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General

Q1. Are you in general agreement with the payment system gaps and opportunities identified above?

Yes

i. What other gaps or opportunities not mentioned in the paper could be addressed to make improvements to the U.S. payment system?

Consider the new payment system to be designed so that it is capable of transferring/facilitating the use of new forms of money in the future, such as bitcoins or air miles. Of lesser importance to US (although important to other countries) may be the ability to support foreign currency clearing alongside USD.

Q2. Are you in general agreement with the desired outcomes for payment system improvements over the next 10 years? Please explain, if desired.

Yes

i. What other outcomes should be pursued?

In addition to ubiquitous, the goals of easy access and low cost (i.e. a bit stronger than cost-effective) are highly desirable as a way of encouraging move to electronic. These may be implied by "ubiquitous" but deserve explicit recognition.

Further, in parallel to "systemically important" institutions we may look into "socially important" enterprises - e.g. those that help bring down unemployment rate for U.S. These institutions may receive differentiated treatment in financial services in general and when they participate in the new payment schemes in particular. One treatment is to have lower clearing fees levied on those certified as social enterprises as part of their "overlay" service.

Q3. In what ways should the Federal Reserve Banks help improve the payment system as an operator, leader, and/or catalyst?

FRB should at minimum act as a catalyst and leader. Without a respected and trusted party, the initiative will not achieve critical mass or will not be able to start at all - as is evident by NACHA failure to pass the same day settlement rule, which has long been a

reality elsewhere in the world. FRB needs to instill the case that the initiative is real and the results are imminent to remove the uncertainty that so hobbled SEPA – where banks wasted untold resources and efforts on tactical solution because there was no clear comprehensive direction provided until well into the initiative.

FRB is the most natural party to also be an operator, as it is the only party that provides ubiquitous services. This said, other parties (e.g. CHIPS) should not be put at the disadvantage and be encouraged to innovate to maintain the vibrant health of the US payment ecosystem.

Ubiquitous near-real-time payments

Q4. In discussions with industry participants, some have stated that implementing a system for near-real-time payments with the features described in the second desired outcome (ubiquitous participation; sender doesn't need to know the bank account number of the recipient; confirmation of good funds is made at the initiation of the payment; sender and receiver receive timely notification that the payment has been made; funds debited from the payer and made available in near real time to the payee) will require coordinated action by a public authority or industry group. Others have stated that current payment services are evolving toward this outcome and no special action by a public authority or industry group is required.

i. Which of these perspectives is more accurate, and why?

As none of the existing systems are architecturally capable of supporting NRT processing, only completely new infrastructures can suffice. In that case, history shows that to achieve ubiquity, coordinated action by a public authority or industry group will be required. Anything smaller than general cooperation will fall short of ubiquity, accessibility and low cost structure objectives.

ii. What other perspective(s) should be considered?

"sender doesn't need to know the bank account number of the recipient account number" doesn't seem as necessary or as powerful as the other desired outcomes and perhaps the infrastructure should only facilitate it and not make it a requirement.

In addition to EPO as a next level of evolution for paper checks, invoice based solutions should be considered as a potential replacement for the Direct Debit processing.

Q5. The second desired outcome articulates features that are desirable for a near-real-time payments system. They include:

a. Ubiquitous participation

- b. Sender doesn't need to know the bank account number of the recipient
- c. Confirmation of good funds is made at the initiation of the payment
- d. Sender and receiver receive timely notification that the payment has been made
- e. Funds debited from the payer and made available in near-real time to the payee

i. Do you agree that these are important features of a U.S. near-real-time system? Please explain, if desired.

Yes - the above are the required features of the NRT system.

We would suggest that the 2nd bullet be amplified to state the system should facilitate (not preclude) the use of identifiers other than the use of the account numbers, such as phone number, e-mail, Facebook id (which have the benefit of portability and at the same time can be rapidly recreated).

We would suggest that definition of timely in bullet (d) should be further elaborated. Given the experience Expanded Remittances and Fed's new focus on End2End processing, it would be desirable to clarify that the objective is to have complete and irrevocable information available in near real time as well - either as a new rule or by making this a capability of the scheme (for example the advising service as offered by Bank of Mexico).

ii. What other characteristics or features are important for a U.S. near-real-time system?

NRT payment system should be capable of:

- (a) Operating 24x7x365 to cater to the new economic activity and life style change.
- (b) Having intrinsic features with readiness to interface to other countries (with different currencies) for cross-border NRT payment transactions

Q6. Near-real-time payments with the features described in the second desired outcome could be provided several different ways, including but not limited to:

- a. Creating a separate wire transfer-like system for near-real-time payments that leverages the relevant processes, features, and infrastructure already established for existing wire transfer systems. This option may require a new front-end mechanism or new rules that would provide near-real-time confirmation of good funds and timely notification of payments to end users and their financial institutions.
- b. Linking together existing limited-participation networks so that a sender in one network could make a payment to a receiver in another

network seamlessly. This option may require common standards and rules and a centralized directory for routing payments across networks.

c. Modifying the ACH to speed up settlement. This option may require a new front-end mechanism or new network rules that would provide near-real-time confirmation of good funds and timely notification of payments to end users and their financial institutions. Payments would be settled periodically during the day.

d. Enhancing the debit card networks to enable ubiquitous near-real-time payments.

e. Implementing an entirely new payment system with the features described in the second desired outcome above.

i. What would be the most effective way for the U.S. payment system to deliver ubiquitous near-real-time payments, including options that are not listed above?

Option (e) coupled with the new set of rules would be the most optimal path to the 2nd desired outcome. It has the benefit of not being burdened by the legacy decisions, rules and architectures inherent in leveraging the existing solutions.

ii. What are the likely pros and cons or costs and benefits of each option? What rule or regulation changes are needed to implement faster payments within existing payment processing channels?

a) Existing wire transfer mechanisms do not operate 24x7 and on "non-business" days. This is a major detriment for the NRT retail system.

b) Existing limited participation solutions do not provide ubiquitous coverage and an overarching rule framework (a la SEPA) will have to be developed and administered. SEPA shows that interoperability is a desirable secondary characteristic but is a poor design decision for supporting more feature rich payment processing

c) Frequent settlement batches achieve most of the objectives and would work well during the "normal" periods. However, the cost of enhancing the legacy 30 year old infrastructures must be balanced against the loss of opportunity of creating the new "rails" that can be reasonable expected to remain current for the next 20-30 years. For example the current information architecture of ACH is highly outdated and is a major impediment to the ability of the US to interoperate with the rest of the world.

iii. Is it sufficient for a solution to be limited to near-real-time authorization and confirmation that good funds are on their way, or must end-user funds availability and/or interbank settlement take place in near-real time as well?

It is highly desirable to have all to components of the solution to have the same (near real time) characteristics. This removes the complexity and uncertainty associated with the settlement cycles (especially in the time of the liquidity stresses).

iv. Which payment scenarios are most and least suitable for near real-time payments? (B2B, P2P, P2B, POS, etc.)

All of them are suitable. Some specific cases may receive more or less benefits (e.g. payroll may not benefit from NRT processing as much as paying for a car purchase),

Q7. Some industry participants have said that efforts to make check payments easier to use, such as by enabling fully electronic payment orders and/or by speeding up electronic check return information, will incrementally benefit the payment system. Others argue the resources needed to implement these efforts will delay a shift to near-real-time payments, which will ultimately be more beneficial to the payment system. Which of these perspectives do you agree with, and why?

The question is whether an incremental improvement (which undoubtedly will occur) is worth a delay and a loss of commitment. In our opinion, given that resources are always scarce, they should be deployed to the solution with the highest probability of transformative results, which is the electronic solution that significantly reduces the societal reduction on cash and paper instruments.

Q8. How will near-real-time payments affect fraud issues that exist with today's payment systems, if at all?

i. Will near-real-time payments create new fraud risks? If yes, please elaborate on those risks.

NRT systems combine the speed of wires with the accessibility and volume of retail payments. Hence fraud risks will likely be the combination of the two - e.g. hiding fraud in the volume of transactions, Money Laundering achieved through rapid transaction turn-over. And since the execution of credit transfers is not secured by mandate or document check between debtor and creditor, the money once credited to the creditor due to any improper invoice or document check (fraudulently or in error) are immediately available for use (or mis-use).

Q9. To what extent would a ubiquitous near-real-time system bring about pivotal change to mobile payments?

This type of system is uniquely suitable for mobile payments. The low cost structure typically offered with such a scheme is much better suited than Telco or card based solutions.

Q10. What would be the implication if the industry and/or the Federal Reserve Banks do not take any action to implement faster payments?

i. What is the cost, including the opportunity cost, of not implementing faster payments in the United States?

Extrapolating from analysis done in other countries, the drag in the economy from the use of Cash and Paper instruments can be estimated at 1% of GDP (\$.15 Trillion per year).

In addition, devoid of faster payments, many derivative innovative payments on top of this new faster payment backbone cannot be

realized, and U.S. payments systems will continue to further fall behind other countries, resulting in both real loss of economic competitiveness as well as psychological setback of its image.

Q11. To what extent will the industry need to modernize core processing and other backend systems to support near-real-time payments?

Experience shows that current cores can work with real time systems (e.g. ATMs). In UK, stand-in processing is widely used to simulate NRT processing even though the cores are batch based. Clearly, new modern cores (e.g. BBVA) would work better, but we expect that the core adoption will be driven more by the need for real time interaction with customers more than the need to support NRT payments.

i. What is the likely timeframe for any such modernization?

Q12. Some industry participants suggest that a new, centralized directory containing account numbers and routing information for businesses and/or consumers, to which every bank and other service providers are linked, will enable more electronic payments. A sender using this directory would not need to know the account or routing information of the receiver.

i. What are the merits and drawbacks of this suggestion?

Such directories (UPIC, UID) have been proven in operation - even if at a smaller scale than would be needed for this. However, the risks of a having such a centralized repository of personal information are also well known - as they become targets of cyber attacks and fraud. Perhaps a federated solution may offer advantages of being a more diffuse and difficult target to attack.

ii. What is the feasibility of this suggestion?

The suggestion is certainly feasible. However, the administration of such facility should be carefully considered to minimize the vulnerability while at the same time offering the characteristics of ubiquitous and convenient access.

Electronification

Q13. Some industry participants say that check use is an enduring part of the U.S. payment system and that moving away from checks more aggressively would be too disruptive for certain end users.

i. Is accelerated migration from checks to electronic payment methods a high-priority desired outcome for the U.S. payment system? (Accelerated means faster than the current trend of gradual migration.)

Yes - moving from paper to electronic means will significantly improve the efficiency of the payment system. Check has unique characteristics and attributes that provide the market with useful capabilities. The combination of public and private initiatives is already determining the pace of migration from check to electronic - e.g. via remote deposit capture, eCheck through the ACH system and Mobile RDC capabilities. The Fed should not work to artificially eliminate check as a payment method without offering compelling (and preferably superior) alternatives.

ii. Please explain, if desired.

Checks are a "default" clearing instrument because the effort to create a check is minimal. However, once created the total costs of processing a check are frequently the highest of all available alternatives. Therefore, it is desirable to create a new "default" option, which will be more efficient to process than a check, will be more information rich than a check and will be less susceptible to fraud than a check.

iii. If yes, should the Federal Reserve Banks establish a target for the percent of noncash payments to be initiated via electronic means, by a specific date? For example: "By the year 2018, 95% of all noncash payments will be made via electronic means."

Yes - as SEPA experience has demonstrated so clearly, the only way to get a large and amorphous group of actors to move in the same direction is to set clear targets and to make clear that non-compliance is not an option.

iv. What is the appropriate target level and date?

Q14. Business-to-business payments have remained largely paper-based due to difficulties with handling remittance information. Consumer bill payments also are heavily paper-based due to the lack of comfort some consumers have with electronic alternatives. In addition, many small businesses have not adopted ACH for recurring payments due to technical challenges and/or cost constraints. The payment industry has multiple efforts underway to address these issues.

i. To what extent are these efforts resulting in migration from checks to other payment types?

We have seen ACH and card transactions grow significantly over the last 10 years. Web ACH transactions are still showing solid growth in the ACH network and card transactions have made a serious impact on retail check use. The B2B space currently lacks a number of features and clear drivers to move transactions into electronic payments. In time there will be innovation that will solve this problem with technology such as EIPP and mobile, standards such as ISO20022, etc.

ii. What other barriers need to be addressed to accelerate migration of these payments?

One of the greatest barriers to innovation in the payment space by banks is the fear of punitive regulation with AML, OFAC and other

concerns of handling a payment inappropriately. If there was an ability to provide some safe harbor provisions to provide confidence to the banks innovation would accelerate.

iii. What other tactics, including incentives, will effectively persuade businesses and consumers to migrate to electronic payments? The best way to influence consumers and businesses is by showing them a better way. The market will facilitate this if the Fed creates an environment conducive for product innovation and experimentation.

iv. Which industry bodies should be responsible for developing and/or implementing these tactics?

The regulators, banks and technology groups need to work together on finding better solutions to the problems. Anyone without the others faces a significant uphill battle.

Cross-border payments

Q15. To what extent would the broader adoption of the XML-based ISO 20022 payment message standards in the United States facilitate electrification of business payments and/or cross-border payments? Cross-border flows are already largely electronic - primarily due to the cost and complexity of using checks in this case. However, moving to ISO20022 will eliminate the need for conversions between formats, thus reducing the need for manual intervention and potential for errors.

Q16. What strategies and tactics do you think will help move the industry toward desired outcome four - consumers and businesses have greater choice in making convenient, cost-effective, and timely cross-border payments?

Safety

Q17. Payment security encompasses a broad range of issues including authentication of the parties involved in the transaction, the security of payment databases, the security of software and devices used by end users to access payment systems, and security of the infrastructure carrying payment messages.

i. Among the issues listed above, or others, what are the key threats to payment system security today and in the future?

- Authentication of the parties involved in the transaction
- The security of software and devices used by end users to access payment systems
- Security of infrastructure carrying payment messages

ii. Which of these threats are not adequately being addressed?
The threats listed in (i) are addressed by each bank and therefore there is no consistency in how these treats are addressed.

iii. What operational or technology changes could be implemented to further mitigate cyber threats?
In the area of cryptography, a new growing adoption has been the Perfect Forward Secrecy.

Q18. What type of information on threat awareness and incident response activities would be useful for the industry?

i. How should this information be made available?

Q19. What future payment standards would materially improve payment security?

i. What are the obstacles to the adoption of security-related payment standards?

Q20. What collaborative actions should the Federal Reserve Banks take with the industry to promote the security of the payment system from end to end?

Q21. Please share any additional perspectives on U.S. payment system improvements.

A well-established legal framework that provides good legal protection for consumers would reduce fears and encourage faster adoption of faster payments. It is desirable for that framework to be self-contained (rather than being addendums and derivatives of existing rules) - thus seizing the opportunity to develop a streamlined policy not encumbered by the legacy considerations.