THE CASE FOR A BEST EXECUTION PRINCIPLE IN CROSS-BORDER PAYMENTS

DIRK A. ZETZSCHE, ROSS P. BUCKLEY, DOUGLAS W. ARNER AND MARIA LUCIA PASSADOR

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UNSW Law
UNSW Sydney NSW 2052 Australia

The Case for a Best Execution Principle in Cross-border Payments

Dirk Zetzsche[*], Ross Buckley[**], Douglas Arner[***] & Maria Lucia Passador[****]

Abstract:

Cross-border payments suffer from a lack of speed and transparency and limited access, resulting in higher overall costs than domestic payments. This paper analyses how the best execution principle developed in the context of securities and derivatives could be applied to cross-border payments. Under that principle, financial institutions are legally required to provide the most advantageous order execution in terms of speed, risks and costs for their customers given the prevailing market environment.

We argue that introducing best execution could alter the current set-up of cross-border payments which rests, for the most part, on a system of large, globally connected correspondent banks. The current system is best understood as one of "best friends",

[*] Professor of Law, ADA Chair in Financial Law (Inclusive Finance), and Coordinator, House of Sustainable Governance & Markets, Faculty of Law, Economics and Finance, University of Luxembourg.

[**] KPMG Law –King & Wood Mallesons Chair of Disruptive Innovation, Scientia Professor, and Member, Centre for Law, Markets and Regulation, UNSW Sydney.

[***] Kerry Holdings Professor in Law and Director, Asian Institute of International Financial Law, University of Hong Kong.

[****] LL.B., LL.M., Ph.D., Post-doctoral researcher Faculty of Law, Economics and Finance, University of Luxembourg.

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in that the relationship among payment institutions determines through which institutions orders are routed. In turn, payment institutions charge their clients on a "cost plus profit" basis. Some of the payment institutions even benefit from rebates based on liquidity volume (kick-backs) and from reduced rates and soft commissions elsewhere in the payment chain. Overall, there is little incentive for payment institutions to truly put their clients first in terms of speed, costs and risks in the current "best friends" environment.

Introducing "best execution" is potentially a game changer: it would require payment institutions to focus on their clients' interests (*i.e.*, when choosing the route the order is to take). Based on experience with the best execution principle enshrined in securities law, we would expect the large-scale introduction of digital routing systems to identify the offer that constitutes best execution. Furthermore, we expect that more links between correspondent banks, new service providers from the FinTech space, and public payment networks (including regional integration systems) would be established and would assist in identifying excess liquidity in infrequently traded currency pairs. While none of this requires distributed ledger technology, strictu sensu, one convenient way, technically, to achieve that purpose is by implementing a distributed ledger that functions, initially, as a digital liquidity marketplace (a pure information sharing device) and, which in time, could be further developed into a "best execution platform".

Keywords: Cross-border payments, best execution, payments, correspondent bank, closed-loop systems, competition, multilateral systems, artificial intelligence, distributed ledger, blockchain.

JEL Codes: G21, G23; K22, K23.

Contents

I. Introduction

The Financial Stability Board (FSB), the Bank of International Settlements (BIS) and the Committee on Capital Market Infrastructures (CPMI) identify four impediments to efficient cross-border payments: (1) costs, (2) slowness, (3) limited access and (4) lack of transparency.[1]

Costs comprise "transaction fees, account fees, compliance costs, applied FX conversion rates and fees, fees across along the payment chain, and liquidity cost for prefunding"[2], with charges for cross-border payments amounting "up to 20 times those for domestic transactions".[3]

Slowness, is due to poor technical integration, manual processes, and diverging legal requirements.[4] "Lack of tight interoperability between different systems creates issues with managing cash flow".[5] Slowness increases costs as long

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[1] FSB, ENHANCING CROSS-BORDER PAYMENTS. STAGE 1 REPORT TO THE G20: TECHNICAL BACKGROUND REPORT (APRIL 9, 2020), https://www.fsb.org/wp-content/uploads/P090420-1.pdf, at 13-14; CPMI, CROSS-BORDER RETAIL PAYMENTS (FEB. 2018), https://www.bis.org/cpmi/publ/d173.htm. This time-related issue is perhaps even worse given that "the lack of common communication or messaging standards across systems often hinders seamless interoperability" (EUROPEAN CENTRAL BANK - BANK OF JAPAN, SYNCHRONISED CROSS-BORDER PAYMENTS (JUNE 2018), https://www.ecb.europa.eu/paym/intro/publications/pdf/ecb.miptopical190604.en.pdf, at 1). For a general overview of the overly-neglected issue, *see* Jon Cunliffe, *Cross-border payment systems have been neglected for too long*, FIN. TIMES (July 13, 2020), https://www.ft.com/content/a241d7e0-e1de-4812-b214-b350cbb7d046.

[2] FSB, ENHANCING CROSS-BORDER PAYMENTS. STAGE 1 REPORT TO THE G20: TECHNICAL BACKGROUND REPORT (APRIL 9, 2020), https://www.fsb.org/wp-content/uploads/P090420-1.pdf, at 13-14.

[3] HAL S. SCOTT & ANNA GELPERN, INTERNATIONAL FINANCE, TRANSACTIONS, POLICY, AND REGULATION (2020), at 744. For potential cost reductions in cross-border correspondent banking see: Gene Neyer & Benjamin Geva, *Blockchain and payment systems: What are the benefits and costs?*, 11 J. PAYMENTS STRATEGY & SYSTEMS 215, 218-9 (2017).

[4] Morten Linnemann Bech, Yuuki Shimizu & Paul Wong, *The quest for speed in payments*, BIS QUARTERLY REV. (March 2017), at 57 ss., http://www.bis.org/publ/qtrpdf/r_qt1703g.htm and *IBM Launches Blockchain Banking Network To Speed Cross-border Payments*, ICT MONITOR WORLDWIDE (Oct. 17, 2017).

[5] VISA, MEETING THE MIDDLE MARKET'S PAYMENT NEEDS (MAY 2020), https://visa-business-solutions.foleon.com/vbs/knowledge-hub/meeting-the-middle-markets-payment-needs/. This will become even more relevant as, , "customers will define the nature of future services, not providers" (MCKINSEY, A VISION FOR THE FUTURE OF CROSS-BORDER PAYMENTS (OCT. 22, 2018), https://www.mckinsey.com/~/media/McKinsey/Industries/Financial%20Ser

settlement times elevate counterparty and FX risk. Issues increase with non-mainstream countries, *i.e.,* where interfaces are non-standard or illiquid currencies are involved.[6]

Limited access is due to proprietary technical systems (including SWIFT), high barriers to be a partner for cross-border payments (due to Herstatt risk and market integrity / antimony laundering / terrorist financing requirements), and sustained preference for cash in specific developing countries. Limited access has relevant drawbacks for the whole society.

Transparency is limited since volume and fee data are rarely published, with names of payment institutions.[7]

This paper analyses to what extent the best execution principle developed in the context of the law of securities and derivatives brokerage can address these shortcomings of cross-border payments. Under the best execution principle, financial institutions are legally required to provide the most advantageous order execution in terms of speed, risk and costs for their customers given the prevailing market environment.

We argue that introducing the best execution principle could make a difference to the current structure of cross-border payments which rests, for the most part, on a system of large, globally connected correspondent banks.[8] The current system may be best characterised as one of "best friends", in the sense

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vices/Our%20Insights/A%20vision%20for%20the%20future%20of%20cross%20border%20payments%20final/A-vision-for-the-future-of-cross-border-payments-web-final.ashx, at 3).

[6] Whereas mainstream countries are "moving towards one common global standard for financial messaging, called ISO 20022. Global adoption of this standard is accelerating with a number of high-value payment market infrastructures already live and more planned to go live by 2023." (KPMG, A NEW STANDARD FOR PAYMENTS (2020), https://home.kpmg/xx/en/home/insights/2020/02/payments-standard.html).

[7] On the general lack of transparency, *see* CROSS-BORDER INTERBANK PAYMENTS AND SETTLEMENTS. EMERGING OPPORTUNITIES FOR DIGITAL TRANSFORMATION (NOV. 2018), https://www.mas.gov.sg/-/media/MAS/ProjectUbin/Cross-Border-Interbank-Payments-and-Settlements.pdf, at 13-14.

[8] In general, Tara Rice, Goetz von Peter, Codruta Boar, *On the global retreat of correspondent banks* (2020), https://www.bis.org/publ/qtrpdf/r_qt2003g.pdf, 39. More specifically, "[d]espite the decline in the number of active correspondents and corridors, both the value and volume of cross-border payments processed via correspondent banking networks continued to grow in the last year, by roughly 5% and 4% respectively", BIS, NEW CORRESPONDENT BANKING DATA - THE DECLINE CONTINUES AT A SLOWER PACE, https://www.bis.org/cpmi/paysysinfo/corr_bank_data/corr_bank_data_commentary_2008.htm.

that the relationship among the payment institutions involved (that is correspondent banks or group companies within a closed-loop system) determines through which institutions the orders are routed. In turn, payment institutions charge their clients on a "per cost" basis. Some of the payment institutions even benefit from volume-based rebates, kick-backs, a type of "soft dollars" benefit, and reduced rates elsewhere in the payment chain. Overall, there is little incentive for payment institutions to put the interests of their clients first by working to seek the best compromise in terms of speed, costs and risks in the current "best friends" environment[9].

We argue that introducing "best execution" would be potentially transformative: it would require payment institutions to consider, exclusively, their clients' interests (*i.e.*, when choosing the route, the order is to take). Based on experience with the best execution principle in securities law, we would expect, following the adoption of best execution in payments law, the large-scale introduction of digital routing systems to identify the offer that constitutes the best execution. Furthermore, we expect that more links between correspondent banks, new service providers from the FinTech space, and public payment networks (including regional integration systems) will be established, and innovative technologies, including routing algorithms and as well as distributed ledger technology (DLT) systems to be implemented, assisting to identify excess liquidity in less frequently traded currencies, or currency pairs, as the case may be.

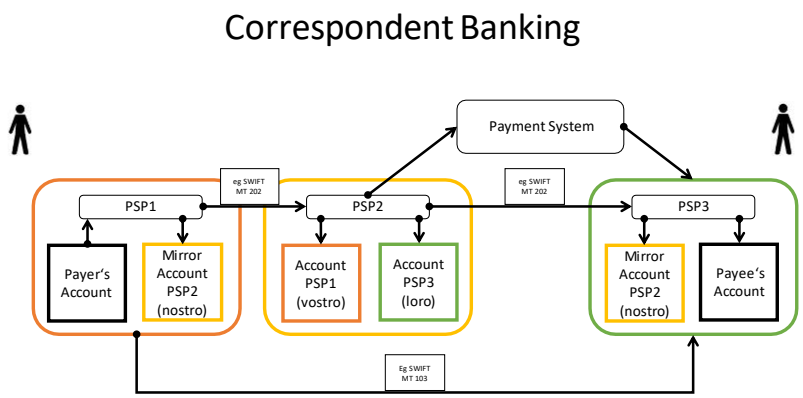
This paper is structured as follows. In Part II we show how the current structure of cross-border payments facilitates monopoly rents: regardless of whether this concerns large correspondent banks or closed-loop systems (such as PayPal, or the payment networks of savings and loan associations or cooperative banks, respectively). In Part III we describe the securities law principle of "best execution" and show how best execution works for securities brokerage. In Part IV we analyse to what extent this principle can be transferred into payment law. In Part V we address some major policy considerations and Part VI concludes.

[9] CPMI, PAYMENT ASPECTS OF FINANCIAL INCLUSION IN THE FINTECH ERA (APR. 2020), https://www.bis.org/cpmi/publ/d191.pdf, 46.

II. Rents in the cross-border payments chain

1. Correspondent banking

Figure 1: Correspondent Banking[10]



Correspondent banking rests on a sequence of booking transactions eventually resulting in the booking of an amount on the payee's account equal to the amount removed from the payer's account (minus fees). Yet, in fact, no money is transferred as such. Rather,

(1) PSP1 debits the payer's account first the amount to be transferred;

(2) PSP1 credits a mirror account (nostro account[11]) held in the name of PSP2 which is kept purely for accounting purposes;

(3) PSP1 sends to PSP2 a payment message via an electronic messaging system (*e.g.* SWIFT MT 202) and announces the forthcoming payment to PSP3 (via *e.g.* SWIFT MT 103);

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[10] Adjusted from EUROPEAN BANKING FEDERATION, GUIDANCE FOR IMPLEMENTATION OF THE REVISED PAYMENT SERVICES DIRECTIVE. PSD2 GUIDANCE (DEC. 20, 2019), https://www.ebf.eu/wp-content/uploads/2019/12/EBF-PSD2-guidance-Final-December-2019.pdf, 11.

[11] Nostro Account is a bank's foreign currency account maintained by the bank in a foreign country and in the home currency of that country. Translated from Latin "our account with you".

(4) PSP2 debits PSP1's account with PSP2 (vostro account[12]).

Then, if no (electronic) fund transfer/payment system is involved:

(5) PSP2 credits PSP3's account with PSP2 (loro account[13]);

(6) PSP2 sends a payment message to PSP3 via an electronic messaging system (*e.g.* SWIFT MT202);

(7) PSP3 debits PSP2's mirror (nostro) account with PSP3 which is kept purely for accounting purposes;

(8) PSP3 credits payee's account with PSP3.

Then, if an (electronic) fund transfer/payment system (*e.g.* FedWire, EURO1/STEP1/STEP2, Target2, INTERAC, RBI EFT) is involved:

(5) PSP2 sends a payment message to the fund transfer system (often using a proprietary messaging standard);

(6) Settlement takes place via the fund transfer system;

(7) The fund transfer system sends a payment message to PSP3 (often using a proprietary messaging standard);

(8) PSP3 credits the payee's account with PSP3.

As summarised by the Bank for International Settlement (BIS), correspondent banking is characterised by a number of worrying trends:[14]

First, the number of financial institutions connected in a correspondent relationship is decreasing. Costs and risk issues are driving this trend. In a correspondent banking relationship, funds from various payment institutions flow essentially through a few, usually large financial institutions which maintain a network of correspondent banks. It is estimated that a mere 200

[12] Vostro account is the local currency account maintained by a foreign bank/branch. Translated from Latin: "your account with us".

[13] Loro account is an account wherein a bank remits funds in foreign currency to another bank for credit to an account of a third bank.

[14] BIS, CORRESPONDENT BANKING (JULY 2016).

banks function in this network as access points for all cross-border payments.[15]

Regulatory factors particularly relating to market integrity such as economic sanctions, antimoney laundering and terrorist financing, and know-your-customer requirements often with high implementation costs and penalties, and strong enforcement measures have reduced banks' risk appetite to be connected to countries, financial institutions, businesses and individuals with elevated risk exposure or lack of information (information asymmetry leading to markets-for-lemons / morale hazard issues) as to the underlying legal situation. This has led to the dominance of a few large financial institutions dominating the market for correspondent banking.

Second, banks see correspondent relationships more and more as a service and sales channel. They are perceived as a necessary ancillary service rather than a product on their own.

Third, both trends have led to a higher concentration of correspondent relationships and hence higher systemic risk and less competition. The higher systemic risk stems from the fact that fewer institutions are available for a back-up relationship in case the main relationship experiences operational or financial difficulties. The lesser degree of competition is obvious where the relationship is established between entities within the same financial conglomerate.

These trends together lead to **higher costs** and **lower liquidity** in many (usually less frequently traded) currencies that are less often accessible via correspondent relationships. Banks without relationships with those few globally active correspondent banks must pay for indirect access to the global banks' "best friends", to tap into an existing correspondent banking network.

2. Closed loop systems

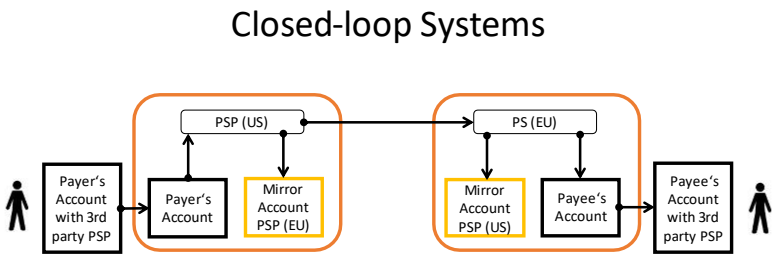
In a closed-loop system, both payer and payee have a relationship with the same payment operator. Examples include the large credit card providers, payment systems which settle transactions between saving and loans associations, and "new"

[15] CLEARING HOUSE GATEWAY AND CAPTURE, SOLUTION FOR CROSS BORDER CREDIT PAYMENTS (2015), https://www.finteq.co.za/wp-content/uploads/2015/12/Finteq_Payment_Gateway_SADC_brochure_FEB14.pdf, at 2.

entrants like PayPal and Alipay/Ant Group, Samsung Pay, and Apple Pay.

For instance, funds wired from the payer to the payee flow through the accounts operated by the affiliates that together form the financial conglomerate operating the closed loop system; for instance, funds from PayPal US in California flow to PayPal EU in Luxembourg. Clients that transfer and receive funds from their respective PSPs' accounts to PayPal will thus experience PayPal as a cross-border fund transfer system.

Figure 2: Closed loop systems



To achieve this, funds are routed from the group entity in the payer's country to the entity in the payee's country. In principle, since payment business is generally a licensed activity (or should be) and licensing is limited to each jurisdiction, for each country the closed loop system must operate as its own entity. Hence, a closed loop system *de facto* works similar to correspondent banking within a network of group affiliates, yet with one set of technology applied across the whole loop; this makes the operational and legacy issues of payment technologies less prevalent and allows, in principle, lower fees.

In turn, the developments described above – increased concentration, less competition and increasing costs – are also prevalent in closed loop systems, justified by the still high(er) costs in traditional cross-border correspondent banking.

Economic rents accrue in both types of payment arrangements predominant in cross-border transactions. This fact, in combination with operational complexity and regulatory uncertainties means that the difficulties observed above will not self-correct simply as a result of market factors or technological developments.

3. Regulatory approaches to enhancing competition and efficiency

The above developments have not gone unnoticed in regulatory and standard setting circles, and in particular the G20/BIS/FSB/CPMI have undertaken efforts to address the increasing concentration and lesser competition in cross-border payments.[16] In particular, three measures have been discussed to remedy the situation: (a) standardisation, (b) joint ownership and (c) fee regulation.

a. Standardisation

One measure to reduce concentration is enhancing competition. A precondition for increased competition in payments, which is a technology-based, data-driven business, is the standardisation of interfaces and/or payment processes. For instance, the CPMI (2016) has actively promoted the standardisation of messaging standards as well as KYC/AML processes. This has been a long-term effort, dating back to the 1970s with the establishment of SWIFT, the FATF, CPMI itself and more recently the focus of an ongoing International Standards Organisation (ISO) initiative.[17]

Standardisation requires highly granular coordination among many regulators and in some cases huge legislative efforts; often payment regulators are not in charge of AML processes which are under the purview of AML/CTF regulators, data protection rules under the purview of data protection regulators, tax rules under the purview of the internal revenue service, and so on. Further, even if there is agreement on standardisation, the question remains: who is in charge of standardisation? Any standardisation project comes with a trade-off between locally-established and global standards and processes. The result can be competition between major economies for the experot of potentially conflicting standards: Whichever countries are able to create global standards closer to their own will benefit their own financial institutions, at the expense of foreign ones.

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[16] *Cf.* FSB, ENHANCING CROSS-BORDER PAYMENTS. STAGE 1 REPORT TO THE G20: TECHNICAL BACKGROUND REPORT (APRIL 9, 2020), https://www.fsb.org/wp-content/uploads/P090420-1.pdf, and FSB, ENHANCING CROSS-BORDER PAYMENTS. STAGE 2 REPORT TO THE G20: BUILDING BLOCKS OF A GLOBAL ROADMAP (JULY 2020), https://www.bis.org/cpmi/publ/d193.pdf.

[17]

These sort of processes have been ongoing for decades, with limited progress. As such, standardisation, while highly desirable, has proven difficult to achieve, by way of regulation, legislation, soft law, technical standards, market forces, or technological evolution.

b. Infrastructure provision and operations: Reducing infrastructure costs

Central banks' collaborative development of cross-border payment infrastructure could be another strategy for reducing the cost of cross-border payments. In this case, publicly backed infrastructure could provide the alternative to that (potentially too costly, risky or slow) which has evolved in the private sector. There is a myriad of regional integration projects which follow this route and are discussed elsewhere at length.[18]

However, the cross-border integration of national payment systems requires significant political and financial investment by central banks. In the absence of joint central banks (such as the ECB or BCEAO) joint infrastructure requires cooperation among central banks. If central banks find standardization challenges, the creation of full cross-border infrastructure (as has been done with SWIFT and CLS) is even more difficult.

c. Fee regulation

A third common approach is fee regulation. For instance, in the EU SEPA region a fixed fee is set for all retail cross-border payments, effectively reducing fees, in total, by more than 70% between 2012-14, while in the US (regulated) debit card fees fell by 42% after fee regulations took effect in 2011.[19] Further, the cap on interchange fees for consumer card payment transactions adopted by the EU Interchange Fee Regulation (IFR)[20] reduced issuers' fees by approximately EUR 3bn per year between 2015-16.[21] This evidence suggests that fee regulation, at least within

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[18] *See* Arner et al. (2021), *Building Regional Payment Systems: Towards a Single Rule Book* (BIS working paper), forthcoming.

[19] *See* BIS, BIS ANNUAL ECONOMIC REPORT 2020 (JUNE 30, 2020), https://www.bis.org/publ/arpdf/ar2020e3.pdf, at 67, 84.

[20] Regulation (EU) 2015/751 of the European Parliament and of the Council of 29 April 2015 on interchange fees for card-based payment transactions.

[21] *See* EUROPEAN COMMISSION, STUDY ON THE APPLICATION OF THE INTERCHANGE FEE REGULATION (2020); Santiago Carbó-Valverde, Sujit Chakravorti & Francisco Rodríguez Fernández, *The Role of Interchange*

confined currency areas, can be an appropriate means to reduce the cost of payments.

However, fee regulation for cross-border payments is problematic. Regulated fees will likely be too high for oft-traded currencies and too low for scarcely traded currencies, given the latter involves the risk that the payment institution will not find a counterpart at that rate. In addition, legal, sanctioning and enforcement risks may further reduce the willingness of participants, resulting in even fewer banks functioning as correspondent banks for infrequently traded currencies at the regulated rate. Finally, fee regulation may reduce the incentive to develop new technologies and otherwise innovate: overly high fees often disincentivise institutions from innovating while the same can be so for overly low fees that do not cover the costs of technological developments. Finding the right level can be exceptionally difficult.

While each of these measures has its merits, each also faces considerable challenges. Thus, we examine a new way forward in cross-border payments that could complement these approaches and also increase their effectiveness: the introduction of the best execution principle established in the context of securities brokerage.

III. Introducing Best Execution: Learning from Securities Regulation

1. Best Execution: An emerging principle of securities regulation

Best execution legally requires a financial institution to provide the most advantageous order execution for each customer given the prevailing market environment.[22] Key factors to consider include price, speed of execution and risks relating to execution (operational or financial risks). Whatever preference the client determined *ex ante*, the financial institution must follow. In the absence of such a stipulation the financial institution retains

Fees in Two-Sided Markets: An Empirical Investigation on Payment Cards, 98 REV. ECON. & STATISTICS 367 (2016).

[22] *Cf.* NIAMH MOLONEY, EU SECURITIES AND FINANCIAL MARKETS REGULATION (OXFORD, 2014), 519 and Casey & Lannoo, *supra* note 26, 58-77.

some discretion, but the principle remains that client interests are paramount.

The US Securities and Exchange Commission (SEC) describes the securities law principle of best execution as follows:

> "Brokers are legally required to seek the best execution reasonably available for their customers' orders. To comply with this requirement, brokers evaluate the orders they receive from all customers in the aggregate and periodically assess which competing markets,, or electronic communications networks (…) offer the most favorable terms of execution. Some of the factors a broker must consider when seeking best execution of customers' orders include: the opportunity to get a better price than what is currently quoted, the speed of execution, and the likelihood that the trade will be executed."[23]

Best execution turns out to be a "compromise"[24] which determines the key characteristics for a financial institution when considering how to route a securities or derivatives trading order for execution in terms of price, risk and speed. A narrower definition of best execution "would enhance the market power of incumbent exchanges, which have the greatest pools of liquidity and generally offer narrower spreads".[25]

Further, best execution prevents the financial institution putting its own interests first; for instance, if that institution is compensated by the trading facility (stock exchange) for additional trading volume rooted over a given platform, that compensation must be disregarded when determining the routing.

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[23] SEC, Best execution, https://www.sec.gov/fast-answers/answersbestexhtm.html.

[24] Guido Ferrarini, *Best execution and competition between trading venues – MiFID's likely impact*, 2 CAP. MARKETS L.J. 404, 404 (2007) (arguing "that MiFID's best execution provisions may represent a compromise between those Member States that, on one hand, having concentration rules in place, intended to protect the incumbent exchanges from the consequences of their repeal and those, on the other, that intended to fully exploit the opportunities of financial liberalization in Europe").

[25] Ferrarini, *supra* note 24, at 407 and fn 23.

2. Legal framework of best execution

a. Fiduciary Duty basis

This principle "originated from the common contract law's concept of fiduciary duty in light of the agency relation between brokers and their clients"[26] requiring brokers "to act loyally for the principal's benefit in all matters connected with the agency relationship".[27] Initially, it was implicitly mentioned in a litigation case against a broker, who received a stock sell order but did not execute it promptly so he could "profit personally" and thereafter "misrepresented the delay to his customer as not dependent upon his will".[28] In 1962, the SEC stated the necessity of formally enshrining best execution in securities regulation. The input was later followed by the NASDAQ to increase competition among trading venues, although no specific definition was set and courts find it difficult to enforce this obligation.[29] Still, in 1986, the London Stock Exchange defined best execution as "the best possible bid-ask spread on the Stock Exchange Automated Quotation System".[30]

The objective of best execution is thus two-fold: First, to the extent best execution reduces transaction costs, it enhances market efficiency;[31] and second, to the extent it addresses conflicts of interest between broker and client interests, it protects investors.[32]

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[26] Jean-Pierre Casey & Karel Lannoo, *Best Execution*, in THE MIFID REVOLUTION (CAMBRIDGE, 2010), 58-77, at 58 and paragraph 1.

[27] S. 8.01, Restatement of Agency 3d (2006), as reported in Casey & Lannoo, *supra* note 26, at 58.

[28] Casey & Lannoo, *supra* note 26, 59. Although not formally a review of US case law on best execution, *see* THOMAS ORDEBERG, THE BEST THERE IS? AN INQUIRY INTO BEST EXECUTION RULES, STOCKHOLM UNIVERSITY (2013), 279 et seq., as referred to in Peter Krüger Andersen, *Perspectives on the MiFID II Best Execution Regime*, EUR. COMP. FIN. L. REV. 692, 693 (2020).

[29] Jonathan R. Macey & Maureen O'Hara, *The law and economics of best execution*, 3 J. FIN. INTERMEDIATION 188 (1997).

[30] John Board & Stephen Wells, *Liquidity and best execution in the US: A comparison of SETS and Tradepoint*, 16 J. ASS. MGMT. 334, 350 (2001).

[31] Casey & Lannoo, *supra* note 26, at 63-4, and Thomas Iseli, Alexander F. Wagner & Rolf H. Weber, *Legal and economic aspects of best execution in the context of the Markets in Financial Instruments Directive*, L. & FIN. MARKETS REV. 31 (July 2007).

[32] *See*, more recently, SEC, *Order directing the Exchanges and the Financial Industry Regulatory Authority to Submit a New National Market System Plan Regarding Consolidated Equity Market Data* (Release no. 34-88827; file no. 4-757) May 6, 2020,

b. EU: MiFID

Historically, EU Member States placed only minor importance on the best execution rule: Member States – when the so-called concentration rule was in force – simply had to match the prevailing price on the local regulated market, although the UK regulations were more detailed than others.[33] In 1993, Article 11 of the 1993 Investment Service Directive 93/22/EEC provided some first notion of best execution at the EU level with a broad conduct of business principle asking investment firms to act "honestly and fairly in conducting its business activities in the best interests of its clients and the integrity of the market".

In 2004, Article 21 MiFID I required investment firms to "take reasonable steps to obtain, when executing orders, the best possible result for their clients taking into account price, cost, speed, likelihood of execution and settlement, size, nature or any other consideration relevant to the execution of the order". The effect of this provision was limited by a splintering of the market into multiple venues so intermediaries could avoid seeking the truly best execution venue and clients faced the risk associated with the segregated markets' lesser liquidity. In addition, the best execution standards' overly prescriptive and opaque requirements[34] led to a narrowing of execution choices, thus reducing the chances of developing genuine competition among

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https://www.sec.gov/rules/sro/nms/2020/34-88827.pdf, at 56; CFA INSTITUTE, REGULATION NMS. REVIEW AND RECOMMENDATIONS (SEPT. 2017), https://www.cfainstitute.org/-/media/documents/article/position-paper/regulation-nms-review-recommendations.ashx (stating that "[i]nducements that trading markets offer to influence routing decisions and build market share have exacerbated the potential for conflicts of interest at broker-dealers. The inducements can work to the detriment of investors while potentially undermining the mandated minimum price variance established in the regulation"); for older studies, *see* Robert Battalio, Shane A. Corwin & Robert Jennings, *Can Brokers Have It All? On the Relation between Make-Take Fees and Limit Order Execution Quality*, 71 J. FIN. 2193 (2016); Charles M.C. Lee, *Market Integration and Price Execution for NYSE-Listed Securities*, 48 J. FIN. 1009 (1993) (providing evidence that broker do not always comply with their fiduciary responsibility for best execution).

[33] For further discussion of the concentration rule *see* Gerard Hertig, *Mifid and the Return of Concentration Rules*, *in* FESTSCHRIFT FÜR KLAUS J. HOPT ZUM 70. GEBURTSTAG AM 24. AUGUST 2010 (2010), 1989-2000. On the UK regulation, that was by far the most complete, *see Could Brussels Drive Share Trading out of Europe?*, 22 INT'L FIN. L. REV. 17 (2003).

[34] ESMA, BEST EXECUTION UNDER MIFID – PEER REVIEW REPORT, ESMA/2015/494 (FEB. 25, 2015), 7.

trading venues.[35] Calls for reform were raised, as best execution requirements were particularly technical and costly, and focused on a limited range of execution criteria, bearing the risk of restricting execution choices and of obstructing competition. As a consequence, best execution obligations needed to be flexibly designed, allowing "multiple competing venues to compete on factors other than price – a price-based benchmark, for example, could have the effect of reinforcing the dominant position of incumbent venues where liquidity is deepest".[36]

When the MiFID I came into force, an analysis of transaction costs revealed that "the role of back-office providers in the MiFID Best Execution chain is key, as they remain in a unique position to capture and process transaction data independently from venues and intermediaries on behalf of the investors of their representatives". It was further predicted that soon "transaction cost attribution would have been provided as a service, as portfolio performance already is".[37]

In 2014/ 2017, Articles 27(1) and (7) MiFID II introduced new characteristics: while MiFID I required firms to take *all reasonable steps* to obtain, when executing orders, the best possible result for their clients, MiFID II now requires firms to take *all sufficient steps* to obtain, when executing orders, the best possible result for their clients.[38] Further, under MiFID II, the best possible result as to retail clients must be determined in terms of total price of execution (spread plus fees).[39]

Financial institutions are tasked with drawing up an execution strategy that identifies venues by type of transactions.[40] There is no uniform procedure applicable to all categories of financial

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[35] Guido Ferrarini, *Contract Standards and the Markets in Financial Instruments Directive (MiFID): An Assessment of the Lamfalussy Regulatory Architecture*, 1 EUR. REV. CONTRACT L. 19, 38 (2005).

[36] Moloney, *supra* note 22, 520 and fn. 51.

[37] Catherine D'Hondt, Jean-René Giraud, TRANSACTION COST ANALYSIS A-Z: A STEP TOWARDS BEST EXECUTION IN THE POST-MIFID LANDSCAPE (2008), https://risk.edhec.edu/publications/transaction-cost-analysis-z-step-towards.

[38] ESMA, Q&A. ON MIFID II AND MIFIR INVESTOR PROTECTION AND INTERMEDIARIES TOPICS, ESMA35-43-349 (DEC. 21, 2020), at 19, https://www.esma.europa.eu/sites/default/files/library/esma35-43-349_mifid_ii_qas_on_investor_protection_topics.pdf.

[39] Stefan Grundmann & Phillip Hacker, *Conflict of Interest*, *in* Danny Busch & Guido Ferrarini, REGULATION OF THE EU FINANCIAL MARKETS, MIFID II AND MIFID (OXFORD, 2017), 195 ff.

[40] Art. 27 MiFID II and Art. 66, Regulation no. 565/2017.

instruments. The selection of the best execution conditions does not concern *all* possible execution venues accessible at a certain time but is limited to those that the intermediary selects on behalf of the client for a given strategy and type of transaction.[41] The financial institution determines the importance of each execution factor.[42] In any case, the strategy must be updated annually, and the clients be notified, also by annual updates.[43] Firms are required to ensure the effectiveness of their execution arrangements and remedy deficiencies, if any.[44] Any specific client instruction is paramount to the execution strategy.[45]

The effect of the principle rests on sophisticated wholesale clients negotiating the best execution terms, while retail clients are protected by virtue of regulatory scrutiny. Further, financial institutions' discretion to propose arrangements is limited: for retail clients the *total* consideration, *i.e.*, the price of the financial instrument *and* the costs of execution, comprise the determining factors.

The best execution rule is made effective due to MiFID II's accompanying rules on pre- and post-trade transparency, conflicts of interests and inducements. In particular, MiFID II subjects execution venues to extensive **data transmission requirements** re order flow and execution rates that allow regulators to review, *ex post*, to what extent the brokers chose the best execution venue.[46] Further, Article 34 MiFID II requires investment firms to identify, prevent, and manage **conflicts of interest**, and implement effective organisational arrangements to prevent conflicts of interest adversely affecting their clients. Further, MiFID II contains **two rules on inducements**, a general and a specific one. The general one prohibits investment firms from paying benefits to, or receiving benefits from, third parties, unless the benefits are designed to enhance the quality of the relevant service to the client, and do not impair compliance with the investment firm's duty to act honestly, fairly, and

[41] Recital 104 of Regulation 565/2017.

[42] Recital 99 of Regulation 565/2017.

[43] Art. 66(3) of Regulation No. 565/2017.

[44] Art. 27(7) MiFID II; *see also* Moloney, *supra* note 22, 522.

[45] Art. 64(2) of Regulation No. 565/2017.

[46] *See* ESMA, QUESTIONS AND ANSWERS. ON MIFID II AND MIFID INVESTOR PROTECTION AND INTERMEDIARIES TOPICS. ESMA35-43-349 (DEC. 21, 2020): "the RTS 27 reporting obligation differs from the requirement concerning data to be published by investment firms under Article 27(6) of MiFID II or RTS 28 which requires reports on orders relating to retail and professional clients, but not eligible counterparties".

professionally in accordance with the best interests of its clients. The more specific one concerns only investment advisers and portfolio managers and prohibits accepting and retaining benefits in relation to the investment firm's services to its underlying clients, other than certain specified non-monetary benefits of negligible size. Finally, Article 53(3)(c) MiFID II requires investment firms providing execution services to identify **separate charges** for execution, and to unbundle and apply separately identifiable charges to other benefits or services, such as investment advice, research and data provision.

Overall, MiFID II best execution provisions **prohibit paying the investment firm for order flow** (while clients may benefit from volume-based rebates). The prohibition applies to the investment firm receiving the payment, and will apply to an investment firm routing underlying client orders to a venue or executing broker in return for receipt of fees or other benefits.[47]

c. US securities regulation

Best execution in the US Securities Regulation dates back to 1988, and section 11A of the Securities Exchange Act of 1934.[48] After some deliberation, the SEC then implemented Rule 605 (formerly Rule 11Ac1–5) and Rule 606 under the *Securities Exchange Act* in 2000 to (i) require monthly disclosure of execution quality publicly in order to promote a more

[47] *See* Article 27(2) MiFID II.

[48] 15 U.S.C. § 78k-1(a) (1988). To the extent important in this context, the provision states: "The Congress finds that [….] New data processing and communications techniques create the opportunity for more efficient and effective market operations. (C) It is in the public interest and appropriate for the protection of investors and the maintenance of fair and orderly markets to assure - (i) economically efficient execution of securities transactions; (ii) fair competition among brokers and dealers, among exchange markets, and between exchange markets and markets other than exchange markets; (iii) the availability to brokers, dealers, and investors of information with respect to quotations for and transactions in securities; (iv) the practicability of brokers **executing investors orders in the best market**; […]." See also David A. Lipton, *Best Execution: The National Market System's Missing Ingredient*, 57 NOTRE DAME L. 449 (1982), D. Bruce Johnsen, *A Transaction Cost Assessment of SEC Regulation Best Interest*, 2018 COLUM. BUS. L. REV. 695 (2018) (criticizing the SEC for disregarding the fact that its policy proposal would lack empirical support); studies arguing *at that time* that a best execution rule would raise transaction costs include, for instance, Robert Kissell, Morton Glantz & Roberto Malamut, *A practical framework for estimating transaction costs and developing optimal trading strategies to achieve best execution*, 1 FIN. RESEARCH LETTERS 35 (2004); Wayne H. Wagner, *Transaction costs and best execution: Compliance and measurement*, 5 J. INV. COMPLIANCE 13 (2004); Wayne H. Wagner & Mark Edwards, *Best Execution*, 49 FIN. ANALYSTS J. 65 (Jan. 1, 1993).

competitive and efficient national market system by increasing the visibility of execution quality, supported by the private law fiduciary principle(s) discussed earlier. The SEC,[49] supported by some commentators,[50] argued that public disclosure of order routing practices would result in more vigorous competition in order routing performance.

The further developments since the introduction of Rule 606 in November 2000 confirmed the SEC's view. In hindsight, it is safe to say that pairing best execution with additional disclosure has indeed reduced transaction costs and enhanced market efficiency.[51] Yet it is important to note a difference between US securities regulation and the EU's MiFID: As the implementation of fiduciary law, adding disclosure was in the US then all about *enforcing* an existing principle rather than writing it anew (like in Europe's MiFID), with disclosure being one means to do so.[52]

Be this as it may: Rule 606, introduced in 2000, was meant to open market infrastructure for tech-based competition, and did so.[53] Today's US equity market infrastructure is "highly automated, dispersed among myriad trading centers, and more complex [in light of the] rapid and ongoing evolution of technologies for generating, routing, and executing orders, and the impact of regulatory changes".[54] Increasingly used sophisticated institutional order execution algorithms (either

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[49] *See* SEC, *Securities Exchange Act Release No. 43590* (Nov. 17, 2000), 65 FR 75414, 75417 (Dec. 1, 2000).

[50] *See*, based on data before 2001, Christine A. Parlour & Duane J. Seppi, *Liquidity-Based Competition for Order Flow*, 16 REV. FIN. ST. 301 (2003); Hendrik Bessembinder, *Quote-based competition and trade execution costs in NYSE-listed stocks*, 70 J. FIN. ECON. 385 (2003).

[51] *See* Robert Battalio, Brian Hatch & Robert Jennings, *Toward a National Market System for U.S. Exchange-Listed Equity Options*, 59 J. FIN. 933 (2004); Xin Zhao & Kee H. Chung, *Information Disclosure and Market Quality: The Effect of SEC Rule 605 on Trading Costs*, 42 J. FIN. QUANT. ANAL 657 (2007); Hendrik Bessembinder, *Trade Execution Costs on NASDAQ and the NYSE: A Post-Reform Comparison*, 34 J. FIN. QUANT. ANAL. 387 (2009); Id., *Quote-based competition and trade execution costs in NYSE-listed stocks*, 70 J. FIN. ECON. 385 (2003); Xin Zhao & Kee H. Chung, *Information Disclosure and Market Quality: The Effect of SEC Rule 605 on Trading Costs*, 42 J. FIN. QUANT. ANAL. 657 (2007) (providing evidence that transparency results in efficiency enhancing competition).

[52] SEC, SEC, *Disclosure of Order Handling Information*, Release No. 34-78309; File No. S7-14-16. RIN 3235-AL67, 17 CFR Parts 240 and 242, https://www.sec.gov/rules/proposed/2016/34-78309.pdf, paragraph II.A.

[53] SEC, *supra* note 52, at 42 ff.

[54] SEC, *supra* note 52, at 19 and fn 28 and 29.

aggressive or passive)[55] and smart order routing systems affecting timing, pricing, and number of orders contribute to a high-speed, and potentially more efficient activity of institutional customers in the current equity market structure. This is exactly what we want to achieve in the world of payments.

Rule 606 was later supplemented by SEC Rule 611 of National Market System Regulation or Regulation NMS of 2005 (the so called "Order Protection Rule" or "Trade-through Rule").[56] Regulation NMS implements the objectives set forth under Section 11A of the *Securities Exchange Act*, facilitating the establishment of a national market system with a view to ensure best execution of investors' orders. The Rule promotes "intermarket price protection by restricting "trade-throughs" – the execution of trades on one venue at prices that are inferior to publicly displayed quotations on another venue"[57]. Specifically, it requires a trading centre to implement policies reasonably aimed to prevent "trade-throughs" with the only exceptions being those set forth in paragraph (b) of said Rule. Such quotations – which must be disseminated in the market data feeds – have to be displayed by an automated trading center, namely centers that are immediately and automatically executable, with no delay. In order to be protected, a quotation must be the "best bid" or "best offer" of a national securities exchange (namely, the highest-priced bid or the lowest-priced offer).[58] The scope of application of the Rule does not *(i)* cover any additional depth-of-book prices outside the best prices displayed by an automated trading center (lower prices for bids and higher prices for offers), *(ii)* require the routing of orders to trading centers that are displaying the best prices, *(iii)* require orders to be routed to execute against displayed quotations before trades could be executed at matching prices (*i.e.* "trade-at" restriction), *(iv)* require investors to display their own trading interest. From the perspective of many observers, the coming into force of Regulation NMS marks the true beginning of a best execution rule in the US.

[55] SEC, *supra* note 52, at 21.

[56] For an in-depth analysis, even with an historical outlook, *see 2015 SEC Memorandum*, https://www.sec.gov/spotlight/emsac/memo-rule-611-regulation-nms.pdf.

[57] SEC, *supra* note 52, at 2.

[58] *Cfr*. Regulation NMS Adopting Release, 70 FR 37496, 37534 (June 29, 2005).

The best execution framework was then supplemented by FINRA Rule 5310 on best execution and interpositioning of 2014, as part of the self-regulation of broker-dealers. It requires firms to *regularly and rigorously* review the execution quality of customer orders (if the firm does not conduct an order-by-order review), at a minimum on a quarterly basis and on a security-by-security, type-of-order basis (*e.g.*, limit order, market order and market on open order).[59] This implies consideration of the market characteristics, as well as the "size and type of transaction and the number of markets checked".[60] Looking at the output, FINRA classified a series of issues with some firms' execution quality reviews. In some cases, firms did not assess the quality of the execution order routing with the one that the firm could have obtained from competing markets; in other cases, instead, firms did not review orders on a type-of-order basis, or did not consider some factors required by the Rule at hand (as the speed of execution, price improvement opportunities and the likelihood of execution of limit orders) and potential conflicts of interests.[61] Further, certain firms still did not disclose the material aspects of the non-directed order flows[62] routed to their own trading desk, of their relationships with each of the significant venues identified on their reports, of

[59] *See also* FINRA, GUIDANCE ON BEST EXECUTION OBLIGATIONS IN EQUITY, OPTIONS AND FIXED INCOME MARKETS, REGULATORY NOTICE 15-46 (NOV. 2015), https://www.finra.org/sites/default/files/notice_doc_file_ref/Notice_Regulatory_15-46.pdf.

[60] Krüger Andersen, *supra* note 28, 721-723. In the literature, *see also* Xin Zhao & Kee H. Chung, *Information Disclosure and Market Quality: The Effect of SEC Rule 605 on Trading Costs*, 42 J. FIN. & QUANT. ANALYSIS 657 (2007).

[61] FINRA, 2019 EXAMINATION FINDINGS REPORT. BEST EXECUTION (OCT. 16, 2019), https://www.finra.org/rules-guidance/guidance/reports/2019-report-exam-findings-and-observations/best-execution.

[62] "Payment for order flow" is still a widespread practice when it comes to order routing (based on data until 2012, reported in Marshall E. Blume & Michael A. Goldstein, *Quotes, Order Flow, and Price Discovery*, 52 J. FIN. 221 (1997), reported that "the New York Stock Exchange (NYSE) quote matches or determines the best displayed quote, and the NYSE is the most frequent initiator of quote changes. *Non-NYSE markets attract a significant portion of their volume when they are posting inferior bids or offers, indicating they obtain order flow for other reasons, such as "payment for order flow."* Yet, when a non-NYSE market does post a better bid or offer, it does attract additional order flow."), hence there is a need for policy action." (emphasis added).

payment details and profit-sharing relationships.[63] At least prior to the 2019 reforms, empirical evidence suggests that *some* brokers did not play by the rules.[64]

In turn, it does not surprise that since its inception, numerous court cases have shown the relevance of best execution for investor plaintiffs,[65] even though federal law often prevents securities brokers from entering into class actions.[66]

The former prompted the SEC to take further action. Building on both Regulation NMS and FINRA's Rule 5310, on 5 June 2019, as well as EU experiences with MiFID II, the SEC introduced amendments to Regulation NMS, dubbed also "Regulation best interest".[67] Rules 606(b)(3) and 606(a) Regulation NMS now require broker-dealers to publish transaction reports on a quarterly and biannual basis to customers in either XML or pdf format.[68] The new rules resemble the conflict-of-interest rules, as well as the disclosure and suitability rules under Article 23–

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[63] FINRA, 2019 EXAMINATION FINDINGS REPORT. BEST EXECUTION (OCT. 16, 2019), https://www.finra.org/rules-guidance/guidance/reports/2019-report-exam-findings-and-observations/best-execution#_edn1.

[64] Robert Battalio, Todd Griffith & Robert Van Ness, *Do (Should) Brokers Route Limit Orders to Options Exchanges That Purchase Order Flow?* 56 J. FINANC. QUANT. ANAL 183, 183 – 211 (2021) ("[s]*ome brokers seemingly maximize the value of their order flow by selling marketable orders and sending* ***nonmarketable orders to exchanges that offer large liquidity*** rebates. Other brokers appear to bypass liquidity rebates by routing both marketable and nonmarketable orders to exchanges that purchase order flow. Using a decision by the Philadelphia Stock Exchange (PHLX) to change its trading protocol, we provide empirical evidence that brokers can enhance limit order execution quality by routing nonmarketable limit orders to options exchanges that purchase order flow." (emphasis added)).

[65] *See Klein v. TD Ameritrade Holding Corp.*, 327 F.R.D. 283 (D. Neb. 2018).; *Schwab v. E*Trade Fin. Corp.*, 285 F. Supp. 3d 745, 753 (S.D.N.Y. 2018); *Schwab v. E*Trade Fin. Corp.*, 752 Fed. App'x. 56 (2d Cir. Oct. 26, 2018); *Newton v. Merrill Lynch, Pierce, Fenner, Smith*, 259 F.3d 154 (3d Cir. 2001); *In Re Merrill Lynch Securities Litigation*, 911 F. Supp. 754 (D.N.J. 1995); *Newman v. Smith*, [1974-1975 Transfer Binder] FED. SEC. L. REP. (CCH) 95,078, at 97,783 (1975); *Sinclair v. SEC*, 444 F.2d 399, 400 (2d Cir. 1971); *In re Kidder Peabody & Co*., 43 S.E.C. 911, 915 (1968); *In re Delaware Management*, 43 S.E.C. 392, 397 (1967)

[66] *See Zola v. TD Ameritrade, Inc.*, 889 F.3d 920, 926 (8th Cir. 2018); *Lewis v. Scottrade, Inc.*, 879 F.3d 850, 855 (8th Cir. 2018); *Fleming v. Charles Schwab Corp.*, 878 F.3d 1146, 1154-55 (9th Cir. 2017); *Kurz v. Fid. Mgmt. & Research Co.*, 556 F.3d 639, 642 (7th Cir. 2009).

[67] 17 CFR § 240.15/1.

[68] SEC, 17 CFR Parts 240 and 242 Release No. 34-78309; File No. S7-14-16 RIN 3235-AL67, *Disclosure of Order Handling Information*, https://www.sec.gov/rules/proposed/2016/34-78309.pdf, at 38. As to the output, *see also* ESMA Q&A ON INVESTMENT PROTECTION TOPICS, Q12, 26.

25 of MiFID II. They aim to increase transparency around best execution by providing key benchmark metrics that are comparable in a simple manner between firms to enhance transparency on potential conflicts between broker-dealers' venue selection and the best interests of the client for each order.[69] The new rules are expected to abolish the malpractice of collecting rebates from execution venues in return for executing the customer's order on that route.[70]

3. Lessons from the securities context

The very first analyses of the best execution principle in the economic field appear to date to 1982.[71] Initially, the introduction of the principle was received with some criticism. For instance, some authors argued that the principle of best execution ("a legal fiction") could lead to *suboptimal* market efficiency[72] due to increased market fragmentation and reduced liquidity.[73]

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[69] In the pre-reform US landscape, *see* Amber Anand, Mehrdad Samadi, Jonathan Sokobin & Kumar Venkataraman, *Institutional Order Handling and Broker-Affiliated Trading Venues*, REV. FIN. ST. (2021), https://doi.org/10.1093/rfs/hhab004, forthcoming (suggesting that "increased transparency of order routing practices will improve execution quality").

[70] See the statement by Dermot Harris, New Best Execution Rules Likely Beyond the SEC's Rule 606 Changes (July 23, 2019), https://a-teaminsight.com/new-best-execution-rules-likely-beyond-the-secs-rule-606-changes/?brand=tti (arguing that the new rules „make it pretty much impossible to hide the old game of collecting rebate from venues in order to execute the customer's order […]. In some cases, this is almost a sole source of revenue for some of these brokers, collecting rebate. Suddenly this is starkly exposed, and they are really not going to be able to survive on it as a sole source of income.")

[71] Kenneth D. Garbade & William L. Silber, *Best Execution in Securities Markets: An Application of Signaling and Agency Theory*, 37 J. FIN. 493 (1982). For a comprehensive overview, *cf.* Ferrarini, *supra* note 24, at 410-11.

[72] Casey & Lannoo, *supra* note 26, at 60.

[73] On the first point, *see* both Macey & O'Hara, *supra* note 29 and JEAN-RENÉ GIRAUD & CATHERINE D'HONDT, MIFID: CONVERGENCE TOWARDS A UNIFIED EUROPEAN CAPITAL MARKETS INDUSTRY (LONDON, 2006); on the second, *see* only Macey & O'Hara, *ibidem.*

On the contrary, greater transparency *and* best execution lead to an increased liquidity in EU financial instruments (Daniel Aghanya, Vineet Agarwal & Sunil Poshakwale, *Market in Financial Instruments Directive (MiFID), stock price informativeness and liquidity*, 113 J. BANK. FIN. 105730 (2020)).

Other commentators emphasised the difficulty of easily determining the best execution venue *ex ante*, while *ex post* enforcement is costly and will rarely lead to results beneficial for clients. In turn, it was argued that if markets were perfectly competitive, retail investors would be unable to monitor best execution; in turn, brokers could execute poorly and use order flow inducements to lower their commission fees.[74]

Yet, this criticism from the 1990s was countered by time. With an application Coasian reasoning, the SEC (in Reg NMS) acknowledged that the principle serves a very valid and important objective: "encouraging trading and market participation by lowering the costs of transacting".[75] Further, it addresses the principal-agent dilemma between broker and client by establishing a clear rule in case of doubt[76], despite its apparent difficulty in measuring and enforcing.

As to the enforcement difficulties which were frequently raised as an impediment to a functioning best execution principle[77], securities regulators have (a) asked for expansive disclosures, (b) built sysems to collect large scale datasets on data gathering *ex ante*, transaction reporting, order routing and post trade transparency,[78] and (c) paired strong penalties with private enforcement. Over time, this approach of technology based and enabled regulation and compliance (RegTech) is allowing data-driven analysis of whether brokers have in fact chosen the best execution venue for their clients.

Finally, we are confident, with hindsight, that the argument that best execution increases transaction costs was likely inaccurate. Today, we often see even (apparently) zero fee order execution. While one wonders who is going to pay the (still existing) execution costs,[79] resulting in the conclusion that the execution

[74] Lawrence Harris, *The economics of best execution* (1996), 5, as referred to in Casey & Lannoo, *supra* note 26, at 61.

[75] Casey & Lannoo, *supra* note 26, at 61, and Ronald H. Coase, *The nature of the firm*, 16 ECONOMICA 386 (1937).

[76] Stephen A. Ross, *The economic theory of agency: the principal's problem*, 62 AM. ECON. REV. 134 (1973).

[77] *See* Jonathan R. Macey & Maureen O'Hara, *The Law and Economics of Best Execution*, 6 J. FIN. INTERM. 188 (1997); Sandro Casal, Matteo Ploner & Alec N. Sproten, *Fostering The Best Execution Regime: An Experiment About Pecuniary Sanctions and Accountability in Fiduciary Money Management*, 57 ECON. INQUIRY 600 (2019).

[78] *See* RTS 27.

[79] *See* Chris Jaccard, *The Cost of Zero Commission Trading* (Oct. 23, 2019), https://www.financialalternatives.com/financial-alternatives-

costs are squeezed out of some other financial intermediary somewhere in the financial services value chain,[80] order execution costs charged to clients has ceased to be a major impediment to market efficiency. This is a state we aspire to achieve for payments.

IV. Best Execution for Cross-border Payments?

We examine here the option to transfer the "best execution" principle from securities regulation to payments and consider the major differences and similarities between securities and payments. We then proceed to examine if the differences matter and how hurdles might be overcome.

1. Fiduciary concepts in payments

PSPs and customers, under existing private law, are subject to some fiduciary duties.

For instance, under common law, the PSP is the customer's agent, and thus not entirely free to act according to its own priorities. The international transfer of funds relies on a chain of agency relationships, with the next PSP in the chain being the former PSP's agent.[81] PSPs in the chain have a fiduciary responsibility to their principal, *i.e.*, the first PSPs to the customer, and later PSPs to their previous PSP. As an agent, the PSP must act within his authority, for instance, pay the right person the right amount at the right time, while adhering to the principal's instructions. In essence, the same principles apply to payment contracts under German and French civil law, which treat payment relationships as "mandate" or "business procurement";[82] while different in the details, the outcome is in

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inc/2019/10/22/the-cost-of-zero-commission-trading; for the same issue in the context of ETFs, *see* William A. Birdthistle & Daniel J. Hemel, *Next Stop for Mutual-Fund Fees: Zero*, WALL ST. J. (June 10, 2018), https://www.wsj.com/articles/next-stop-for-mutual-fund-fees-zero-1528652532.

[80] *See*, for that argument, Dirk A. Zetzsche, William A. Birdthistle, Douglas Arner & Ross Buckley, *Digital Finance Platforms – Toward a New Regulatory Paradigm*, 23 U. PA. BUS. L.J. 273 (2020).

[81] *See Royal Products Ltd v Midland Bank Ltd* [1981] 2 Lloyd's Rep 147 (Webster J); *Midland Bank Ltd v Seymour* [1955] 2 Lloyd's Rep 147 (Devlin J); *Dovey v Bank of New Zealand* [2000] 3 NZLR 641.

[82] *See*, for Germany, §

many ways similar to the common law agency relationship just laid out.

Yet, the original private law relationship is often superseded by statutory law. For instance, US Uniform Commercial Code (UCC4a), Article 4a, on Transfer of Funds substitutes in the US for the original agency relationship. In the same vein, the level of detail stipulated by EU Member States implementing Payment Services Directive I and II, as the result of EU law aiming at "full harmonisation" by way of financial regulation,[83] leaves little room for generic principles of agency law.[84] In particular, while we find rules on cost transparency and cost reimbursement, we do not find any statutory best execution requirement. This leaves all PSPs with the option to define, in their contractual terms, the "best friends" relationship within their network as the sole one within their authority as agent. In particular, while PSPs subject to common law *and* civil law are prohibited to explicitly look for the most expensive way, or the most beneficial way for themselves, to achieve cross-border payments, nothing in statutory nor private law, so far, requires PSPs to look for, create and set up anew, the best payment path in light of costs, speed and risks.

2. Contrasting cross-border payments and securities transactions

Significant differences exist between securities brokerage and payments, notably from the legal, risk and transactional perspective.

a. Legal differences

In most countries, securities settlement is analogised to the law of **property and possession**, or in legal terms it is structured as *jus ad rem* (a right in relation to a thing). This is true even where the book-entry has replaced property and possession as part of a system of dematerialised securities. Payments, by contrast, are in principle **claims-based**. Funds in a bank account and cross-border payments each represent an unsecured claim against the financial institution.

[83] *See* Article 107 PSD II.

[84] *See*, for instance, § 675c to § 676c of the German Bürgerliches Gesetzbuch. In the literature, *ex multis*, Benjamin Geva, *The EU Payment Services Directive: An Outsider's View*, 54 TEXAS INT'L L.J. 211 (2019), (also in 28 *Yearbook of European law* 177 (2009)).

The former differences have several legal consequences:

The first pertains to **insolvency**: even in the case of the financial institution's insolvency, the owner of the security (*i.e.* the client with a security deposit) has a right in the security; that right survives and supersedes all claims by creditors of the insolvent institution. By contrast, in the case of payments, and in the absence of deposit protection schemes or other statutory preferences, the claim will be satisfied after those of secured creditors and *pari passu* with those of all other unsecured creditors.

The second consequence pertains to **the applicable law**: while there is some legal uncertainty as to whose law applies to securities settlement, in principle property law follows the *lex rei sitae* (*i.e.* the law of the place where the property lies).[85] The applicable law on claims, by contrast, and payments in particular, is, in principle, identified by looking at the place of the PSP from where the funds are withdrawn.[86]

The third consequence pertains to the type of **assurance** implicitly given. Securities of the same type are fungible. Following the property analogy, the seller only promises to deliver securities of the specified type in the specified amount, not an actual specific security. This fungibility of securities is essential for liquid securities markets. Likewise, in payments, the payer owes the value agreed on delivered in any form that is legal tender in the country of the payee, or her PSP, as the case may be.

The fourth consequence pertains to the **role of the financial institution** involved. Securities brokers are "fiduciaries", *i.e.* their actions directly impact the wealth of their clients and their duty is to put their client's interests first. Securities brokerage as such is an "off-balance sheet business". Funds in a bank account accrue to the bank's balance sheet, so bank deposits, in principle,

[85] The principle holds true regardless of whether we discuss bearer or registered securities, and whether we look at direct or indirect securities holding (through intermediaries). Yet, in indirect securities holding systems, it is far from easy to determine the place where 'property lies', given that in a pyramidal structure the same security may be booked in several accounts simultaneously, and legal concepts may for purposes of identifying the lex situs may look at the place of the account, the place of the "branch" or "office", or the contractual arrangement, to name the most common approaches. *See* James Steven Rogers, *Conflict of Laws for Transactions in Securities Held through Intermediaries*, 39 CORN. INT'L L. J. 285, 303-316; MATTHIAS LEHMANN, FINANZINSTRUMENTE (MOHR SIEBECK, 2009).

[86] Luca G. Radicati di Brozolo, *International Payments and Conflicts of Laws*, 48 AM. J. COMP. L. 307, 319 (2000).

are "on-balance business". However, the distinction is blurred in the case of payments, given that payment-specific regulation requires payment institutions to segregate client funds and treat them separately from the institution's own funds, based on rules aiming at maintaining the nominal value of the funds used for payment purposes.

b. Type of risk

We see two major differences in the type(s) of risk.

First, as a result of their claims-based nature, payments are characterized by ***financial* counterparty risk** (referred to as Herstatt risk), whereas securities transfers do not come with financial counterparty risk, but ***operational* counterparty risk** (that is, the risk the promised securities will never be delivered).

Second, there is no FX risk in securities title transfer, while there is FX risk in cross-border payments on one of the parties. Depending on in which currency the contract is written, payee or payor will bear the FX risk.

c. Transactional differences

In the case of securities settlements, something needs to be transferred. The same thing, at least in legal terms, changes hands (see above). In the case of cross-border payments there is no transfer of "the same thing". Rather, cross-border payments are characterised by a swap which takes place by way of cessation and novation: only the value of the thing stays essentially the same. Therefore, during the transaction, there is no physical transfer of currencies. The funds are not sent across borders; instead, accounts are credited in one jurisdiction and debited the corresponding amount in the other.[87] This is true for both the system of correspondent banks and closed-loop systems (such as Paypal), only with the difference that in the latter case different legal entities of the same financial conglomerate interact.

This system enables payment institutions to exchange book positions in FX-adjusted terms. The respective amount is then

[87] For an explanation of different methods of cross-border payments, BANK OF ENGLAND, EXPLAINER: CROSS-BORDER PAYMENTS (OCT. 13, 2020), https://www.bankofengland.co.uk/research/future-finance/explainer-cross-border-payments#:~:text=Cross%2Dborder%20payments%20are%20financial,back%20to%20their%20home%20country.

credited and debited to the correspondent institution's clients so that these clients experience the transaction as "payments" in foreign currency. The more correspondent institutions involved in a transaction, the more intermediate booking of transactions is necessary, the longer the transaction will take, the greater the Herstatt risk built up in the payment intermediary chain, and eventually the higher the costs incurred at each stage. Naturally, closed-loop systems have speed advantages since they can reduce time by virtue of technical standardization. On the downside, clients bear the counterparty risk of being connected to "that group"; liabilities to some group entities may, under certain conditions, put the finalisation of the transaction at risk.

3. Implications

Do the differences laid out above hinder the introduction of the best execution principle in payments law and regulation? We argue in this section that the legal, economic and transactional differences do not prevent the introduction of the "best execution" principle for payments. Our argument rests on three points. First, we argue that payment-specific legislation has reduced the differences in the legal treatment of payments and securities . Second, we argue that the structure of modern digital transactions aims to mimic securities settlement. Third, we argue that the risks for clients and intermediaries alike relating to cross-border payments have become more similar to that of securities brokerage, partly due to the activity of correspondent banks, and partly due to the first and second developments.

a. Impact of payment-specific legislation

In jurisdictions with specific regulations for specialized payment services providers (usually separate from those applying to banks and credit institutions), we find legal requirements to segregate clients' funds from other funds, and safeguard the former (*i.e.* rendering the funds subject to certain investment and maintenance rules), thereby inhibiting the use of funds for purposes other than payment purposes.[88] Further, in e-money

[88] *See*, for instance, Article 10 of the Payment Services Directive 2: "Safeguarding requirements": 1. The Member States or competent authorities shall require a payment institution which provides payment services as referred to in points (1) to (6) of Annex I to safeguard all funds which have been received from the payment service users or through another payment service provider for the execution of payment transactions, in either of the following ways: a) funds shall not be commingled at any time with the funds of any natural or legal person other than payment

schemes, an often used substitute for payments services, e-money service providers are increasingly requested to

> "safeguard customer funds by: (i) placing the relevant funds in segregated accounts[89] or (ii) setting up appropriate measures to protect customer funds. With regard to the latter, the study identified two typical types of requirement: (i) funds must be placed in a trust account, administered by a trustee, solely for the benefit of the customers; or (ii) customer funds must be covered by insurance or a comparable guarantee from an insurer or a bank."[90]

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service users on whose behalf the funds are held and, where they are still held by the payment institution and not yet delivered to the payee or transferred to another payment service provider by the end of the business day following the day when the funds have been received, they shall be deposited in a separate account in a credit institution or invested in secure, liquid low-risk assets as defined by the competent authorities of the home Member State; and they shall be insulated in accordance with national law in the interest of the payment service users against the claims of other creditors of the payment institution, in particular in the event of insolvency; b) funds shall be covered by an insurance policy or some other comparable guarantee from an insurance company or a credit institution, which does not belong to the same group as the payment institution itself, for an amount equivalent to that which would have been segregated in the absence of the insurance policy or other comparable guarantee, payable in the event that the payment institution is unable to meet its financial obligations; 2. Where a payment institution is required to safeguard funds under paragraph 1 and a portion of those funds is to be used for future payment transactions with the remaining amount to be used for non-payment services, that portion of the funds to be used for future payment transactions shall also be subject to the requirements of paragraph 1. Where that portion is variable or not known in advance, Member States shall allow payment institutions to apply this paragraph on the basis of a representative portion assumed to be used for payment services provided such a representative portion can be reasonably estimated on the basis of historical data to the satisfaction of the competent authorities.").

[89] The concept of segregated accounts here is considered as the consequence of full reserve.

[90] CPMI, PAYMENT ASPECTS OF FINANCIAL INCLUSION (APRIL 2016), 26-27. *See*, for instance, Article 7 of the EU E-Money Directive (Directive 2009/110/EC of the European Parliament and of the Council of 16 September 2009 on the taking up, pursuit and prudential supervision of the business of electronic money institutions amending Directives 2005/60/EC and 2006/48/EC and repealing Directive 2000/46/EC), as well as Article 60 of the 2020 MiCA proposal (Proposal for a Regulation of the European Parliament and of the Council on Markets in Crypto-assets, and amending Directive (EU) 2019/1937. COM/2020/593 final).

Further, the Alliance for Financial Inclusion recommends the adoption of similar rules to regulators of developing countries, *see* AFI, POLICY MODEL FOR E-MONEY (SEPT. 2019), 6-7.

In the US, the FDIC offers deposit insurance pass-through protection on prepaid transaction accounts, including prepaid cards and e-money products issued in the US, if:

- the prepaid transaction service is open-loop,
- the underlying funds are held in a segregated deposit account at a FDIC-covered depository institution,
- the e-money account holders (not the payment institution) are the principal owners of the funds in the account,
- up-to-date records on the identity of the e-money account holders and the amount of funds in the accounts are kept.[91]

Because US federal government payments, such as tax refunds and social security payments, can only be routed to prepaid accounts that meet these requirements, there is *de facto* pressure to comply with them. At least one major US retailer modified the design of its prepaid card account service in order to qualify for FDIC pass-through insurance.[92]

While this does not assign a certain fraction of value on a per-client basis to each client, as in the case of securities brokerage, the safeguarding rules render the *collective* funds of all clients a separate item on the payment institution's balance sheet, both legally and economically. While formally held in the name of the payment institution, the funds become subject to entirely different duties and obligations. They must be maintained and managed in the interest of the clients collectively, which is in many ways more similar to the management of collective investment schemes than bank deposits. For managers of collective investment schemes, the legal position of a fiduciary is beyond doubt. In short, with respect to payments and payments' substitutes, the legislation has watered down the effect of the legal difference between claims and possession.

b. DLT-based payments

Cross-border payment systems further come closer to securities brokerage by making use of securitization. For instance, several payment systems translate the transaction first into a derivative (often a Credit Default Swap or cross-currency swap) in which

[91] FDIC Law, § 1020.220, https://www.fdic.gov/regulations/laws/rules/8000-1600.html.

[92] CPMI, PAYMENT ASPECTS OF FINANCIAL INCLUSION (APRIL 2016), 27.

one currency (being of monetary value only within the jurisdiction of that central bank) is then reflected in the recipient jurisdiction where it is assessed in value and translated into the currency of the recipient country.[93] Essentially the same process, only called tokenization, is the basis for certain sovereign or private digital currency projects. Tokenization, in essence, is substantially equivalent to the securitization of a cash-flow. By virtue of the issuance process, the funds (as mere claim against the institution) are turned legally into an *jus ad rem*. This replaces the unwanted features of payments, in particular Herstatt risk (counterparty risk), with the operational (settlement) risk characteristics of securities. Again, we see the obligations that arise from the means of payments restructured into an approach more akin to securities, by virtue of advanced legal structuring.

c) Risks and incentives

Both tendencies of the former – legislation and legal structuring of payment systems – result in an **incentive structure on the side of payment service providers and e-money schemes** that is similar to securities brokerage, in three respects:

(1) these payment institutions do not benefit from an increase or decrease of funds used for payments;

(2) these payment institutions are not concerned about an increase or decrease of costs related to the transfer and management of the funds, because they can pass the costs to the payee or payer, depending on who assumes the costs; and

(3) these payment institutions retain some discretion as to the way in which they seek to route the client's funds to achieve the objective of cross-border payments; in particular, they can pick their preferred counterparty, similar to a broker being allowed to pick their preferred trading venue – in the absence of a best execution obligation.

Similarly, the risks for clients have become closer to that of securities brokerages:

[93] Jessie Cheng & Benjamin Geva, *Understanding Block Chain and Distributed Financial Technology: New Rails for Payments and an Analysis of Article 4A of the UCC*, BUSINESS LAW TODAY (Mar. 1, 2016), 1-5 (highlighting that only robust payment rules, as the ones adopting the Uniform Commercial Code (UCC), allow payments using distributed financial technology to discharge the underlying obligation to pay).

(1) clients do not bear the risk of the payment institutions' solvency, but the insolvency risk related to that of the segregated account only, which is (often) in the name of a different institution[94];

(2) given that the investment of the safeguarded funds is strictly regulated with a view to ensuring the maintenance of the nominal value of the funds, the interest in the financial state of the payment institution is limited; instead, clients become interested in the effectiveness of the institutions' operations in managing the clients' collective funds; in economic terms, financial risk (counterparty risk) has been translated into operational risk;

(3) besides these operational risks, clients bear agency risk, that is the risk that the payment institutions route the payer's funds to the payee's accounts in a poor manner (*e.g.* at high costs or low speed), because the institutions made a poor choice in good or bad faith; this is exactly the risks brokerage clients face when the broker exercises its discretion as to the appropriate execution venue.

V. Transforming Cross-Border Payments through Best Execution?

As the law, transactional structure and risks of cross-border payments ever more closely replicate those of securities brokerages, does it not make more sense to regulate these matters, at least in principle, analogously, and implement best execution as part of the law of payments?

The answer to this question also rests on the potential (expected or desired) impact of introducing a best execution obligation to cross-border payments. Hence, this section focuses on how a world of cross-border payments with best execution as the legal standard is likely to look.

1. From one to many links?

Best execution could potentially enhance the number of links each institution establishes for settling transactions. Positing

[94] CPMI, PAYMENT ASPECTS OF FINANCIAL INCLUSION (APRIL 2016), 26-27. *See also* ECB, THE PAYMENT SYSTEM (TOM KOKKOLA, ED., 2010), https://www.ecb.europa.eu/pub/pdf/other/paymentsystem201009en.pdf, 120-2.

this, we are not blind to the fact that bank customers are effectively locked into their payment relationship, muting any incentive provided by competition; further, some banks do have access to all currencies, either for lack of correspondent links or lack of currency trading liquidity, creating dependencies on globally active PSPs with regard to scarcely traded currencies. Yet, we are hopeful that best execution, as a statutory principle that could not be put aside by contractual stipulations, could mandate PSPs to look for better (cheaper/faster/less risky) means to execute transactions than under the conditions offered by their correspondent banking network; options stimulated by best execution could include reliance on service offerings by nonbanks (e.g. TransferWise, PayPal and others) or enhancing the efficiency of the existing correspondent banking network through better technical integration in an effort to maintain liquidity in that network; this could be the effect, for instance, of lower fees and higher speed as a result of increasing digitalisation.

However, this requires some version of best execution that mandates banks active in cross-border banking to look for choice and variety, or even create the former, on behalf of their clients. Introducing best execution as a legal principle, if rightly designed, would do just that: require banks to look for the best way to effect cross-border payments from the perspective of their clients.

Naturally, if banks only look at the individual client relationship they will not establish a new link given that the establishment and maintenance of a link is costly, and for the most part far too costly for one transaction. Hence, the principle must be designed in a way that best execution means offering choice to clients between different order routing channels. For instance, we can envisage a rule that requires provision of a choice among three channels; that is, cross-border active banks will be required to maintain at least three correspondent banking channels for any given transaction.

This approach faces the counter argument that, in practice, fewer and fewer links will be established. Hence, adding additional costs to cross-border banking by asking banks to set up more links could lead to more banks focusing on national payment business only, and thus further enhancing concentration. This counterargument could be addressed by way of regulation. Regulators could make a minimum number of correspondent relationships – for example three – mandatory as a precondition for entering into cross-border banking in the first place, and ask

for a justification if payment institutions maintain and offer to their clients fewer banking alternatives than this, thereby enhancing the costs of monopoly structures. Large, globally active banks would have to comply with such a requirement, since abandoning their ability to provide global payments would not for them a viable alternative.

An alternative would be for regulators to develop further technical infrastructure that facilitates many links across many banks for purposes of cross-border banking. That is the subject of the next section.

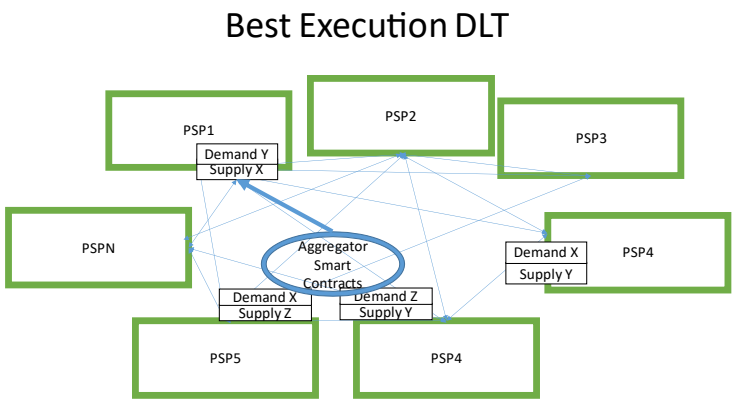
2. Drive towards DLT?

Digitalisation can further cross-border payment efficiency, yet also comes with its own challenges. In particular, adopting large-scale algorithms running a cross-border payment system would require, first, the standardisation of all interfaces and processes of multiple PSPs involved, and second, access to data regarding liquidity, execution rates and dates which are not readily available. Thus, the foundational establishment of a new multilateral network may provide the better option.

While various alternatives exist, one technical option that provides a means to enhance banking links is the use of DLT, given that DLT allows access for many banks simultaneously to the same data stream. If best execution was introduced as a legal principle, then a (regulatory sponsored or privately set-up) distributed ledger system could be used to create competition among payment institutions, relying on the information distribution function inherent to DLT, again similar to the role regulated stock exchanges play in securities brokerage:

Assume PSP1, located in country A, wants to transfer funds to country B. PSP1 announces the payment via the DLT using an announcement algorithm. Now two types of PSPs may respond (again by way of algorithms): the first group consists of PSPs with a direct representation in B, interested in receiving the A currency. The second group consists of PSPs engaging in multi-aggregate operations, for instance PSPs in country C with links both to PSPs in A and B which are interested to swap their position in C into positions in A and B currency. Both the first and the second group disclose their currency transfer rates and any additional costs as well as the offered settlement time (a point in time) by way of DLT. PSP1 then accepts the offer that represents best execution.

Figure 3: DLT as Best Execution network



To establish a distribute ledger system as a best execution network, attention must be given to system governance, participation, contributions, messaging standards, ensuring equal access to promote competition at equal terms, and many more details. We have examined these details elsewhere.[95] Yet what remains important is that technology (DLT) paired with a well-designed best execution principle could lead to a greater number of links *and* competition at the same time.

VI. Policy Considerations

In drafting a best execution rule for cross-border payments a number of considerations need to be taken into account.

1. Which institutions to be covered?

First, it must be identified which institutions should be covered by the best execution rule. Given that the purpose of introducing best execution is to spur competition between the system of correspondent banks, closed-loop systems and any potential new tech-driven payment solution (including with, or by virtue of, digital currencies), any rule should optimally cover:

(a) all banks engaged in cross-border payments,

[95] Dirk A. Zetzsche, Linn Anker-Sørensen & Maria Lucia Passador, *DLT-based enhancement of cross-border payment efficiency – a Legal and Regulatory Perspective* (2021), forthcoming.

(b) all payment and e-money service providers,

(c) all closed-loop system that do not meet the aforementioned definitions, and

(d) all functional payment substitutes, including systems relating to payment-oriented crypto assets.

Interestingly, countries can implement a best execution principle unilaterally and do not need to wait for a multilateral policy recommendation. That is: each country can subject their own institutions to execute at best terms for their clients, and thereby prompts a legal requirement to search for the best, rather than the best friend's option. In turn, implementation of best execution does neither require large-scale international standard setting, nor technical implementation projects. With the stereotypical brush of the lawmaker, PSPs will be required to engage in searches for the best execution, as further defined in the details of such a rule.

2. Design of a best execution rule

Second, effective best execution rules rest on four building blocks: (1) the fiduciary status of the service provider, (2) disclosure rules vis-à-vis clients and regulators on the execution terms of, and priorities applied for, individual transactions, (3) market intelligence on the side of regulators on the pre- and post-execution environment, based on large scale data transfer from financial institutions offering, accepting, and executing transactions, and (4) robust public and private enforcement. Most notably, items (2) to (4) together aim at efficient enforcement in an environment where the fiduciary principle (1) necessarily comes with discretion.

Drafting the principle itself is inexpensive. With regard to payments, reporting on execution terms, so far, is reduced to costs; here PSPs need to add disclosures as to why they executed a transaction in a specific way. Market intelligence on payments is at its infancy, yet on the rise with more and more central banks seeking to get hold of transaction data by introducing transaction reporting requirements.[96] The robust enforcement environment rests, one the one hand, on sophisticated clients negotiating execution terms (already happening), and on the other hand, on

[96] *See* ICMA. RECOMMENDATIONS FOR REPORTING UNDER SFTR (FEB, 2020), https://www.icmagroup.org/assets/documents/Regulatory/Repo/SFTR/ICMA-recommendations-for-reporting-under-SFTR-240220.pdf.

supervision, sector-wide inquiries and sanctions, to ensure that retail and SME clients also benefit from advanced order routing systems.

3. Allocating volume-based commissions?

Third, the best execution principle must take into account the practice of commissions for routed volume. These commissions incentivie banks to bundle liquidity and to that extent are efficiency enhancing, yet the liquidity they use is that of their clients, and thus the commission in itself could well become a disincentive to look for the best route for individual payments.

We propose a two-prong approach to these commissions. First, it would be important to require disclosure of the commissions received and paid by the payment institutions to both regulators and the public. This disclosure could then form the basis for new entrants to provide better offers if their technologies allow.

Second, as a default rule, we propose a rule that allocates volume-based commissions pro rata to clients, based on transaction volume, yet a fair share of the commission (which could perhaps be 25-50% of the commission received) would be allocated to the payment institution for its efforts to bundle liquidity, as bundling of liquidity in itself requires technical efforts and investments. Sophisticated clients may negotiate a different rate, while for retail clients only a greater share to clients would be allowed.

4. Openness to innovation

Payment institutions must consider costs, risks and speed when deciding upon the order route. As to risks, payment institutions need to be free to choose the best route in light of the technology available, and after considering at least three different routes. Their former corresponding network could well be “best execution” in that sense, but does not have to be per se. Further, the standard must be implemented in a way that ensures openness to innovation, that is: not any new route in terms of technology or routing system should be disqualified as “too risky” as long as all participants have received regulatory approval to operate.

5. Minimum number of order routes to be considered

We propose to limit freedom of contract in one important respect, that payment institutions must look for, and compare, at least three different offers in terms of costs, speed, and risks. For that purpose, several offers received through one DLT count as multiple offers. An exemption from this requirement may be appropriate for scarcely traded currencies, subject to regulatory approval.

6. Facilitating enforcement: A RegTech approach

As with any fiduciary principle, enforcement will be key. Among clients, only institutional ones will have the means to enforce best execution, whereas payment regulators and central banks are also well placed to do so. We suggest they will be best placed to do so if empowered to use the same means as securities regulators: disclosure, automated standardised data transfer on pre- and post-execution offers, and algorithm / AI data. Only through this RegTech approach will regulators be positioned to meaningfully argue against pay-for-volume arrangements that benefit “best friends”, rather than the “best execution”.

VII. Conclusion

The more recently introduced safeguarding and segregation requirements for specialized payment services providers and e-money providers have reduced the differences in the legal treatment of payments vis-à-vis securities, and as such the incentives that originally characterised payments business and the handling of cash on the side of financial institutions. While these rules do not yet apply to banks, which function in developed countries as most important PSPs, they apply to new types of payment providers, including innovative closed-loop systems and the mobile payment providers that function as backbone for billions of people in developing countries. The result of these requirements is an incentive structure for cross-border payments that comes closer to that of securities brokers: (1) PSPs do not benefit from an increase, nor do their suffer from a decrease, of assets provided to them by clients when engaged in payment operations, while (2) clients do not bear the financial insolvency risk of the PSPs in the same manner as was previously the case. Further, PSPs can be somewhat uninterested in the fees other payment institutions in the chain charge to them, given that they can fully offload these fees onto their clients (plus

a profit margin). In turn, PSPs have a strong incentive to look at their own interests, such as benefiting from incentives created within their "best friends" network (such as commissions and kick-backs) when determining order routing.

In such a setting, introducing "best execution" is potentially game changing. This legal standard requires the payment institution to exclusively consider their clients' interests, when, for instance, choosing the route the order is to take. In turn, we would expect that PSPs will develop digital routing systems that seek the best cross-border liquidity among multiple offers. Furthermore, if PSPs are required to consider multiple offers for order routing (we propose a minimum number of three), potentially more links between correspondent banks, new services providers from the FinTech space, and public payment networks (including regional integration systems) will be established, assisting the identification of excess liquidity in less frequently traded currencies. While none of the former requires DLT, one easy way, technically, to achieve this end is a distributed ledger that functions, initially, as a digital liquidity market place (i.e. as a pure information sharing device for excess positions in a given currency) and that could over time be further developed into a "best execution platform".