

“The Long-Term Future of Cash”

By Mike Lee

CEO, ATMIA



ATM, Debit & Prepaid Forum, Oct 5-7, 2008
The Sheraton Wild Horse Pass, Chandler, AZ



“Every morning the impala awakes knowing it must outrun the fastest lion if it wants to stay alive. Every morning the lion awakes knowing that it must outrun the slowest impala or it will starve. It makes no difference if you are a lion or an impala, when the sun comes up in Africa, you must awake running.”

African saying

Future of Cash

“Money is arguably mankind’s single-most important invention.”

Tony Cleaver, [Understanding the World Economy](#)

But is our money in trouble?

Future of Cash

September 7, 2008

The Federal government seizes control of the nation's two largest mortgage finance companies , Fannie Mae and Freddie Mac. It could become one of the most expensive financial bailouts in history. The Federal Reserve already had around \$400bn of uncertain assets on its balance sheet as a consequence of its liquidity assistance to the banking system before this bail out. Losses on these mortgage assets taken over could be as high as \$300bn. We are in the global credit crunch.

Future of Cash

“The most rampant decadence today is financial decadence... Sixty-two scholars have signed on to a report by the Institute for American Values and other think tanks called, “For a New Thrift: Confronting the Debt Culture” ...Between 1989 and 2001, credit-card debt nearly tripled...from \$238 billion to \$692 billion. By last year, it was up to \$937 billion.”

The Great Seduction by David Brooks, New York Times, 10 June 2008

Future of Cash

CNN Money.com

July 31, 2008: 06:39 PM EST

NEW YORK (Associated Press) - As Americans see their home prices plunge, bills climb, and credit lines shrink, they are swiping their credit cards less and their debit cards more.

<http://money.cnn.com/news/newsfeeds>

Future of Cash

Shift in payment transaction patterns in the US in 2008? In 2008 some US banks have seen an upturn in use of cash and cash-like transactions (debit). It is likely in the current climate to see declines in credit card use, increases in cash and cash-like transactions and in ATM card transactions. One US bank with over a million credit cards saw a 9% decline from Jan-June 2008 for transactions per credit card per month compared to the same period in 2007. The liability of credit is reinforcing the value and role of cash!

The Return of MasterCard's Mr Bill



And the Rise of the Debit Card

- ❑ Appeared in Saturday Night Live 3 decades ago – part of MasterCard's Priceless campaign – HOW to spend money is a key issue in economically uncertain times.

Future of Cash

The Global Credit Crunch has increased the use of cash:

- ❑ Within a year of the credit crunch crisis, the number of people in the UK who believe the best place to keep cash is under a mattress *trebled*
- ❑ The number of British people who believe their money is safest with banks or building societies went down from 74% to 57%

Source: Newcastle Building Society (Daily Telegraph 26 April 2008)

Future of Cash

The Global Credit Crunch has decreased the use of credit:

➤ In 2008 up to May in the UK credit card spending grew by 1.2% well below the rate of inflation and the average value of a credit card purchase fell by £1 to £34.33

Source: APACS

Future of Cash

The British Retail Consortium (BRC) confirmed in April this year that cash increased its dominance as a means of payment in the preceding 12 months, moving up to 60% of all retail spending transactions from 54% the year before. Even measured by value, cash transactions rose from 32% a year ago to 34%.

This year's BRC survey of 17,000 shops found cash was the most cost-effective way for retailers to accept payments.

Source : 2007-2008 BRC survey

Future of Cash

**But what of the long-term future of cash?
Consumers do change their payment habits in response to environmental changes like economic down-turns and credit crunches but what are the deeper demand drivers and growth inhibitors for cash for longer time-frames?**



**“I am interested in the future.
It’s where I plan to spend the
rest of my life.”**

Woody Allen



The Paradox of Time

The PAST can be known but we are powerless to change it, whereas ..

the FUTURE *cannot* be known yet it *can* be changed...

Rules of the Futures Game



Hindsight –
Historical
Analysis

Insight –
Environment
Scan

Foresight –
Business
Forecasting

Rules of the Futures Game

Futures studies is *not* looking for knowledge of the future (foreknowledge) but knowledge *about* possible, probable, preferable and plausible futures

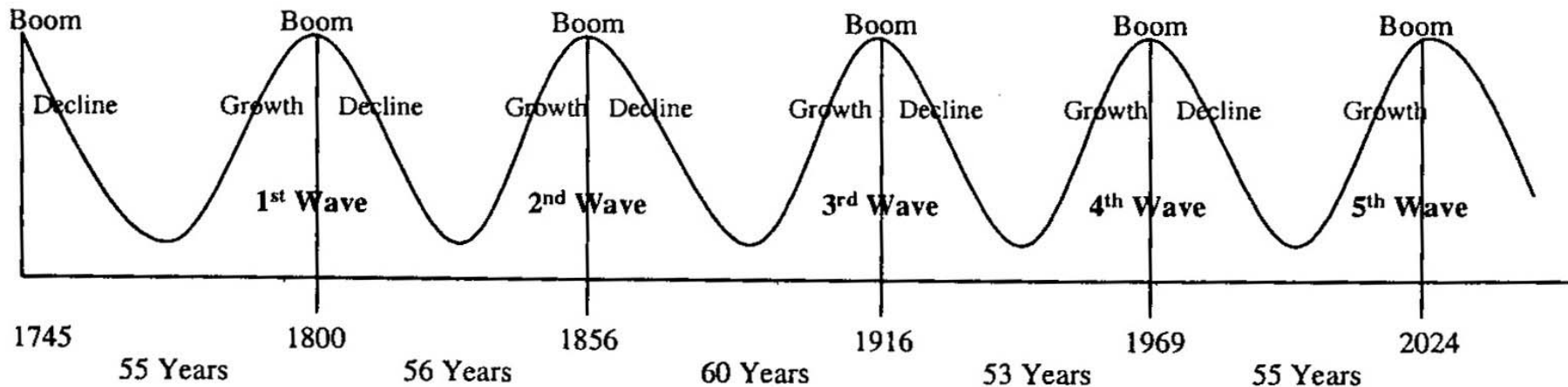
Rules of the Futures Game

**“The future can be explored,
colonized, imagined and created.”**

**Richard Slaughter, Australian Futurist and compiler of
the Knowledge Base for Futures Studies**

Rules of the Futures Game

Long Kondratieff economic waves of boom and bust (growth and decline) tend to be between 50-60 years long with technology invention occurring during economic decline, e.g. after Great Depression following inventions happened: radar (1934), TV (1936), helicopters (1936), Nylon (1938), computers (1945). The diffusion time for new technologies is usually one generation.



American Wars

| | | | | | | | | |
|---------------------|-------------|-------------|-----------|----------------------|-------------|--------------|---------|-------------------------|
| American Revolution | War of 1812 | Mexican War | Civil War | Spanish-American War | World War I | World War II | Vietnam | 'War' of Economic Blocs |
| | | | | | | Korean War | | |

Technology Cycle

| | | | | | | | | | |
|------------|--------------|------------|--------------|------------|--------------|------------|--------------|------------|--------------|
| Innovation | New products | Innovation | New products | Innovation | New products | Innovation | New products | Innovation | New products |
|------------|--------------|------------|--------------|------------|--------------|------------|--------------|------------|--------------|

Overarching Technology

| | | | |
|------------------|--------------|------------|-------------------------------|
| Railroads | Steel | Oil | Information technology |
| Steam engines | | | |

Rules of the Futures Game

**With technologies and economic cycles
we are dealing with generational and
inter-generational phenomena!!**

Future of Cash

**Cash spans not just generations
but historical epochs, Ancient,
Medieval and Modern
– this technology is 27 centuries
old!!!**

Coins are mentioned in the Bible.

The Long Past of Cash

The oldest known coins date to Lydia in the 7th century BC, while use of paper money was widespread during the Tang Dynasty in China (618-907 AD).

Future of Cash

Cash is not a technology which can easily reach exhaustion due to resource depletion (of paper, ink and metal).

The biggest potential problem for cash is not scarcity but an excess of supply, i.e. governments printing too much paper money and causing hyper-inflation and a loss of value in the currency... as in Zimbabwe. The dangers of over-supplying paper money, however, are easily resisted by sensible central banks. Meanwhile, there is no problem with world demand for cash...

Future of Cash

**Estimated annual world demand
for cash *today*
= 1 billion banknotes**

Future of Cash

360 billion cash transactions per year (i.e. 30 bn per month or roughly 1 bn per day)!

Future of Cash

The European Payments Council, which is actively promoting non-cash payments, confirmed in a 2004 report that cash is still the most important payment instrument in the world.

Future of Cash

The World Payments Report of 2006 stated that cash volumes are continuing to rise despite attempts to promote non-cash payments.

Conditions driving cash demand, such as its popularity, its resistance to substitution and the unexpected global increase of the informal economy, are deeply entrenched.

The future lifespan of cash should be measured in decades, not years.

Future of Cash

Visa estimates \$1.3 trillion per year is spent across the world on small-ticket items of \$5 or less.

Source: The Economist, Feb 2007

Future of Cash

**Cash is used for approximately
65% of global payment
transactions.**

Future of Cash

Cash handling (processing and storing) is increasing between 2-10% in most industrialized nations and by substantially more in less advanced countries.

(Scan Coin, 2005)

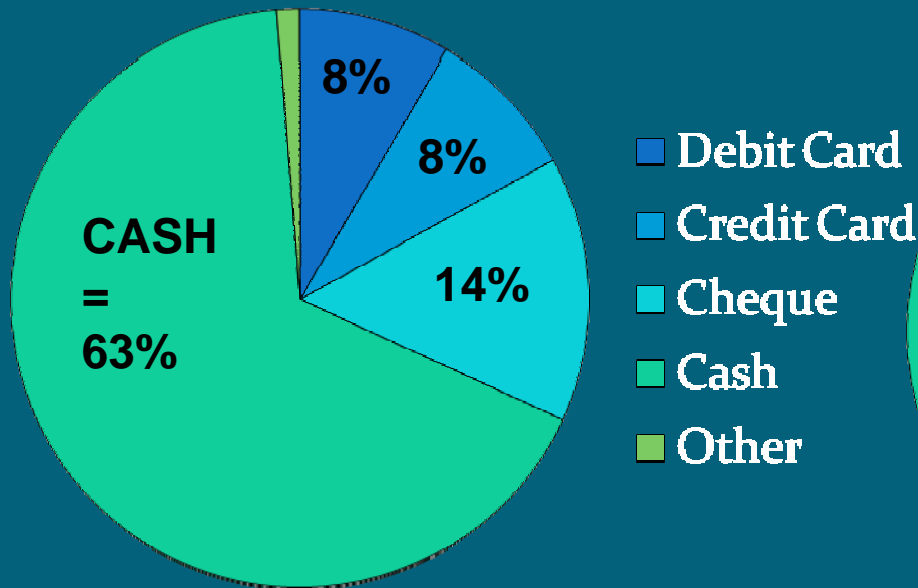
Note About Cash versus Card Data

Whereas every single cheque and card transaction is recorded in the financial payments system, data on cash transactions is comparatively understated because banknotes and coins may be used multiple times *without being recorded.*

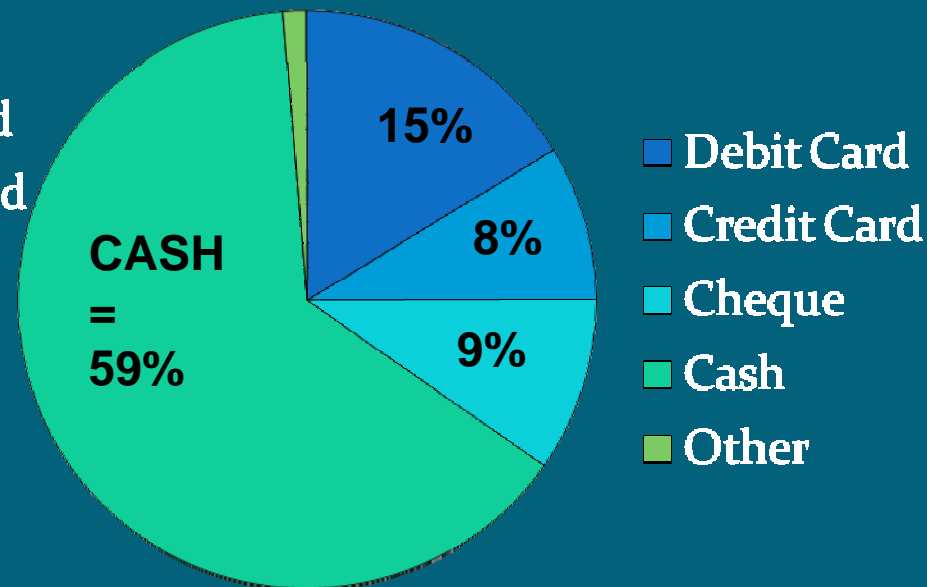
Source: Federal Reserve Bank of Boston Conference 2006

Cash in the USA

% of Total Payment Transactions - 2004



% of Total Payment Transactions - 2009



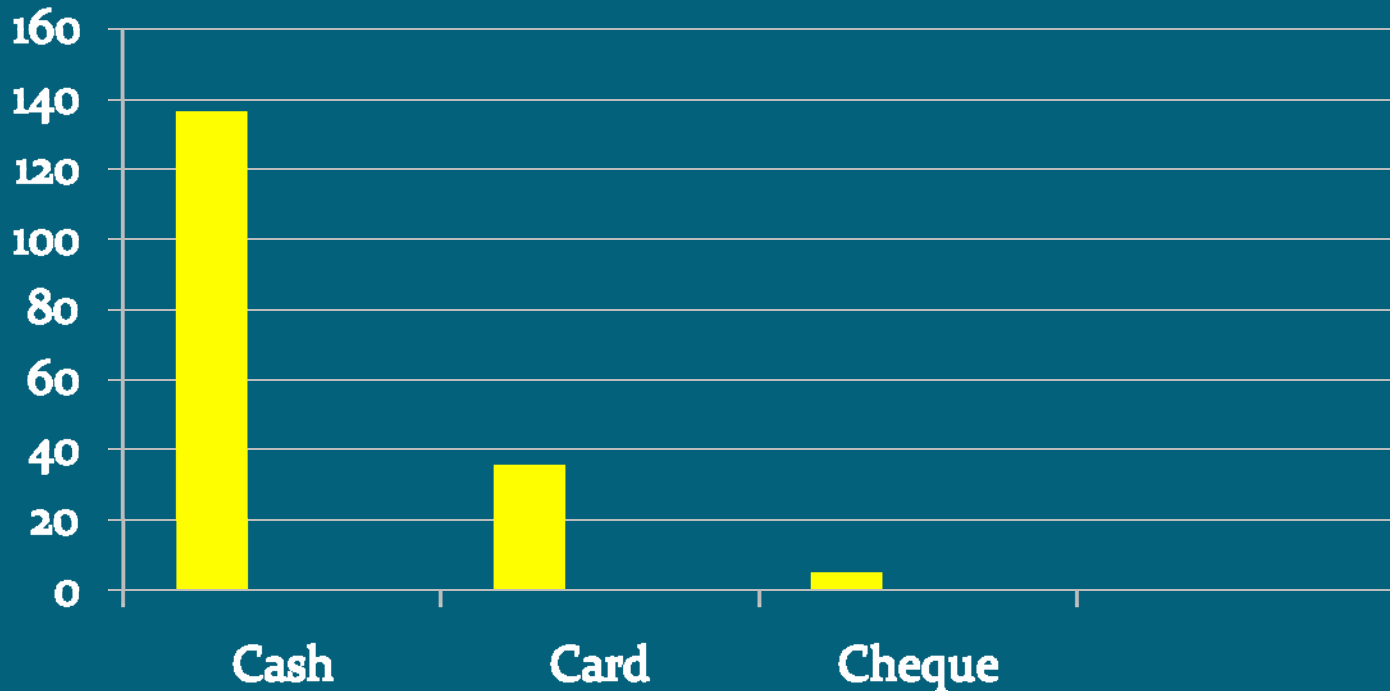
Source: McKinsey & Co, Federal Reserve Bank of Boston Conference 2006

Cash in USA

- According to the US Treasury, paper currency in circulation has been climbing steadily in America from \$81 million in 1975, representing \$380 for every person in the US, to \$2,578 in banknotes for every American by 2005.
 - The vast majority of payment transactions in the USA are C2B of which about 75% are retail payments and 25% are bill payments.
 - Cash dominates this huge retail payments sector with values of total annual cash payments almost four times higher than those for card-based retail payments.
- Source: Federal Reserve Bank of Boston Conference 2006*

Cash in USA: Consumer to Business Retail Payments

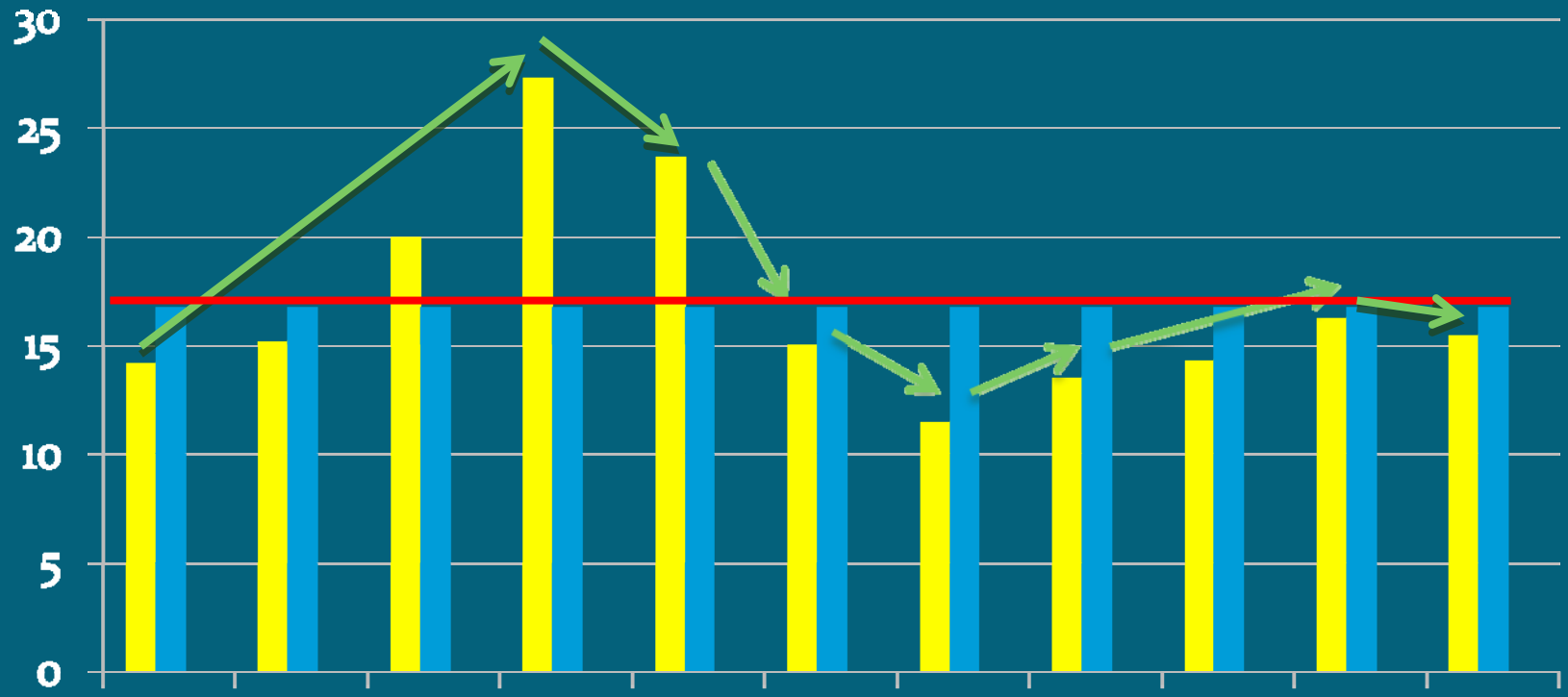
Expressed in \$ billions



Source: Federal Reserve Bank of Boston Conference 2006

Annual US Coin Production for Circulation: 1997-2007

Expressed in \$ billions



1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007
Source: US Mint, Department of the Treasury, Annual Reports from 1997-2007

Cash in USA

- **From 1997-2007, the US Mint manufactured annually on average 16,7 billion coins, roughly 45,8 million every day of the year!**
- **In 2007, the Bureau of Engraving and Printing produced about 38 million banknotes a day which would make a stack of cash about 2.6 miles high!**

Cash in USA

Estimated average daily production of cash in the USA during 2007:

38 million banknotes a day

42 million coins a day

= **80 million items of cash** manufactured per day!

Sources: US Mint (coins) and Bureau of Engraving & Printing (notes)

Cash in USA

Seigniorage = the difference between costs to make cash and the face value received from the Federal Reserve Bank

| | |
|-------------|------------------------|
| 2007 | \$1,03 billion |
| 2006 | \$682.4 million |
| 2005 | \$722.7 million |
| 2004 | \$644.1 million |

Sources: US Mint Annual Reports

Cash generates seigniorage tax of approximately €14 bn to European governments

Fun Facts about Cash in the USA

- **95% of notes printed in a year are to replace older notes**
- **Banknotes are 25% linen and 75% cotton, plus synthetic fibres**
- **The US Mint is the world's largest manufacturer of coins**

Source: Bureau of Engraving and Printing

Fun Facts about Cash in the USA

- No woman portrait has appeared on a US currency note since 1896
- It is thought the origin of the \$ sign came about through shortening “pesos” to p’s and then writing the S over the P, finally evolving into \$
- It costs about 6.2 cents to produce 1 banknote
- The average lifespan of a note ranges from 16 months for a \$5 note to 89 months (7.4 years) for \$100 note...

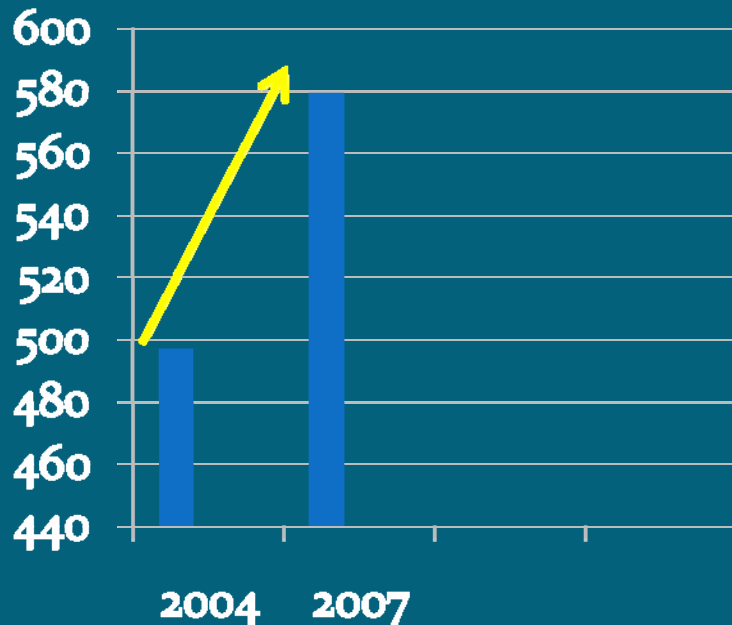
Source: Bureau of Engraving and Printing

Cash in USA

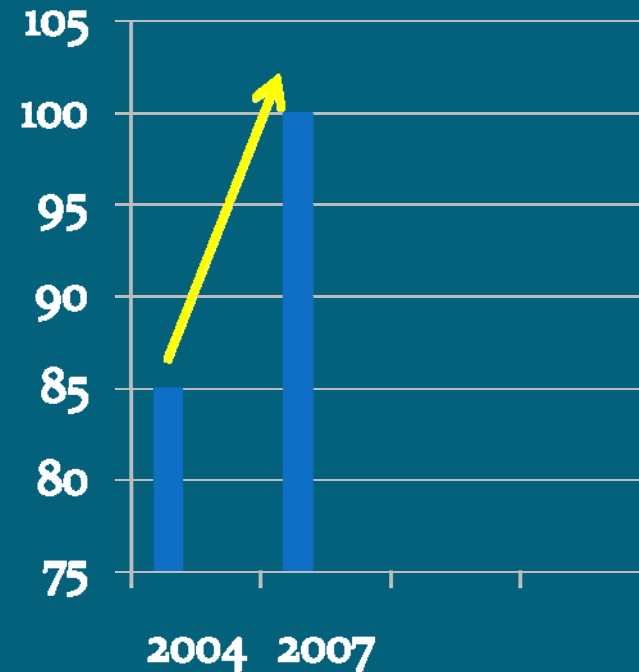
- **Credit card growth has peaked and is flattening – what will impacts of credit crunch be?**
- **Debit card growth is accelerating**
- **Checks are declining sharply**
- **Cash has declined but is still expected to remain the main payment method for consumer to business payments for the foreseeable future**
- **No single payments technology will dominate the payments market because consumers require wide choice**

Cash in USA

**Increase in Value
of ATM Withdrawals
*Expressed in \$ billions***



**Increase in Average Value
of ATM Withdrawals in \$**



Source: Federal Reserve Payments Study 2007

Cash in Canada

- **Cash is rated as cheapest and most reliable Method of Payment (MOP) at point of sale by Canadian merchants**
- **Cash is the MOP most universally accepted by merchants in Canada with 100% acceptance, followed by 93% accepting debit cards & 92% accepting credit cards**
- **Debit cards are most preferred MOP by 53% of merchants, followed by cash at 39% with credit cards at only 5%**
- **Credit cards are the least preferred MOP and rated the most costly and least reliable**

Source: Bank of Canada Discussion Paper, August 2008 “Merchant Acceptance, Costs & Perceptions of Retail Payments”

Cash in Canada

- **Cash rated as totally reliable by 67% of merchants**
- **Debit cards rated as totally reliable by 56% of merchants and credit cards by 38%**
- **Cash was seen as “not at all costly” by 63% compared to 19% for debit cards and 3% for credit**
- **35% of the volume of payment transactions is by cash, 34% by debit and 25% by credit**
- **30% of the value of transactions is from credit, 30% from debit and 25% from cash**
- **Cash is more intensively used than debit in the food, restaurant, gas and general merchandise subsectors.**

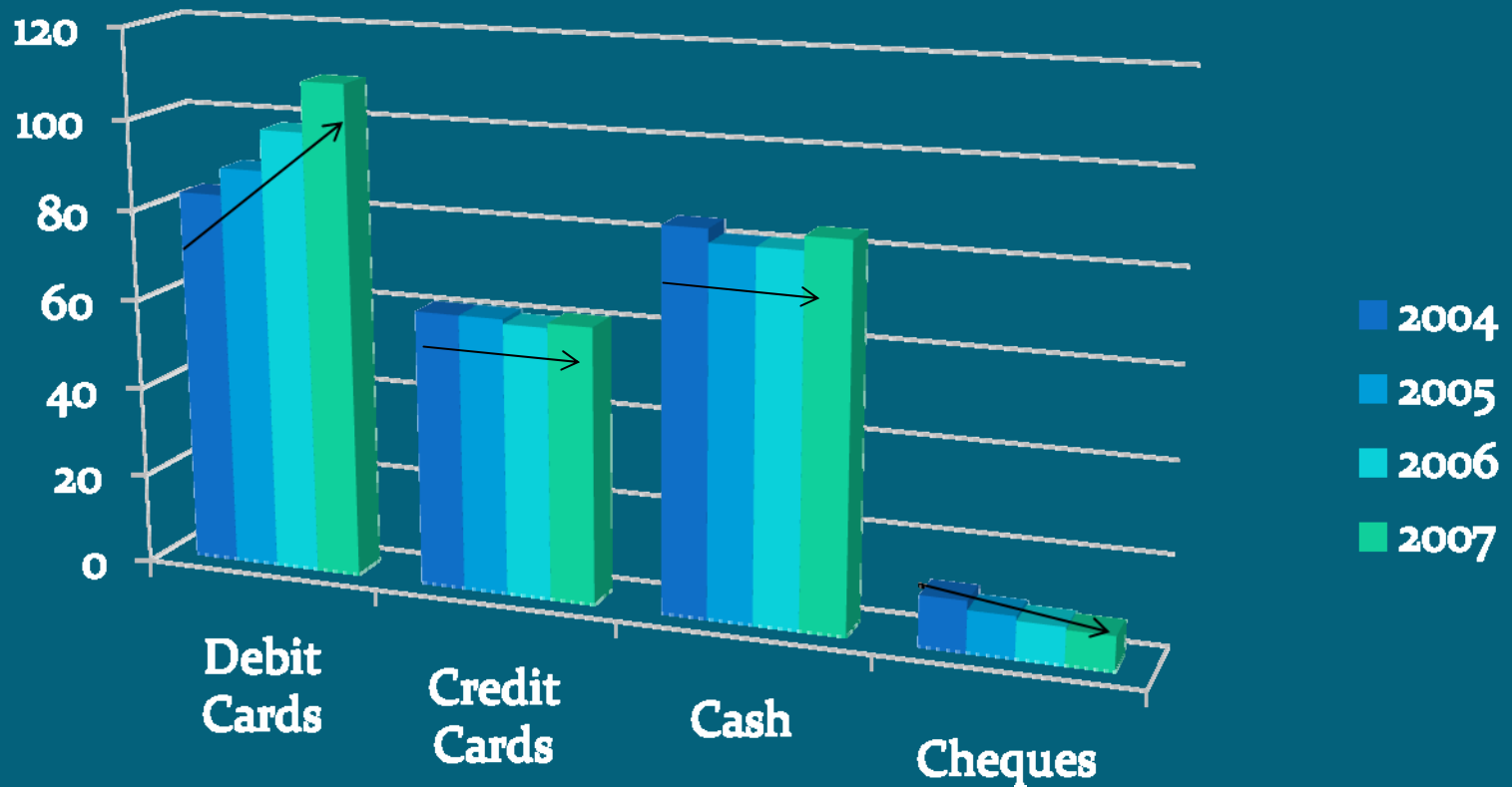
Source: Bank of Canada Discussion Paper, August 2008 “Merchant Acceptance, Costs & Perceptions of Retail Payments”

Cash in the United Kingdom

By the end of 2004, the value of notes in circulation exceeded GBP 36 bn, a 45% increase since 1999.

Source: The Future of Cash (2008) AGIS Consulting

Retail Spending in the UK:2004-7



Source: APACS

Cash in the UK

Boots UK Payments Study

- 1,500 stores with total of 13,000 tills
- Total of 485 million transactions studied of which **79% = cash**, 18% card, 3% other
- Value of transactions: **54% = cash**, 40% = card, 6% = other
- Cost of cash per transaction = 0.6%
- Cost of card transaction = 2%
- Contactless “touch and go” faster than cash and cards but more costly than both

Cash in the UK

- **£26 bn in cash in circulation**
- **£1.4 bn moved in cash moved daily**

Cash in the UK

In the last 3 years:

- **Debit Card spending rose by 31%**
- **Check spending fell by 33%**
- **Cash spending stayed constant at equilibrium**

Source: APACS

Cash in the UK

The rise and rise of the Debit Card

- **Debit card spending increased fivefold between 1997-2007**
- **In 2007, the Debit Card accounted for 72% of total plastic card transactions, used to make 4.9 bn purchases in the UK – by 2017 it is forecast there will be nine billion debit card payments**

Source: APACS

Cash in Europe

“Since the euro was introduced ...in 2002, it has grown by 175% to reach €677 bn at the end of 2007...In terms of GDP, it has increased from 4% to 8% between 2002-2007. Cash remains the most widely used payment instrument and represents 8 out of 10 transactions in the eurozone. .. Growth in non-cash payments has been slowing in the eurozone since 2003.”

On average, each European consumer holds €2,000 in cash.

“The Future of Cash” (2008) AGIS Consulting

Cash in Europe

➤ **The EU has set a benchmark of between 200-230 noncash transactions per inhabitant per year, yet countries like Spain, Italy and Poland see fewer than 100 non-cash transactions per inhabitant per year. Across 17 European countries the average of card transactions is 49 per inhabitant per year.**

Cash in Germany

In Germany's small stores, cash represents 80-90% of transactions.

Source: The Future of Cash (2008) AGIS Consulting

Cash in Transitional Countries

In countries of the former USSR, central banks confirm that in every single country in this region cash transactions dominate both the volume and value of retail payments.

Cash In Japan

Japan, the world's 2nd largest economy, is cash-dominated, with only 36 non-cash transactions per person per year, compared to 288 per capita in USA (of which 119 are for cheques). Significantly, Japan has the highest savings rate in the industrial world.

Source: The Future of Cash (2008) AGIS Consulting

Cash in China

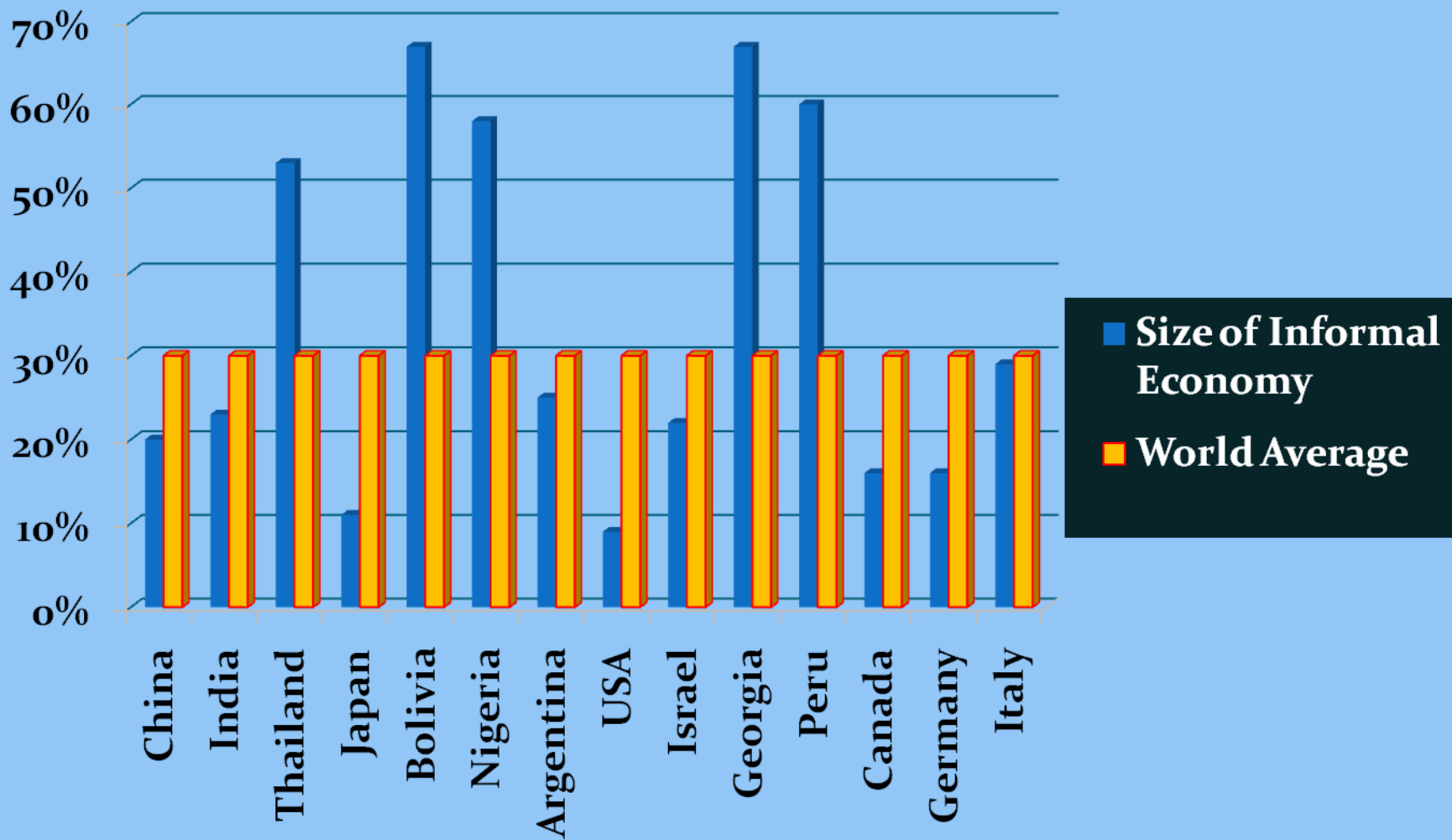
And one of the superpowers of the future, China, does not view credit as real money – it is cash and money in the bank which represents real money to the Chinese. Credit is “future” money in China and is intangible. China has a high national level of savings.

Source: The Future of Cash (2008) AGIS Consulting

Cash Drivers: Informal Economy

- Informal sector growing in developed, developing *and* transitional countries
- In European Union, 48 million workers in informal sector
- In India, informal sector provides over 90% of employment with 360 million workers
- In Russia the informal sector makes up 14% of total employment
- Increases in size of informal sector in variably lead to increase in demand for cash (Schneider :2002)

Average Size of Informal Economy Around World measured as a % of GDP



Other Cash Drivers: Vending Business

- US vending machine industry worth \$20 billion gross annual revenues with about 6 million machines nationwide
- Over 90% are cash-operated
- The US's most cash-intensive industry
- Penetration rate = 48 persons per machine (38 for urban population)

Sources: Federal Reserve Bank of Boston (2006) and NAMA

Other Cash Drivers: Vending Business

Vending machines gave the soft drink industry a competitive distribution channel and turned it into the 2nd most profitable industry from 1992-2006 in the US measured by Return on Invested Capital (ROIC), at the same level of profitability as pre-packaged software at 37.6% ROIC, compared to general average from 1992-2006 of 14.9% and less profitable businesses like commercial aviation at 5.9%

Source: Michael E. Porter, Harvard Business Review, Jan 2008

Other Cash Drivers: Vending Business

3.7 million machines in Europe with €26 billion turnover and 10,000 operating companies

- **Just under 5 million machines in Japan with penetration rate of 45 persons per machine (35 for urban population)**

Source: European Vending Association (EVA) (2005)

Other Cash Drivers: Vending Business

Cash and Vending:

- **70-80% of machines accept coins**
- **5-10% cashless (proprietary/corporate)**
- **10-20% have no payment system - “free-vend”**

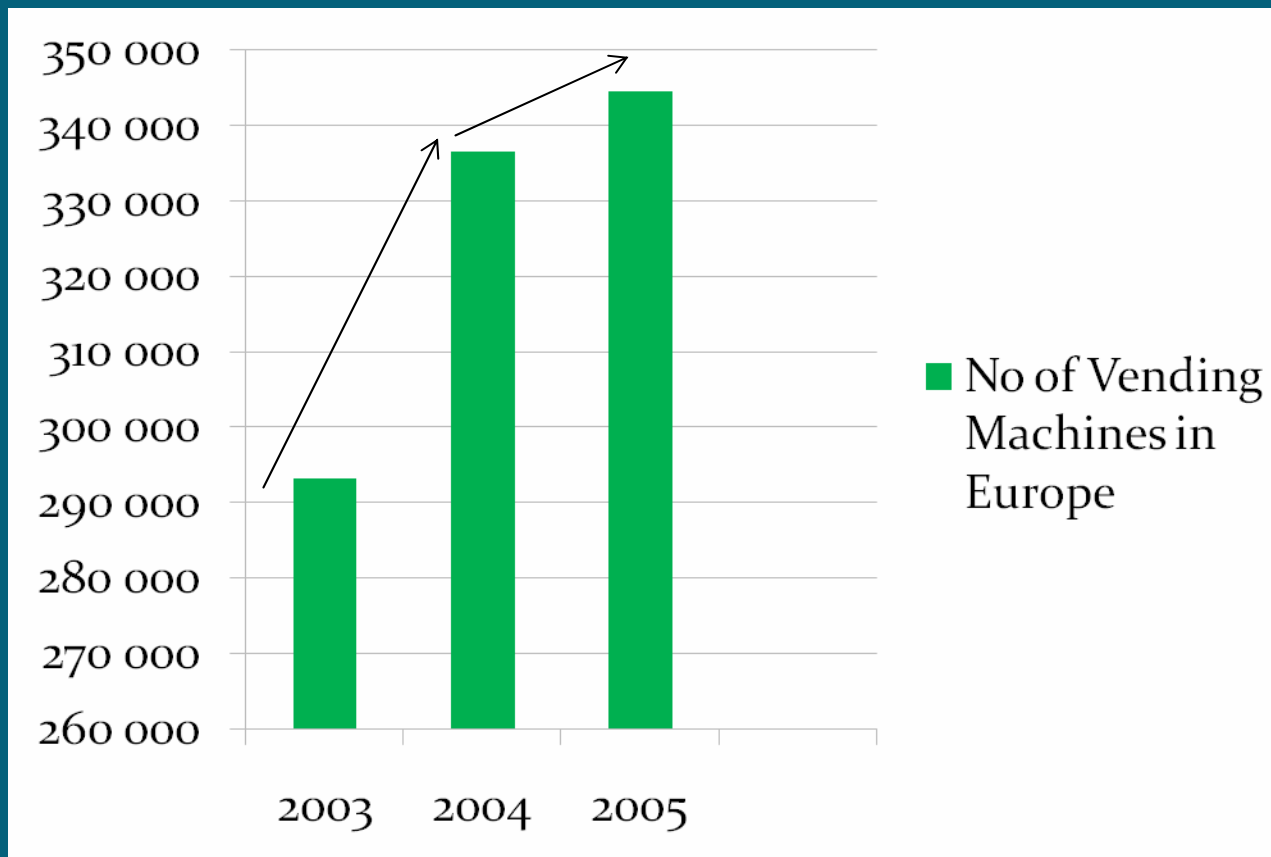
Source: European Vending Association (EVA) (2005)

Other Cash Drivers: Vending Business

- **About 100,000 vending machines in Australia**
Source : Independent Vending Machine Operators of Australia, 2008
- **Estimated number of machines in the world for food and beverages: 15 -20 million**
- **3.7m in Europe, 5m+ in USA and 5m+ in Japan, 1m in Korea, and thousands in Canada, Brazil, Colombia, Chile, Venezuela, Mexico, South Africa, and emerging markets in Russia, China and India.**

Source : Catherine Piana, Director General, European Vending Association, 2008

Other Cash Drivers: Vending Business



Source: European Vending Association (EVA) (2005)

Other Cash Drivers: Vending Business

- The urban population of the world in 2005 was 3 164 635 000 (3.2 bn) (UN Population Division)
- At urban penetration rates of 50 persons per machine, there is a world potential for 63,292,700 vending machines
- The UN expects there to be over 4 billion urban people by 2020 – this would mean a global scope for about 84 million vending machines at these penetration rates – over 60 million more than today!

Resistance to Substitution

One of the strongest arguments for the future of cash is its resistance to substitution. Michael E. Porter of Harvard Business School developed a theory of 5 forces which shape competition. One of them was the threat of substitute products which would make it more likely for customers to switch to alternatives, especially in response to price increases. Cash has proved highly resistant to substitution.

Why?

Unique & Durable Features of Cash

- Valuable asset in itself – a store or “shelter” of value
- Most tangible and liquid form of money, i.e. real money
- Immediate settlement – no settlement or credit risk
- Certainty of acceptance as legal tender
- Public asset regulated by central bank and generating public tax (seignorage)

Unique & Durable Features of Cash

- **Anonymous – cannot be tracked in today’s “surveillance” society**
- **Ease of use & ease of access**
- **Personal product, like jewellery**
- **Fee-free**
- **Does not require technology or infrastructure for P2P payments**
- **Universal – accepted almost anywhere**
- **Very fast transaction speed**
- **Useful budgetary tool**

Future of Cash

It is not possible for any one technology designed to be a substitute for cash, *on its own*, to successfully mimic *all* the qualities of cash. There is no one “magic” substitute for cash.

Universal Characteristics of Cash Buying

- **Small ticket items usually under \$10**
- **Used in small stores**
- **Used for parking and vending machines**
- **Used for non-luxury items like food and drink – SIGNIFICANT in times of economic hardship when luxury spending declines**
- **And cash does not need electricity to process – useful in power outages when e-transactions cannot be processed!**

Determinants of Choice to Pay by Cash

➤ Size of payment

- High value payments = CHECK
- Mid-range value payments = CARD OR CASH
- Low value payments = CASH

➤ Type of Goods and Services

- Food & beverages – non-luxury items = CASH

➤ Type of Location

- Small stores = CASH
- Groceries = CASH
- Vending = CASH

Payment Transaction Speed in Seconds

| | Cash | Debit Card | Credit Card | e-purse |
|-------------|------|------------|-------------|---------|
| Belgium | 32 | 32 | 56 | 20 |
| Netherlands | 19 | 26 | 28 | 14 |

Source: 2006 Study by Central Banks of Belgium and the Netherlands

Future of Cash

**Shaving 6 seconds off transaction times
= 1% increase in sales!**

McDonalds

Growth Inhibitors

- Cash substitutes? NO!
- Costs of cash? NO!
- Crime? NO!
- Regulations? MAYBE!

Growth Inhibitors – Costs?

The average cost per transaction by payment method in 2006 in the UK was:

| Payment Method | Cost Per Transaction (Pence) |
|-----------------------|-------------------------------------|
| Cash | 2.5p |
| Debit Cards | 7p |
| Cheques | 46p |
| Credit Cards | 37p |
| Charge Cards | 60p |

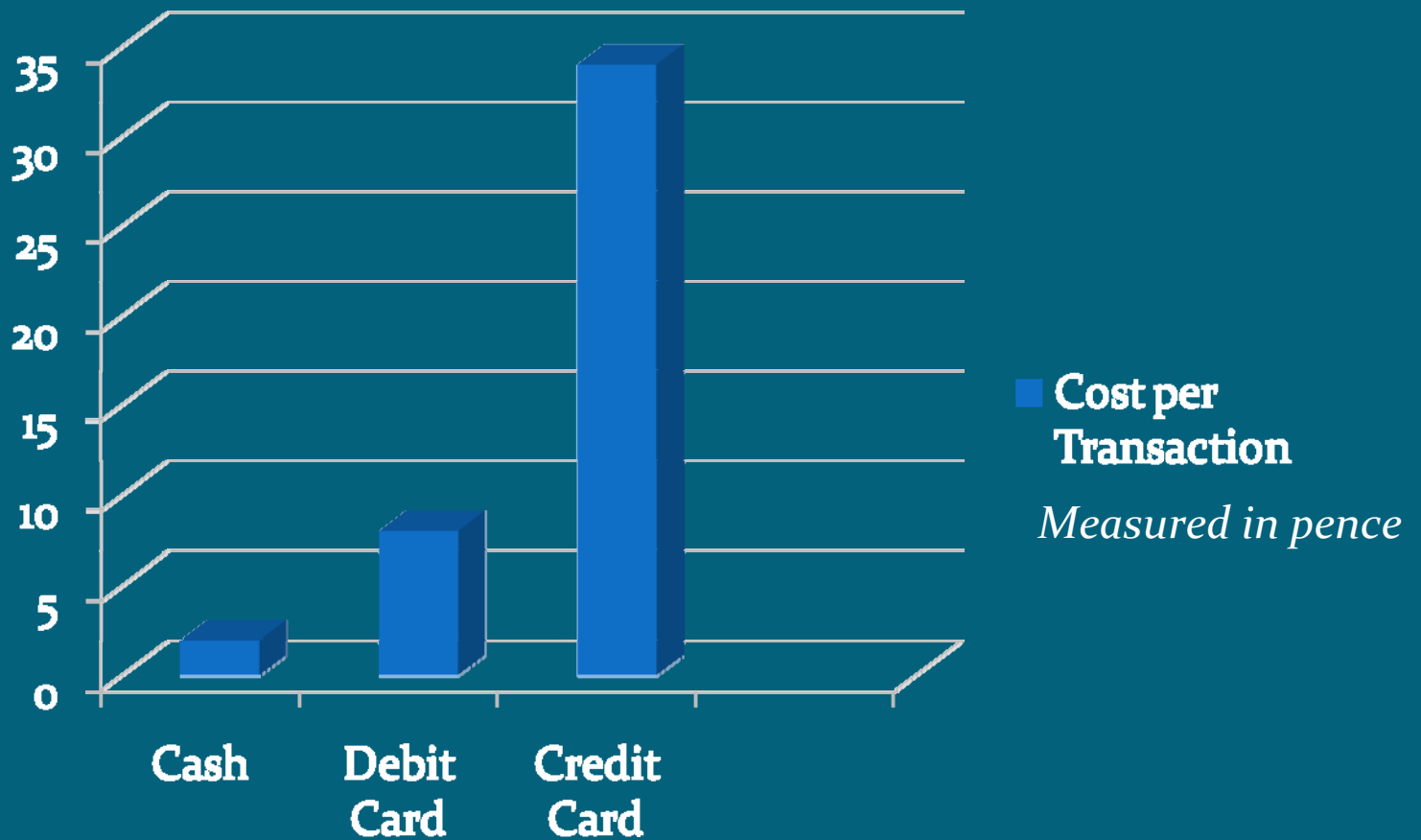
British Retail Consortium (2006 annual research of BRC members with turnover greater than £500m)

Average Transaction Cost (in euros)

| | Cash | Debit Card | Credit Card | e-purse |
|-------------|------|------------|-------------|---------|
| Belgium | 0.53 | 0.55 | 2.62 | 0.55 |
| Netherlands | 0.30 | 0.486 | 3.587 | 0.931 |

Source: 2006 Study by Central Banks of Belgium and the Netherlands

Cost of Cash



Source: BRC Survey, April 2008

Growth Inhibitors – Costs?

The European Payments Council has estimated the cost of cash to be 0.4-0.6% of GDP in Europe, with 65% of total cost of cash borne by banking industry.

Growth Inhibitors – Crime?

Crime is a level playing field with criminals targetting cash, cards, customer data and e-money with equally damaging results!

Growth Inhibitors – Crime?

- Card fraud reached about \$30bn in 2005 (Nilson Report)
- Card Not Present Fraud totaled £212.6 million in the UK in 2006 (RBR)
- Card fraud in UK went up from £400 m in 2005 to £550 m in 2007
- Internet fraud grew by 32% in the UK between 2005-2006

Growth Inhibitors – Regulations?

In France, authorities have limited use of cash by law, e.g. transactions over €3,000 cannot be conducted in cash and wages may not be paid in cash. As a result, cheques and payment cards have grown rapidly. But this is an artificial, nonmarket-related, enforced decline of cash.

Growth Inhibitors – Regulations?

The European Commission and European Payments Council are promoting non-cash payments through the creation of a cashless payment system called SEPA (Single Euro Payment Area) for card payments and credit transfers.

Growth Inhibitors – Regulations?

Yet Europeans continue to draw more and more cash every year – the aggregate number and value of ATM cash withdrawals grew at an annual rate of 5,9% and 7.1% respectively during 2000-2004. Many European countries are not moving to higher levels of non-cash usage.

Growth Inhibitors – Regulations?

In Singapore, the government tried to create a cashless society by launching the Singapore Electronic Legal Tender (SELT) concept in 2002. Despite this, cash in circulation there has grown by 28% between 2002-2006!

Source: The Future of Cash (2008) AGIS Consulting

Cash banned in the sky?

Tuesday, September 2, 2008 - 2:38 PM CDT

Southwest Airlines shifting from cash to plastic for onboard purchases

Dallas Business Journal

Dallas-based Southwest (NYSE: LUV) said in a press release Tuesday that beginning Sept. 9, all aircraft will have devices onboard to handle credit and debit card transactions. If you want a cocktail, beer or wine, the flight attendant's hand-held device allows you to charge it.

As part of the move, the carrier will no longer accept cash.

Cash for Gas Discounts?

“Discount per gallon if you use cash” July 24, 2008
Marketplace Public Radio, LA, USA

A Massachusetts lawmaker is pushing to make gas cheaper if you pay with cash, with a potential savings of seven cents per gallon. Jeff Tyler reports how the discount could help independent gas stations. Many companies prohibit their franchise gas stations from charging less for cash purchases. The Massachusetts legislation would give retailers that option.

Brandon Wright, Petroleum Marketers' Association
<http://marketplace.publicradio.org>

Future of Cash

Cash as a public asset, issued by central banks, is the only payment method and form of money still under the authority of the state. Taking cash out of society may be tantamount to the privatisation of part of the money supply and monetary policy, a “retailisation” of money production and supply – potentially a recipe for liquidity crises, price wars and financial instability.

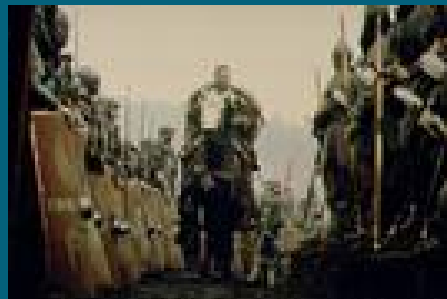
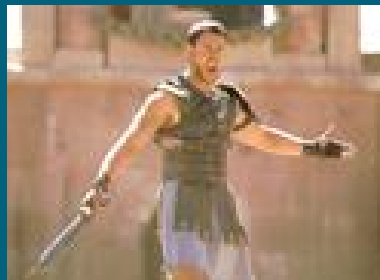
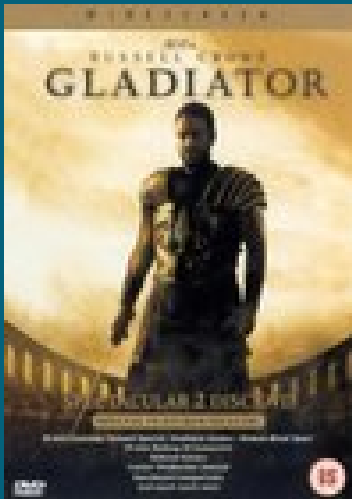
Future of Cash

The check, first used extensively in Holland in the early 1500s, was invented to be a cash substitute. In 5 centuries it has failed to displace cash as the # 1 payment means. It has disappeared in Holland. In 8 developed countries, the average checks per person per year is fewer than two. Then the credit card was invented in New York in the 1950s, again to substitute for cash. In five decades, it has failed to replace cash and may now have peaked.

What *can* topple cash as humanity's favorite means of payment?

Future of Cash

**Cash is the...UNDEFEATED CHAMPION
GLADIATOR!!!!**



Final Predictions for Cash

There is virtually zero chance that cash will be withdrawn from society within the next generation (i.e. 25 years).

There could even be another hundred years of cash. This will be probable unless there are some dramatic, unexpected changes to the conditions favouring the continuation of cash.

In Conclusion

Cash may be a lion, dominant in the retail payment marketplace, rather than an impala, hunted by bigger players, but even lions will starve if they do not work hard to stay alive. So, as the African proverb goes, when the sun comes up each day, we must all awake running.

Future of Cash

See our new cash portal:

<http://www.atmia.com/caseforfutureofcash/>

**THANK YOU FOR YOUR KIND
ATTENTION!**

Questions?

Email mike@atmia.com