysteme AG. A drop in the number of companies established in 2019 is likely an indication of the lag between the date on which the company is incorporated and the date of applying for or obtaining authorisation.

Market coverage and passporting

Almost all business models display a strong preference for either local or full EEA ambitions, with the obvious exceptions of banking IT service companies and application programming interface (API) integration providers that support a network of banks that cover more than two countries but less than the full 27 or 31 in the EU or EEA respectively (see Figure 2).

The majority of businesses in the data (184 out 316) are active in only one market. Business models that are more strongly focused on one or two home markets are found in the areas of consumer analytics, accounting and enterprise resource planning (ERP) integration, corporate banking services and wealth management. Consumer banking service providers — such as new digital banks — are more likely to aspire to regional coverage. Meanwhile, some of the business models in which there are few representatives — such as in loyalty or identity — are also authorised in just one market.

The main businesses more likely to aspire to full regional scope of operations are in merchant services, for which over twice the number of firms have a licence to operate in the full 31 countries compared with

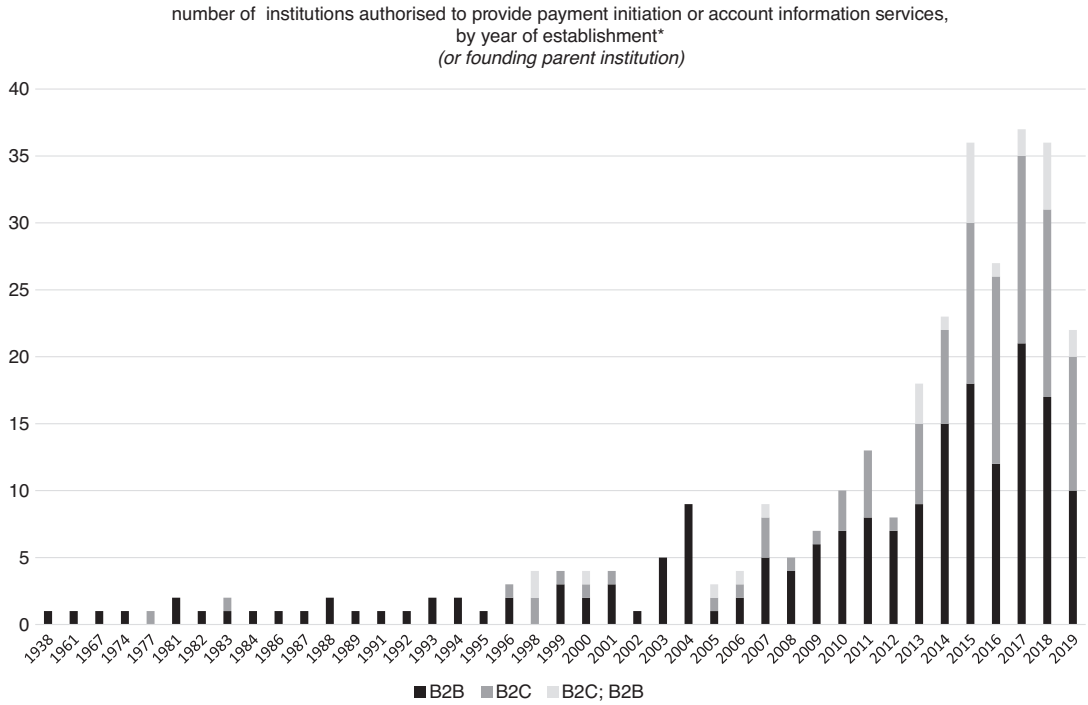

Figure 2: Number of institutions authorised to provide payment initiation or account information services, by year of establishment (or founding parent institution)

just the home country of the operator. Additionally, some operators in this group that are operating in only one country themselves are part of a bigger corporate group (such as Nets).

Figures 3–5 illustrate the overall growth in authorised PISPs, AISPs and electronic money institutes.

Broken down into different institution categories, the picture remains similar, although registrations in Lithuania and Germany represent a greater portion of the overall population of electronic money institutions than in the overall sample (see Figure 4).

Once passporting is taken into account, the distribution across EEA jurisdictions is more balanced but still skewed towards a large contingent in the UK, followed by Germany, France, the Netherlands and Sweden (Figure 6). A significant portion of the divergence in the UK is due to a significant number of AISPs. The retail banking market there is seeing the entry of a wide range of customer mobile apps, analytics and payment service providers that may serve to intermediate between banks and end customers. This is likely caused by the lead that the UK has taken in creating a UK-specific regulatory framework for open banking, which goes well beyond PSD2 to open up a larger space for new entrants.

Business services and models

There is a wide variety of business models represented in the sample. Although many businesses seeking PISP or AISP authorisation are directly active in the provision of financial and payment services, there is also a range of other businesses. These include, most prominently, accounting firms, credit reference agencies, retailers, IT

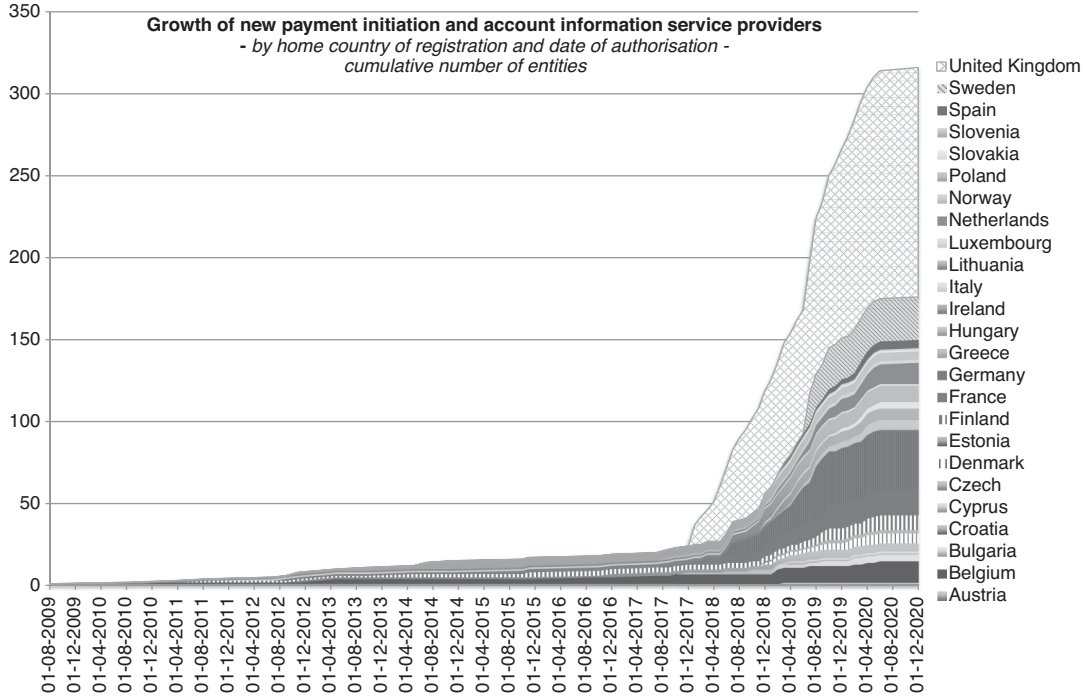

Figure 3: Cumulative growth of new payment initiation and account information service providers by home country of registration and date of authorisation

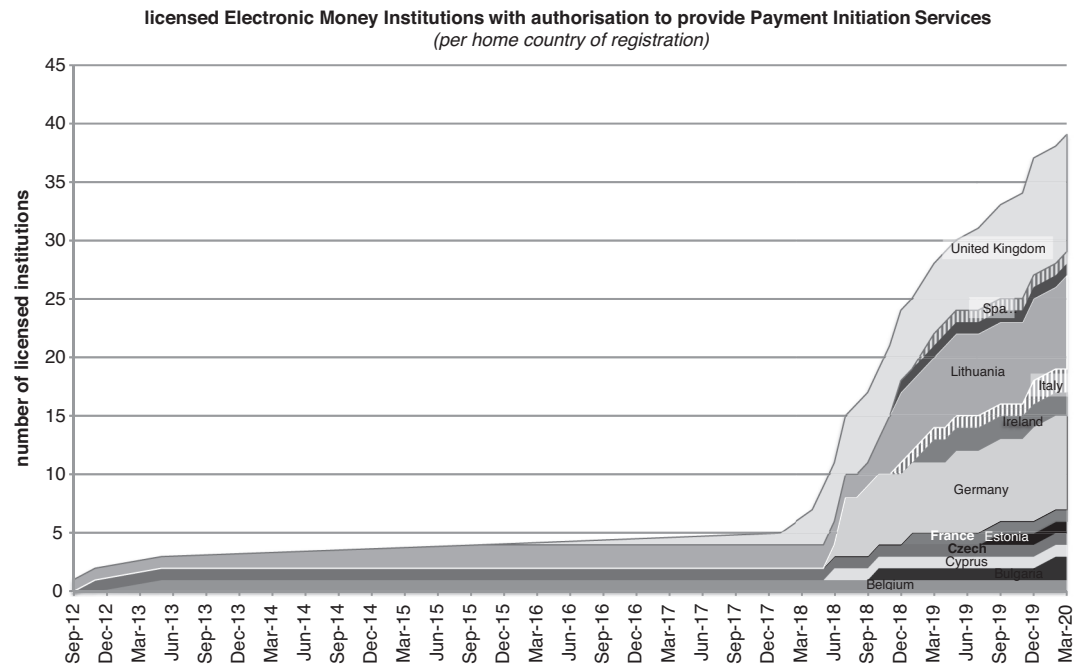

Figure 4: Licensed electronic money institutions authorised to provide payment initiation services, by home country of registration

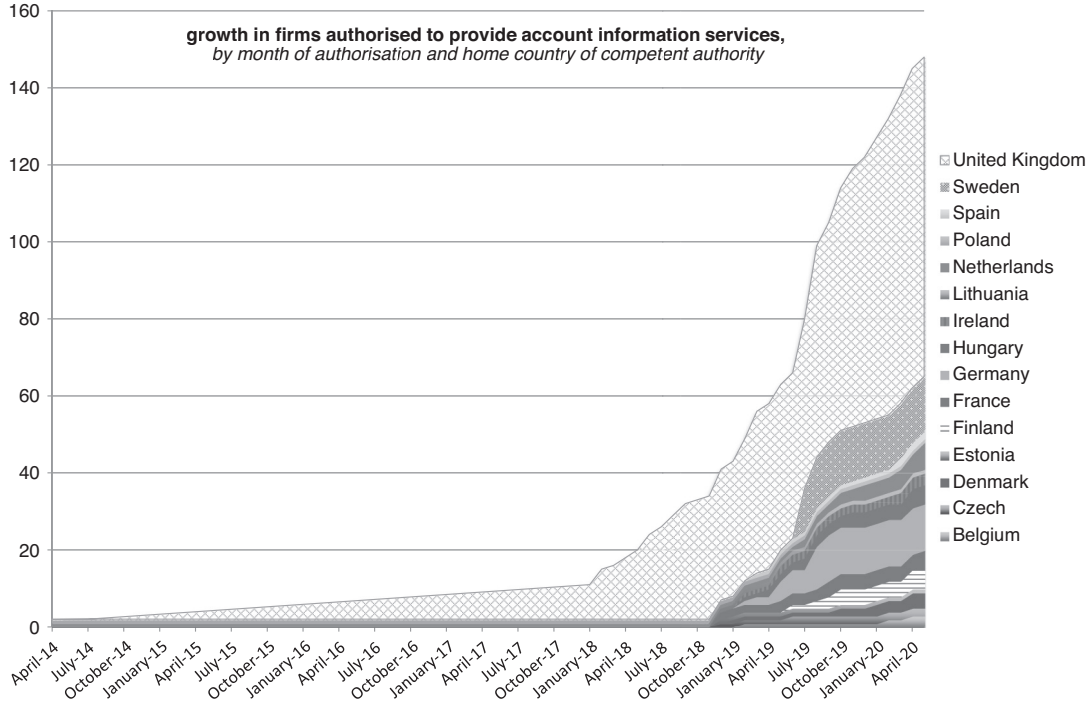

Figure 5: Growth in firms authorised to provide account information services, by month of authorisation and home country of competent authority

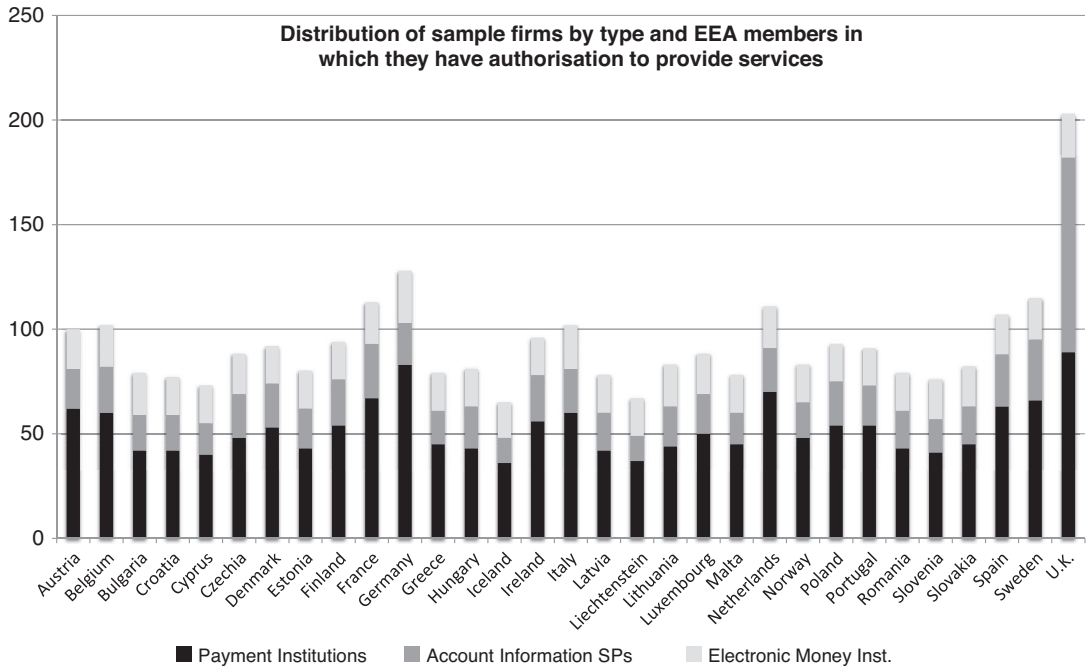

Figure 6: Distribution of firms by type and country

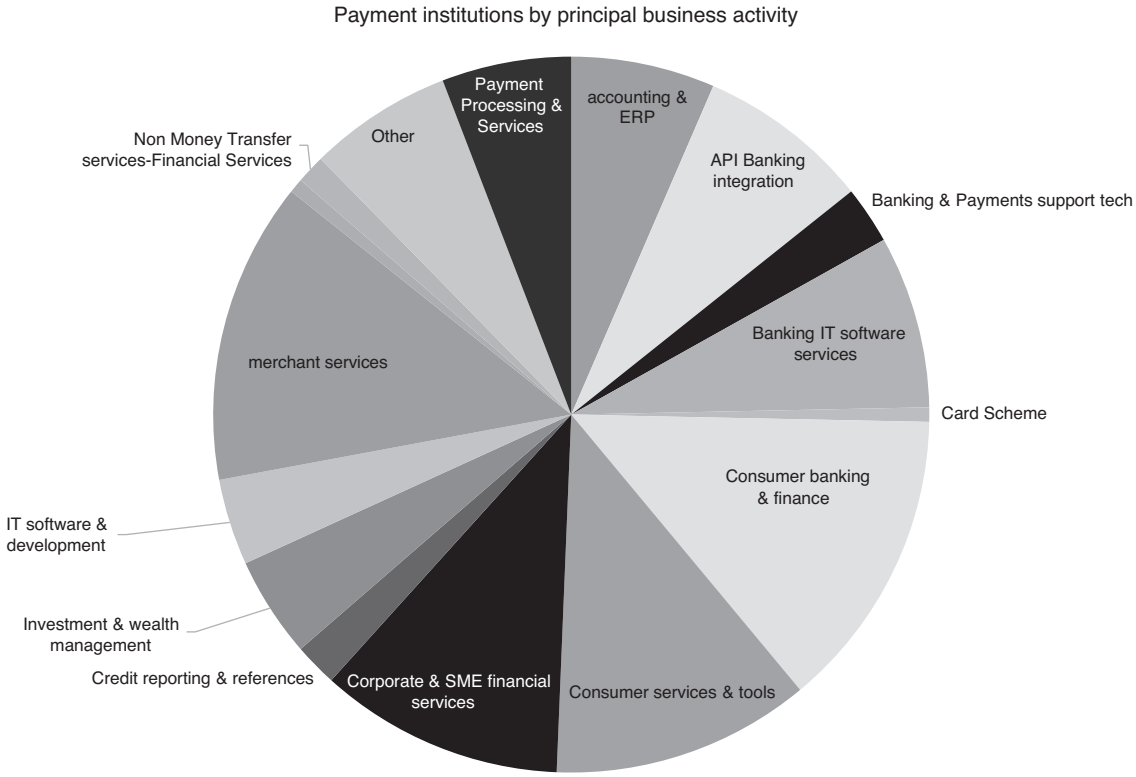

Figure 7: Payment institutions by principal business activity

software developers and companies providing customer loyalty applications. The full spectrum is outlined in Figures 7 and 8.

The population of AISPs also encompasses a wide variety of business models. Although the majority of firms provide consumer-oriented financial management and analytical tools, the full spectrum of AISPs includes other firms whose core businesses include (1) accounting and audit, (2) insolvency and (3) loyalty applications.

In terms of customer orientation, 173 companies authorised to provide account information services are primarily business-to-business (B2B) firms, offering services to other institutions including banks, corporates or other technology firms; 99 firms primarily follow a business-to-consumer (B2C) model; and 26 firms operate a two-sided model with offers for both consumers and financial services and other institutions. One firm operates a B2B2C model targeting employees.

Segments warranting further comment

The biggest group of firms is in the consumer-facing 'services and tools' grouping. This includes a diverse range of early-stage businesses, many of which provide a new set of channels for financial institutions to acquire and interact with end customers. Many of them offer free services to consumers to analyse their financial health, capacity or behaviour (eg spending patterns), and advise them on products or help them benefit more from loyalty, subscription or other bonus offers. Many of them appear to be free to users, who can download an app and activate them. Some

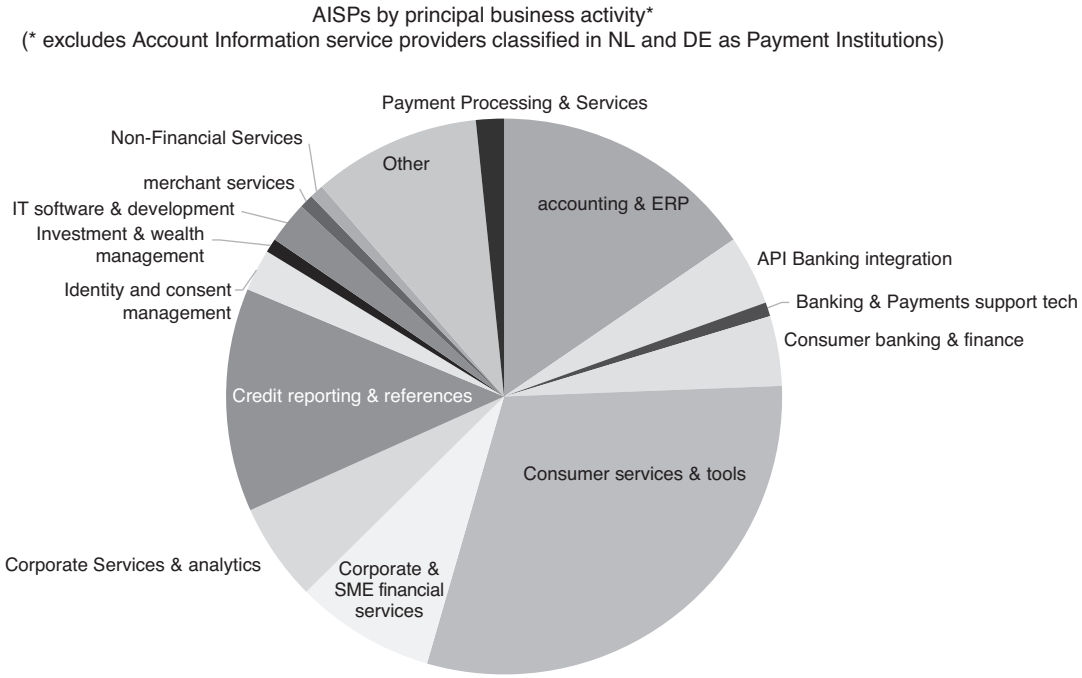

Figure 8: Account information service provider business models (excluding account information service providers classified as payment institutions in Netherlands and Germany)

indicate that they may earn revenues from product vendors to which end consumers are introduced.

Some are focused on very specific niche markets, such as helping people with lower incomes or poor credit ratings to build a 'thicker file' or, in contrast, to provide customised value-added advice to higher-income clients in private banking. One app is marketed by a wealth manager to high net worth individuals to track the spending of their staff.

A significant number of firms are developing mobile payment apps that target both merchants and consumers to varying degrees, with the aim of better leveraging data about spending patterns to drive loyalty and analytics on behalf of a variety of users. With the introduction of lower-cost near real-time credit transfer systems such as Swish and Faster Payments, such mobile apps can allow merchants to accept payment via alternatives to cards, such as the service provided by Sofort. It would be reasonable to expect competition among these new providers for the business of online and physical merchants to increase. One example of such increased competition can be seen between credit card instruments and new instant payment schemes. Credit card schemes have a strong and broad base of merchants, and can offer compelling services to cardholders, such as purchasing insurance (with pricing of risk enabled by decades of experience). They can also command relatively high prices from merchants based on their market power. With instant payments on the other hand, PISPs could potentially offer faster, immediate, and much cheaper payment services to merchants, including e-commerce merchants.

Shareholders and investors

In terms of number of companies, privately funded early-stage and venture capital (VC)

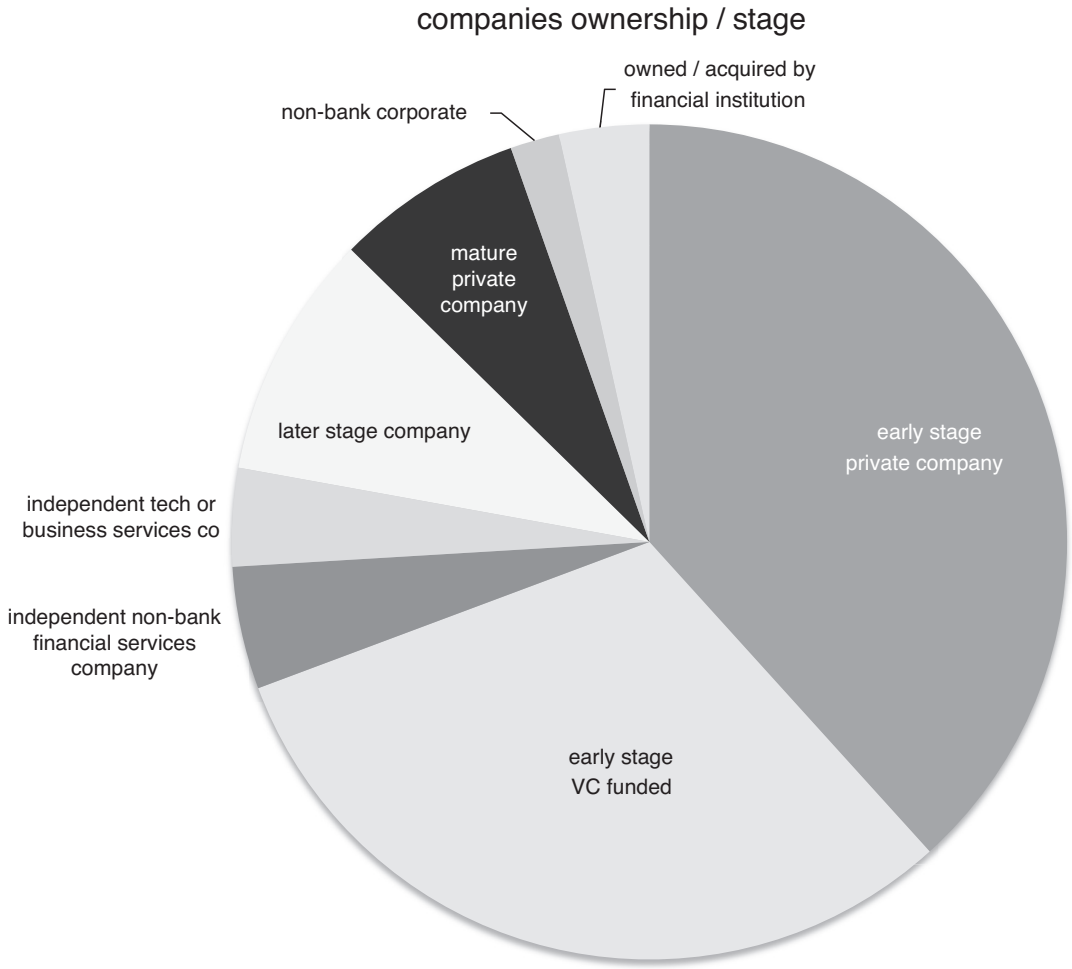

Figure 9: Distribution of companies by ownership/development stage

funded companies dominate the sample. In the absence of comprehensive and comparable financial data, an assessment by valuation is not possible. Nevertheless, selected disclosures give some indication of the expected market potential. Beyond the established and listed players, some of the biggest newcomers in this sample include Klarna subsidiary Sofort and Revolut (Klarna and Revolut both valued recently at US$5.5bn[1]). Also in the sample is Plaid, which is being acquired by Visa for a stated US$5.3bn.[2] Most of the earlier-stage companies have more modest but significant valuations: Paytrail in Finland was valued at US$44m in 2017;[3] Eurobits in Spain was acquired by Tink for €15.5m in 2020;[4] Olinda raised series C funding of €104m from parties including Tencent;[5] and API integrator BUD, backed by HSBC and Goldman Sachs, recently raised US$20m[6] to aid in expanding its staff and market coverage.

Within the scope of shareholders and investors, banks and other financial institutions are very prominent. Fifteen of the early-stage non-VC funded companies are owned by banks or groups of banks. A wide range of credit institutions have created or supported investments in new technology

and services, including Danske Bank, OP Financial Group, BBVA, Credit Agricole, Credit Mutuel Arkea, NatWest, Bundesverband Deustcher Banken, SPARDA Bank, Wüstenrot & Württembergische, Gruppo IVA Maurizio Sella, AXA Bank, Belfius, BNP Paribas Fortis, HSBC, Goldman Sachs, ING, KBC, ING Ventures, Nordea, the Volksbanken group and M.M. Warburg & Co. In other cases, banks have invested alongside VC funds in independent entities.

A small number of non-bank corporates have either established or acquired companies with authorisations. In the retail and related space, for payments and in management of subscriptions and loyalty, this includes BP, Enel, Zalando, Telefonica, Esprit fashions and the supermarket chain ICA Spara.

A larger contingent is made up of very big (ie listed or not early-stage) non-bank corporates that provide payment and related business services, such as payments processing, credit reporting and accounting, such as CRIF, Sage, Wolters Kluwers, NETS A/S, First Data, Worldline and American Express. This contingent also includes local and global technology firms, including Google and Intuit.

There are a few smaller and relatively early-stage firms that have already acquired other companies in the sample, perhaps an early sign of consolidation that may increase. This includes Klarna, which owns Sofort, and Tink AB, a Swedish firm that acquired a Spanish FinTech called Eurobits Technologies in 2020.

Correlation with European venture capital

According to Invest Europe,[7] total European venture capital — across all sectors — in 2019 comprised 913 firms, making investments of €11bn in 4,696 companies. In 2019, the overall market, including private equity, buy-out, VC and 'growth funds' allocated 3.4 per cent and 8.2 per cent of funding by firms and amount respectively to financial and insurance activities. Venture capitalists invested just under €1bn in financial and insurance activities.

In terms of the geographical allocation of investments, the Invest Europe data indicate some correlation with this sample, but also demonstrate the level to which this industry segment has become a focus for development in the UK and Ireland. This can be seen in Table 2, which summarises the number of earlier-stage companies invested in at seed, start-up and venture stages (across all industries) in 2019.

The large portion of firms registered in the UK may be influenced by the focus of the economy on financial services and investment management. To some extent, however, this prominence may also be linked to explicit efforts in the UK market to support more competition in the banking sector. Since the Cruikshank Report 20 years ago and the financial crisis of 2008/9, in which RBS was brought into public ownership, several steps have been taken to promote FinTech innovation and competition in retail and small to medium-size enterprise banking. The Office of Fair Trading has played a catalytic role in encouraging open banking, reforming access to payment systems and laying foundations for the licensing of new digital banks. The Bank of England and the Financial Conduct Authority also took early-stage initiatives to promote FinTech.

On the investment side, the British Business Bank has identified FinTech as one of its priority segments for investment. In 2018 it allocated 13 per cent of its funding to 'future of finance' companies. The organisation has invested via a range of investment fund management companies, among which several, including Balderton, Seedcamp, notion.vc, Dawn Capital and Amadeus Capital partners, have been active in the payments space, including AISPs and PISPs covered herein.

Table 2: Number of early-stage investments, by region

Stage	*UK & Ireland*	*France & Benelux*	*Germany, Austria, Switzerland*	*Southern Europe*	*Nordics*	*Central & Eastern Europe*	∑
Invest Europe, 'Annual Activity Statistics 2019'							
Seed	214	280	220	125	232	202	1,273
Start-up	546	833	506	415	338	151	2,789
Sub-total	894	1330	822	627	654	369	4,696
%	19%	28%	18%	13%	14%	8%	100%
EUCLID sample (for comparison)							
Early & later-stage VC	108	32	21	5	34	15	215
%	50%	15%	10%	2%	16%	7%	100%

Source: Invest Europe, 'Annual Activity Statistics 2019', available at: https://www.investeurope.eu/research/data-and-insight/ (accessed 30th June, 2020)

An additional financing initiative emerged from the RBS bailout in 2009, under which a £425m Capability & Innovation Fund (https://bcr-ltd.com/cif/) was established to provide grants to help awardees improve their banking capabilities for small and medium-sized enterprises. Under this programme, four firms covered in this data (Funding Options, iwoca, Swoop and Fluidly) received grants.

Lithuania has also had a very proactive approach towards the FinTech industry. The authorities there have actively encouraged FinTech firms to use Lithuania as a base to serve Europe (Figure 10). Application and licensing processes have reputedly been streamlined. Lithuania has attracted companies including Revolut and Google.

The sample also provides some information about the mode of entry of non-European financial and technology firms. Several of the older and larger North American based technology firms have established their own legal entities, mostly using the UK, Ireland or Lithuania as a base for servicing the broader market. This includes companies such as Plaid, Yodlee, Google and Saltedge. Larger Chinese payments actors such as Ant Financial and Tencent have invested in this market through minority stakes in companies including Klarna (Ant), Olinda (Tencent) and Truelayer (Tencent). There is also one firm that claims to be working in partnership with WeChat to provide payments acceptance for them in Europe.

WHAT THIS SAYS ABOUT THE ECONOMICS AND INVESTMENT LANDSCAPE

New intermediaries are playing a growing role in advising clients on financial services. Many AISPs and some PISPs aim to provide smarter data analytics, and to draw on data that have previously been unavailable (technically or legally), to inform more automated and dynamic advice. This can and is overlapping into providing financial advice to consumers and firms regarding savings, investments and how to improve one's credit score. It is also fostering the broader usage of artificial intelligence to generate recommendations.

Many, but not all, of these businesses are also two-sided. They are onboarding end users, primarily consumers, with low or no fees and offers but counting on generating revenue through advertisers, prospect generation or fees levied on merchants.

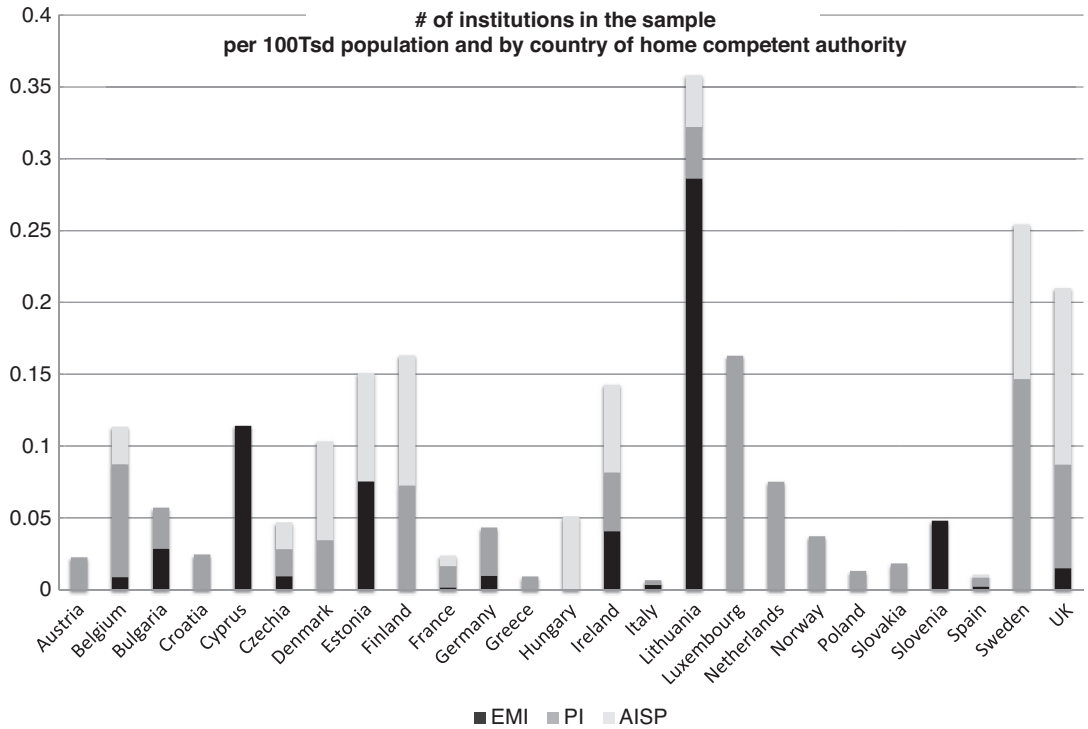

Figure 10: Number of institutions in the sample by country of home competent authority

Some of these structures are well established, although in some cases there may be concerns about disclosure and potential conflicts of interest, particularly where financial investment products are intermediated.

What role do synergies with non-financial industry activities play in value creation and competition? So far within this sample there is little indication that non-financial services providers are expecting to internalise payment initiation functionality. With a few minor exceptions (Esprit, BP, ICA Sparda), retailers may be relying on existing payment licences (such as for Uber and Airbnb) or the new companies servicing merchants to provide access to related data analytics. This trend is also consistent with the appearance of a small number of loyalty application specialists among the sample of AISPs.

Accounting and ERP software and service providers make up an important contingent of AISPs. Many of these firms are likely to have been already providing consent-based access and data-sharing facilities to clients before the introduction of PSD2, but now find that they need to have an AISP authorisation in order to formalise and comply with this practice, as it pertains specifically to bank transaction information.

Banking federations and associations that have shared service companies are using them to develop internal tools that larger banks may be able to develop internally. Some of the companies in Germany, Italy and France are set up by the IT and shared services units of savings and cooperative banks. This includes companies in the data such as the Linxo Group and BPCI in France, VR Payment GmbH and PAYONE GmbH in Germany, Fabrick SpA in Italy, MyFin in Bulgaria and Payconiq as a regional service provider based out of Luxemburg. Their presence in the list may say

more about how their shared business operations function than about a specific focus on FinTech that sets them apart from other banks. Larger banks do not need to establish separate entities or licensing arrangements to provide such services. It is therefore reasonable to assume that other banks also have similar projects but have less incentive to create them as separate ventures. In contrast, it should be noted again that many banks have made minority investments in individual early-stage firms providing the services covered by this analysis.

The opening up of payment initiation services may also lead to changes in the market share of card schemes. Platform competition between new SEPA Credit Transfer (SCT) solutions and cards should increase. While it is still too early to foresee what portion of and at what pace e-commerce and other retail payments will substitute SCT, there appears to be growing momentum for this. There are also converging public policy and private market forces heading in that direction from:

- the European Payment Council (EPC), for SCT instructions to be confirmed as the European Instant Scheme for euro;
- the ECB, by positioning TIPS as the infrastructure hub that can connect the existing 'local' SCT Instant Payments solutions in Europe and allow cross-border reach and full business interoperability, initially for the Eurozone, but pre-wired to support multi-currency instant payment settlement;
- the European Commission and the ECB, both of which have publicly supported the launch of the European Payment Initiative (EPI), announced by 16 leading commercial issuing banks — this will be a European scheme, based on account-to-account or card rails, which could present an alternative to international card schemes; and
- the EPC, which has taken steps to fast-track development of a request-to-pay scheme (SEPA Request-to-Pay Rulebook) that will allow overlay services on any account-to-account payment instrument. The European Automated Clearing House Association is developing an interoperabilty framework to complement the EPC SRTP Rulebook.

The more the above elements fall into place, the more space will open up for PISP services. Companies like Klarna/Sofort, or the leading acquiring processors (Worldpay, Worldline, Nets) will be in a good position to offer lower-cost options to merchants. They can then expect PISPs to similarly seek a position between acquiring banks and merchants. The total and per capita payment card expenditure of consumers gives some indication of the countries in which investors may see near-term potential. A recent study commissioned by the EU assessed the effects of the Interchange Fee Regulation (IFR) (see Figure 11).[8] Although it recommends further assessment of the impact of maximum fees for transactions above €35, there does now seem to be greater clarity regarding the stability of the current fee structures and regulation. This will enable new providers to have more confidence in assessing the business case.

From this early-stage sample, it will be interesting to observe if and how AISPs and PISPs expand their hold on retail-client relationships and how loyal any new client base proves to be. Some institutions, such as Klarna and Sofort, have managed to expand from an initial niche in e-commerce payments and merchant services into providing a broader array of financial services to their own client base. Within this sample there are many companies seeking to insert themselves in between banks and their customers, and to this end are clearly developing their own consumer branding. Of course, whether they will remain niche players or expand into the core activities of credit institutions remains to be seen. In a scenario in which core

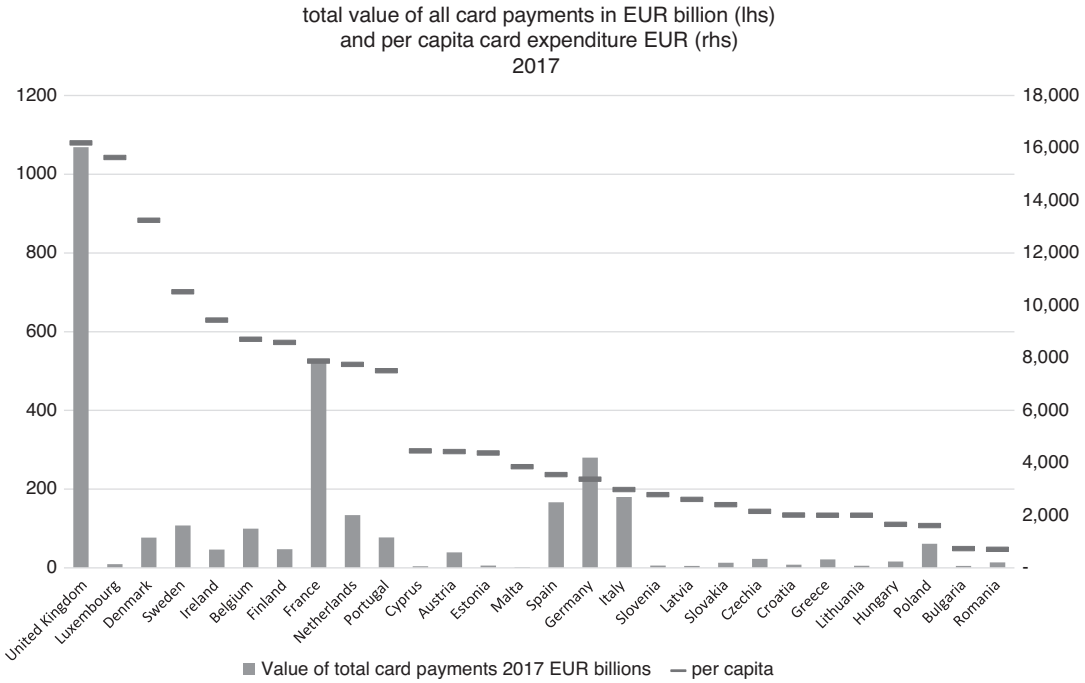

Figure 11: Value of card payments per country (€bn) — total (left-hand side) and per capita (right-hand side)

banking services become commoditised, it could prove to be more profitable to focus on client-facing intermediation and services.

Outcomes may depend on the depth and variety of product providers and other financial institutions (beyond integrated universal banks) to which PISPs and ASIP will act as distributors and intermediaries. Further analysis should extrapolate from modelling the effects of vertical integration in oligopolistic industries. As Abiru *et al.* note,[9] when imperfections exist in both the upstream and downstream markets, double marginalisation can occur, undermining welfare. In monopoly industries, vertical integration is a stable equilibrium; in such cases vertical integration may be economically more efficient. However, as the level of competition and participants in upstream and downstream sectors diverge, there is 'no uniquely dominant strategy'.[10]

Transposed to the market context under investigation, the implications are that in markets with a high concentration of banks and few alternative sources of finance, vertical integration of new PISP and AISP services may be more efficient. If new downstream intermediaries find few banks (ie upstream product providers) to work with, they may be in a weak competitive position to compete with those banks' own vertically integrated distribution arms. On the other hand, if there is also a growing variety of upstream independent market-based financial firms — locally or via passporting — and B2B product providers, a diverse array of new, downstream distribution layer actors may be complementary and result in a new, less concentrated market structure.

Although this aspect of market dynamics requires further research, one can certainly expect that the overall dynamics will depend on the structures at both the up and downstream layers of the market. The success of account information and payment initiation services (financially as well as in terms

of their impact on market efficiency) will depend in part on the structure and degree of competition in upstream markets. For this reason, policy makers need to monitor and gauge competition within this more complex context. For the further creation of both a dynamic and integrated European market for financial services, this is just another chapter in a slowly unfolding process.

CONCLUSIONS AND POLICY IMPLICATIONS

Although there will surely be further evolution both regionally and globally, this initial *zoology of FinTechs* has provided some initial insights into the dynamics and expectations of market participants:

- *The prevalence of new end-client facing intermediation services implies that there is still some room for efficiency gains*. Most new entrants will be betting on their chances of earning revenue from improving on the interaction between banks and end users — both consumers and merchants. Most markets in the EEA have high degrees of concentration in retail banking, so there may indeed be space for some areas of client prospecting and sales to squeeze out margins for banks and compete with their internal product and marketing functions.

  A significant element of competition also focuses not so much on price but on variety competition, in which the preferences of a new generation and of more bespoke business requirements are addressed by more specialised services. However, in opaque market segments or in the context of uninformed users, there may also be the potential for new actors to generate new revenue opportunities or increase overall market consumption of financial services that are not welfare-enhancing. The overall impact on sector efficiency may take time to manifest and will be increasingly difficult to assess. Nevertheless, the evidence supports one key assumption of the legislator, that the level of innovation in payments could be increased, given more regulatory leeway (in the form of the PSD2).
- *Beyond consumers, merchants are the most important group that should anticipate improvements from the new competition*. With the introduction of new payments architecture and platform competition between cards and (instant) credit transfer systems there is the expectation that merchants and consumers will be offered new ways to pay that may undercut the fees of card schemes. This may work if merchants are offered significant value-added benefits or reductions in fees, and if consumer habits can in parallel be shifted away from cards to mobile apps and credit transfer products. Certainly, card schemes have woken up to the potential threat and are energetically improving their services with additional features like purchasing insurance, or increased security with geo-blocking options. However, to the extent that banks still control acquiring services for both card and instant payments, they may be able to adjust pricing so that payment initiation services do not overly cannibalise their card scheme commission revenue.

  The investments in the merchant service and payment apps suggest that some investors have confidence in this hypothesis. In the UK, Kikapay targets both merchants and consumers and highlights its potential to reduce both fraud and costs for merchants, as well as provide immediate availability of funds. In Sweden, Trustly, Mondido and Brite offer merchants services that are more efficient, provide immediate funds and can improve online sales rates. Perhaps not surprisingly, it is in these two countries — the UK and Sweden — that there are also some of the highest per capita spends by card.[11] As card fees are largely calculated on percentage terms and instant payments often incur a flat fee, there could be significant

arbitrage opportunities for new players to exploit. It will be worthwhile observing this specific area of the market (indeed, some markets in the EEA, such as Germany, already have a higher rate of credit transfers for retail payments). Again, the evidence supports another key assumption of the legislator, that there is room for more competition in payments. Beneficial price effects for merchants have been observed as a result of the Interchange Fee Regulation.[12] Although further beneficial effects for merchants or consumers have not yet emerged, more price reductions for merchants can be expected from the increased competition between cards payments and instant account-to-account payments.

- *The data point to what could become a wider range of new information economy actors sharing and accessing data.* The sample highlights the role of accounting, tax and credit reference firms in accessing and providing access to account information. However, PSD2 only applies a data access and protection framework specifically to certain banking operations and information. It layers on top of General Data Protection Regulation requirements in a specific segment.

  But as the emerging discussion around the role of data trustees and the approach taken by the Australian Competition and Consumer Commission (ACCC) in Australia suggest, growth of data access and usage extends well beyond banking. Will cloud-based accounting and tax service providers be the forerunners in the AISP market, or are they the exception that has to comply with banking sector rules? Will other intermediaries emerge that share and manage data access for other businesses? In this respect, both Verimi GmbH, with its array of industry and service shareholders (Samsung, VW), and Giesicke & Devrient could provide interesting examples of how non-financial firms might look at information access.

Further research

Avenues for further research include the following:

- Several trends make it more difficult to monitor and assess the changes in the sector. With the growing diversity of actors in the ecosystem, blurring borders and a move from price to variety competition, it will be more complicated for policy makers to measure and assess competition and efficiency. While some changes in regulation have de-risked end-user services and protected the central infrastructure, other risks to integrity and consumers may arise. As the marginal costs of international expansion through these business models decline, more complex supply chains may arise that test the boundaries of regulators' and supervisors' authority. It might become easier for 'thin' client-facing service models to establish a legal presence in local jurisdictions to address consumer protection issues in retail banking, and then to source products via B2B relationships with foreign entities. This could expand cross-border trade in retail financial services under regulations applied to business/professional investors.

  Further research could we warranted to develop improvements in data and analytics used by authorities to monitor and oversee the market and keep up pace with its dynamics.
- The speed, ease and investor appetite with which some of the providers in this sample have expanded across borders amplifies the importance of ongoing digital trade and FinTech agreements. Regional and bilateral trade agreements are focusing increasingly on the role of various impediments to cross-border trade in payment and related data services. In parallel, concerns about the strategic implications of international expansion by highly scalable tech-network services have prompted re-examination of competition

policy frameworks and national interest. Informing this emerging trade and regulatory policy domain is of importance and warrants new and highly practical research that can guide policy makers in the interest of equitable economic development.

- Research should also investigate the interactions between and effects of competition in these downstream distribution functions and the market structure in upstream parts of the financial services sector. Payment and account information services have long been structurally embedded in the services of banks. With the help of technology, their joint DNA have been separated and freed to develop more independently. But as they still are parts of a common ecosystem, interactions between them will inevitably influence broader market outcomes and implications for welfare, competition and efficiency. Separating out the payment and account information services offered by incumbent banks from the EUCLID database of credit institutions will allow for such investigation.
- The specific role of large marketplace 'platform operators' in the provision of payment services and financial services more broadly is worth further investigation. Some companies are building capabilities through the acquisition of a bank, electronic money institute or payment institution; others are creating subsidiaries that are licensed to operate in specific EU member states. Their platform business models might be more focused on developing a broader and deeper end-user relationship (with the supply side of their platform, or the demand side, or both) and less focused on earning immediate return on payment services — leading to the risk of cross-subsidisation.

AUTHORS' NOTE

The views expressed herein do not engage or represent those of any of the organisations with which the authors are associated.

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