



Global Electronic Payments Market Study and Forecast

May 2006



Study Objectives

- Size the global electronic payments market
 - Transaction volume, by type, by country
 - 79 countries, majority of world GDP
- Forecast expected volume growth
 - 5- and 10-year periods
 - Identify statistically valid correlations
- Create a reusable model
- Create baseline for strategic planning

Study Partner – Global Insight, Inc.

- Leading econometric forecasting company
- Recognized as the most consistently accurate forecasting company in the world
- Highly ranked by the Wall Street Journal, Reuters, Federal Reserve and others
- Knowledgeable about payments space based on work with clients like Visa and Wal-Mart



Data Sources

- Bank for International Settlement data
- Industry reports
- ACI internal data

Payments Groupings

Payment System	Transaction Detail
Checks	<ul style="list-style-type: none">• Checks
Retail Transfers	<ul style="list-style-type: none">• ATM Transactions• Card-based e-Money• Cash Withdrawals• Electronic Money Function – Purchases
Retail Payments	<ul style="list-style-type: none">• Credit Card Transactions/Payments• Debit Card Transactions/Payments• Delayed Debit Card Payments• Paperless Credit Transactions• Direct Debit• Electronic Credit• E-Bill Payments
Wholesale Payments	<ul style="list-style-type: none">• LVTS (Large Value Transfer System)• ACH (Automatic Clearing House)• RTGS (Real-time Gross Settlements)• Credit Transfer – Large Value Interbank• Other Clearing House• Automatic Debits

Econometric Approach Validated

Historical trends and number of transactions linked to the following variables:

- Retail payment transactions are driven by real GDP and trade (exports + imports)
- Retail transfer transactions are driven by real GDP
- Wholesale transactions are driven by real GDP and apparent consumption of technology
- Checks are driven by consumer spending

Global Electronic Payment Transactions

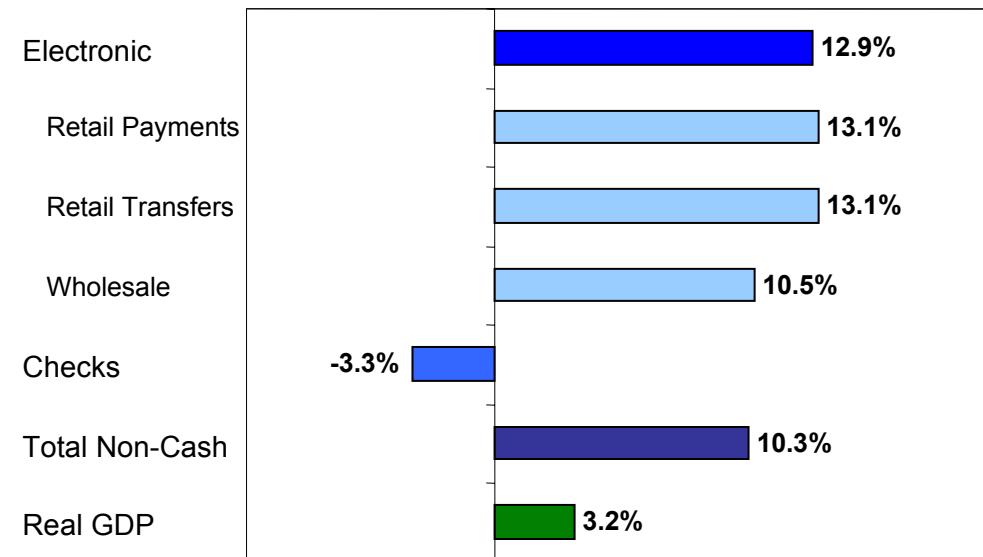
Transactions Top 210 Billion & Double by 2010

Global Payment Transactions

	2004 Transactions (billion)	Change in Transactions 2004 - 2009 (billion)	2004 - 2009 Compound Annual Growth Rate
Electronic	209.8	174.4	12.9%
Retail Payments	140.2	119.6	13.1%
Retail Transfers	47.6	40.6	13.1%
Wholesale	21.9	14.2	10.5%
Checks	52.4	-8.0	-3.3%
Total Non-Cash	262.2	166.4	10.3%
Real GDP	\$34,854	\$6,027	3.2%

Transaction Growth

Compound Annual Growth Rate, 2004 to 2009

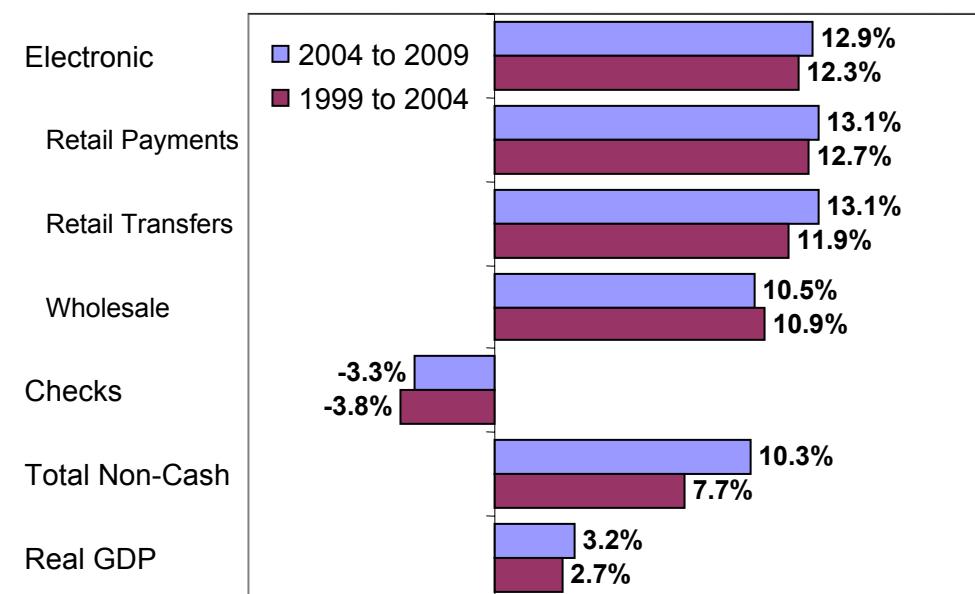


Global Electronic Payment Transaction Growth Accelerates

Global Payment Transactions

	1999 Transactions (billion)	2004 Transactions (billion)	2009 Transactions (billion)
Electronic	117.4	209.8	384.2
Retail Payments	77.2	140.2	259.8
Retail Transfers	27.2	47.6	88.3
Wholesale	13.0	21.9	36.1
Checks	63.7	52.4	44.4
Total Non-Cash	181.1	262.2	428.6
Real GDP	\$30,446	\$34,854	\$40,880

Transaction Growth Compound Annual Growth Rate

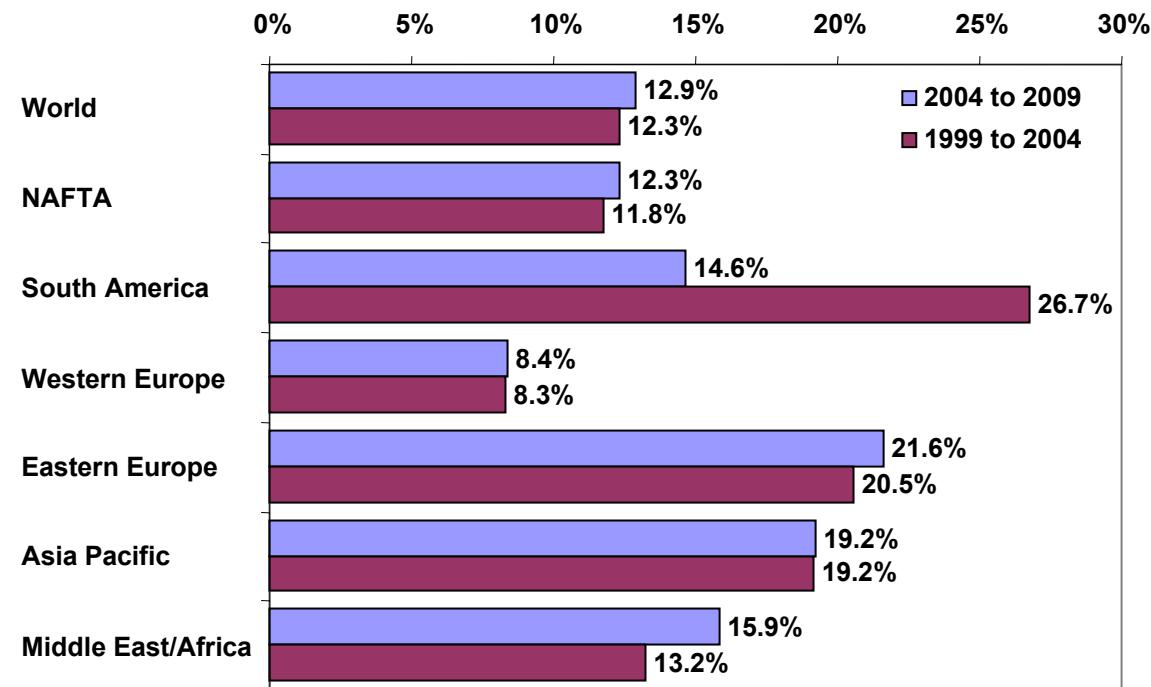


Eastern Europe and Asia Pacific Will Be Leaders In Electronic Transaction Growth

Global Electronic Transactions

	1999	2004	2009
World	117.4	209.8	384.2
NAFTA	44.9	78.3	140.0
South America	3.8	12.5	24.7
Western Europe	50.2	74.8	111.9
Eastern Europe	3.8	9.7	25.8
Asia Pacific	12.9	31.1	74.8
Middle East/Africa	1.8	3.3	6.9

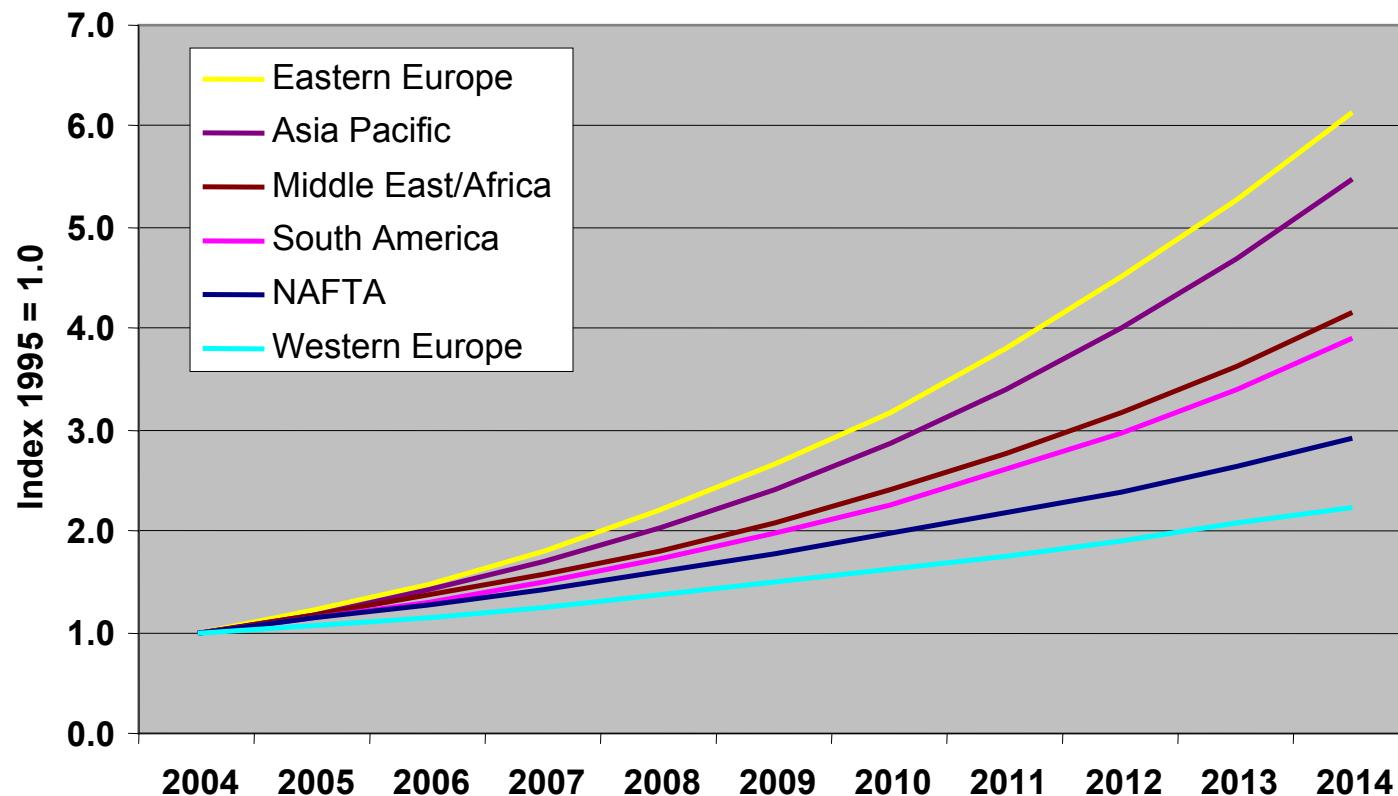
Electronic Transactions Growth By Region



Over the Next Ten Years, Electronic Payments More Than Double for Every Region

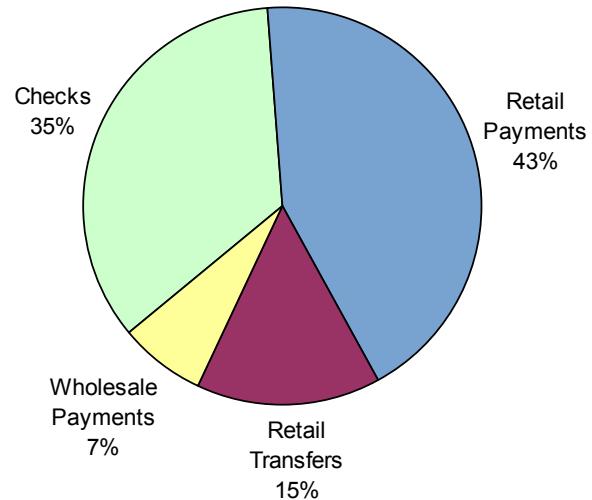
Regional Growth Rate for Electronic Payments

(Retail Payments + Retail Transfers + Wholesale Payments)

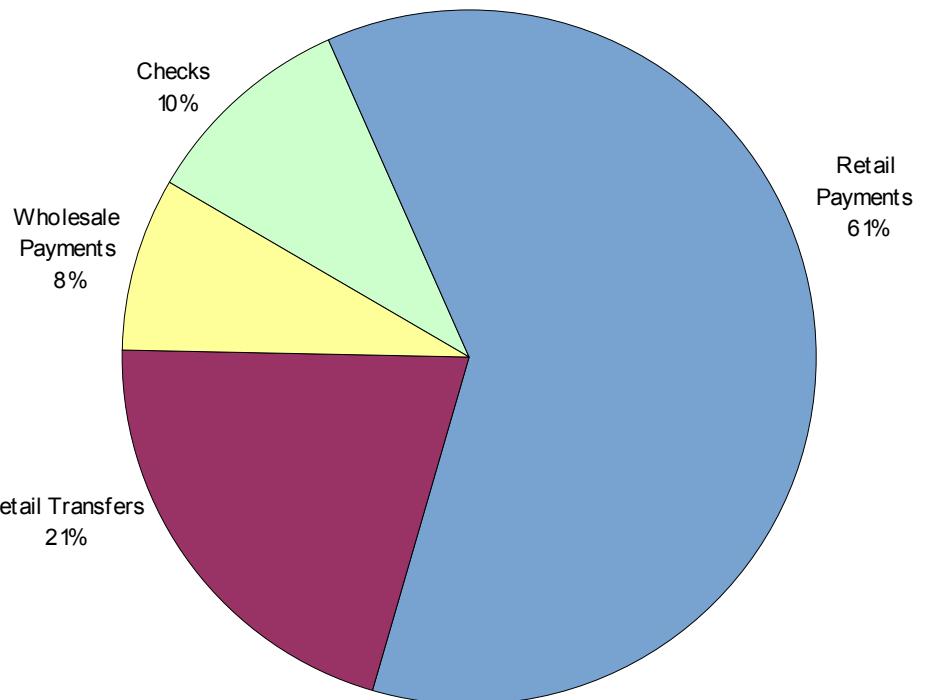


As a Result, Checks Become Less Relevant Over Time

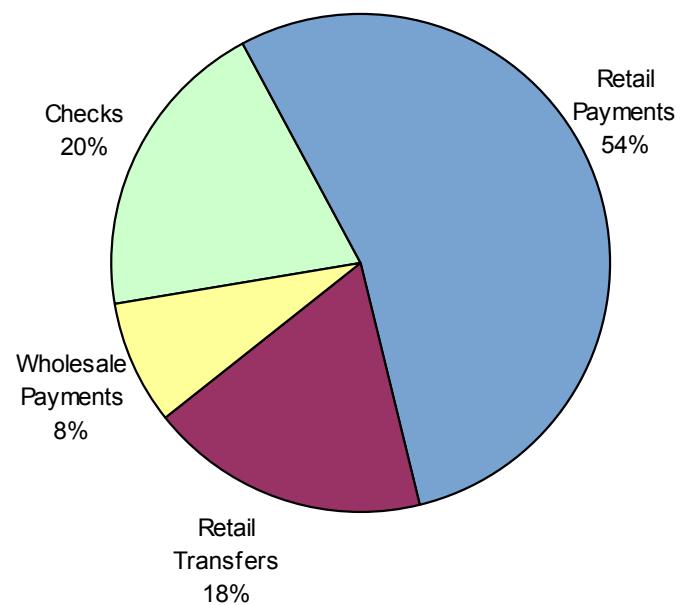
Non-Cash Transactions 1999



Non-Cash Transactions 2009

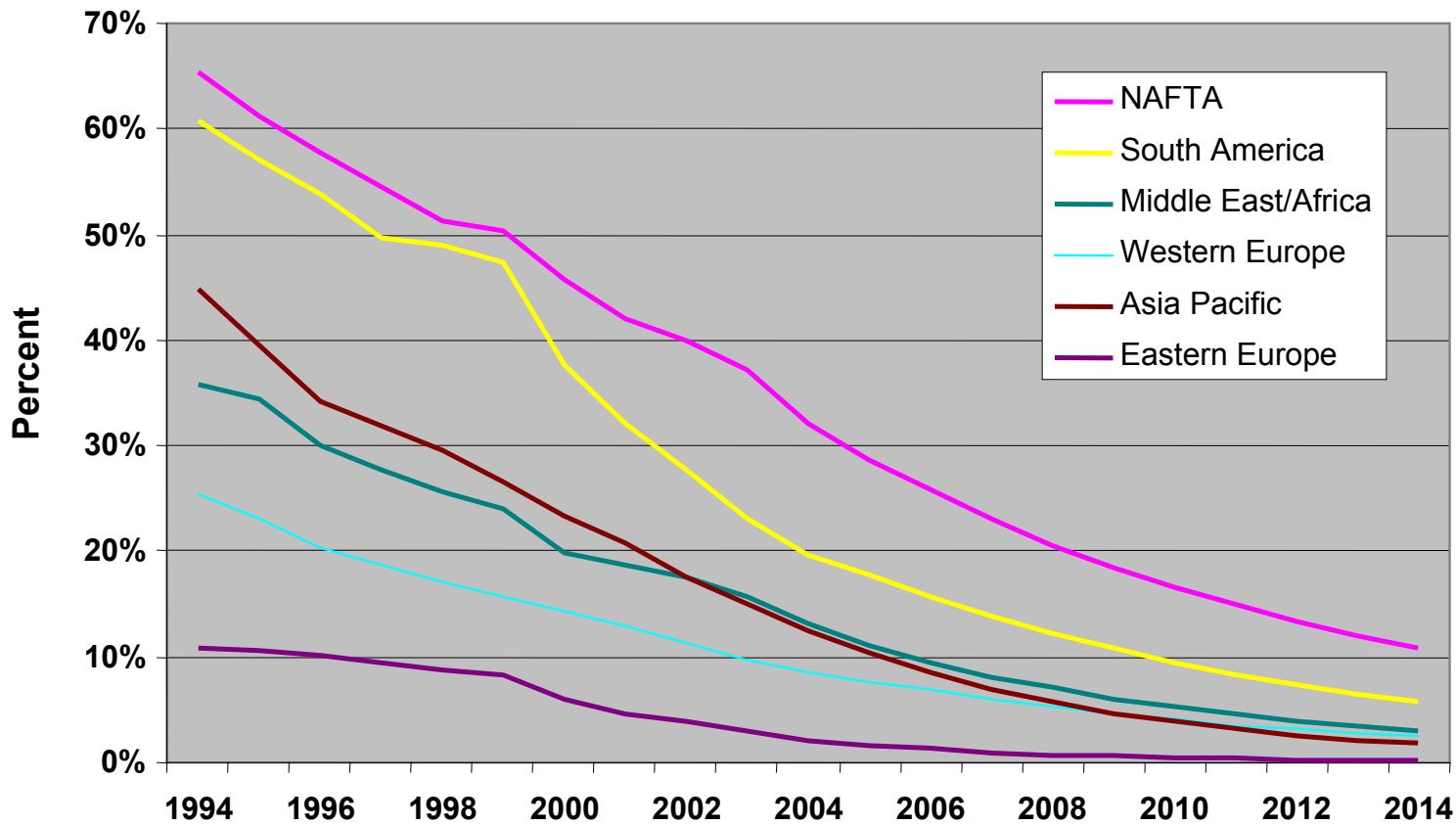


Non-Cash Transactions 2004



Emerging World is Bypassing Checks

Checks as a Share of Total Transactions "Opportunity"



Top 15 Countries: Electronic Payments Total Volume

Electronic Payments - 2004				
	Top 15 Countries	Total Transactions (millions)	% of World Transactions	% of World Real GDP
1	United States	66,014	31.5%	30.9%
2	United Kingdom	18,446	8.8%	4.6%
3	Germany	17,301	8.2%	5.6%
4	France	11,488	5.5%	4.1%
5	Brazil	10,856	5.2%	1.9%
6	Canada	9,189	4.4%	2.3%
7	China	5,794	2.8%	4.3%
8	South Korea	5,591	2.7%	1.8%
9	Australia	5,529	2.6%	1.2%
10	Japan	4,771	2.3%	14.2%
11	Spain	4,571	2.2%	1.9%
12	Netherlands	4,269	2.0%	1.1%
13	Italy	3,517	1.7%	3.2%
14	Belgium	3,395	1.6%	0.7%
15	Mexico	3,129	1.5%	1.8%
	Total Top 15	173,860	82.9%	79.3%
	World	209,762	--	--

Top 15 Countries – Retail Payments

Retail Payments - 2004				
	Top 15 Countries	Total Transactions (millions)	% of World Retail Payment Transactions	% of World Real GDP
1	United States	44,865	32.0%	30.9%
2	Germany	13,767	9.8%	5.6%
3	United Kingdom	11,190	8.0%	4.6%
4	France	10,135	7.2%	4.1%
5	Canada	6,481	4.6%	2.3%
6	South Korea	4,963	3.5%	1.8%
7	Japan	4,382	3.1%	14.2%
8	China	4,160	3.0%	4.3%
9	Brazil	4,092	2.9%	1.9%
10	Australia	3,719	2.7%	1.2%
11	Netherlands	3,624	2.6%	1.1%
12	Spain	3,565	2.5%	1.9%
13	Italy	2,853	2.0%	3.2%
14	Austria	1,867	1.3%	0.6%
15	Mexico	1,770	1.3%	1.8%
	Total Top 15	121,435	86.6%	79.2%
	World	140,200	--	--

Top 15 Countries – Retail Transfers

Retail Transfers - 2004				
	Top 15 Countries	Total Transactions (millions)	% of World Retail Transfer Transactions	% of World Real GDP
1	United States	12,532	26.3%	30.9%
2	Brazil	6,748	14.2%	1.9%
3	Germany	3,440	7.2%	5.6%
4	United Kingdom	2,661	5.6%	4.6%
5	Singapore	2,064	4.3%	0.3%
6	Canada	1,577	3.3%	2.3%
7	Mexico	1,354	2.8%	1.8%
8	France	1,341	2.8%	4.1%
9	India	1,278	2.7%	1.7%
10	Australia	1,065	2.2%	1.2%
11	Spain	1,000	2.1%	1.9%
12	Indonesia	979	2.1%	0.6%
13	Thailand	701	1.5%	0.4%
14	Italy	659	1.4%	3.2%
15	Netherlands	641	1.3%	1.1%
	Total Top 15	38,040	79.9%	61.4%
	World	47,639	--	--

Top 15 Countries – Wholesale Payments

Wholesale - 2004				
	Top 15 Countries	Total Transactions (millions)	% of World Large Value Transactions	% of World Real GDP
1	United States	8,617	39.3%	30.9%
2	United Kingdom	4,596	21.0%	4.6%
3	Russia	1,709	7.8%	0.9%
4	China	1,194	5.4%	4.3%
5	Canada	1,130	5.2%	2.3%
6	Belgium	1,127	5.1%	0.7%
7	Australia	745	3.4%	1.2%
8	Poland	740	3.4%	0.5%
9	Norway	359	1.6%	0.5%
10	Czech Republic	351	1.6%	0.2%
11	Switzerland	312	1.4%	0.7%
12	Israel	222	1.0%	0.3%
13	Taiwan	160	0.7%	1.0%
14	Serbia & Montenegro (former)	134	0.6%	0.1%
15	Germany	94	0.4%	5.6%
	Total Top 15	21,489	98.0%	53.8%
	World	21,923	--	--

Top 15 Countries – Checks

Checks - 2004				
	Top 15 Countries	Total Transactions (millions)	% of World Check Transactions	% of World Real GDP
1	United States	35,250	67.3%	30.9%
2	France	3,716	7.1%	4.1%
3	Brazil	2,248	4.3%	1.9%
4	United Kingdom	2,063	3.9%	4.6%
5	Canada	1,404	2.7%	2.3%
6	South Korea	1,006	1.9%	1.8%
7	India	1,000	1.9%	1.7%
8	Australia	756	1.4%	1.2%
9	Mexico	565	1.1%	1.8%
10	Italy	494	0.9%	3.2%
11	China	416	0.8%	4.3%
12	Chile	305	0.6%	0.3%
13	Portugal	229	0.4%	0.3%
14	New Zealand	218	0.4%	0.2%
15	Israel	185	0.4%	0.3%
	Total Top 15	49,854	95.2%	58.7%
	World	52,393	--	--

Top 15 Growing Countries: Electronic Payments Volume Growth

Electronic Payments - Growth 2004 to 2009				
	Top 15 Countries	Change in Transactions (millions)	Compound Annual Growth Transactions	Compound Annual Growth Real GDP
1	United States	52,273	12.4%	3.3%
2	China	17,080	31.6%	8.1%
3	United Kingdom	10,994	9.8%	2.5%
4	Brazil	9,978	13.9%	3.4%
5	South Korea	8,317	20.0%	5.2%
6	Germany	6,433	6.5%	1.5%
7	France	5,780	8.5%	2.0%
8	Canada	5,638	10.0%	2.8%
9	Russia	4,084	18.9%	4.8%
10	Mexico	3,763	17.1%	3.7%
11	Australia	3,544	10.4%	2.5%
12	Spain	3,261	11.4%	2.7%
13	Poland	3,243	20.3%	4.6%
14	India	3,180	26.1%	6.5%
15	Singapore	2,856	17.4%	4.5%
	Total Top 15	140,423	13.0%	3.5%
	World	174,414	12.9%	3.2%

Top 15 Growing Countries – Retail Payments

Retail Payments - Growth 2004 to 2009				
	Top 15 Countries	Change in Transactions (millions)	Compound Annual Growth Transactions	Compound Annual Growth Real GDP
1	United States	36,993	12.8%	3.3%
2	China	13,896	34.1%	8.1%
3	United Kingdom	7,432	10.7%	2.5%
4	South Korea	7,369	20.0%	5.2%
5	Germany	5,310	6.7%	1.5%
6	France	5,212	8.7%	2.0%
7	Brazil	4,342	15.6%	3.4%
8	Canada	3,966	10.0%	2.8%
9	Australia	2,714	11.6%	2.5%
10	Spain	2,630	11.7%	2.7%
11	Mexico	2,524	19.4%	3.7%
12	Russia	2,224	27.0%	4.8%
13	Poland	1,917	25.1%	4.6%
14	Japan	1,909	7.5%	1.7%
15	Czech Republic	1,456	23.8%	4.3%
	Total Top 15	99,895	13.3%	3.1%
	World	119,569	13.1%	3.2%

Top 15 Growing Countries – Retail Transfers

Retail Transfers - Growth 2004 to 2009				
	Top 15 Countries	Change in Transactions (millions)	Compound Annual Growth Transactions	Compound Annual Growth Real GDP
1	United States	9,807	12.3%	3.3%
2	Brazil	5,625	12.9%	3.4%
3	India	2,693	25.5%	6.5%
4	Singapore	2,463	17.0%	4.5%
5	United Kingdom	1,496	9.3%	2.5%
6	Indonesia	1,395	19.4%	5.0%
7	China	1,348	32.4%	8.1%
8	Mexico	1,235	13.8%	3.7%
9	Germany	1,095	5.7%	1.5%
10	Canada	1,021	10.5%	2.8%
11	South Korea	946	20.2%	5.2%
12	Thailand	937	18.5%	4.8%
13	Turkey	682	19.9%	5.2%
14	Spain	629	10.2%	2.7%
15	Australia	596	9.3%	2.5%
	Total Top 15	31,968	13.3%	3.6%
	World	40,644	13.1%	3.2%

Top 15 Growing Countries – Wholesale Payments

Wholesale – 2004 to 2009				
	Top 15 Countries	Change in Transactions (millions)	Compound Annual Growth Transactions	Compound Annual Growth Real GDP
1	United States	5,473	10.3%	3.3%
2	United Kingdom	2,065	7.7%	2.5%
3	China	1,837	20.5%	8.1%
4	Russia	1,451	13.1%	4.8%
5	Poland	748	15.0%	4.6%
6	Canada	650	9.5%	2.8%
7	Belgium	401	6.3%	1.9%
8	Czech Republic	316	13.7%	4.3%
9	Australia	234	5.6%	2.5%
10	Serbia & Montenegro (former)	172	18.0%	5.6%
11	Norway	157	7.5%	2.2%
12	Israel	121	9.1%	3.7%
13	Switzerland	94	5.4%	1.6%
14	Taiwan	87	9.0%	3.9%
15	Hong Kong	64	12.5%	5.4%
	Total Top 15	13,869	10.5%	3.7%
	World	14,202	10.5%	3.2%

Top 15 Growing Countries – Checks

	Checks - Growth 2004 to 2009			
	Top 15 Countries	Change in Transactions (millions)	Compound Annual Growth Transactions	Compound Annual Growth Real GDP
1	South Africa	2.873	1.3%	3.6%
2	Costa Rica	0.620	0.6%	3.1%
3	Tanzania	0.006	0.3%	5.4%
4	Lithuania	-0.003	-5.7%	6.0%
5	Venezuela	-0.003	-0.9%	4.9%
6	Estonia	-0.008	-6.2%	6.7%
7	Slovakia	-0.010	-4.7%	5.1%
8	Hungary	-0.011	-3.5%	3.7%
9	Latvia	-0.012	-6.1%	6.6%
10	Oman	-0.024	-0.3%	4.2%
11	Kazakhstan	-0.081	-6.8%	9.0%
12	Mozambique	-0.100	-0.2%	5.8%
13	Czech Republic	-0.103	-3.8%	4.3%
14	Luxembourg	-0.107	-9.5%	4.0%
15	Saudi Arabia	-0.113	-0.3%	4.5%
	Total Top 15	3	0.7%	4.5%
	World	-8,007	-3.3%	3.2%

Key Takeaways

- Electronic payments growth will outpace GDP growth for the foreseeable future
- Electronic payments will continue to take share from cash and checks
- Explosive growth will be evident in some markets
- Pressure will increase on legacy payment systems to cope with volume



EVERY SECOND. EVERY DAY.