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THE VALUE OF DIGITIZING GOVERNMENT PAYMENTS IN EMERGING ECONOMIES

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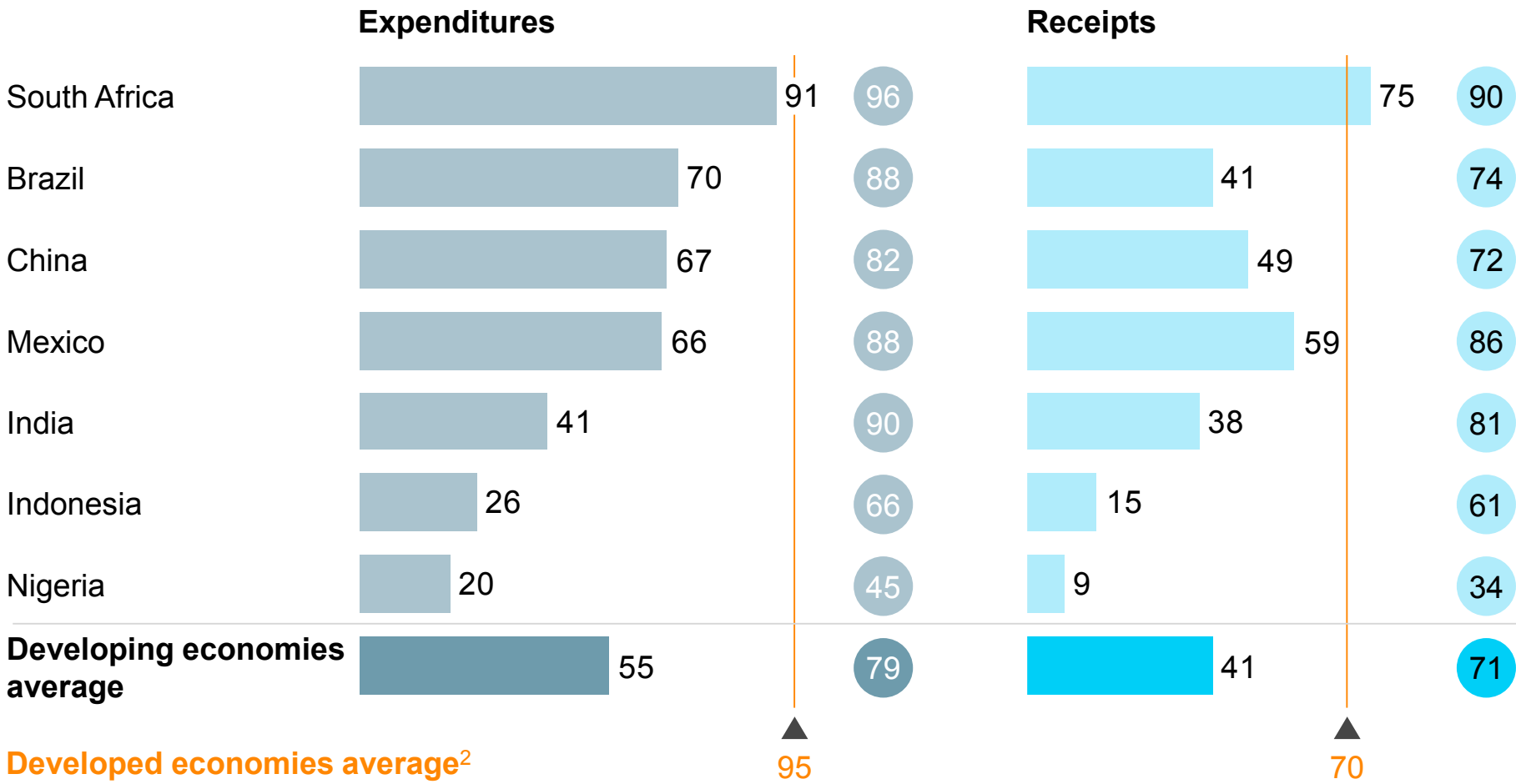
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In developing countries, a large share of government payment transactions are in cash

Share of digital in government payments by number, 2015[1]
%

⬤ Share of digital by value, 2015 (%)

Expenditures

Country	Value (bar)	Share of digital by value
South Africa	91	96
Brazil	70	88
China	67	82
Mexico	66	88
India	41	90
Indonesia	26	66
Nigeria	20	45
Developing economies average	**55**	**79**

Receipts

Country	Value (bar)	Share of digital by value
South Africa	75	90
Brazil	41	74
China	49	72
Mexico	59	86
India	38	81
Indonesia	15	61
Nigeria	9	34
Developing economies average	**41**	**71**

Developed economies average[2]

Expenditures benchmark: ▲ 95

Receipts benchmark: ▲ 70

Cash expenditures and receipts are subject to leakage and fraud, and the cost to governments of processing cash payments are high

Leakage

- Public employee salaries skimmed or stolen
- Household subsidies skimmed by public officials
- Tax officials skim from taxes collected

Fraud

- Government is billed for work not performed
- Benefits or salaries paid to "ghost" recipients
- Businesses under-report income

Processing costs

- Back-office costs of processing cash payments are high due to labor-intensive manual processes, check printing, and transportation and distribution costs, and they are prone to errors and rework

Digitizing government payments reduces leakage, fraud and processing costs

Example: India National Rural Employment Guarantee Scheme

- The Indian state of Andhra Pradesh introduced **biometric IDs and e-payments** for subsidies in 2010

- **Beneficiaries of the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) reported receiving 24% more in benefits,** with no additional cost to government

- The new system **reduced the lag between working on an MGNREGS project and being paid by 10 days** (a 29% reduction from 34 days)

Digitizing government payments reduces leakage, fraud and processing costs

Example: Sierra Leone healthcare workers

- Emergency response to the **Ebola virus outbreak** in 2014

- **E-payments through mobile wallets** to healthcare workers **saved the government $10.7 million in payroll "leakage" in the 13 months** from December 2014 to January 2016

- Digitization **cut payment times from over one month to around one week**

- Response workers saved ~**$80,000 per month in travel costs** to cash payment centers

- Prevented the loss of ~**800 working days per month** from the Ebola response workforce, helping save lives
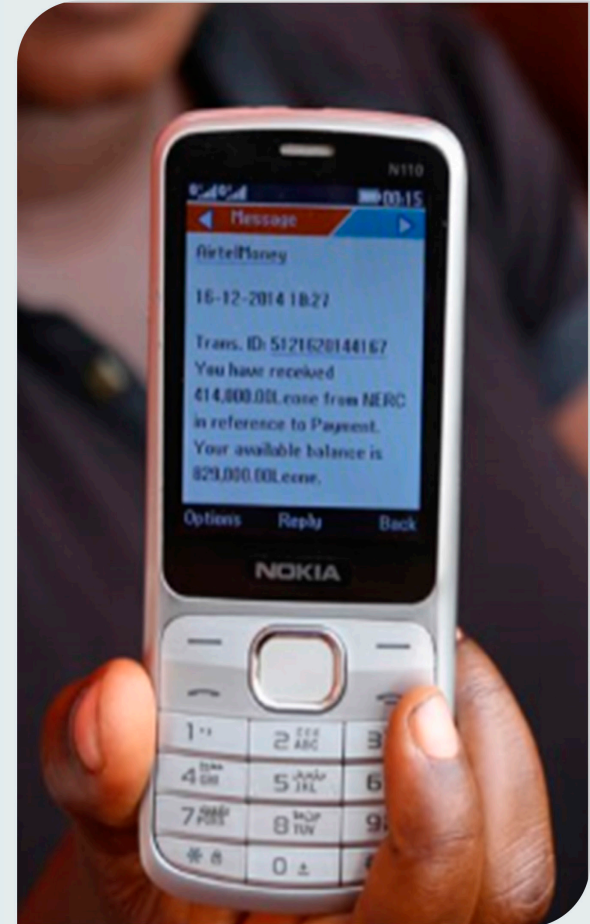
Empirical estimates suggest the size of leakage and fraud in government payments are large

Fraudulent payments for "ghost" workers		
	40%	of central government payroll, Zimbabwe
	23%	of teachers in Honduras
	19%	of Nairobi city payroll, Kenya
	18%	of National Rural Employment Guarantee Scheme, India
	15%	of teachers in Papua New Guinea
	10%	of police in Afghanistan
	10%	of civil servants in Ghana

Leakage in government-to-government payments		
	87%	of schools' non-wage spending in Uganda
	76%	of discretionary education spending in Zambia
	73%	of non-wage recurrent spending budgeted for regional health directorates in Chad
	40%	of Ngorongoro Conservation Area revenues, Tanzania
	38%	of health spending in Kenya

We calculate the potential value of digitizing government payments

$$V_{i,t} = \sum_k \left(PV_{i,k,t} * c_{i,k,t}^v * \rho_k + PN_{i,t} * c_{i,k,t}^n * \Phi \right)$$

i Country
t Current year
k Type of government payment transaction

$V_{i,t}$ Total value of potential savings

$PV_{i,k,t}$ **Value of government payments** of type k

$c_{i,k,t}^v$ Share of payments by value of type k that are made **in cash or check**

ρ_k Percent **savings from reducing leakage and fraud** for payment type k. Ranges from **5% to 25%**

$PN_{i,k,t}$ **Number of government payments** of type k

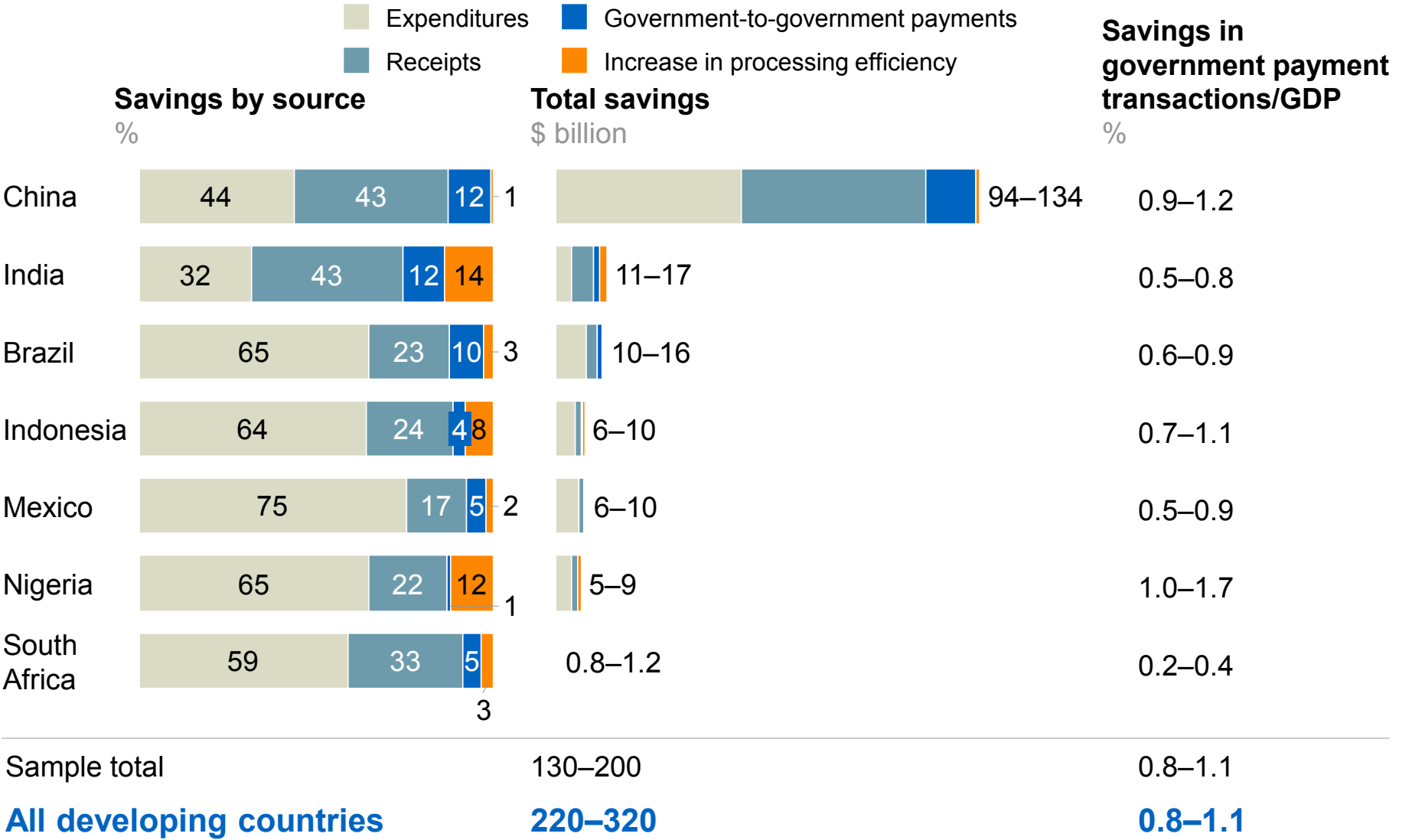$c_{i,k,t}^n$ Share of government payments by number of type k that occur **in cash or check**

Φ **Savings per transaction** by digitizing and automating payments processing. Assumed to be **$0.50 to $1.20**

We consider five different types of government payments

	Type	Description	Estimated leakage & fraud %
Expenditures	**G2C** Government-to-consumer	▪ Household subsidies ▪ Civil servant salaries	15–25
	G2B Government-to-business	▪ Payments to vendors for goods and services ▪ Payment to contractors (e.g., infrastructure)	5–15
Receipts	**C2G** Consumer-to-government	▪ Personal income taxes ▪ Other fees	5
	B2G Business-to-government	▪ Business income taxes ▪ VAT and sales taxes	5
	G2G Government-to-government	▪ Subsidies from central government to local governments ▪ Funding for schools, health care	5–15

Developing countries could reap $220 billion to $320 billion in value from digitizing government payments

Annual savings from digitizing government payment transactions

Legend:
- Expenditures (light beige)
- Receipts (teal)
- Government-to-government payments (blue)
- Increase in processing efficiency (orange)

| | Savings by source %| | | | Total savings $ billion | Savings in government payment transactions/GDP % |
|---|---|---|---|---|---|---|
| China | 44 | 43 | 12 | 1 | 94–134 | 0.9–1.2 |
| India | 32 | 43 | 12 | 14 | 11–17 | 0.5–0.8 |
| Brazil | 65 | 23 | 10 | 3 | 10–16 | 0.6–0.9 |
| Indonesia | 64 | 24 | 4 | 8 | 6–10 | 0.7–1.1 |
| Mexico | 75 | 17 | 5 | 2 | 6–10 | 0.5–0.9 |
| Nigeria | 65 | 22 | 12 | 1 | 5–9 | 1.0–1.7 |
| South Africa | 59 | 33 | 5 | 3 | 0.8–1.2 | 0.2–0.4 |
| Sample total | | | | | 130–200 | 0.8–1.1 |
| **All developing countries** | | | | | **220–320** | **0.8–1.1** |

Governments could gain $105 billion to $155 billion annually, improving fiscal balances

**Annual savings in government payment transaction in developing countries**
100% = $220 billion–$320 billion

By source

Government-to-government payments

Increase in processing efficiency 6%

7%

Receipts 29%

57% Expenditures
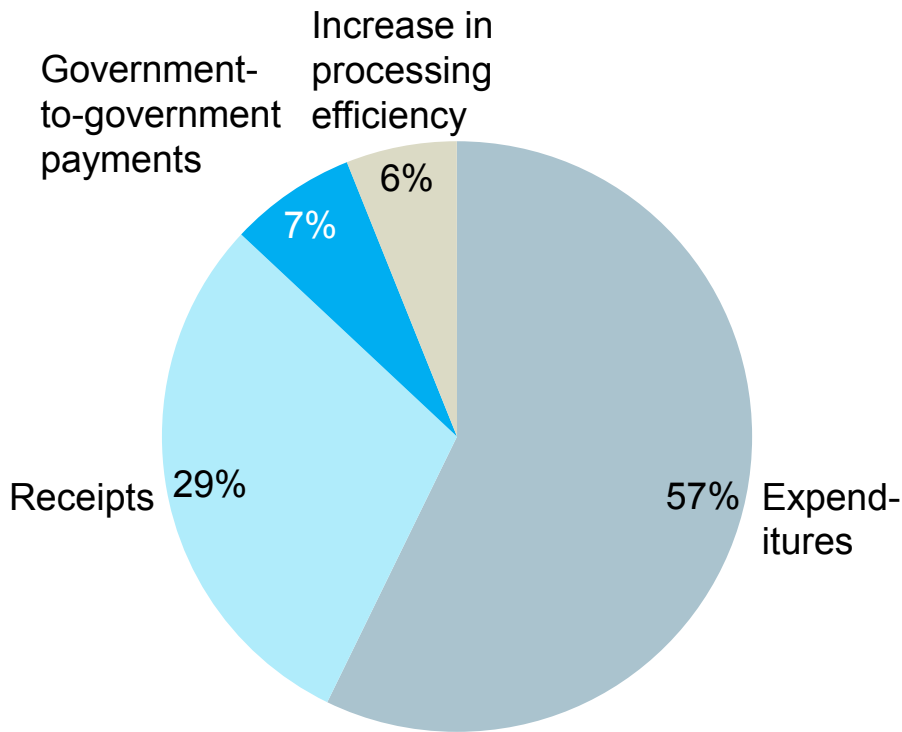
By recipient

To government from reducing leakage, fraudulent payments, leakage in government-to-government payments, and processing inefficiencies

52%
($115 billion–$165 billion)

48%
($105 billion–$155 billion)
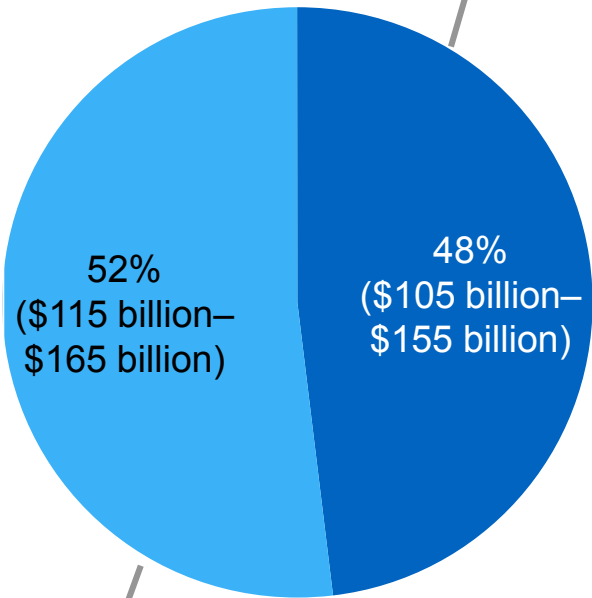
To households and businesses from reducing leakage in subsidies and payments

There are additional potential benefits excluded from our calculations

Improved government service delivery

- Reduced absenteeism

- Better targeting of subsidies

- Replacing in-kind subsidies with digital payments

Catalyst for widespread use of digital finance

- Prompt individuals and businesses to adopt digital finance

- Spur investment in digital payment infrastructure

- Create demand for digital providers

Reducing tax evasion and informal economy

- Better tracking of incomes / receipts to calculate taxes owed

- Big data analytics to improve tax audits

- Incentives for small businesses to formalize

Thank you

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