

# MasterCard Advisors' Cashless Journey

## The Global Journey From Cash to Cashless

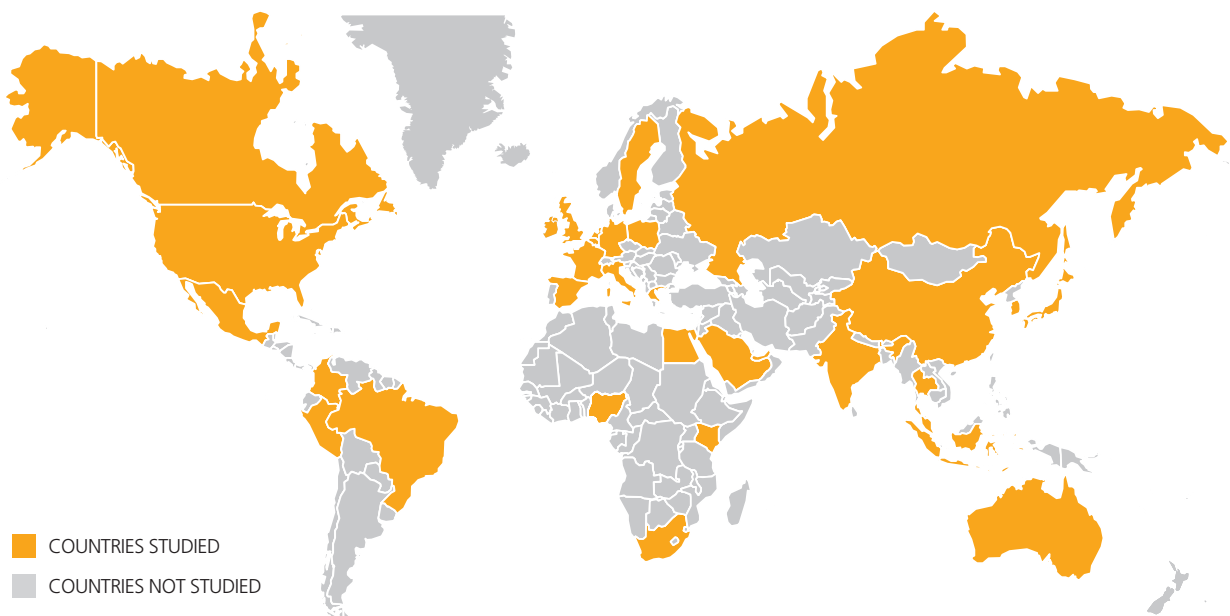
Today, around **85% of all retail payment transactions are done with cash**, which equates to 60% of retail transaction value. Even though much of the world's population has access to many different options for making payments other than cash, cash still persists. Cash takes time to get at, is riskier to carry, and by most estimates, cash costs society as much as 1.5% of GDP. Electronic payments, on the other hand, have been proven to boost economic growth, while advancing financial inclusion. It is for these reasons that countries around the world are working to make their payment systems less dependent on cash.

**1.5%** THE BURDEN OF CASH USAGE ON SOCIETY IS SUBSTANTIAL,  
AS MUCH AS 1.5% OF GDP.

The Cashless Journey Study was developed to track nations' progress towards more cashless economies. It offers insights into how some nations have made the journey from cash to cashless, and how other nations can continue their journeys.

The study helps to shape the conversation about consumer payment patterns across countries around the globe. The information it provides was designed to assess the impact of different factors, such as regulatory measures or financial inclusion initiatives, on changes to these patterns. The study explores the evolution of consumer payment patterns in 33 countries from five regions, representing more than 85% of global GDP, taking into account both developed and developing nations, using a single methodology.

### COUNTRIES COVERED BY THE CASHLESS JOURNEY STUDY



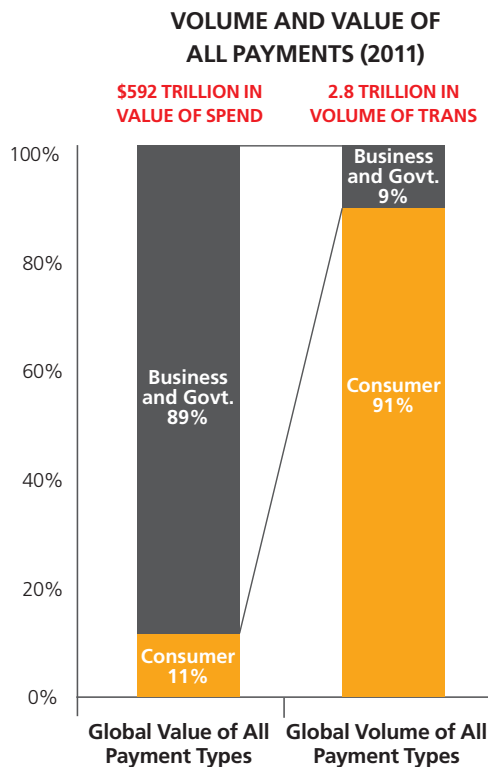
## A FOCUS ON THE VALUE OF CONSUMER PAYMENTS

Government, banks and payment networks all look at cash usage and broader payment habits through different lenses. MasterCard looks at payments through different lenses, depending on the audience, product or region.

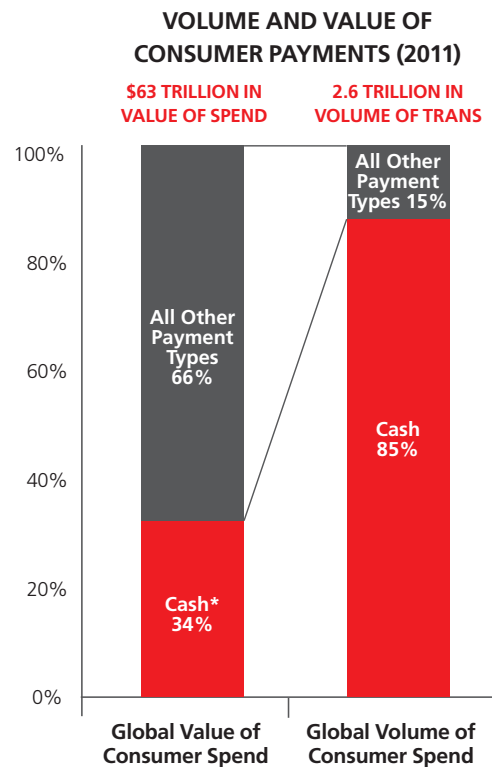
The Cashless Journey Study chose a consistent global methodology focusing on consumer payments, or payments initiated by individuals. Consumer payments for goods and services account for about 11% of the value of payments around the globe, but more than 90% of volume of payments (or number of transactions).

The study focuses on the value of consumer payments (\$63 trillion in total spend), rather than the volume of payments (total transactions), as estimates of payments value are more readily available, and have also been found to be more representative of broader trends in payments preference.

Finally, it should be noted that this study looks at all consumer payments, including those that happen beyond retail point of sale. This is an important consideration to underscore, as by including non-retail categories like housing and bill payment, the total figure for consumer payments is far larger than the value of retail point of sale payments. So, while cash accounts for 60% of the value of total retail payments in shops or online, when these other large consumer payments (e.g. wire transfer to buy a car, direct debit to pay mortgage) are included, the value of payments represented by cash falls to 34%.



Source: MasterCard Advisors analysis, BIS CPSS, McKinsey Global Payments Map, World Bank Statistics



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\*Focus of the study.

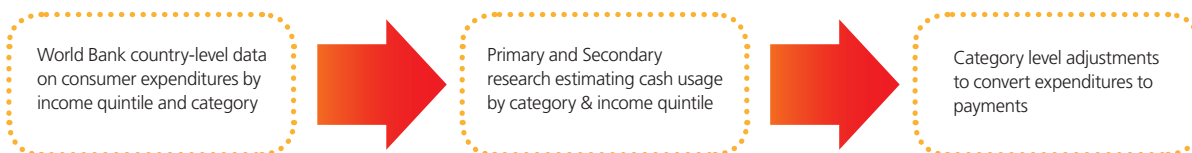
## THREE INDICATORS OFFER THREE WAYS TO LOOK AT THE CASHLESS JOURNEY

The Cashless Journey Study measures nations' progress towards more modern, efficient payment processes by looking at the current share of cash versus non-cash payments for consumers (Share), how this Share has shifted in the past five years (Trajectory), and whether conditions exist for cash payments to move to electronic (Readiness).

The study measures **three indicators** of progress:

1. **Share:** the percentage of the value of all consumer payments that are presently done by a means other than cash
2. **Trajectory:** a measure of the shift in cash share of consumer payments' value between 2006 and 2011
3. **Readiness:** a measure of the future potential for conversion of cash payments to electronic payments based on macro-economic preconditions observed in highly cashless markets

## CALCULATING THE VALUE OF CONSUMER PAYMENTS DONE WITH CASH



## HOW THE SCORE FOR SHARE WAS CALCULATED

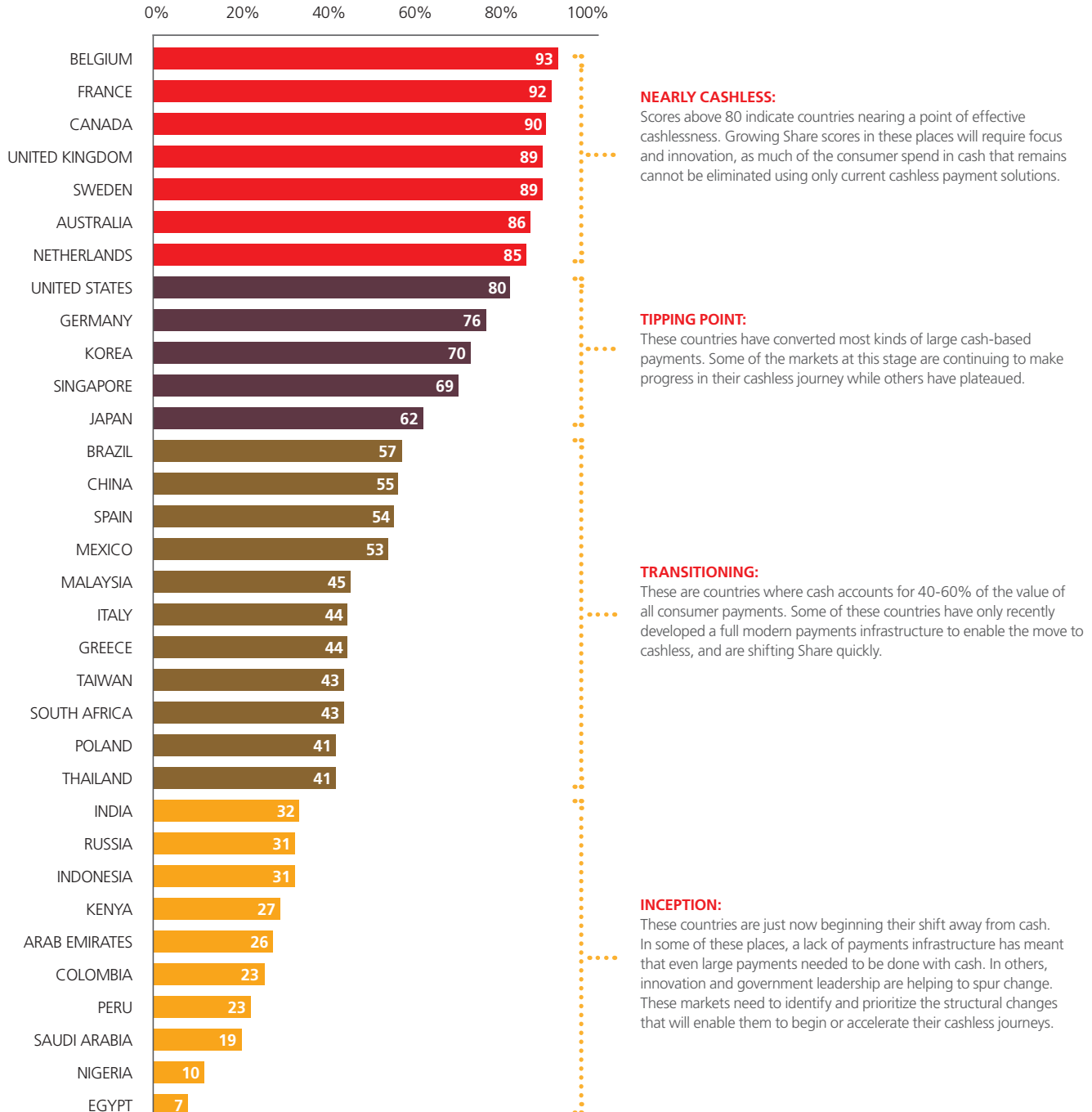
The first indicator, Share, was estimated using consumer expenditure data developed by the World Bank, combined with data on other payment values taken from central bank sources. Consumer cash payments were estimated by comparing data on total consumer expenditures at the category and income quintile level (via the World Bank International Comparison Program) with MasterCard's own research into consumer payment patterns for these same categories and income quintiles. Finally, the figures for expenditures were adjusted to reflect typical ratios between expenditures and payments, resulting **in an estimate of the value of consumer payments done using cash.**

To estimate non-cash consumer payments, central bank figures for total payments for credit transfers, direct debits, credit cards, debit cards, checks and other non-cash payment methods were used as the starting point. These figures were adjusted to get consumer payments based on benchmarks/secondary research estimating ratios of consumer to total payments.

The score for Share reflects the percentage of all consumer payments, by value, conducted by a means other than cash. The results for Share are presented as a number from 1-100.

## SHARE INDICATORS REFLECT FOUR DISTINCT STAGES OF EVOLUTION

The figures below reflect the findings for the Share indicator. They show the rank order of non-cash payments' share of the total value of consumer payments in the nations considered. The major break points in Share scores suggest that the countries examined fall into four categories based on their score for Share. These categories will return as other indicators of the study are discussed:

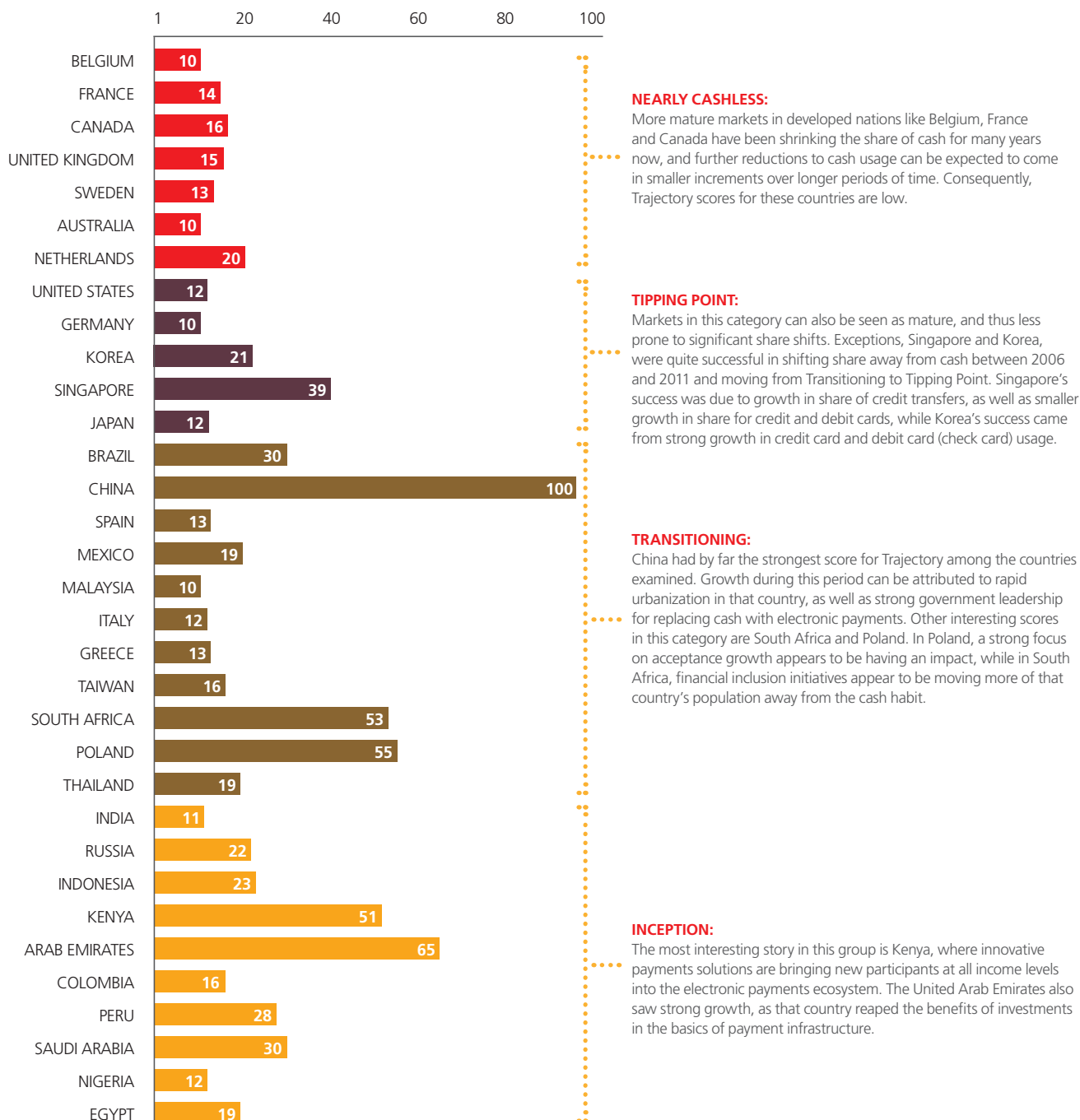


## CALCULATING THE SCORE FOR TRAJECTORY

The second indicator, Trajectory, uses historic data from the same sources used to create the score for Share to **estimate how cash share has shifted in the five most recent years for which data is available**. The score for Share reflects Advisors' estimates of the change in share of consumer payment for cash. The results for Trajectory are indexed across all countries to a scale of 1-100.

## TRAJECTORY SCORES SUGGEST THAT SEVERAL NATIONS WITH LOWER SHARE SCORES ARE SHIFTING SHARE QUICKLY

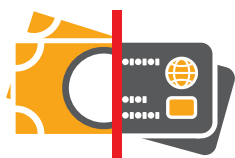
The chart below shows the Trajectory indicator score for the 33 nations evaluated. The Trajectory indicator score reflects the estimated change in share for cashless payment products between 2006 and 2011.



## CALCULATING THE SCORE FOR READINESS

The third indicator, Readiness, looks at factors found to be correlated to consumer cash usage, to provide a measure of the degree to which conditions exist for a move away from cash. The factors comprising the score for Readiness fall into four broad categories of nearly equal weighting:

### ACCESS TO FINANCIAL SERVICES



Measures of the availability and affordability of financial services and whether people use bank accounts and electronic payment products.

### MACRO-ECONOMIC AND CULTURAL FACTORS



Measures of cultural and other macro-economic factors impacting preference for cash, such as ease of doing business and size of informal economy.

### MERCHANT SCALE AND COMPETITION



Measures indicating potential for uptake of new payment solutions by large scale merchants. Measures of intensity of local competition.

### TECHNOLOGY AND INFRASTRUCTURE

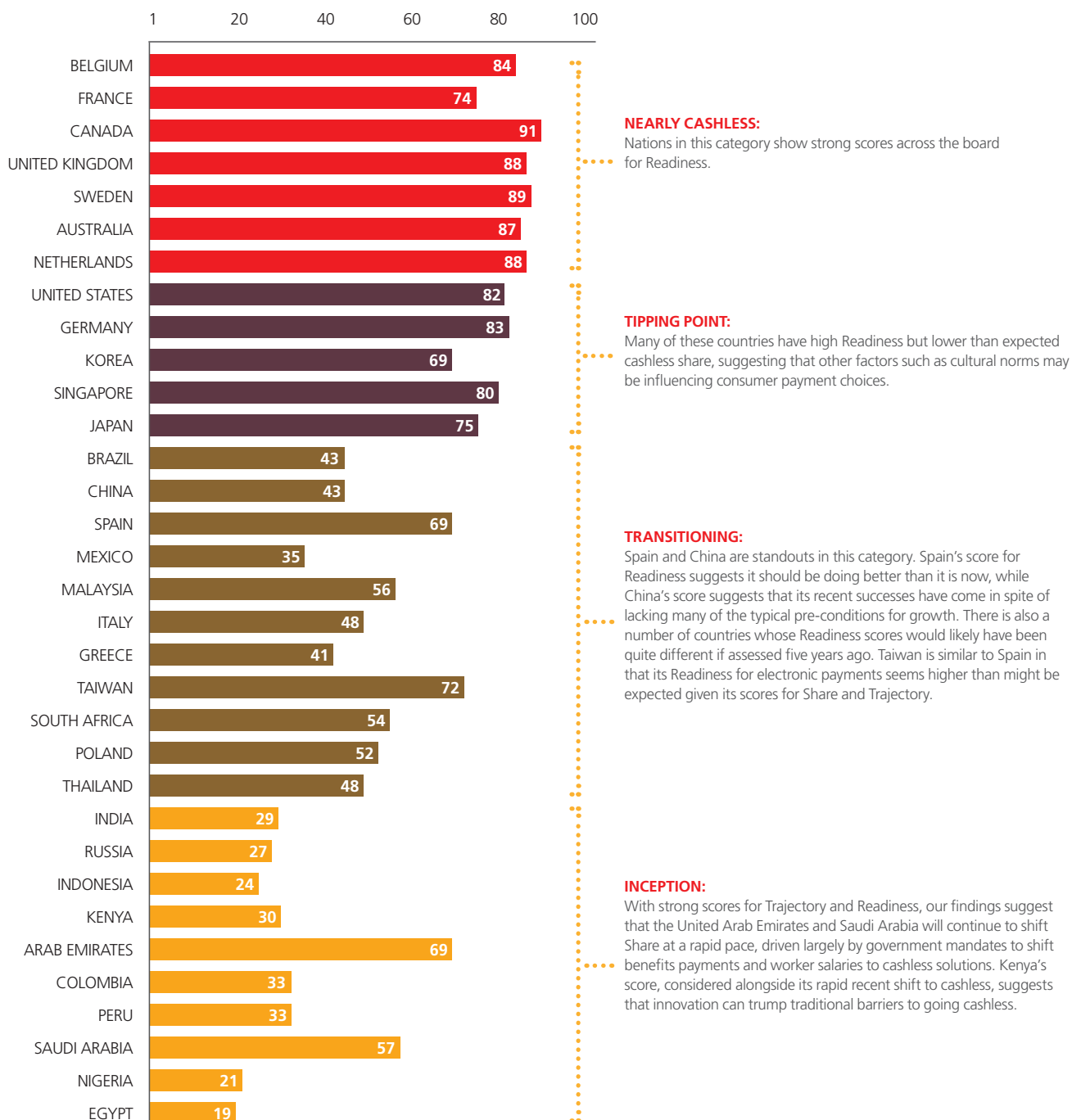


Measures of access to and uptake of new technology as well as innovation. Also measures quality of infrastructure.

The Readiness indicator score is an estimate of the degree to which the conditions are present for a move away from cash, based on experience in other markets. The results for Readiness are indexed across all countries to a scale of 1-100.

## READINESS SCORES TYPICALLY CORRELATE POSITIVELY WITH SHARE SCORES WHILE EXCEPTIONS MERIT FURTHER INVESTIGATION

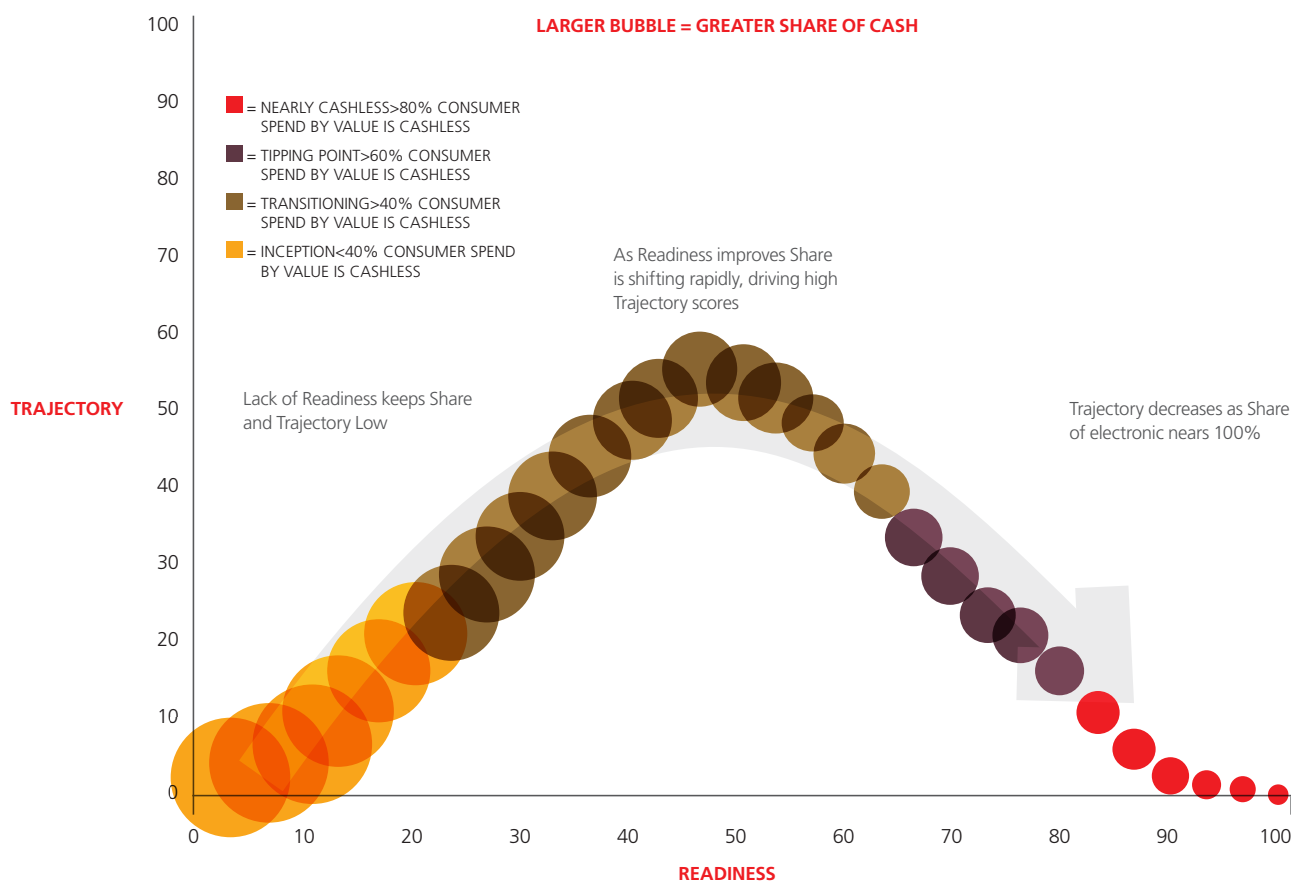
The chart below shows the Readiness score for the 33 nations evaluated. The Readiness score is an estimate of the degree to which the conditions are present for a move away from cash, based on experience in other markets.



## THERE IS A TYPICAL JOURNEY TOWARD A MORE CASHLESS ECONOMY

Improvements to the score for the Readiness indicator should cause a move away from cash, and growth in use of cashless solutions. This, in turn, should drive higher scores for the Trajectory indicator, as improvement to the factors that drive Readiness (i.e. infrastructure, financial inclusion, ease of doing business) should be creating a shift in payment behaviour.

As the Trajectory score rises, it's expected the share of cash would diminish and, in the case of this plot, the bubble representing share of cash to get smaller.



### NEARLY CASHLESS:

Nations in this category show strong scores across the board for Readiness.

### TIPPING POINT:

Many of these countries have high Readiness but lower than expected cashless share, suggesting that other factors such as cultural norms may be influencing consumer payment choices.

### TRANSITIONING:

Spain and China are standouts in this category. Spain's score for Readiness suggests it should be doing better than it is now, while China's score suggests that its recent successes have come in spite of lacking many of the typical pre-conditions for growth. There is also a number of countries whose Readiness scores would likely have been quite different if assessed five years ago. Taiwan is similar to Spain in that its Readiness for electronic payments seems higher than might be expected given its scores for Share and Trajectory.

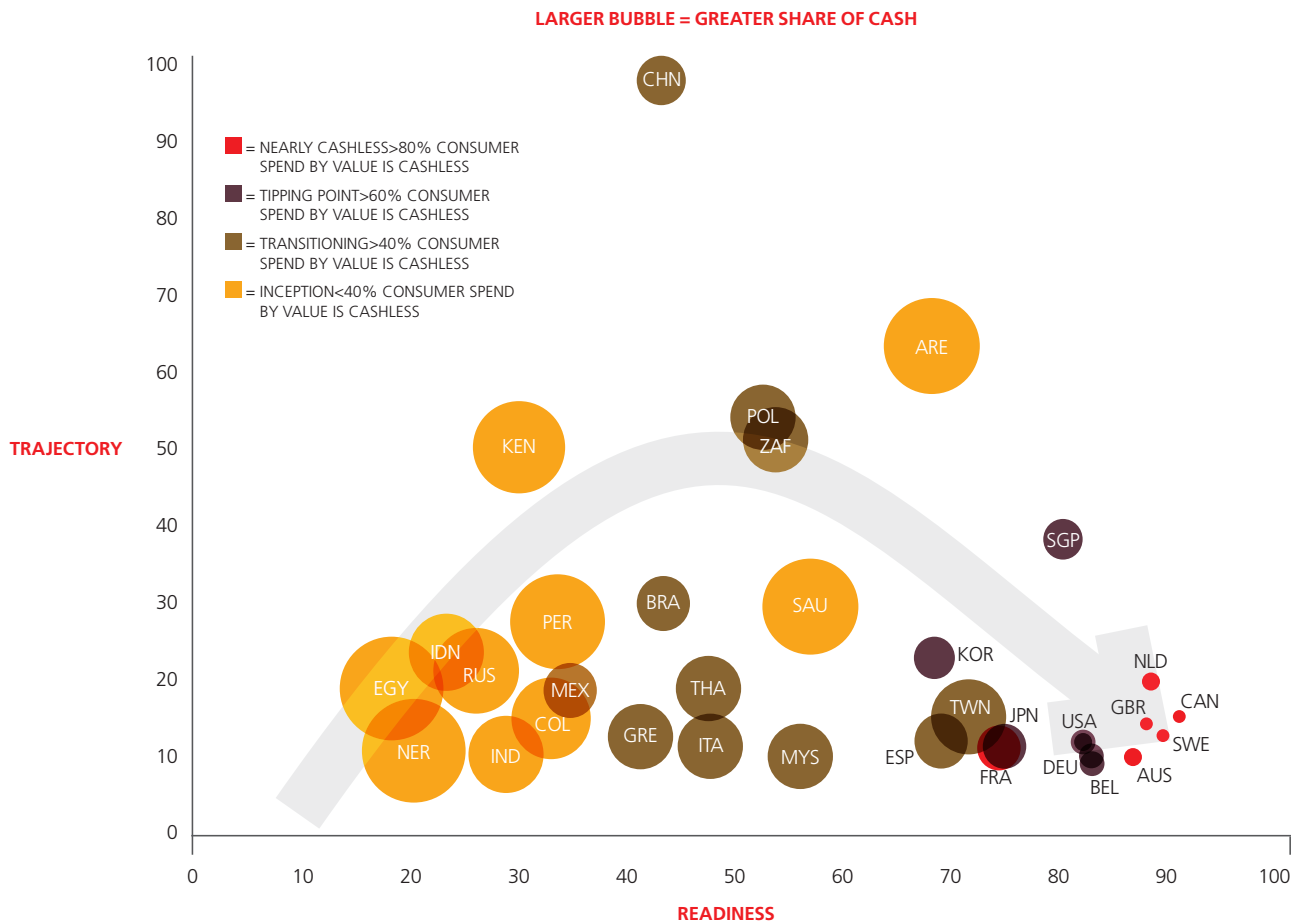
### INCEPTION:

With strong scores for Trajectory and Readiness, our findings suggest that the United Arab Emirates and Saudi Arabia will continue to shift Share at a rapid pace, driven largely by government mandates to shift benefits payments and worker salaries to cashless solutions. Kenya's score, considered alongside its rapid recent shift to cashless, suggests that innovation can trump traditional barriers to going cashless.

With study countries plotted in this manner, most countries fit into the traditional path for the journey to cashless, but there are notable exceptions.

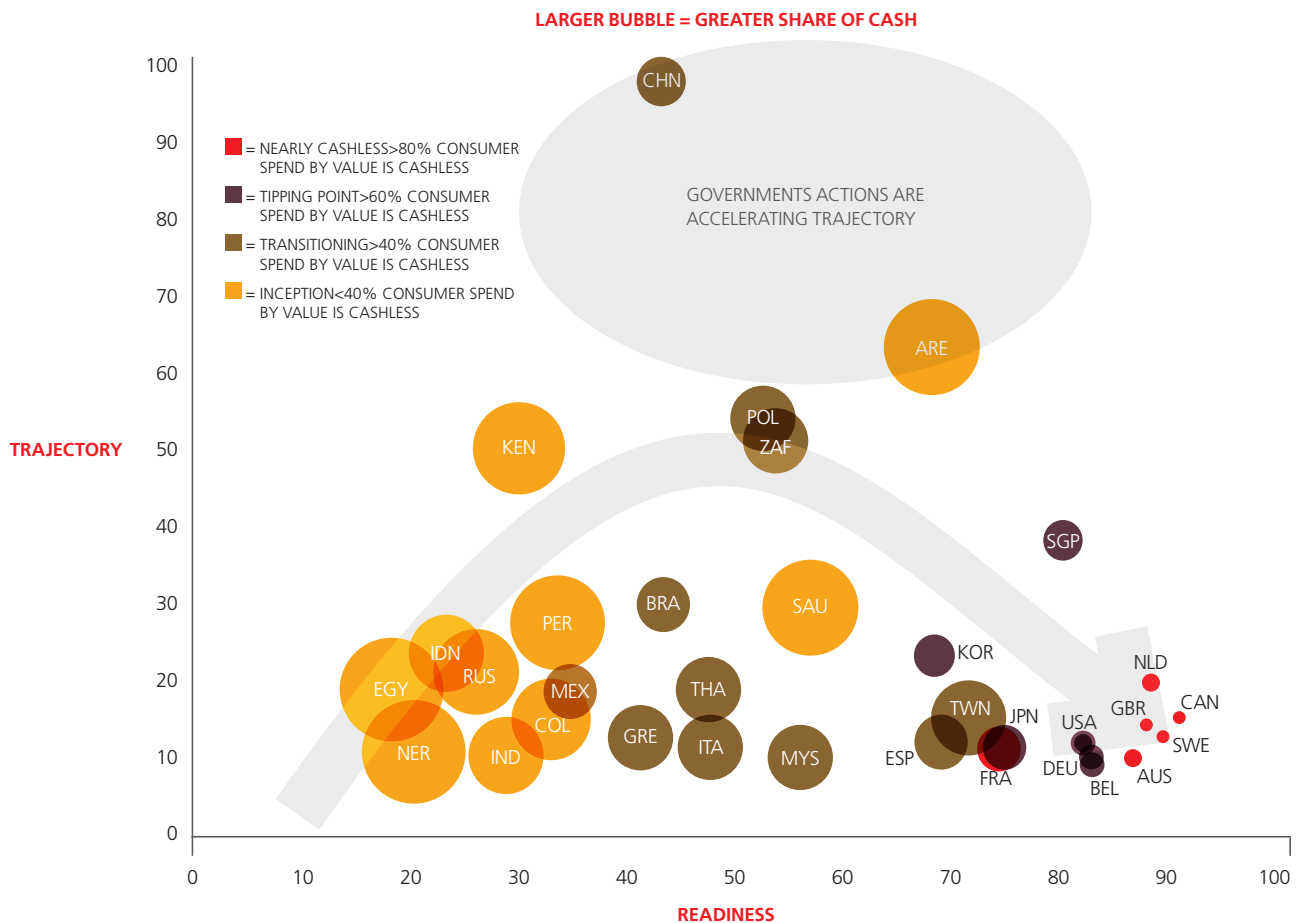
## COUNTRY LEGEND

Australia	AUS	Greece	GRE	Netherlands	NLD	Sweden	SWE
Belgium	BEL	India	IND	Nigeria	NER	Taiwan	TWN
Brazil	BRA	Indonesia	IDN	Peru	PER	Thailand	THA
Canada	CAN	Italy	ITA	Poland	POL	United Arab	
China	CHN	Japan	JPN	Russia	RUS	Emirates	ARE
Colombia	COL	Kenya	KEN	Saudi Arabia	SAU	United Kingdom	GBR
Egypt	EGY	Korea	KOR	Singapore	SGP	United States	
France	FRA	Malaysia	MYS	South Africa	ZAF	of America	USA
Germany	DEU	Mexico	MEX	Spain	ESP		



## GOVERNMENTS CAN SPEED THE JOURNEY

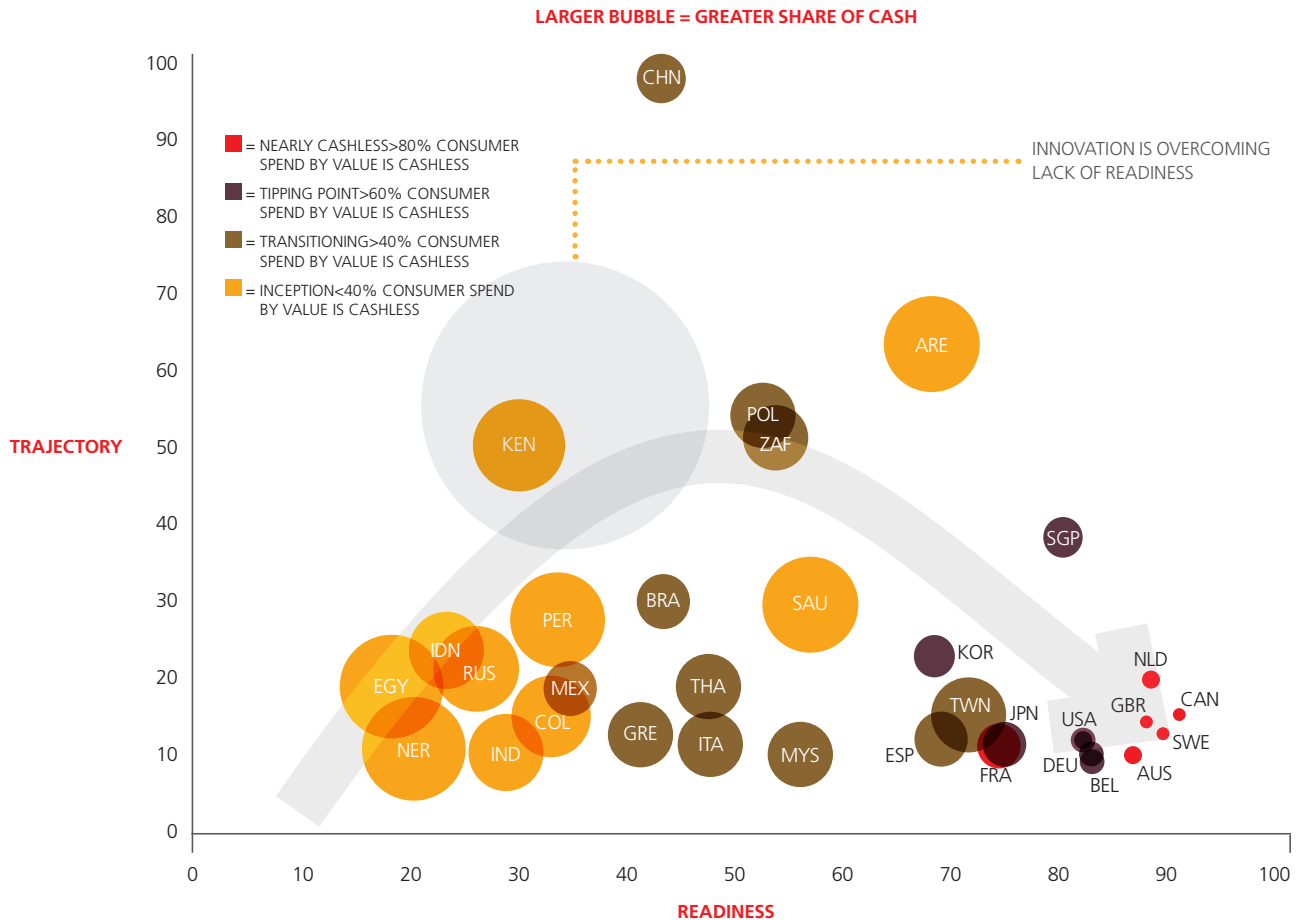
In plotting the actual data from the indicators, most nations appear to be following the expected three phase pattern. As scores for Readiness rise, so does share of electronic payments. However the highest Trajectory scores are for China and the United Arab Emirates, and particularly in the case of China, the rate of change is far faster than would be expected, given its Readiness scores.



In these countries and others, government leadership is driving a move to cashless consumer payments, providing focus and momentum for the cashless journey to overcome macroeconomic, structural and cultural barriers.

## INNOVATION CAN CREATE SHORTCUTS ON THE JOURNEY

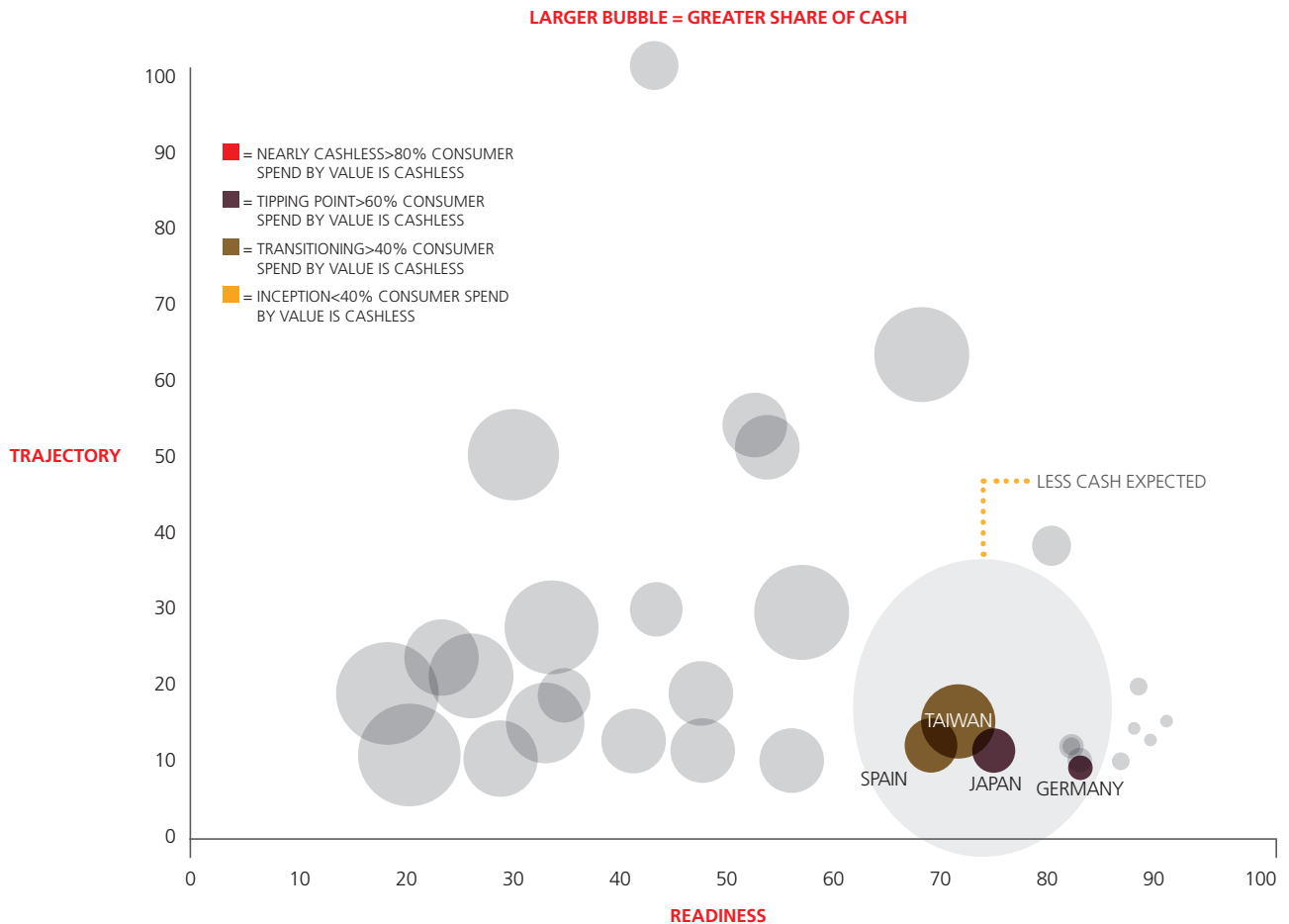
Kenya provides a unique example of where an innovative payments solution available to Kenyans of all income levels has accelerated the cashless journey.



M-Pesa, a remittance and payment scheme using mobile phones, has found broad uptake among Kenyans of all income levels. By enabling anyone with a mobile phone to pay, or send money electronically, M-Pesa has essentially removed many of the traditional barriers to going cashless, such as a buyer having a bank account and a seller having a land line connection to inter-bank networks. The Kenyan government explicitly allowed market forces to drive innovation and uptake of M-Pesa, and the results speak for themselves, with Kenya's Trajectory score among the five highest of all countries examined, despite its Readiness score being well towards the lower end of the scale.

## CONSUMERS PREFERENCES AND OTHER FACTORS CAN SLOW THE JOURNEY

Many of the developed nations in the study use more cash than expected. Given their scores for the Readiness indicator, it's expected to see less cash being used (higher cash share being indicated by smaller sized bubbles on the plot). With all the macro-economic prerequisites in place, why does so much cash persist?



Consumer needs appear to play a role in Germany, Japan and Taiwan, where low rates of street crime mean little risk in carrying large amounts of cash. Extensive and inexpensive ATM networks, and slow growth of POS acceptance, particularly for debit, have likely also kept cash share high in these markets.

Spain has been among the countries hardest hit by the financial crisis, and this has likely spurred growth in use of cash, as larger numbers of Spanish citizens work outside the formal economy.

## CONCLUSIONS

The burden of cash usage on society is substantial, as much as 1.5% of GDP, and heavy cash usage is also often an indicator of other economic problems. Electronic payments have made substantial inroads with consumers in numerous markets, but in most countries the cashless journey has only just begun.

This Cashless Journey Study offers insights into the paths that 33 countries have followed on their journeys. The study highlights some of most important requirements for success, factors that can accelerate the cashless journey and some constraints.

Many markets have made real progress on their journeys by establishing basic infrastructure over long periods of time. Affordable and broadly available financial products, a vibrant and competitive merchant market place, a transparent and productive business environment—all of these basics are strongly correlated with progress in the cashless journey. Australia has followed this path and is now nearly cashless. Brazil is another country putting the basics in place and reaping the benefits but they are less far along in their journey.

Five years of rapid progress in Kenya and China have shown us that encouraging payment product innovation and strong government cash reduction leadership can dramatically accelerate the cashless journey.

Some Tipping Point markets like Germany and Japan show us that, despite having the necessary infrastructure in place for decades, markets can plateau on their journey before consumers become nearly cashless. If specific consumer attitudes and behaviors towards cash usage are not well understood or accommodated, consumers may prevent the cashless journey's completion.

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For additional insights, please visit [insights.mastercard.com](http://insights.mastercard.com) and [mastercardadvisors.com](http://mastercardadvisors.com).

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## AUTHORS



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Prior to joining Advisors, Hugh led projects for other payment networks, and numerous issuing banks in North America and Europe. Hugh has also consulted extensively on technologies such as EIPP, SRM and supply chain finance. Hugh is a graduate of the University of Manitoba and resides in Toronto, Canada.



**Amit Jain** is part of the Global Payments Strategy Knowledge Center in MasterCard Advisors. The Payments Strategy team works with MasterCard clients around the world to develop and implement successful strategies across their payments businesses.

Amit is a seasoned professional with nearly 15 years experience in the industry including financial services, management consulting, venture capital and technology. A key focus of Mr. Jain's career has been to work with senior executives on key strategic issues affecting their business.

In his current role at MasterCard, Mr. Jain is responsible for coordinating the creation and distribution of thought leadership globally across the company. Mr. Jain has also led large global payment strategy projects including Global expansion strategy for MasterCard Bill Pay, Impact of Durbin and E-Commerce trends in Europe. Prior to MasterCard, Mr. Jain worked in a senior strategy role at Citi where he played a key part in the creation of the Enterprise Payments Business and driving relationships with emerging payment players like Apple and Google. Mr. Jain joined Citi from Booz Allen where he was an engagement manager in the strategy practice.

Amit received an MBA from the Ross School of Business at University of Michigan, Ann Arbor and a BS (eng) from Indian Institute of Technology, Delhi.



**Michael Angus** is Group Head, Payments Strategy. In this role, he leads the Global Payments Strategy Knowledge Center in MasterCard Advisors. His team works with MasterCard clients around the world to develop and implement successful strategies across their payments businesses.

Michael has been a management consultant for over two decades and for the last 15 years he has focused on the financial services sector and the business of payments. He led regional strategy practices at Gemini Consulting and The Capital Markets Company and co-led the Global Payments Practice at Capgemini.

Michael has spent half his consulting career based in Europe and half based in the U.S. He has helped senior bank executives improve their payments businesses at many of the top banks in the U.S., Europe, Asia and Latin America. He has worked with banks on every facet of the business of payments from helping a multi-national bank create, build and run its global wholesale payments line of business to establishing strategies and governance for new payments opportunities, including healthcare.

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