

Real-Time Payments: Economic Impact and Financial Inclusion

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Introduction

A fishmonger in Kuala Lumpur posts a QR code at his market stall to receive real-time payments from customers; he no longer needs to carry rolls of cash home, late at night. A rice farmer in India visits a onestop transfer kiosk to make her micro-loan payments and receive instant school subsidies for her children; she can buy their books today, using her mobile wallet. A group of colleagues in Madrid go out to dinner and split the check digitally; there's no pile of credit cards on the table, no counting coins.

Low-cost, convenient, and accessible real-time payments are playing an increasingly important role in our modern digital economies. In every corner of the globe, from developing countries to the more advanced economies in the world, real-time payments are changing the way consumers and businesses pay, work, and conduct their financial affairs.

Real-time payments solve real-time challenges – they reduce costs and improve liquidity for businesses and help banks achieve greater efficiency. Many governments and regulators around the world are actively championing real-time payments as a proven catalyst for economic growth and increased financial inclusion.

ACI Worldwide's second Real-Time Payments:
Economic Impact and Financial Inclusion report,
in collaboration with the Centre for Economic and
Business Research (Cebr), leverages data from 40
countries to make a comprehensive case for the
adoption of real-time payments by highlighting the
economic growth and financial inclusion benefits that
real-time payments bring.

This year's report shows—for the first time—an empirical link between real-time payments and financial inclusion. By providing citizens with access to affordable financial services, modern digital payments can help lift millions of people around the globe out of poverty. Additionally, the report reveals that the associated financial inclusion uplift experienced by many countries presents a significant profit opportunity for banks — our study forecasts billions of dollars in new bank profits worldwide over the next four years as a result of increasing real-time transactions.

Real-time payments are increasingly becoming the backbone of our digital economies, and real-time efficiencies are saving consumers and businesses billions of dollars annually. For governments, the resulting transition from an informal cash economy is boosting GDP and treasury revenues in every country we studied.

For banks that take this opportunity to modernize and streamline payment technology and services, millions of new customers present significant growth and profit potential.

Real-time payments have asserted their role as a powerful enabler for societal transformation. They boost economic growth, deliver a shift to a more formalized economy, and improve the efficiency of financial systems. They are bringing greater financial inclusion for individuals, helping to solve real-word issues, and delivering real-life advantages that go beyond greater convenience and choice to act as a catalyst for proven economic benefit.

With this report, we aim to unravel the complexities of real-time payments modernization, spotlight the opportunities for governments and banks, chart the path forward for real-time payments adoption, and show that real-time payments are a win-win proposition for all stakeholders in the world's payments ecosystem.

Thomas Warsop, III
President & CEO
ACI Worldwide

Executive summary

Real-Time Payments: Economic Impact and Financial Inclusion

Our research finds that across the world, the ability to pay instantly for goods and services, often via mobile phones, is driving economic growth at every level of society and providing affordable and innovative financial services to tens of millions of previously unbanked citizens.

By allowing for the transfer of money between consumers and businesses within seconds rather than days, real-time payments improve overall market efficiencies in the economy. This results in substantial net savings for consumers and businesses. Those savings, combined with the increased treasury revenue from formalizing previous cash transactions, are boosting GDP growth for countries that have embraced real-time payments modernization.

Real-time adoption is boosting financial inclusion in countries around the world—particularly among women, the young, and very low-income citizens—as well as digital inclusion, an essential stepping stone to modern society. This report demonstrates the empirical link between real-time payments and financial inclusion for the first time, leveraging data from 28 countries.

Meanwhile, real-time payments adoption is presenting new business opportunities for banks, notably in developing nations with huge pools of unbanked citizens, but also in more developed nations. Our report quantifies the profit opportunities for financial institutions due to the financial inclusion uplift resulting from adoption of real-time payments, with billions of dollars in new bank profits worldwide forecast over the next five years.

Key findings

Empirical link between real-time payments and financial inclusion



By 2028,

167.2 million

people previously excluded

from the financial system across the 28 countries studied for financial inclusion **could have bank accounts**.

Top 10 countries for financial inclusion uplift

Newly banked citizens by 2028			
C	Pakistan	63.5 million	
(3)	India	25.5 million	
*	Philippines	20.9 million	
0	Nigeria	13.8 million	
	China	13.8 million	
	Colombia	5.1 million	
	U.S.	4.9 million	
	Brazil	2.8 million	
	Thailand	1.6 million	
(*	Turkey	1.5 million	



Economic impact: a win-win for citizens, businesses, and governments

Real-time payments are saving consumers and businesses money and boosting economies around the world

Real-time payments are saving money for consumers and businesses while driving significant economic growth in countries around the world. As real-time payment schemes mature, their positive impact is on the rise.

Our study in collaboration with the Cebr analyzed 40 countries, an increase from our 2022 report, which looked at 30 countries. The report also includes rigorous growth forecasts for 2028.

Real-time payment systems directly benefit consumers and businesses, primarily through lower transaction fees and reduction of settlement float times. By allowing for the transfer of money between consumers and businesses within seconds rather than days, real-time payments improve overall market efficiencies in the economy and simply improve the lives of the end users. However, for governments and central banks, the bigger economic story is how real-time payments drive GDP growth.

This growth stems from several factors but mainly these two dynamics:

- Savings to individuals and businesses means more productivity.
- Real-time payments formalize segments of the cash-based "shadow economy," thus increasing treasury revenues.

Across all 40 countries in the study, real-time payments boosted GDP by a total of \$164.0 billion in 2023, which is equivalent to the labor output of 12.0 million workers. In 2028, we project GDP contributions from real-time payments of \$285.8 billion – a 72% increase over five years, equivalent to the labor of 16.9 million workers.

Looking more closely at the economic benefits for users, real-time payments in those 40 countries generated \$116.9 billion in savings for consumers and businesses. These savings are predicted to grow to \$245.8 billion by 2028.



Real-time payments create economic advantages for consumers and merchants primarily in three ways:

Lower transaction costs

Consumers pay lower fees for real-time transactions compared to maintaining traditional bank and credit card accounts. At the same time, merchants pay lower—and in some countries, zero—transaction fees for accepting real-time payments.

Time is money, and it's worth noting the efficiencies gained for very small merchants in the developing world (such as roadside vendors), who—like their customers—live on day-to-day cash. Real-time rails also help manage inventory and track sales for low-overhead businesses.

- Unlocking capital by eliminating float time
 Traditional electronic payments can take hours
 or days (in the case of credit cards) to settle. For
 merchants, that's an economic loss. Their capital
 is, in effect, trapped in the financial system,
 potentially stalling their operations and affecting
 the bottom line.
- Reduction in the cost of failed transactions

 Because real-time payments happen instantly,
 fraud or technical errors are more likely to
 be noticed, and corrected, on the spot. This
 reduces the costs borne by consumers,
 merchants, and banks to resolve problems that,
 with conventional electronic payments, arise
 long after the transaction.

Such "asymmetries" in non-real-time payments are a particular problem for workers in the gig economy – labor markets characterized by informal contracting, such as ride-hailing services and house sitters. With frictionless real-time payments, these workers are paid quickly, allowing them to better plan their finances.

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Real-time payments have improved small businesses efficiency. Without having to manage cash, suddenly you can focus more on your work."

Ankur Saxena

Senior Director of Sales for South Asia, Middle East, and East Africa ACI Worldwide



The rapid integration of Al and machine learning is expected to further strengthen security of real-time rails. For example, India is moving from rule-based to riskbased fraud prevention with Al."

Ankur Saxena

Senior Director of Sales for South Asia, Middle East, and East Africa ACI Worldwide

In the fastest-growing markets, governments are embracing real-time networks as a means of modernizing their financial systems, a change embraced by consumers and businesses alike. "In countries like India, Brazil, Colombia, and Argentina, the governments are pushing new use cases for real-time payments, and consumers and merchants are keen to adopt them," says Ramsey. "These countries see even more economic growth from real-time payments."

In more developed countries, the impact of realtime channels is less dramatic given the broad acceptance of non-real-time electronic payments such as credit cards. Nonetheless, in the five leading developed markets—U.S., Canada, U.K., France, and Germany—total GDP contribution in 2028 is projected to reach \$17.7 billion.

The proven appeal of real-time payment systems suggests that stakeholders in even the most advanced nations should take note. Everywhere in the world, real-time is a growing economic force.

Due to real-time transactions, those five countries. saw additional GDP growth totaling \$114.6 billion – equivalent to the output of 10.2 million workers. This represents an enormous leap from the 2022 report, which showed GDP growth in 2021 of \$54.6 billion across the top five markets. In two years, real-time's GDP contribution tripled.

By 2028, that macro-economic impact across our top five markets is projected to rise to \$188.1 billion of additional GDP – the output of 13.2 million workers.

Real-time economic impact

Top five markets - GDP growth facilitated by real-time payments in 2023

③	India	\$50.0 billion
	Brazil	\$24.6 billion
	China	\$16.8 billion
	Thailand	\$13.0 billion
	Mexico	\$10.3 billion

Total efficiency savings in the top five markets for consumers and businesses were:

\$99.6 billion

in 2023

\$199.7 billion

by 2028

Scale of GDP supported across all 40 countries in the study:

\$164.0 billion \$285.0 billion in 2023

Financial inclusion: from unbanked to banked

Across the globe, real-time payments are driving financial inclusion and changing lives

As real-time payment systems become pervasive, they are improving the lives of citizens who previously had no access to the formal banking system. For people living day to day on cash, switching to real-time electronic transactions is strongly correlated with a financial inclusion uplift. This correlation holds across multiple countries, making real-time payments a banking "gateway" that brings the benefits of financial inclusion long recognized by the World Bank to millions of citizens, including better financial security, reduced economic inequality, and increased entrepreneurship and community well-being.

Through real-time apps, QR codes, and mobile wallets, previously unbanked and underbanked citizens can gain access to useful and affordable financial products and services and, for example, receive life-changing government aid (such as farm subsidies or school fees) at the click of a button.

The inclusion benefits from real-time payments are particularly evident in the developing world, with its large swaths of unbanked and underbanked citizens.

But even in more advanced economies, real-time payments are helping people without debit or credit cards manage their daily finances without resorting to onerous check-cashing fees or payday loans. Lower transaction fees can make financial services more affordable and therefore more accessible to a larger portion of the population.

This study applied historic banking data from 40 countries to a predictive model looking forward to 2028. Among our findings: for a hypothetical country with a 50% banked population, an increase of 10% in the value share of real-time payments would boost the banked population by almost 10%, to 59.1%.

Real-time effect on financial inclusion

10% increase

in the value share of real-time payments leads to nearly 10% increase in the banked population



When you bring more transactions into the formal economy, you can do a lot of good things, whether it is education or feeding people. You elevate the country as a whole."

Santhosh Rao

Head of Sales, Middle East, Africa, and South Asia ACI Worldwide



In particular, the Cebr analysis indicates that real-time payments are boosting financial inclusion among three demographic groups: younger people (aged 18-24 years); women; and people in lower income groups (40% of the population with the lowest incomes). This differential impact varies at different levels of real-time adoption, but at its maximum, the difference implies that for the same level of real-time adoption, the associated financial inclusion uplift is 7.4% higher for younger people than older people, 4.3% higher for women than men, and 4.1% higher for lower income than higher income groups.

Younger people are generally less inclined to have bank accounts and more likely to live on daily cash. It's worth noting that many regions, such as Africa, have large youth populations, but this group also stands out in more developed nations.

In many countries, **women** have traditionally been excluded from family financial management. Real-time payments empower women in particular to have more control over family finances and improve the lives of their families, especially children. Boosting financial independence for women gives them more control over their own destiny.

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In Europe, we're seeing how real-time payments boost the savings of the young because they're more easily able to move money out of their gig wages straight into savings."

Craig Ramsey
Head of Real-Time Payments
ACI Worldwide

Lower income citizens are often unable to open traditional bank accounts due to physical distance, financial illiteracy, or the cost associated with opening a traditional bank account. Real-time payments will help this group to have access to affordable financial services.

Whatever the cohort, real-time payments present many opportunities for citizens to better manage their day-to-day liquidity. For example, real-time transactions allow users to see and understand their cash balance through immediate updates on their account.

But the benefits of real-time transcend personal financial responsibility. Especially in developing nations, citizens with real-time accounts have faster access to money from government programs and subsidies.

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In India, your phone number is not just your real-time account number. It is who you are. Everything now flows through your digital identity."

Ankur Saxena Senior Director of Sales for South Asia, Middle East, and East Africa

ACI Worldwide



The benefits are circular, because real-time payments create a record of spending patterns, helping local governments determine where aid is needed. Agencies can then pay out subsidies through real-time channels, helping those citizens faster and without the higher fees often incurred through other payment methods (for the government payer and the recipient).

"In Malaysia," says Ashish Chouksey, ACI's Senior Director of Business Development in APAC, "subsidies across the board are being pushed through real-time channels. The government can transfer the benefits directly to the bank accounts or wallets of citizens in need."

And in India, 400 million people have received direct remittances across real-time payment channels, helping to lift them out of poverty. "Real-time payments and subsidies in combination with mobile technology have helped to improve the lives of millions of citizens in India," says Saxena. "Fintechs play an important role in expanding the reach of real-time payments and enabling the last-mile connectivity to customer segments that were underserved before by traditional banks and financial institutions. People in rural India might not instantly recognize the bank where they hold

an account, but they are familiar with 'Paytm' or 'GooglePay,' which lets them send and receive money using their mobile phones."

Finally, real-time payment systems bring not only financial inclusion, but digital inclusion — and thus entry into the modern world. "In India, your phone number is not just your real-time account number," says Saxena. "It is who you are. Everything now flows through your digital identity."



By **2028**, across the top 10 countries studied,

153 million
people previously excluded from
the financial system could have
bank accounts

Top 10 markets for financial inclusion uplift (by volume of new accounts)

Number of newly banked citizens by 2028			
C	Pakistan	63.5 million	
(S)	India	25.5 million	
>	Philippines	20.9 million	
0	Nigeria	13.8 million	
	China	13.8 million	
	Colombia	5.1 million	
	U.S.	4.9 million	
	Brazil	2.8 million	
	Thailand	1.6 million	
(*	Turkey	1.5 million	

Profit opportunity: big markets for banks

Real-time payments create a path for financial institutions to serve hundreds of millions of new customers

The phenomenal growth of real-time payments and the resulting rise in financial inclusion present a significant profit opportunity for banks. This study forecasts billions of dollars in new bank profits worldwide over the next four years resulting from increasing real-time transactions and the associated financial inclusion uplift.

Real-time payments present an opportunity to grow an entirely new customer base. Indeed, fintechs and so-called "neo banks" around the world are taking notice and moving rapidly into the space.

To determine bank profit opportunities, the Cebr utilized estimates of a standard measure called "customer lifetime value," adjusted for individual countries and factored in the relative profitability of local banking sectors.

Even considering the lower fees generated by real-time accounts, the research reveals that bottom-line opportunities are significant given the exploding customer base:

- The projected addition of more than 167.2 million new account holders by 2028 across the 28 countries studied in the financial inclusion research.
- By far the largest single opportunity is Pakistan, which is expected to have profit potential of \$173.0 billion by 2028.

Many governments are now requiring banks to offer low-cost real-time payment accounts. In Brazil, the central bank's PIX real-time payments system is mandated for all banks countrywide. Meanwhile, India's government banned merchant transaction fees for real-time payments and issued all merchants QR codes for real-time acceptance – incentivizing even small market traders to open bank accounts.



In this digital world, the convenience and always-on nature of real-time payments presents financial institutions with the opportunity to become first choice for everyday banking. The digital presence and trust that real-time payments create drive customers to a bank's brand, often restoring the relationship historically created through using their local branch. Those payment system operators, regulators, and governments who have created the strongest real-time ecosystems stand to benefit the most."

Richard Albery

Head of Solution Consulting, Europe ACI Worldwide



Real-time profit opportunity

Based on the estimated value of financial inclusion—new account holders resulting from the growth of real-time rails—the top 10 markets for profit opportunity are:

C	Pakistan	\$173.0 billion
0	Nigeria	\$40.4 billion
>	Philippines	\$28.7 billion
0	India	\$24.6 billion
	China	\$21.2 billion
	U.S.	\$18.9 billion
	Brazil	\$8.9 billion
	Colombia	\$7.6 billion
0	Peru	\$4.5 billion
•	Argentina	\$3.4 billion



Regional view

Africa: a youth-led transition with real-world results

Africa is one of the world's fastest-growing markets for real-time payments. This shift is not only boosting economic growth but also enabling more people to participate in the formal economy. Across the continent, innovators, entrepreneurs, fintechs, financial service providers, and central banks are reshaping and modernizing the payments landscape with innovative financial services and digital solutions that benefit consumers and businesses – and, ultimately, national economies.



Real-time's impact is already immense and transformative, and it's poised to expand even further. Africa is home to the largest youth population¹ of any continent, with a median age of around 20 years, and 40% of its 1.5 billion people being 15 years old or younger, versus 25% globally. Young people rely heavily on their mobile phones for banking services and disproportionately benefit from the financial inclusion uplift from real-time payments, suggesting that Africa may benefit more than other regions from the economic and financial inclusion benefits of real-time payments.

But it's not just young people who are driving the transformation of the continent's payments landscape. Real-time payments are increasingly vital for small businesses due to their efficiency. Take, for example, a bakery in Lagos with limited cash flow. The small business can take a wedding order, receive a deposit as a real-time payment, and instantly use the funds to buy supplies for the job – eliminating the wait for a transaction to clear or the inconvenience of requiring cash payments.

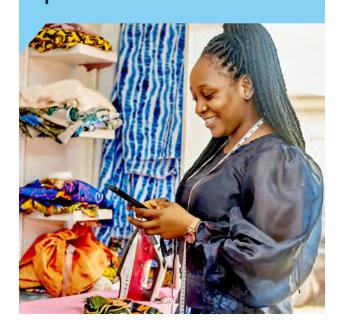
Economies throughout Africa are experiencing the real-time ripple effect. Nigeria, the continent's largest country and economy, has developed one of the most advanced real-time payment



In Nigeria, the government puts quite a bit of effort into financial education programs. They'll have people go speak to communities, and they've made financial education mandatory in school."

Michael Nel

Principal Solution Consultant, South Africa ACI Worldwide



ecosystems in the world. Its national real-time payments scheme, NIP, provides a fast and efficient way for people and businesses to transfer money to each other—within seconds—and is accessible through many channels, such as online and mobile banking, point-of-sale terminals, and ATMs. 75% of all transactions in Nigeria are now made in real time, reducing the country's cash economy and driving economic growth and financial inclusion. According to the Cebr report, real-time payments contributed \$7.0 billion of additional GDP growth in 2023, expected to rise to \$15.0 billion by 2028. The share of the banked population in Nigeria is expected to increase 6.5 percentage points between 2021 and 2028, placing Nigeria in the top five nations worldwide for inclusion uplift in absolute terms due to real-time payments - and representing a potential increase of \$40.4 billion in profits for banks.

Governments across the continent are also driving awareness of real-time payments and the associated opportunities, which leads to new financial behaviors. For example, says Michael Nel, Principal Solution Consultant for ACI in Cape Town, South Africa, "In Nigeria, the government puts quite a bit of effort into financial education programs. They'll have people go speak to communities, and

they've made financial education mandatory in school."

Real-time profit opportunity

Based on the estimated value of financial inclusion—new account holders resulting from the growth of real-time rails—the top two markets for profit opportunity are Nigeria and South Africa.

Total profit opportunity for banks by 2028





Top markets: Africa

Nigeria

Formal GDP facilitated by real-time payments

2023

\$7.0 billion

Equivalent to 1.4% of combined GDP, or the output of 1.0 million workers

South Africa

\$238.7 million

Equivalent to 0.06% of combined GDP, or the output of 10,300 workers

Egypt

\$164.7 million

Equivalent to 0.04% of combined GDP, or the output of 11,565 workers

2028 (forecast)

Nigeria

\$15.0 billion

Equivalent to 2.4% of combined GDP, or the output of 2.0 million workers

Egypt

\$5.2 billion

Equivalent to 0.9% of combined GDP, or the output of 296,100 workers

South Africa

\$486.4 million

Equivalent to 0.1% of combined GDP, or the output of 20,500 workers



Throughout Africa, the digital and real-time payments revolution is spurring new investments, such as the launch of PayShap, a new real-time payments service in South Africa, or Ethiopia's National Payment Gateway, which enables businesses and consumers to make secure, seamless, and convenient online payments using various channels and payment methods. Egypt is one of the fastest-growing real-time markets in the region. According to the Cebr research, GDP contributions from real-time payments are expected to rise from \$164.7 million in 2023 to \$5.2 billion by 2028.

People previously excluded from the financial system who could have bank accounts by 2028





The opportunity for banks is not limited to countries with large unbanked populations.

Although South Africa, the continent's second-largest economy and its most industrialized, is already heavily banked at 84%, the expected increase of just 0.8 percentage points in the banked population between 2021 and 2028 still represents a predicted profit opportunity of \$899.1 million for banks.

Momentum throughout Africa is likely to continue as neighboring countries see each other's real-time progress and follow suit — and begin to collaborate on cross-border schemes. This is expected to spur a virtuous cycle of additional innovative services and solutions that yield further benefits to consumers, businesses, the financial sector, and regional economies — all of it powered by the quiet hum of billions of instantaneous transactions.

Top markets: Africa

Aggregated net savings for consumers and businesses facilitated by real-time payments

2023

Nigeria

\$1.9 billion

South Africa

\$164.2 million

Egypt

\$21.8 million

2028 (forecast)

Nigeria

\$8.4 billion

South Africa

\$340.5 million

Egypt

\$85.0 million



Regional view

Asia Pacific: a real-time payments powerhouse and a model for change

With a combination of well-established real-time and digital payment ecosystems, strong mobile wallet adoption in the population, and huge potential for additional financial inclusion, Asia Pacific is the world's largest real-time payments market, with 24% of all transactions in the region now made in real time. The region is led by India, the world's largest real-time player. India's enthusiastic embrace of real-time payments technology has brought substantial economic and social benefits, which has a cascading effect – and many other countries in the region, notably China and Thailand, have followed suit.



Modern digital infrastructure like optical fiber and 5G mobile networks now penetrate emerging markets in Asia Pacific. The last-mile connectivity provided by those networks and the proliferation of low-cost smartphones are bringing mobile payment options to more and more people, expanding financial inclusion. The benefits of this increased economic participation for consumers, businesses, and national economies are creating palpable momentum.

Efficiency savings for Indian consumers and businesses due to real-time payments were staggering in 2023, totaling more than \$46.1 billion, and contributing \$50.0 billion to GDP – equivalent to the annual labor of 6.8 million workers. Those benefits can arguably be traced back to India's introduction of the Goods and Services Tax in 2017, which incentivized the government to make formal payments more convenient. It was a case of policy driving financial transformation.

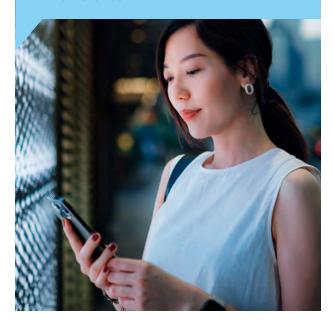


Real-time has transferred a lot of cash transactions into the formal economy.

That increases the tax collection, and cash transactions have themselves come down drastically because of this."

Ankur Saxena

Senior Director of Sales for South Asia, Middle East, and East Africa ACI Worldwide





Real-time profit opportunity

Based on the estimated value of financial inclusion—new account holders resulting from the growth of real-time rails—the top three markets for profit opportunity are Pakistan, the Philippines, and India.

Total profit opportunity for banks by 2028



Pakistan \$173.0 billion



Philippines

\$29.0 billion



\$25.0 billion



Top markets: Asia Pacific

Formal GDP facilitated by real-time payments

2023

India

\$50.0 billion

Equivalent to 1.4% of combined GDP, or the output of 6.8 million workers

China

\$16.8 billion

Equivalent to 0.09% of combined GDP. or the output of 659,500 workers

Thailand

\$13.0 billion

Equivalent to 2.6% of combined GDP, or the output of 1.0 million workers

2028 (forecast)

India

\$76.5 billion

Equivalent to 1.5% of combined GDP, or the output of 8.0 million workers

China

\$32.7 billion

Equivalent to 0.14% of combined GDP, or the output of 1.0 million workers

Thailand

\$16.3 billion

Equivalent to 2.9% of combined GDP, or the output of 1.2 million workers

As the world's third-largest real-time payments market, Thailand is another regional power player reaping the economic and financial inclusion benefits of its real-time payments scheme. PromptPay, which was launched in 2016. In 2023, real-time payments generated \$13.0 billion of additional GDP for Thailand, which is equivalent to 2.6% of combined GDP, or the output of 1.0 million workers.

One of the regional players to watch is Indonesia, which is among the world's top 10 fastest-growing real-time payment markets. Indonesia has a burgeoning gig economy, with many workers requiring fast and secure payments to better manage their finances. Real-time payments are expected to contribute \$3.6 billion of additional GDP to the Indonesian economy by 2028, representing 0.21% of total GDP, or the equivalent output of 304,000 workers.

Malaysia is also leading the way for real-time expansion and inclusion in Asia Pacific. Its consumer-facing DuitNow real-time transfer service was launched in 2018, making real-time payments a daily reality for the country's 34 million residents. The projected increase of the banked population between 2021 and 2028 is expected

to represent a \$792.0 million profit opportunity for Malaysia's financial sector.

"As Indonesia and Malaysia have shown, with the right technology, partners, and central support – it is possible to build successful and innovative realtime ecosystems quickly and bring their benefits to consumers and businesses," says Chee Cheng Ong, ACI's Head of ASEAN.

Cross-border real-time payment systems offer an additional route for improving financial inclusion across Asia Pacific. The ASEAN Regional Payment Connectivity Initiative and the G20 Roadmap are two schemes aiming to build new payment corridors across the region. Malaysia was one of the first countries in Asia to enable cross-border QR-code acceptance for tourists traveling abroad, who can now use their eWallet apps to scan and pay at merchant outlets in other countries, such as Singapore, Thailand, or Indonesia.

According to the Cebr research, real-time payments are expected to contribute to a substantial uplift in financial inclusion - and increased profit opportunities for financial institutions across the region. These opportunities for banks will be most felt in Pakistan and the

Philippines, where the associated financial inclusion uplift from the expansion of real-time payments is projected to contribute profits of nearly \$173.0 billion and \$29.0 billion, respectively. to banks in the two countries by 2028.

Asia Pacific's opportunities to benefit from real-time payments—economically as well as socially—should continue their rapid growth. The trajectory elevates the region not only as a model for technological change but as a reimagining of how economies can function more efficiently, competitively, and inclusively.

People previously excluded from the financial system who could have bank accounts by 2028



63.5 million



India

25.5 million



Philippines

21.0 million

Top markets: Asia Pacific

Aggregated net savings for consumers and businesses facilitated by real-time payments

2023

India

\$46.1 billion

China

\$15.4 billion

Thailand

\$3.9 billion

2028 (forecast)

\$107.2 billion

China

\$31.9 billion

Thailand

\$6.6 billion



Regional view

Europe: new regulation changes the game

The European Union's new Instant Payments Regulation, which will first come into effect for Euro countries in January 2025 (with full send adoption by October 2025), mandates all banks and payment service providers in Single Euro Payments Area (SEPA) countries to offer instant payments under the SEPA Instant Credit Transfer scheme at the same cost as or lower-than-standard credit transfers. The new law represents a transformative concept for the continent: mandating instant payments across the EU, enabling money to move in the blink of an eye. But the shift to instant payments is not just about convenience; it's about unlocking economic potential, increased savings for consumers and businesses, and improved financial inclusion on a massive scale.



The ambitious new payments law lays the foundation for fintech innovation and cross-border collaboration throughout the region, including the WERO project, a pan-European digital wallet solution leveraging instant payment rails. Launched by the European Payments Initiative, WERO aspires to increase the competitiveness in the European retail banking sector and offer a competitive alternative to international payment systems while supporting European financial sovereignty and innovation. Already live in France, Germany, and Belgium, WERO aims to eventually cover all of Europe, offering a full range of payment functionalities.

As the benefits of instant payments become more visible and widespread, fintech participation in the ecosystem could produce additional gains. For example, Spain has introduced value-added services such as support for peer-to-peer payments on its instant payment rails. As a result, two friends or colleagues from different countries could split a dinner bill directly in a restaurant's payments system, rather than doing the awkward dance of asking the server for separate bills. This type of frictionless experience will only expand the appeal and use of instant payments across more transactions.



In Europe, we're seeing instant payments being made mandatory if batch payments or non-instant payments are offered by banks. That is impacting thousands of banks across the whole region and will create new positive everyday banking experiences."

Richard Albery Head of Solution Consulting, Europe ACI Worldwide



Real-time profit opportunity

Based on the estimated value of financial inclusion—new account holders resulting from the growth of real-time rails—the top three markets for profit opportunity are Turkey, Italy, and Spain.

Total profit opportunity for banks by 2028



\$2.5 billion



\$571.0 million



\$225.0 million

The macroeconomic benefits of instant payments are particularly evident in the U.K., one of the region's most mature markets. Instant payments added more than an estimated \$3.4 billion to the country's economic output in 2023 alone,

the equivalent of 36,200 jobs – real people, real livelihoods, real impact.

But the U.K. isn't resting on its laurels. Regulators and law makers have incentivized adoption, recognizing the importance of instant payments in retail and open banking services for consumers and businesses. This shift has further potential to increase macroeconomic benefits and innovation from fintechs.

Business and consumer savings due to instant payments have been strong elsewhere in the region, as well. Turkey's introduction of its new instant payments system—Instant and Continuous Transfer of Funds—in January 2021 has already begun to bear fruit. Transactions in Turkey produced more than \$1.0 billion in savings in 2023. These changes have also generated a financial inclusion uplift, bringing people into the financial system who weren't previously participating. The expected increase of nearly 2 percentage points in the banked share of Turkey's population between 2021 and 2028 equates to more than \$2.0 billion in profit opportunity for financial institutions.

Top markets: Europe

Formal GDP facilitated by real-time payments

2023

U.K.

\$3.4 billion

Equivalent to 0.11% of combined GDP, or the output of 36,200 workers

Turkev

\$3.0 billion

Equivalent to 0.34% of combined GDP, or the output of 107,000 workers

Germany

\$1.8 billion

Equivalent to 0.05% of combined GDP, or the output of 19,000 workers

2028

Turkey

\$5.1 billion

Equivalent to 0.37% of combined GDP, or the output of 124,000 workers

U.K.

\$4.0 billion

Equivalent to 0.12% of combined GDP, or the output of 40,000 workers

Germany

\$3.6 billion

Equivalent to 0.01% of combined GDP, or the output of 36,000 workers



People previously excluded from the financial system who could have bank accounts by 2028



Turkey

1.5 million



1 ltaly 273,000



77,000

Regulatory changes that encourage instant crossborder payments promise to expand the financial inclusion that European states have experienced so far.

As these payment systems mature and more cross-border collaborations take shape, Europe is likely to see even more profound changes from instant payments. The financial landscape of the region is being rewritten, one instant transaction at a time.

Top markets: Europe

Aggregated net savings for consumers and businesses facilitated by real-time payments

2023

Turkey

\$1.5 billion

U.K.

\$1.1 billion

Germany

\$433.0 million

2028 (forecast)

Turkey

\$2.6 billion

Netherlands

\$1.4 billion

Germany

\$1.1 billion



Reducing the barriers to switch banks has forced players in the banking system to become more competitive. Innovation in account services or payment channels is creating differentiation across the sector, with greater availability and choice of services in line with regulator and consumer demands."

Richard Albery

Head of Solution Consulting, Europe **ACI** Worldwide



Regional view

Latin America: Brazil's PIX shows the way

Many countries in Latin America are already benefiting from real-time systems – unlocking economic potential that was previously trapped in inefficient systems and redefining the relationship between consumers, companies, and their money. Brazil's hugely popular PIX system is an inspiring example for the region, and other countries such as Mexico and Colombia are diligently working on transforming their own payment ecosystems. The increased availability of cross-border transactions and gains in financial inclusion promise to expand the advantages of real-time payments throughout Latin America.

Brazil, the region's largest country and economy, has PIX, a real-time payments scheme operated by the central bank that rivals the best systems globally due to its speed, versatility, ease of use, and enhanced security. Consequently, Brazil accounts for 75% of all real-time transactions in Latin America, generating tangible economic benefits. In 2023, real-time payments resulted in more than \$18.4 billion in savings for Brazilian consumers and businesses and contributed \$24.6 billion to the overall economy – equivalent to the labor of more than 1.3 million workers.

The region's trajectory is remarkable, with those savings expected to double by 2028 as real-time payments become more prevalent across additional channels. Although transactions are currently dominated by person-to-person payments, strong growth is expected in bill pay, in-store, and online transactions.

Brazil also holds significant potential for additional uplift from financial inclusion. By 2028, it is estimated that real-time payments will contribute to 2.8 million new account holders, representing potential profits of \$8.9 billion for Brazil's financial institutions. An infusion of that magnitude should boost the broader ecosystem, unleashing even

more innovation among fintechs and financial institutions and creating new financial experiences and opportunities for the expanding pool of consumers and businesses.



With PIX, we're seeing a huge reduction in costs for businesses. Now they get paid instantly and have that cash on hand to keep growing."

Vlademir Santos Head of Brazil ACI Worldwide





Mexico's real-time payments market, due to its size and maturity, produced almost \$7.8 billion in savings for consumers and businesses in 2023. Its real-time scheme, which debuted in 2004, is poised to grow in the next few years by leveraging value-added overlay services such as Request to Pay and cross-border transactions.

Regulators in Mexico have been making moves to stimulate such activity and capitalize on the large additional potential available in the market. The central bank's CoDi system facilitates payments through QR codes and NFC technology, promoting financial inclusion by enabling transactions without the need of a bank or credit card. DiMo, the central bank's latest innovation, offers a payments alternative using a phone number instead of a traditional bank account. Both systems are supported by private banks.

Colombia is another Latin American country set to reap the economic and financial inclusion benefits of real-time payments. Colombia's central bank is building a new domestic real-time payments ecosystem as part of a nationwide banking transformation project. The new, interoperable, countrywide scheme is set to go live in 2025. It is the first scheme in Latin America

being built through collaborative consensus by all stakeholders in the payments ecosystem – government, regulators, private banks, and the central bank.

Real-time profit opportunity

Based on the estimated value of financial inclusion—new account holders resulting from the growth of real-time rails—the top three markets for profit opportunity are Brazil, Colombia, and Peru.

Total profit opportunity for banks by 2028



Brazi

\$8.9 billion



Colombia

\$7.6 billion



Peru

\$4.5 billion

Top markets: Latin America

Formal GDP facilitated by real-time payments

2023

Brazil

\$24.6 billion

Equivalent to 1.32% of combined GDP, or the output of 1.3 million workers

Mexico

\$10.3 billion

Equivalent to 0.71% of combined GDP, or the output of 411,000 workers

Argentina

\$6.0 billion

Equivalent to 0.94% of combined GDP, or the output of 183,000 workers

2028 (forecast)

Brazil

\$49.9 billion

Equivalent to 2.41% of combined GDP, or the output of 2.5 million workers

Mexico

\$12.8 billion

Equivalent to 0.79% of combined GDP, or the output of 467,000 workers

Argentina

\$19.3 billion

Equivalent to 1.2% of combined GDP, or the output of 253,000 workers

Colombia is set to benefit more than any other country in the region from the expected financial inclusion uplift due to the expansion of real-time payments. According to the Cebr research, 5.1 million Colombians previously excluded from the financial system could have bank accounts by 2028, representing a profit opportunity for banks of \$7.6 billion.

The proliferation of domestic real-time payment schemes in Latin America will also move the region a step closer to a cross-border payments infrastructure, which could generate benefits around the globe. "Latin Americans live around the world, so the option to do remittance and cross-border payments will be key," says Sonia Gomez, ACI's Director, Solution Consulting for Latin America.

With well-established and successful real-time payment schemes to use as a model, the region has created the groundwork necessary to support a dynamic and swiftly evolving real-time ecosystem. Substantial economic advantages are already materializing, and there's potential for even greater financial inclusion domestically and internationally. Ultimately, real-time payments in Latin America will continue to reshape the financial landscape across the continent.

People previously excluded from the financial system who could have bank accounts by 2028



Colombia

5.1 million



2.8 million



Peru 1.4 million



Top markets: Latin America

Aggregated net savings for consumers and businesses facilitated by real-time payments

2023

Brazil

\$18.4 billion

Mexico

\$7.8 billion

Argentina

\$1.5 billion

2028 (forecast)

\$44.7 billion

Mexico

\$9.3 billion

Argentina

\$5.0 billion

Regional view

Middle East: real-time helps to build a more inclusive, efficient, and innovative financial system

Transformative change is sweeping through the financial sector of one of the world's most historically significant regions. It's a story of technological leapfrogging, cultural adaptation, and economic reinvention, all centered around real-time payments.

Kuwait and Qatar joined the real-time club last year, which means that five out of six members of the Gulf Cooperation Council now boast real-time payment systems. Throughout the Gulf, regulators and financial institutions are working to drive a return on their substantial investments through improved financial inclusion and innovations that produce macroeconomic benefits.

The momentum has propelled the Middle East to become the fastest-growing real-time payments region in the world.

The benefits are particularly visible in Bahrain, an island nation that's home to the region's most mature real-time payments market. Launched in 2017, most Bahrainis today use BenefitPay, the national eWallet mobile app enabling real-time payments at retail stores, eGovernment services, and eCommerce. In a single platform, BenefitPay allows consumers to pay with a tap or QR code at retail stores, check out online without entering card details, transfer funds instantly from bank to bank, pay bills and invoices, and more.

The contributions from real-time payments to Bahrain's GDP are expected to rise from \$537.0 million in 2023 to \$677.6 million by 2028, 1.32% of formal GDP, or equivalent to the output of 12,500 workers.

The Middle East's real-time journey is characterized by a unique blend of tradition and innovation. While preserving their cultural heritage, these nations are leveraging cutting-edge financial technologies that address socioeconomic challenges.



Financial inclusion is real in Bahrain. The Central Bank of Bahrain, together with the Benefit Company and the banking community, has done a tremendous job connecting all point-of-sale terminals in the Kingdom to the central payments infrastructure."

Luis Contreras

Principal Solution Consultant, Middle East ACI Worldwide



Real-time profit opportunity

Based on the estimated value of financial inclusion—new account holders resulting from the growth of real-time rails—the top two markets for profit opportunity are the United Arab Emirates (UAE) and Saudi Arabia.

Total profit opportunity for banks by 2028



UAI

\$1.8 billion



Saudi Arabia

\$780.0 million

For instance, the increased financial inclusion spurred by real-time payments is helping Bahrain follow through on its Wages Protection System, established in 2021. Almost half of its 1.5 million residents are foreigners – 75% of whom are laborers. Under the law, employers must pay workers through real-time digital bank accounts, linked through the Benefit Company, which is the nationwide electronic payments network. Now, all payroll is recorded, which protects workers and ensures proper taxation.

Another notable benefit of real-time payments and consequent digital banking has been the increasing financial inclusion of women in Bahrain and across the region, in particular through new innovative financial service offerings that can be accessed 24/7 via mobile phone applications.

"Financial inclusion is real in Bahrain," says Luis Contreras, ACI's Principal Solution Consultant in Bahrain. "The central bank, together with the Benefit Company, has done a tremendous job connecting all point-of-sale terminals in the Kingdom to the central payments infrastructure."

Top markets: Middle East

Formal GDP facilitated by real-time payments

2023

Saudi Arabia

\$719.0 million

Equivalent to 0.07% of combined GDP, or the output of 10,500 workers

Bahrain

\$537.0 million

Equivalent to 1.22% of combined GDP, or the output of 10,200 workers

UAE

\$125.0 million

Equivalent to 0.02% of combined GDP, or the output of 1,540 workers

2028 (forecast)

Saudi Arabia

\$1.1 billion

Equivalent to 0.1% of combined GDP, or the output of 16,000 workers

Bahrain

\$677.6 million

Equivalent to 1.32% of combined GDP, or the output of 12,500 workers

UAE

\$297.0 million

Equivalent to 0.05% of combined GDP, or the output of 3,400 workers



The UAE has also made tremendous progress in recent years. Its central bank established a special vehicle company, Al Etihad Payments, to operate its real-time payments scheme. The active involvement of the central bank is expected to produce a dynamic environment for innovative financial service offerings. According to the Cebr research, 279,000 people previously excluded from the financial system could have bank accounts by 2028 due to the expected financial inclusion uplift from real-time payments, presenting a \$1.8 billion profit opportunity for the UAE's financial institutions.

The largest real-time payments market in the region, Saudi Arabia, is poised for the largest increase in consumer and business savings, as well as macroeconomic benefits in the region, with additional GDP growth supported by real-time payments expected to rise to \$1.1 billion by 2028, equivalent to the output of 16,000 workers. Qatar and Kuwait may be at the beginning of their real-time journeys, but they have clear roadmaps—learning from their regional peers—and are expected to reap the economic and financial inclusion benefits from real-time payments soon.

As the Middle East continues to invest in and expand its digital financial infrastructure, it's not just facilitating faster transactions – it's laying the groundwork for a more inclusive, innovative, efficient, and transparent future that's set to redefine the Gulf's role in the global economy.

People previously excluded from the financial system who could have bank accounts by 2028



UAE

279,000



Saudi Arabia

178,000

Top markets: Middle East

Aggregated net savings for consumers and businesses facilitated by real-time payments

2023

Saudi Arabia

\$140.1 million

Bahrain

\$86.3 million

UAE

\$11.2 million

2028 (forecast)

Saudi Arabia

\$381.3 million

Bahrain

\$318.1 million

UA

\$34.3 million



Regional view

North America: incremental growth, outsized benefits

Non-real-time electronic transfers (such as ACH) have long dominated the landscape in the North American payments market. With the launch of the FedNow® Service—the U.S. Federal Reserve's real-time payments system—in 2023, that predominance is set to change. Given the sheer size of the U.S. market, even small changes can produce enormous benefits for consumers, businesses, and the broader economy. Meanwhile, Canada continues to move forward on launching its new real-time scheme, raising the potential for eventual cross-border payment offerings with mutual advantages for the countries in the region.



The size and scale of the potential impact from real-time payments are already clear in the U.S., where businesses and consumers reaped more than \$1.0 billion in savings in 2023. That number is expected to climb quickly, more than quadrupling to \$4.4 billion by 2028.

Some of that expansion will come from an increase in financial inclusion. For lower-income citizens who have historically lacked the credit scores needed to get a traditional debit or credit card account, the availability of real-time payments offers an on-ramp to the banking system. The banked population in the U.S. is expected to increase 1.5 percentage points by 2028 due to rising real-time transactions. That represents nearly 4.9 million new account holders, many of whom stand to benefit from access to direct deposit services and short-term loan products that greatly reduce the fees involved with cashing checks or taking out payday loans.

This inclusion boost also represents a profit opportunity for U.S. financial institutions of nearly \$18.9 billion. "That's a very large number for a mature banking market," says Bridget Hall, ACI's Leader of Real-Time Payments for the Americas.

Top markets: North America

Formal GDP facilitated by real-time payments

2023

\$2.7 billion

Equivalent to 0.01% of combined GDP, or the output of 17,900 workers

Canada

U.S.

\$1.5 billion

Equivalent to 0.07% of combined GDP, or the output of 14,000 workers

2028 (forecast)

u.s. **\$7.9** billion

Equivalent to 0.03% of combined GDP, or the output of 48,000 workers

Canada

\$1.2 billion

Equivalent to 0.05% of combined GDP, or the output of 10,000 workers





Real-time profit opportunity

Based on the estimated value of financial inclusion—new account holders resulting from the growth of real-time rails—the top two markets for profit opportunity are the U.S. and Canada.

Total profit opportunity for banks by 2028





The high settlement speed offered by real-time payments is also expected to drive economic growth. For transactions where speed is important, such as home buying—especially in hot markets where cash deposits are expected—waiting for a bank wire to clear can mean forfeiting the offer. At the same time, the delay limits the seller's ability to nimbly "flip" the cash into a new home. That waiting game adds up.



The average real-estate closing time, including wiring money into all the different stakeholder accounts, is about a month. Real-time payments can speed up the process and improve the experience by making evening and weekend closings possible."

Leader of Real-Time Payments for the Americas **ACI** Worldwide

Meanwhile, Canada is looking to build on the success of its real-time payments scheme, which has been in place since 2002. In 2023, consumers and businesses netted \$288.6 million of savings as real-time payments added an estimated \$1.5 billion to the country's GDP. The ongoing development of Payment Canada's Real-Time Rail is expected to expand its impact.

As real-time payments gain momentum in the U.S., the world's largest economy, even incremental expansion of their usage is likely to generate outsized benefits. As the economic and financial

inclusion benefits mount, they should attract additional investment and innovation from fintechs and financial institutions looking to take part in a rapidly expanding marketplace.

People previously excluded from the financial system who could have bank accounts by 2028



(*) Canada

4.9 million

62,000

Top markets: North America

Aggregated net savings for consumers and businesses facilitated by real-time payments

2023

\$1.1 billion

Canada

\$288.6 million

2028 (forecast)

\$4.4 billion

Canada

\$394.5 million

Methodology

Economic impact

The economic impact of real-time payments is analyzed through two lenses.

- i. Net efficiency savings for businesses and consumers
- ii. Aggregate macroeconomic impact

Net efficiency saving for businesses and consumers

This report considers three channels of savings for businesses and consumers

- i. Net impact on transaction costs: real-time payments displace and reduce the volume of transactions that would otherwise occur via paper-based instruments – which typically have higher unit costs per transaction.²
- ii. Reduction in the opportunity cost associated with payment float: real-time payments reduce the time for which capital is idle in payment systems.
- iii. Reduction in the costs associated with failed transactions, composed of:
 - a. The cost of fees that individuals and organizations incur from a payment failing.
 - b. The labor costs per organization for repairing a failed payment.
 - c. The costs that are associated with lost business through consumer attrition or churn.

Aggregate macroeconomic impact

The macroeconomic impact analysis takes,

 i. impacts from the agent-level business and consumer net efficiency savings analysis that are additive when considered at a country level and, ii. the further effect of formalizing segments of the shadow economy to estimate GDP supported by realtime payments.^{3,4}

Estimates are produced for 2023 and 2028 for 40 countries, informed by forecasts of payment volumes and values provided by GlobalData. Two scenarios are considered across the analysis. The first looks at the economic impacts of real-time payments given their current and forecasted level of adoption. The second looks at the "maximum additional benefit" of real-time payments by modeling a scenario where all payments in a given economy are real-time.

Financial inclusion

This report seeks to identify an empirical relationship between the changing payments mix and increasing financial inclusion. We do this using a fixed effects regression model and panel data on changing financial inclusion and payments mix over 2011-2021 for 34 countries, using GlobalData estimates and the World Bank's Financial Inclusion Database.⁵ A statistically significant non-linear increasing relationship is found between real-time payments and financial inclusion. This finding is then used to project changes in the share of the population that is banked, along with the associated profit opportunity this represents for financial institutions, given payments mix forecasts for 2028.

Profit opportunity for banks

The report estimates the impact of this expanded customer base by constructing an estimate of the typical customer lifetime value of a representative consumer in each market. This is based on country-specific purchasing power data and the profitability the financial sector.⁶

Within the report, percentages are used when referring to a number or ratio, expressed as a fraction of 100. Percentage growth or change is used when referring to the increase of one value relative to another, in terms of a percentage. Percentage points are used when explaining the movement in absolute terms, between two percentages. This is notably the case when looking at changes in the banked share of the population within a particular country.

For further methodological information, please see the methodological notes included in **Cebr's full report**.

https://www.statista.com/statistics/1226211/population-of-africa-by-age-group/#:^: text=Africa%20 is%20the%20continent%20with,low%20at%20around%2020%20 years

² Krüger, M. and Seitz, F. (2014). "Costs and benefits of cash and cashless payment instruments."

³ Elgin, C., Kose, M., Ohnsorge, F., and Yu, S. (2021). "<u>Understanding informality</u>."

⁴ Schneider, F. (2017). "<u>Restricting or Abolishing Cash: An Effective Instrument for Fighting the Shadow Economy, Crime and Terrorism?</u>"

⁵ World Bank Financial Inclusion Index

Our estimate is based on information from the following sources: World Bank "Purchasing Power"; YDC Data Economics, 2022; Natwest and UCL, 2023; Novantas Strategy & Management; Penser; Dan Rosenbaum - Oliver Wyman; ARK Investment Management; Digital Growth institute, 2024; and relevant national statistical agencies.



About Cebr

For over 30 years the Centre for Economics and Business Research (Cebr) has supplied independent economic forecasting and analysis to hundreds of private firms and public organizations. Our Economic Advisory team specializes in economic impact assessments, having advised several government departments as well as FTSE and multi-national firms on a range of topics. Cebr's Forecasting team delivers award-winning forecasts of the U.K. and global economies, helping our clients stay ahead of the game in anticipating future economic developments. For further information about Cebr, please visit https://cebr.com/.

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About ACI Worldwide

ACI Worldwide, an original innovator in global payments technology, delivers transformative software solutions that power intelligent payments orchestration in real time so banks, billers, and merchants can drive growth, while continuously modernizing their payment infrastructures, simply and securely. With nearly 50 years of trusted payments expertise, we combine our global footprint with a local presence to offer enhanced payment experiences to stay ahead of constantly changing payment challenges and opportunities.

ACI Worldwide is pleased to present its second report Real-Time Payments: Economic Impact and Financial Inclusion in collaboration with the Cebr. It provides an unprecedented view of the economic benefits stimulated by real-time payments, and, for the first time, reveals an empirical link between real-time payments and financial inclusion. For further information about ACI Worldwide please visit https://www.aciworldwide.com/.

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