

Peterson Institute for International Economics

The present and future of fast payment systems

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[00:00:25.29] - Nicolas Véron

Morning, good afternoon, good evening, wherever you are in the world. I'm Nicolas Véron. It's my pleasure to introduce this new session of the Financial Statement Series at the Peterson Institute for International Economics, which is also the first session since the arrival of a new administration in the US. Who knows what will happen in the world in the years and months ahead, but for now, for today, we will stick to our usual focus on structural, some would say arcane or nerdy topics as financial statements, because it's too early to see how the agenda may change, if at all, going forward. So we're talking today about fast payment systems, and we couldn't think of better speakers for that than Harish Natarajan and Otton Moreno-Gonzalez. I have to mention that some of you got an invitation with a different second speaker, but there was a last-minute change. Miguel Diaz could no longer make it, so I'm very grateful to atone for having stood in at the last minute. Harish Natarajan studied at the Indian Institute of Technology in Madras, Chennai, initially in electrical and electronics engineering, got his degree in '94 there, and then in '98 at the Indian Institute of Management in Kolkata in a postgraduate diploma in computer management.

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So it's a combination of IIT and IIM. For those who know India, is some What intimidating. And then he worked at Citibank. He worked in a number of software companies. Then for 6 years from 2003 to 2009 at Visa in different functions about including operations, risk, and business development. In 2009, Harish joined the World Bank. And in layman terms, I guess it's not an exaggeration to say he has become the World Bank's payment system guru. He has been the lead contributor for the International Monetary Fund and World Bank Bali FinTech Agenda. He has been the co-chair of the CPMI World Bank Task Force on Payments Aspects of Financial Inclusion. Of course, CPMI is the Committee on Payment and Market Infrastructures, which is hosted by the Bank of— for International Settlements. And of course, in that capacity, Harish has worked with policymakers and leaders in a number of different countries, particularly developing and emerging markets. Otan Moreno has studied initially at the Technical University

in Monterrey in Mexico. He joined the Bank of Mexico in 2004. In the meantime, he earned his PhD in economics in 2013 at University of Texas at Austin. And in 2016, he joined the Payments Department of Bank of Mexico, Oversight of Payment Systems.

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And almost a year ago in February 2024, became Director General for Payment Systems and Market Infrastructure. Structures at the Bank of Mexico. With that, Harish, over to you.

[00:03:32.06] - Harish Natarajan

Thank you, Nicholas, for the very kind introduction. Let me see if I'm able to share my presentation well. And I will now move into full display. Okay, I hope you are able to see the presentation well. Let me start by describing a little bit of what is all this big buzz around fast payments. At some level, fast payment systems are like any other payment system, but at some other levels, it is actually quite different. Put simply, as the name suggests, fast payments are able to process payments in an instant, like many payment systems do. But the difference here is that the payee and the payer—the payer gets the—the payee gets the money immediately, and the payee's account is also debited immediately. In a sense, it gives a real-time experience to the payers and payees. So that is why the term fast comes in. And the other point is also that it, in a way, that tries to bring in all the different types of payment service providers in the country, both banks and non-banks. Whereas typically you see payment systems which are very specific to, say, the banks which issue cards, or between non-bank players, whereas fast payment systems are intended to be nationwide and providing, integrating all the different types of payment service providers.

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And then in a way, it is also delinked from the underlying payment instrument. So many of the payment systems process only one kind of payment instrument, like card payment systems only processes cards historically. Of course, things are changing. And bank-based systems only process credit transfers and debit transfers. Whereas this kind of system actually integrates all the different types of payment instruments. It covers a variety of use cases, kind of both from person-to-person transfers to merchant payments, and then also to business-to-business and so on. And then again, it brings various channels and modes of initiating payments. So typically, say you are—you can only initiate a transaction in person and with a particular kind of instrument, whereas here you can initiate with QR codes, you can initiate through your app, you can initiate even through a third-party application. So in that sense, it brings in different initiations. So at one level, it is a payment system, as has been there for a number of years. But

at another level, it introduces a number of features which are quite transformative. And what you're seeing here is also on the left-hand side is a global map of the adoption of fast payments.

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Of course, I'm certainly missing a few countries. This is a little bit— it's a few months old. But what you can see here is it is fairly widespread, but there are of course clearly parts of the world where the penetration, the adoption of fast payments is limited, but it is changing very rapidly. But also in the countries where it has been implemented, in particular in the low and middle income countries, this is a work in progress. So a country implementing fast payments doesn't mean that all the features are available on day one. It is an iterative process and basically the world is in an early stage of adoption of fast payments with very remarkable effects already in a number of countries which have made significant progress. Now, what are the benefits? I already alluded to some of them. And let me start by noting that it has a transformational impact on financial And that is because it really creates for the first time a mechanism which connects various types of payment service providers, as I mentioned. So, in emerging markets, for example, the initial introduction for much of the population to payment services is through mobile money and non-bank providers.

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And by integrating them into the broader ecosystem, allows them to transact across different types of payment providers and across the society. And then the additional point is that it allows merchants, small businesses, street vendors to accept payments, which was not possible earlier because of the cost aspect. And then also because it required significant investment in fixed cost in terms of the terminal and so on. Whereas here you're able to do it through a QR code, so in a way dramatically and structurally lowers the cost of accepting and making payments. So that is one reason why it boosts financial inclusion. And the other point is about it is a platform for innovation. So this is a layer on top of which you can actually bring in various innovations. And as I mentioned earlier, you don't even need to have your own bank or a payment service provider to offer you the services. It could be done by a third-party application. Like, say, a social media application or any other e-commerce provider who could have— who has an app, and this could be integrated into that. So in a way, it allows for you to conveniently make and receive payments.

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And that brings in various amount of innovations. It can plug into the accounting and payroll systems of businesses and automatically initiate and receive payments. So it fosters

competition by bringing in different providers. And it is a— it's a platform on which there could be various innovation. So in that sense, it engenders the digital economy and allows the growth of digital economy. At the same time, of course, there are some risks here. One is, given the nature of the fast payment systems, it does completely eliminate, in a way, repudiation-related fraud, and then also in some sense lowers the risk of counterfeit frauds. But it does open the door for what is known as phishing attacks and unauthorized payment kind of scams. So here the customer is making the payment and knowing and acknowledges that the payment was made, but the customer was duped into making it. And this is where all the social engineering attacks, etc., and this has actually become a notable problem in many parts of the world. And the second is that the governance of such systems needs to be very inclusive. Given the broader social and public policy objectives which are at stake here.

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And at the same time, because of the social and public policy issues at stake, sometimes getting the balance between the public and private interests can be challenging. And then lastly, there has to be an enabling environment, that fast payment systems cannot succeed in a country where there's very limited amount of inclusion to begin in terms of ownership of accounts to begin with. And then also a fair and basic reliable level of digital infrastructure, of course, is a precondition. And the legal and regulatory framework around non-bank players to enter the market and interoperability, etc., also has to be in place. Some of the key impacts. Now, India and Brazil, of course, have been celebrated successes of fast payments, and they were amongst the early breakthroughs in this space. But they were not the first to start fast payments. Actually, it goes much earlier with the ZenGen system in Japan, and then also other UK and Singapore and others have launched much earlier, and they have been good successes. But it was dramatic and transformative in India and Brazil. And in a way, it is even after 10 years, India is still growing at 33.5%, kind of on an annual basis.

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And then you can see the compounded annual growth rate for Brazil. But there are also other countries which are shown in the slide, like Oman, Philippines, and Malaysia, where again, we are seeing very strong growth. And there are a few other countries. And in some of the countries, there have been some studies, like for example, in the case of Thailand, there was a study which basically said that the PromptPay, which is the name of the fast payment service there, is expected to generate 2% of the GDP by 2026. And you also see some other numbers on the savings to businesses and then savings to individuals. Some of the critical success factors for fast payments. So it's not that every country which has launched a fast payment system has been successful. There have been notable slow pace of adoption. And based on

analysis from our side, We identify 4 key reasons or critical success factors, so to say. The first is to support for all the different payment instruments and use cases, and what is also known as overlay services in the sense that these are services which can be built on top of a base kind of system.

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And for example, being able to make a payment using an alias and not having to know all your payment credentials like account number, routing number, and so on. Instead of that, you simply know somebody by the email address and you can make a payment to an email address. But of course, behind it, there's a lot of mapping and, and resolution which needs to happen. But to the, to the person initiating the payment, it is, it is a seamless and intuitive experience. So those are overlay services which can be developed on top of it and which is very critical for adoption. The other is standardization and interoperability. And then about kind of good communication with the end users to support them to onboard, and then also ensuring that the user experience is is seamless. And then, as I mentioned earlier, the governance and operating structure, and then also to ensure that the pricing and the business model is right. There are a number of developments in the industry, so I could say the future of fast payments in a way, based on the domestic successes. Now, there is, of course, an attempt to see whether this could be interconnected to create some kind of a cross-border fast payment systems, cross-border fast payment service.

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And this could be, of course, done through regional systems, like what we are seeing in some parts of the world, in what would be Southern Africa, Middle East, for example, as well as using new approaches to interlink the different fast payments, like the Project Nexus, which is being tried currently in the ASEAN region. And then there are also discussions about central bank digital currencies and fast payments. Are they competitors? Do they— how do they coexist? And here, based on our analysis, we are seeing that in a country— in countries where the fast payment systems have been successful, the rationale for introducing a retail CBDC is limited. But that doesn't mean that CBDC is not relevant. It could be relevant for other reasons, including, say, for remote parts of the country where offline payments might be necessary, as well as part of a broader geopolitical and national sovereignty considerations. Of course, the wholesale central bank digital currency has a relevance even in those kinds of countries because it integrates into the financial markets. And then there are developments on open banking and open finance. Which lends itself well into the fast payment systems development. And in some cases, the same structures which supported fast payments are being used also to advance open finance.

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And then lastly, the fast payment systems, as I mentioned, can catalyze a series of innovations. And we are seeing fast payments kind of supporting now buy now, pay later solutions, also digital lending, and then business-to-business payments is in area where some countries are making rapid progress. With that, let me just conclude noting that at the World Bank, we see fast payments as transformational and a key platform for financial inclusion. And we have a dedicated project called Frictionless, Affordable, Safe, Timely Transactions, or Project FAST, using which we are mobilizing ourselves to support developing countries in accelerating adoption of fast payments. So thank you, Nicholas. I'll be happy to discuss further as part of the Q&A.

[00:16:53.15] - Nicolas Véron

So it's masterful and lots to digest and unpack. We'll do that in the Q&A, but first, Othon.

[00:17:00.13] - Othon Moreno

Thank you, Nicholas. Good morning, everyone. I think it's going to be useful for everyone here in the conversation to listen to a particular case of implementation of a fast payment system in a weird country, which is Mexico. Mexico is famous for a wide use of cash across the population. It's also famous because having one of the— Harish was talking about recent implementations of fast payment systems, but he also mentioned how some of them are quite old. Mexico's case is one that is quite old. Our fast payment system started 20 years ago. It's now part of the general knowledge of the population. Actually explaining to the Mexican population that those innovations that we have seen in Brazil recently is pretty much— we have had that since 20 years ago, of course, with a different degree of success in the adoption of the payment system. In 2004, the Central Bank of Mexico launched the new version of the RTGS, the Real-Time Gross Settlement System, that essentially gives services to the financial institutions with a tweak. We decided to also allow for all types of payments, person-to-person, person-to-business, business-to-business, regardless of the amount. So there's no limit. So essentially, you already have a fast payment system there, which for access to the general population.

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Very rapidly, in 2007, 3 years later, we allowed for the inclusion, for the adoption of the system for non-bank financial institutions. So essentially, any financial institution who has any kind of regulation, financial regulation from any financial authority in the country, were allowed to connect to the system. So, and Hais also mentioned how it's important for the fast-paced

system to have non-banks also included in the equation. So we started in 2004, 2007 we allowed for the non-bank financial institutions to join. In 2013, we made the system run 24/7. It was, it was, it was a little by little, right? First we moved from 12 hours of operation to 18 hours of operations. That we did that to allow for the operation of CLS, this American bank that is used for the settlement and netting of cross-border transactions and cross-currency transactions. So they operate in London time, so we need to move towards the London times. That moves our system to 28 hours. Yeah, so 18 hours. And as the Brits say, in for a penny, in for a pound. Moving from 18 hours to 24 hours, it was pretty simple. So now we have a system that has no minimum limit in the, in the, for the transactions, access with no financial, non-bank financial institutions already, operating 24/7.

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There you have a, you have a fast payment system running. In 2017, We made that 24/7 mandatory for all retail banks. So that, that, that, that means that any, any bank with more than, I believe, 100,000 deposit accounts were mandated to operate 24/7 and receive the, the, the instructions from the clients regardless of the time and the day. And that pushed a little bit for the adoption of the fast payment system. But to be honest, our fast payment system has been struggling in the very first years of implementation, in the fast payment part, in the personal-to-business, personal-to-person kind of transactions. One example, in 2019, the system operated 834 million payments, person-to-person or business-to-business, below \$8,000 pesos, around \$400 American. So those transactions below \$400 million were around 834 million transactions made in 2019. But then the pandemic came, right? And we see the need for instructing payments with a different perspective of— with the restrictions on mobility that were implemented pretty much all over the world, with the need to keep economic activity going without the possibility of making the payments in cash. So we see an increase in the adoption of the payments. And in 2024, we had 4.5 billion transactions in our fast payments systems, transactions below \$400.

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We are also seeing those rates of adoption that Javier was talking about in Mexico since 2019, that the system has been growing at 40% annual rate. Consistently for the past 5 years now. So we do see this increase in the adoption. And now I can say 70%, 70% of the adult population in the country uses the system in any given quarter. 70% of the adult population. I cannot think of any other public infrastructure in the country that serves more population. No, not the public transport systems in any city, not the telephone company, not the TV stations. I think there's no single infrastructure that serves 70% of the adult population as a payment system. So it's been adopted. It's been adopted in certain use cases. And I think that's very important, Kaish. Was

talking about how these different use cases need to be supported. We started, and it's important to go back and try to remember 2004 when the system came live. In 2004, there was no iPhones. That means there was no apps. That means there were no banking apps. So it's How do you push for a fast payment instrument without any electronic device that allows us to instruct those payments?

[00:23:21.16]

It essentially started for the people going to the brick and mortar, uh, to the, to the, to the, to the bank branch to instruct a payment, right? In person. That's, that was the first business use case in the, for the, for the, for our fast payments. That it starts evolving, and as the Mexicans, the population starts digitalizing, right? Then you start seeing how these new services came up. And now, for example, business-to-person, that's, for example, the payroll kind of payments. Almost all of those payments are now in electronic means. Person-to-person, almost all electronic person-to-person transactions are made through fast payment system. And the very next step that we need to push for is for the person-to-business. And that's when there's these new innovations that we've seen in India, we've seen in Brazil with this use cases for the aliases and the way to identify users in this huge matrix of payments through the use of emails and QR codes that we've been pushing for in the past 5 years. I think the transformation of the fast payment system in Mexico is going towards that. I think once we start looking at that adoption, we're going to start seeing this kind of numbers that we see in India, that we see in Brazil.

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It's a challenge for public policy. Because you need to compete with the MDRs, merchant discount rate charged by the card networks. And you want to replicate that kind of system, but you also want to give space for it to evolve. But I think that in the next years, the future of the fast payment systems, I think all over the world, but I know a little bit better in Mexico, is what it's going to be, the push and the fight for the merchants with the card networks in the in the near future. I think I stop here, Nicolas, and let's get into the—

[00:25:29.23] - Nicolas Véron

In the rest of the session, we'll go back and forth between Mexico and other jurisdictions, but it's great to have this kind of sense of a particular case study. Harish, I'd like to take a step back just on the user experience. And if you can explain maybe to our— audience who are either in the US or in the European Union, what is their experience of a fast payment system? Do they have finance fast payment system in those jurisdictions? If they don't have it, why? And how does it feel to be left behind?

[00:26:07.12] - Harish Natarajan

Um, no, no, um, thank you, thank you, Nicholas. No, US and European Union and European countries do have fast payments. There are notable successes also in Europe. Europe, like Spain and Sweden and UK. So to make it more concrete, in Sweden I think it's called the Swish, in Spain the Bizum, and then UK of course it's called FAST. So these have been quite successful, but I think the difference between that and And the difference between that and the US, of course, there have been a few private providers like Zelle, for example, between the different various banks which are participating. And then now the FedNow service which has been launched, which is in very early stages at this point. But Zelle has seen a good amount of penetration. I think the difference why the emerging markets successes are talked about quite a lot here is because there were very few digital payments before, before fast payments got introduced. So in a way, in emerging markets, fast payments became the first mass usage of digital payments. Unlike in Europe and the US, where card payments had made significant penetration already, and that was not the case in at least some of the emerging markets, at least in India and then also in Brazil.

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it had not penetrated that much as it has in Europe and the US. So that's the way I would put it. But also, in the case of the emerging markets, it has also been integrated into the broader financial inclusion strategic objective of the countries. So in that sense, it has also helped bring in new individuals into the financial system, and then also merchants, as Auton was also mentioning. And that is also the difference between Europe, US, and the other countries.

[00:28:22.29] - Nicolas Véron

Again, to understand the taxonomy, you mentioned Brazil and India, but you didn't mention the two other initial BRICS, right? China and Russia. Can you tell us what— if they have do they have fast payment system or what form it takes? Is Alipay a fast payment? How should we think about the taxonomy? Just for the non-specialists among our audience.

[00:28:42.17] - Harish Natarajan

Russia, we have not tracked in the recent past, so I'm not that current on the current status in Russia. But in the case of China, it doesn't have fully functioning fast payment systems like what we are talking about in Brazil and India. But they do have, of course, the WeChat Pay and Alipay, which have kind of wide adoption. And in that sense, the interoperability there was between those two systems and then the banks in terms of just the funds transfer part. So that

funds transfer between banks and non-bank players, that is there in China. But the retail user, end-user experience is through Alipay and and, and WeChat Pay. So in that sense, it doesn't have the full functioning fast payments like in other parts of the world.

[00:29:34.29] - Nicolas Véron

So just to understand what, what— this is about the vocabulary really. What is it about WeChat Pay or Alipay or PayPal in the US, or, you know, uh, that makes it not a fast payment system?

[00:29:47.27] - Harish Natarajan

No, it is a fast payment system, but the thing is that kind of Going back to the taxonomy of a fast payment system, there has to be at least 3 participants. Otherwise, it is not 3 participants in the sense 3 payment institutions for it to be called a payment system. Otherwise, it is bilateral or internal system of an institution. So WeChat Pay and Alipay, they are individual institutions and they have their own customers and the payments are between the customers of WeChat Pay or between the customers of Alipay. So in that sense, it is not a payment system. Them. But as I said, they can do some limited transactions between each other, which is about just a funds transfer. But it is not about, say, a merchant who is signed up with Alipay can receive a merchant payment from WeChat Pay. So that capability is not there. And then a lot of other things. But of course, it is— the country contexts are different. So in the case of countries like China, where there's been already wide adoption of a particular provider, it was difficult to introduce some system like this. And that's why the point about competition also comes in, because the fast payment systems provide a mechanism for various players to compete and not allow— kind of not resulting in a situation where there's a duopoly or very few players controlling the market.

[00:31:10.05] - Nicolas Véron

Othon, to understand how it went in the case of Mexico, one obvious piece of this debate is the competition between a fast payment system and the card companies, Visa, Mastercard, or any others that have an established position in the market. Can you give us a sense of how that played out in Mexico? What were the key steps? And yeah, basically, what was the story there?

[00:31:34.25] - Othon Moreno

Yeah, I think in 2019, 5 years ago, the central bank We operate the fast payment system at the Central Bank in Mexico because, as Heijero said, there's a lot of industrialization elements to be considered. In Mexico, the fast payment system is operated by the Central Bank, as any other real-time settlement infrastructure in the country. We would like to use these same

infrastructures for payments between between persons and merchants, right? In 2019, we pushed for what it's called the request to pay functionality. You understood that the QR codes that are presented in the merchant, and then there's all the information that needs to be shared between the payer and the payee is done through these QR implementations, right? We saw a lack of adoption between the banks. The system is there and it's been pushed by the Central Bank in the recent years. We haven't seen the adoption that you can see in Brazil, that you can see in other parts of the world. And I think this precisely has to do with the competition that has with the card payments and the card networks. And it's important to understand what the difference among different countries are.

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On this situation. For example, in Mexico, the settlement of a card payment is T+1. So you get the money the very next day. This is not the case all over the world. In some jurisdictions, you can take up to 30 days to get your money back as a merchant once you receive a payment with a card, right? And if you want to get that money earlier, of course you can always pay a little extra on interest rate for your payments to be credited faster than those 30 days. So in those jurisdictions, in those situations, of course, when you have the option of a QR code with a fast payment system, of course, the merchant can move fast, very fast to new implementation because the cost of receiving card payments is way higher. It's not the case in Mexico. The merchant discount rates are not as low as we would like to be, But they are in no way the highest ones in the world or anything. They're pretty much around the same levels in the United States, 1.5% for relatively large merchants, and a smaller merchant with lower bargaining power, they can go up to 2.5%, which is more or less what you can see around the world, more or less those levels, right?

[00:34:19.29]

So we don't have the push from the merchants to do Like this. that. So the push gotta come then from the users. And that has been the hard part since the payment system providers usually try to prevent the competition from the fast payment systems, right? So I think the very next strategy to keep pushing towards that is to bring the users as the ones that is pushing for the adoption of the new system. I think I think at the end of the day, it's going to be place for both kind of payments in the market, right? Some payments are going to be very useful to make through fast payment systems, especially low value payments. I'm talking about payments on the few dollars, few pesos. What the merchant is kind of, it makes no sense. It is not profitable to charge 2% of 2 pesos. It's pretty much nothing. Right? So there's no business case to bring the solution there. Then fast payments can be a good place to get there. And also those kind of

solutions that do require the instant settlement of the operation because of the cost of capital, working capital in those industries.

[00:35:34.20]

So I think that's going to be for those solutions to be actually useful in the payments landscape in any case.

[00:35:42.06] - Nicolas Véron

Harish, Othon just mentioned the fact that the central bank is at the center of the system in Mexico. I think it's the case in most, but maybe not all, of the examples you gave us in various emerging countries. Obviously not for Zelle in the US, even so you also mentioned FedNow, but you mentioned the fact that it's at an early stage of adoption. Can you give us more of a sense of where central banks are in that landscape? What have been the experiences where central banks have not been at the center, so unlike in Mexico, and maybe also a bit of politics of that, including, you know, the interference with private sector business models, expanding on what just Autan just told us?

[00:36:26.19] - Harish Natarajan

Yes, no, I think this is indeed a very important point. In our assessment, central banks very clearly have a role as a champion and a catalyst. I think that across all countries, I think that role is very important for central banks to play. But historically, in the world of payment systems, there has been this general point about central banks stepping in when there's a market failure. And this is also the case in general for public sector intervention. Across various parts of the economic activity. And in the case of the nature of the evolution of the payment systems, there have been a lot of new players who have entered the market, like non-bank players, and then also other players who are not offering payment services themselves but have a wide customer base. And payments in a way is something which can be integrated into into their broader offerings. So there are these new players who are entering the market and some of them who have already had some market success. And then you have the incumbents who have been there in the market for some time, and over a period of time they control most of the market infrastructures through either themselves or because of the large market share they have.

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And this basically doesn't mean that organically or naturally these two worlds will come together. So, there has to be an intervention by some authority, and in this case, the central bank is the most natural player to bring these two worlds together. But that doesn't mean that the central

bank has to operate it. It means that the central bank has to play a catalyst role and it has to play a championing role. And in some cases, this might not happen on its own, and even after the championing and catalyst role, it might not still work. So, I think the central bank might need to step in to actually operate it. But that doesn't mean that that has to be the steady state. In the steady state, it could again be kind of moved on to the private sector, which was the experience also in the card space, where a lot of the central banks or government authorities operated some of the systems in many countries. And then over a period of time, they gave it to the private sector.

[00:38:50.27] - Nicolas Véron

Have there been any examples in this space of fast payment system of a central bank stepping in and then stepping out and passing the baton to the private sector?

[00:38:59.22] - Harish Natarajan

It is too early because these developments are very recent. But just to also note the earlier part of your question, there have been some successes of non-bank or kind of private sector operated fast payment systems. As I mentioned, Zelle has had remarkable— has had good success. But of course, it is not widespread adoption in terms of the banks participating. But all the big banks are already there in Zelle. But some of the smaller banks are not, and that's also the reason why the Fed now is coming in. Now, in Thailand, for example, it is operated by an association of banks and it is not the central bank, but of course, central bank has an overseer role, they have a catalyst role, and they did champion the adoption of fast payments. So there have been—

[00:39:54.13] - Nicolas Véron

In India, sorry to interrupt, but in India it's the central bank, right?

[00:39:58.01] - Harish Natarajan

India, it is also again an entity which was incubated and championed by the central bank, but it is an association of banks. But of course, the banking structure in India is such that public sector banks have a significant share of the banking assets. So in that sense, you could say that the association, there's a lot of public sector banks ownership, but the membership is widespread. It is not just public sector banks, there are foreign banks, there are non-bank players even now. So, in that sense, it is not right to say that it is a central bank-operated system. It is also, in a way, in the private sector, but maybe you could say quasi in that sense. But there are pure

private sector-led fast payment systems as well, as I mentioned. But it is quite common to see central banks directly operating fast payment systems in many parts of the world.

[00:40:52.15] - Nicolas Véron

Othon, we have a question from Miguel Medin about tax collection. Let's ask this question in the context of Mexico, is there a correlation between adoption of fast payment systems and online tax collection? Can you explain how these two play up, or if at all?

[00:41:08.25] - Othon Moreno

It is being signaled as one of the main concerns for the adoption of fast payment systems, the tax collection efforts around the country. The people has the perspective that once they start operating. In Mexico, nearly 80% of the transactions in the country are made in cash, right? And one of the ideas behind that is that if I go digital, then the tax authority— it will be easier for the tax authority to track my income and my expenses and therefore to get a better grasp of what my taxes should be and therefore implement some policies regarding that. I think that's a mistake, to be honest. I think, first of all, it's my position that everyone should pay taxes regardless of whether the transaction was done in cash or was done electronically. That's a point. But I think even that, even if we concede the fact that having more transparency of your income and your expenses would lead the government to push for better tax policies, I think that's the wrong way of looking at this. And I'll give you an example. In Mexico, you can deduct from your tax payments your expenses in gas, right? In gasoline for the car.

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And the way we used to do that is you go to the gas station, you fill your tank, and they give you a receipt, and then you will present that receipt in your monthly or yearly declaration of tax. But that got wrong very, very fast. They give you the blank receipt and you can put whatever amount you want to put in there. So it just got crazy. And then the public said, okay, the tax office said, okay, for now on, if you want to deduct taxes, you're going to do that only with the receipt of a card payment, right? So you cannot change the amount. The very next day after the tax authority put that into place, all gas stations in the country start receiving card payments. Otherwise they wouldn't be able to deduct the premium for the taxes. So that's one example when the causality goes the other way around, when actually pushing for electronic payments was a result of a better tax collection strategy. So I think even though we have that negative incentive of tax collection for the adoption of payment systems, I think I think the way we should work around it is have a better taxing system that allows for low-income persons to just get rid of that discussion.

[00:43:58.13]

And that's exactly what you see in other countries. And I think Brazil is a fantastic example. And Raiz was talking about the success of Brazil. And I don't think Brazilians love paying taxes, to be honest. I don't think no one loves paying taxes. I think, but the taxing system in Brazil is such that the adoption of a fast payment system was a natural thing to do. I think we need to think about that. We need to rethink the way we look at taxes to push for the adoption of fast payment systems. As an example, I have with the gas stations in the country. I think that's my position on that.

[00:44:34.04] - Nicolas Véron

Very interesting. Harry, shall bundle a few questions. You may want to comment on this issue of taxation and the politics of that resistance. But also we have two questions which are not the same questions, but in a way both of them about the risks. One from Linda Goldberg about the financial stability implications, if any at all, of fast payment systems and what, what, what is there in that space. Basically, what are the elements of this agenda where financial stability concerns arise? And then we also have a question from Dan Figney on what European legislation— I think it's Payment Systems Directive number 3— calls verification of payee, which is mandated in the EU. Can you get us a little bit of a sense of how banks understand the imperative of this confirmation process, if I say it with the right words? And more generally, the experience— you already mentioned fraud and scams. And phishing, what has been the learning curve in that space? So I'm aware these are many questions in one question, but you can be selective.

[00:45:47.10] - Harish Natarajan

Yeah, let me provide brief responses to all of them. On the taxation point, of course, tax is complicated and it is not something which people want to do willingly. But I think the fast payment systems and the adoption of them does raise some challenges, right? So, because of the nature of the services and the system, you're going to now start penetrating segments which were quite informal before, and very small businesses who might or might not have the trade licenses and so on. So, I think it is an area where due care has to be taken. And of course, the general kind of the prudent public policy here is certainly that tax has to be paid where it is due. But the point has to be that you need to lower the cost of compliance, need to make it easier for people to meet their tax payment requirements. And then there has to be care that small businesses are not basically swept into this big tax compliance requirements, which is not

commensurate with the scale of their business. So asking a small shop owner to kind of really file all the returns, etc., is complicated for them.

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And the natural reaction then would be not to accept digital payments. So I think it has to go hand in hand, and there are ways in which it can be done to ensure that the public policy objective of tax collection is met, as well as broader adoption of digital payments. Now, in terms of the financial stability risk, this is an area of course of active research. There has been some analysis of the potential of accelerating bank runs because fast payments can move funds faster. And if there's a risk of any rumors from a particular bank, then there have been concerns that money can move out very fast. But of course, it is not conclusive that fast payment systems in any dramatic way increases the risk of bank runs. But this is an area which has been talked about earlier. And then the other point is also about because of the competition with non-banks and so on, the pressure on banks to retain the deposits and retain kind of stability in the holdings of customers. I think that has also been talked about. And then it also has implications for the collection of the monetary statistics from central banks to basically project the liquidity, the cash needs, and the broader performance of the economy.

[00:48:38.02]

So it does have implications for the collection of statistics by central banks. Now, in terms of the verification of payee, so what this basically does is that before you send a payment, you are given an opportunity to confirm to whom you are paying. So, as I said earlier, you could make a payment using an alias, and when you make a payment using an alias, if you may, you are basically asked to confirm that this is the name of the payer, to whom you are paying, and then, and basically ensuring that the person who's initiating the payment is not making a kind of a mistake, generally like a fat finger mistake and so on, not typing a digit wrong or something like that. But it doesn't stop the phishing attacks because there it is a very different kind of attack. So, you're not making a mistake in the payee's credentials. Here you are basically being kind of manipulated on the purpose of making the payment. So, in that sense, the verification of payee doesn't address that, but it does address the fat finger kind of issue.

[00:49:51.13] - Nicolas Véron

Just to stay in the European Union, I'm very ignorant about that, so probably I'm not asking the questions the right way, but the ECB has introduced a system called TIPS for small payments. If I'm not mistaken, this has been mostly used actually not in the eurozone, but in Sweden, which is also connected to Target2. Can you give us a sense of, I mean, what has driven, you know,

success or failures of fast payment systems and what has been the reason when systems have been introduced by central banks and have not really gained traction?

[00:50:28.09] - Harish Natarajan

Yeah, as I was mentioning earlier in my presentation, there are certain critical success factors for adoption of fast payments. And it has to do, of course, with the broader context in which the system is being introduced. And there has to be broad participation of both banks and non-bank providers. And it also has to have a variety of modes of initiating payments. So, for example, if you take the case of Brazil and India, bulk of the payments are initiated by third-party payment applications. So, what I mean by this is, so typically you are making a transaction with your bank, you would use either the card issued by the bank, you either go to the bank branch, or use the internet banking website of the bank, or you use the banking app of the bank. So with third-party payment initiations, you can initiate it using an app of a third party. So like say Google Pay or WhatsApp or Amazon's application. So using that, you're initiating a payment by, of course, you're connecting it to your bank, you're authorizing your bank to make the payment and so on. But all of that is masked. It is hidden written to you.

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So you are well, you're already well used to making a payment using a third party, using the third party application like Google app and WhatsApp Pay and so on. And then basically, all your friends and commercial networks are also there in that in some cases. And basically, that makes it quite easy for you, intuitive for you, and engaging for you to transact. And that has been a very critical success factor in some of these countries. Um, so that, that is—

[00:52:20.06] - Nicolas Véron

if I understand you well, is that there have been cases where this access to third parties has not been granted and that has basically prevented the system to reach its potential, right?

[00:52:30.23] - Harish Natarajan

It's not necessarily not been granted, or the system is not supporting that. It's not that they, they can support it but not been granted, but it's just that the system is not supporting it. That is the case of TIPS, but TIPS is a very different context. Because TIPS is kind of trying to provide the service euro-wide, and they are providing a very base level of service, and then the third-party applications can be developed on top of it, which is the overlay services I was mentioning. So it is not right to say that TIPS doesn't support it. The overlay services can be developed on top of TIPS to support that. So I think that's the way to go. And so that is one point of the engaging

user experience and third-party applications and so on. Then the other point is also related to the broader policy context and infrastructure context in the country. In some countries, fast payments have been introduced, but third-party non-bank providers have not been allowed to participate yet. In that sense, it is simply a system between banks. Those are some of the reasons why in some countries it has not succeeded.

[00:53:39.19]

And of course, in many of these countries, initiatives are underway to rectify the situation.

[00:53:47.05] - Nicolas Véron

Othon, I'd like to come back to some things that Harish mentioned, which is central bank digital currencies. I'm sure you had that debate in Mexico, even so I'm not aware of the specifics of it in Mexico. The Bank for International Settlements a few months ago had a good paper on the, you know, how to see the complementary or competition between fast payment systems and CBDCs. Can you give us a sense of the CBDC versus fast payment system debate in the case of Mexico?

[00:54:14.18] - Othon Moreno

Of course, we have had this discussion in Mexico. I cannot disagree a little bit with what Jairus was saying about whenever you have a fully adopted fast payment system makes the case of retail CBDC a little bit be a bit mute for the discussion. I think there's a complementarity of both services. Let's start thinking about this and about financial inclusion issues. We have different perspectives around the globe on financial inclusion. In Mexico, we have huge regions of the country without access to financial services, huge segments of the population. And there's two reasons why we have seen this. Either because the financial institutions, financial service providers, payment service providers do not want to bring them services, they are just not profitable, that's it. Or there's also areas of the country where the people have decided not to look for those services because they don't see value in having a bank account or making a fast payment system, payments or card payments. They just decided to stay in cash, that's enough for them. I think in that consideration is a retail factor, CBDC will make sense because if there's segments of the market that are not profitable, maybe a public infrastructure will bring them services to them will make sense.

[00:55:43.17]

And that's the case, for example, for airports and might in ports. Or highways, right? Where the private sector seems no business to make them, to build them, then the government goes there

and build them because they are necessary infrastructure for development of the sector. And I think it's a similar argument here. If there are segments of the population that are not getting financial services because the private sector doesn't want to provide services, maybe the government should go and give those services. And the way to do that is through a CBDC. It's also the evolution of cash, and we're looking at that in that way. It's the evolution of cash. We do provide cash. The Federal Reserve provides cash. The Bank of Mexico provides cash. Bank of Canada, Bank of— the European Central Bank, they provide cash. So what's different of making out of plastic and cotton, and we want to move that towards digital parts, with the digital version of that.

[00:56:41.26] - Nicolas Véron

Follow-up question on this, because Harish, when he mentioned CBDC, said maybe strategic autonomy reasons, as we would call them in Europe, are also part of the rationale. Well, not expanding again on the very current situation between the US and Mexico, but, but how has that played out? And can you give us a sense of the way policymakers and also political authorities in Mexico have used CBDCs? The CBDC question in connection with the payment function, but also this sovereignty issue?

[00:57:13.29] - Othon Moreno

I think the sovereignty issue is covered in Mexico. As I said, the fast payment system, the real-time gross settlement system is provided by the central bank, not by the private sector. We don't have that dependence on the provision of payment systems at the basic, the core ones, of course, of course Visa, Mastercard, American Express, they do operate in the country, but in the worst case scenario, right, we have our sovereignty on payment services through the central bank. We print our own cash, right, with our own printers, with our own ink, with our own cotton. So that's part also the sovereignty of Venezuela. So in the worst case scenario, we can go back to cash for a few months, and we will be fine with that. I think in this case, the CBDC discussion has to do with the development of new services that all those people who don't see value in the payment services provided today by the private sector, they might jump to better services provided by the central bank. All those segments that have not been attended by the private sector could be attended by the central bank with this logic. Of public infrastructure.

[00:58:26.12]

That's what the discussion actually is.

[00:58:29.02] - Nicolas Véron

Right. Harish, unfortunately, we're already close to the hour. There are so many more questions I would want to ask. But we have one from Sami Habib on countries where no fast payment system exists. And the question is, what are the most crucial first steps for the introduction of fast payments? So that's very much down your alley. What would you answer? Succinctly to that question.

[00:58:51.26] - Harish Natarajan

Right, you know, I think the first order of business is really to bring the different stakeholders together and understand the kind of the current landscape and to really chart a vision and engaging the different stakeholders. I think that is the very important first step. And then after that, I think a lot of things are pretty straightforward once you have the buy-in of all the different stakeholders. The steps to take in terms of designing the system, the kind of the operating rules and procedures, and the standardization aspects, all of that is pretty well documented. And what is the most crucial point is to ensure that there's a very strong buy-in of the different stakeholders and they are all bought in from day one. And central bank in that sense is the entity which has to play that. Clearly, the World Bank is there to help to diffuse, distribute those best practices.

[00:59:49.29] - Nicolas Véron

This is, in a way, is a free advertisement. Thank you so much. Very illuminating comments. Thanks to Harish Natarajan. Thanks especially to Aután Moreno for having been available to step in at the very last minute and for the insights from Mexico. Our next session will be on Thursday, the 13th of February, we'll talk about supervisory architecture and the model of the so-called Twin Peaks concept in financial supervision with Michael Taylor, who coined both the concept and the expression. And in the meantime, again, many thanks to our speakers today, to Jessica Parrada and the whole team at the Peterson Institute for making this series possible. And have a great rest of your day.

[01:00:34.13] - Harish Natarajan

Thank you.

[01:00:34.24] - Nicolas Véron

Thank you, everyone.

[01:00:35.21] - Othon Moreno

Thank you.