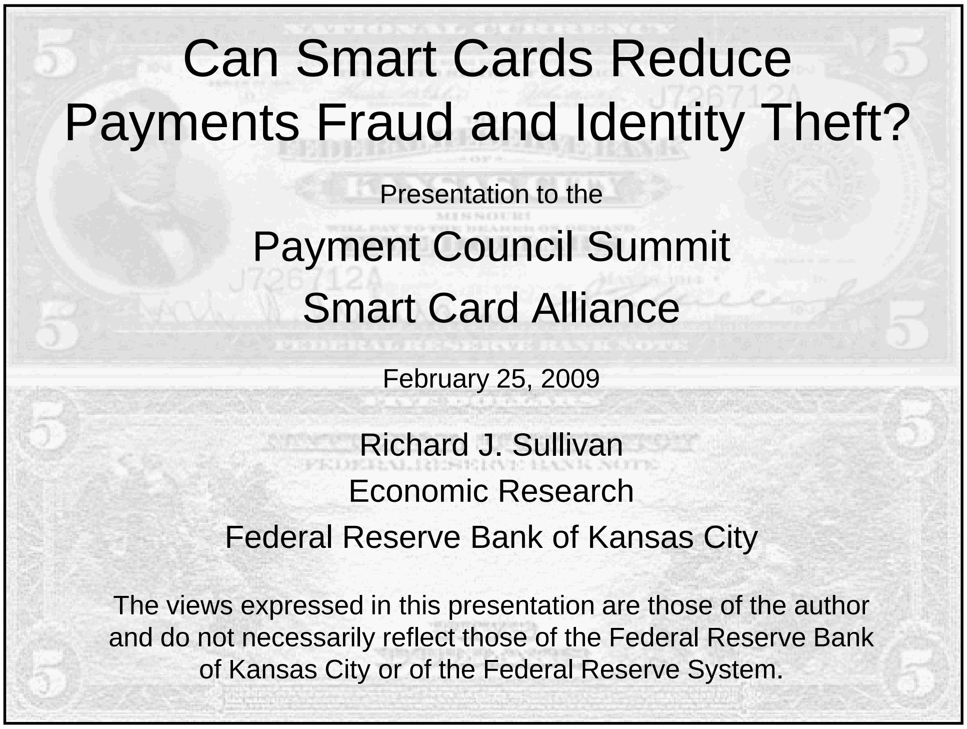


Can Smart Cards Reduce Payments Fraud and Identity Theft?

Presentation to the

Payment Council Summit

Smart Card Alliance

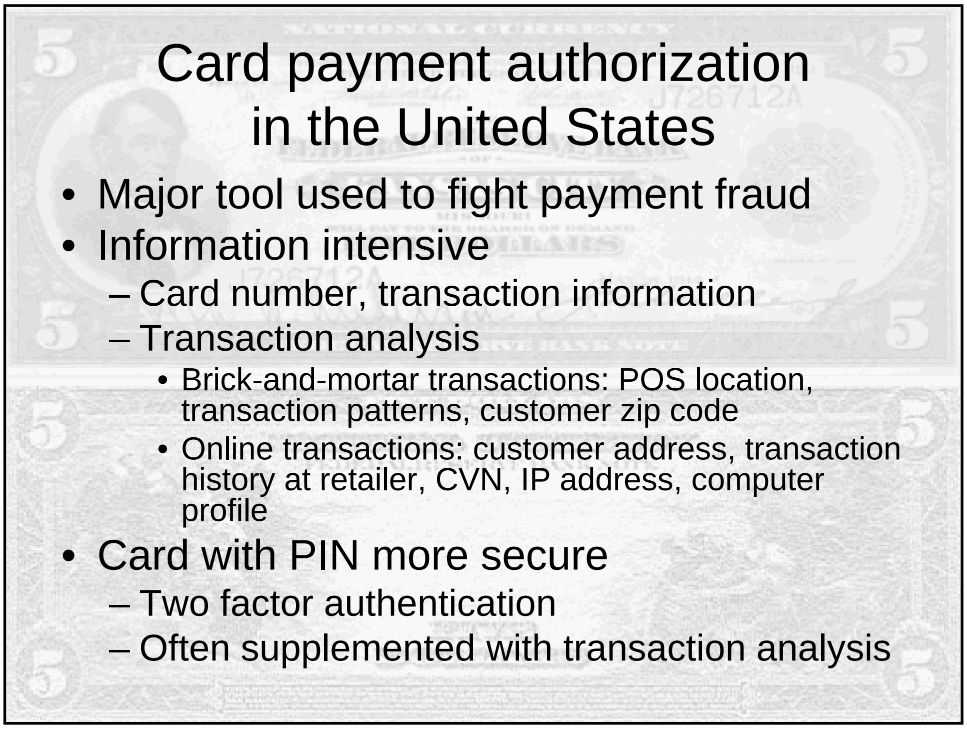
February 25, 2009

Richard J. Sullivan
Economic Research
Federal Reserve Bank of Kansas City

The views expressed in this presentation are those of the author and do not necessarily reflect those of the Federal Reserve Bank of Kansas City or of the Federal Reserve System.

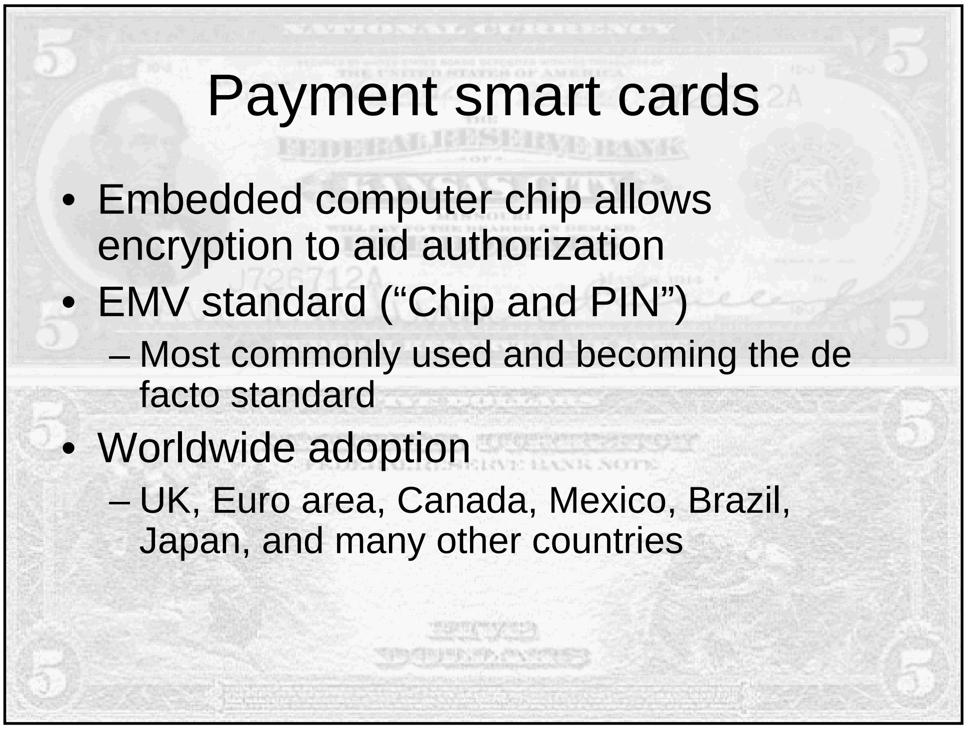
Agenda

- Payment authorization and smart cards
  - Information-intensive payment authorization
  - The UK EMV rollout
- The economics of adopting of payment smart cards
  - The “business case”
  - Network technology and coordination
  - Standards development



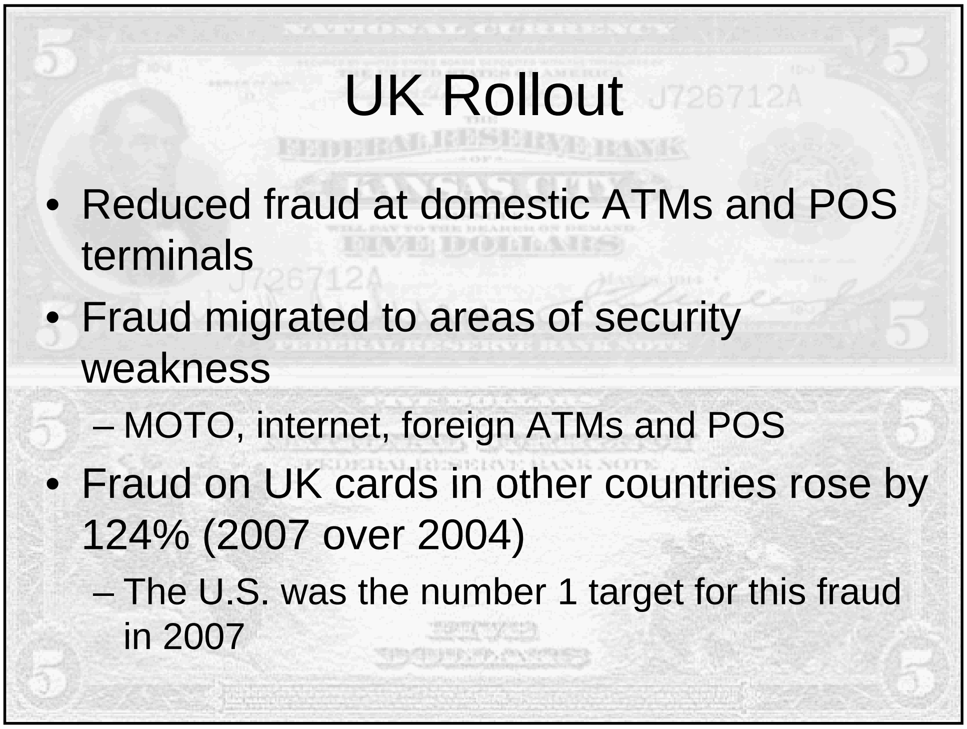
Card payment authorization in the United States

- Major tool used to fight payment fraud
- Information intensive
  - Card number, transaction information
  - Transaction analysis
    - Brick-and-mortar transactions: POS location, transaction patterns, customer zip code
    - Online transactions: customer address, transaction history at retailer, CVN, IP address, computer profile
- Card with PIN more secure
  - Two factor authentication
  - Often supplemented with transaction analysis



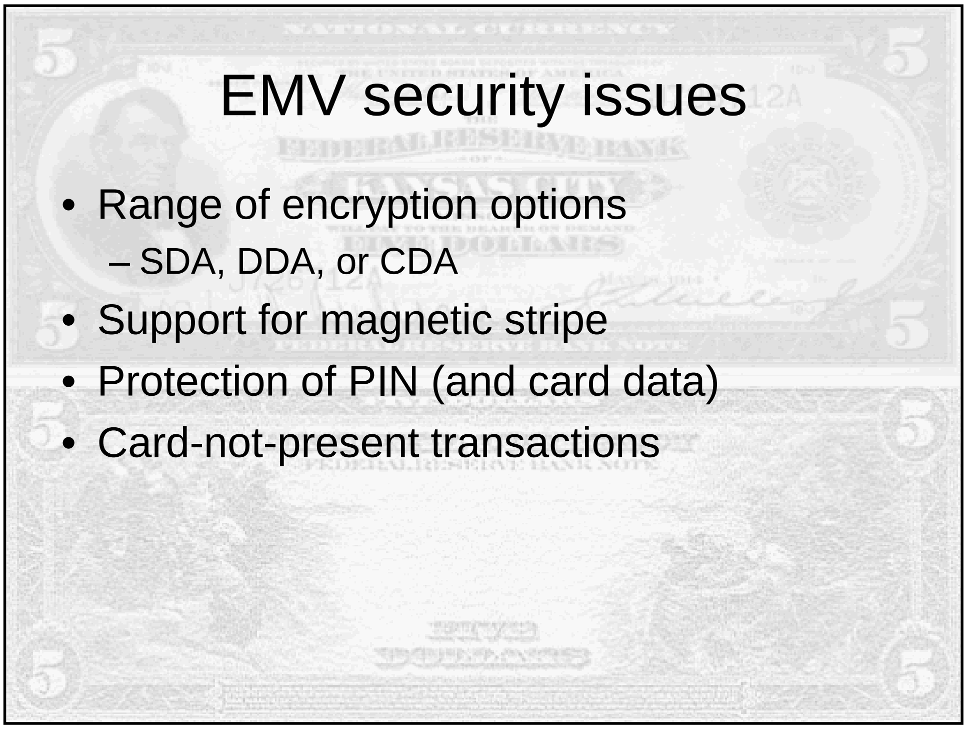
Payment smart cards

- Embedded computer chip allows encryption to aid authorization
- EMV standard (“Chip and PIN”)
  - Most commonly used and becoming the de facto standard
- Worldwide adoption
  - UK, Euro area, Canada, Mexico, Brazil, Japan, and many other countries



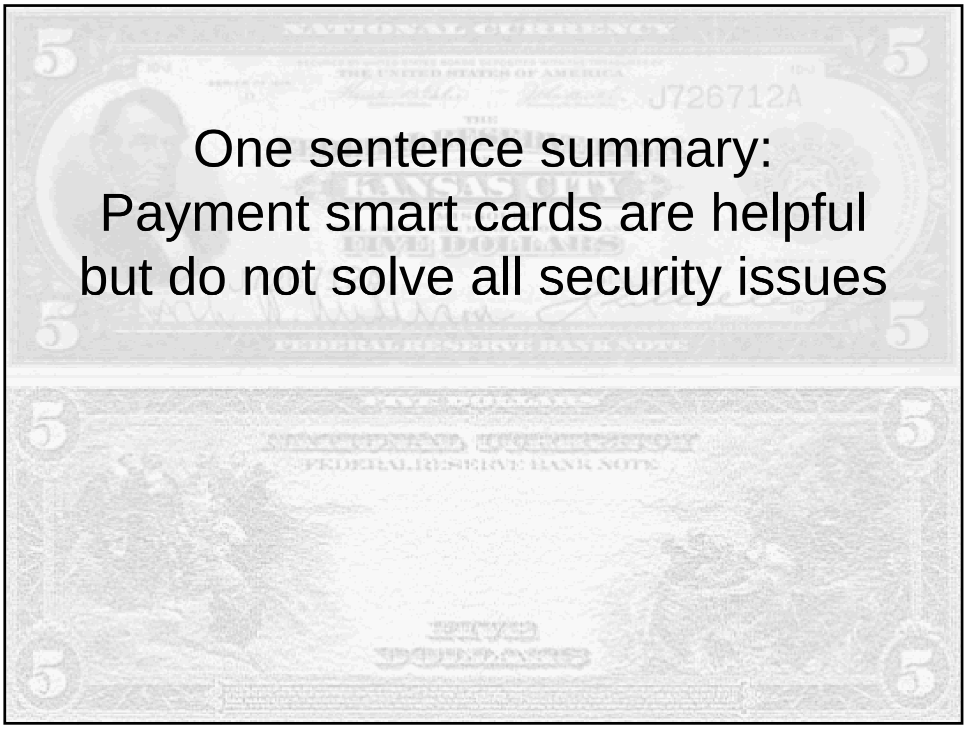
UK Rollout

- Reduced fraud at domestic ATMs and POS terminals
- Fraud migrated to areas of security weakness
  - MOTO, internet, foreign ATMs and POS
- Fraud on UK cards in other countries rose by 124% (2007 over 2004)
  - The U.S. was the number 1 target for this fraud in 2007

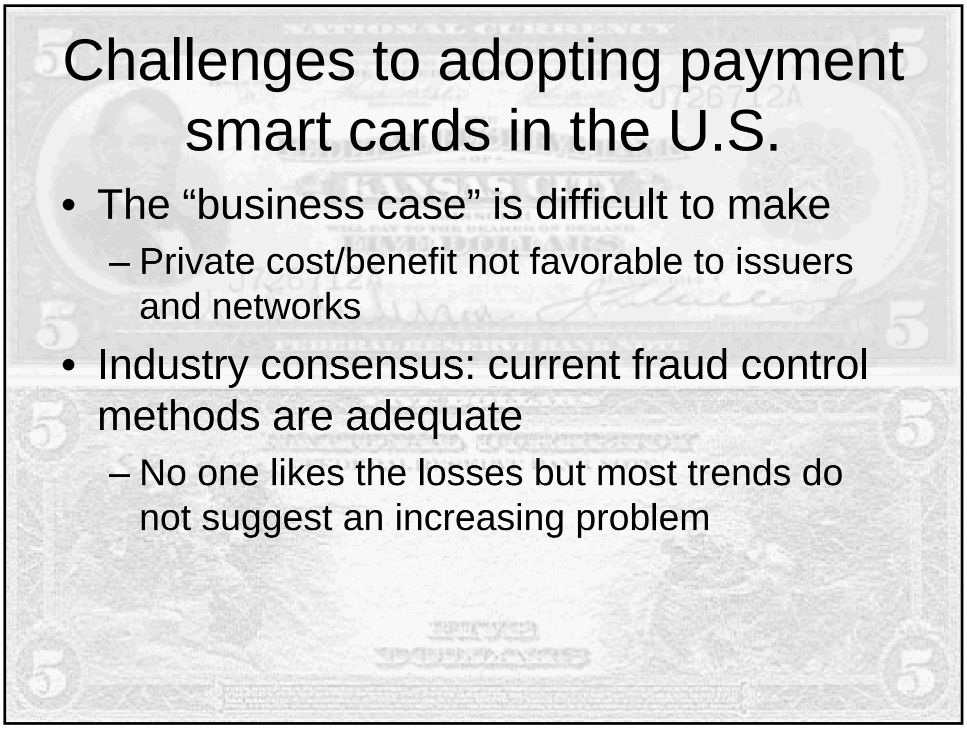


EMV security issues

- Range of encryption options
  - SDA, DDA, or CDA
- Support for magnetic stripe
- Protection of PIN (and card data)
- Card-not-present transactions

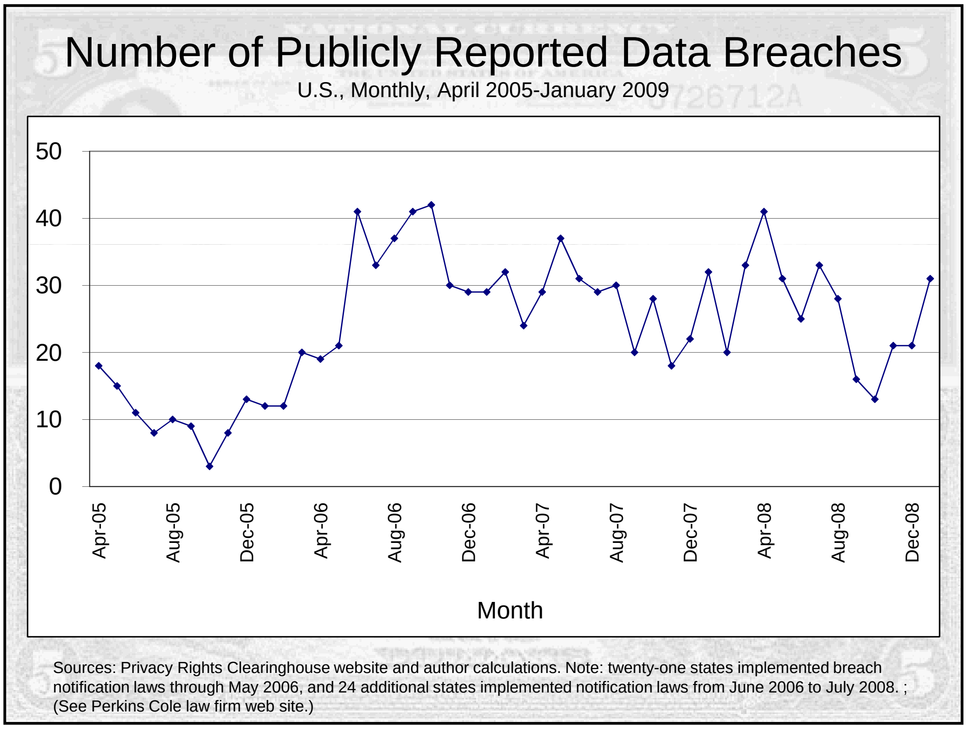


One sentence summary:
Payment smart cards are helpful but do not solve all security issues



Challenges to adopting payment smart cards in the U.S.

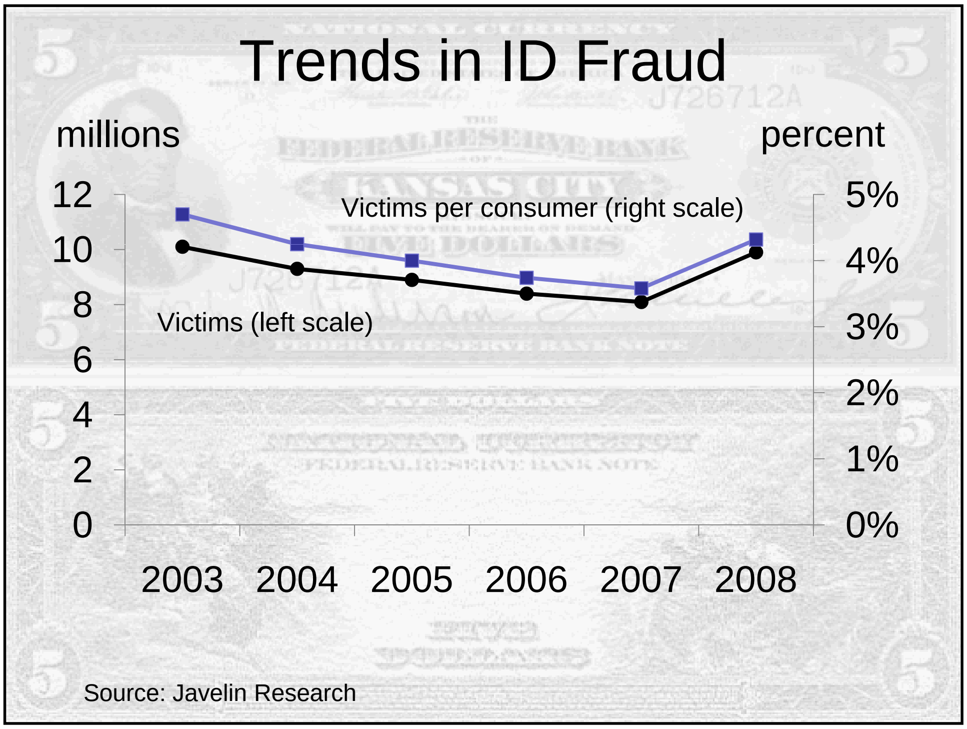
- The “business case” is difficult to make
  - Private cost/benefit not favorable to issuers and networks
- Industry consensus: current fraud control methods are adequate
  - No one likes the losses but most trends do not suggest an increasing problem



Number of Publicly Reported Data Breaches

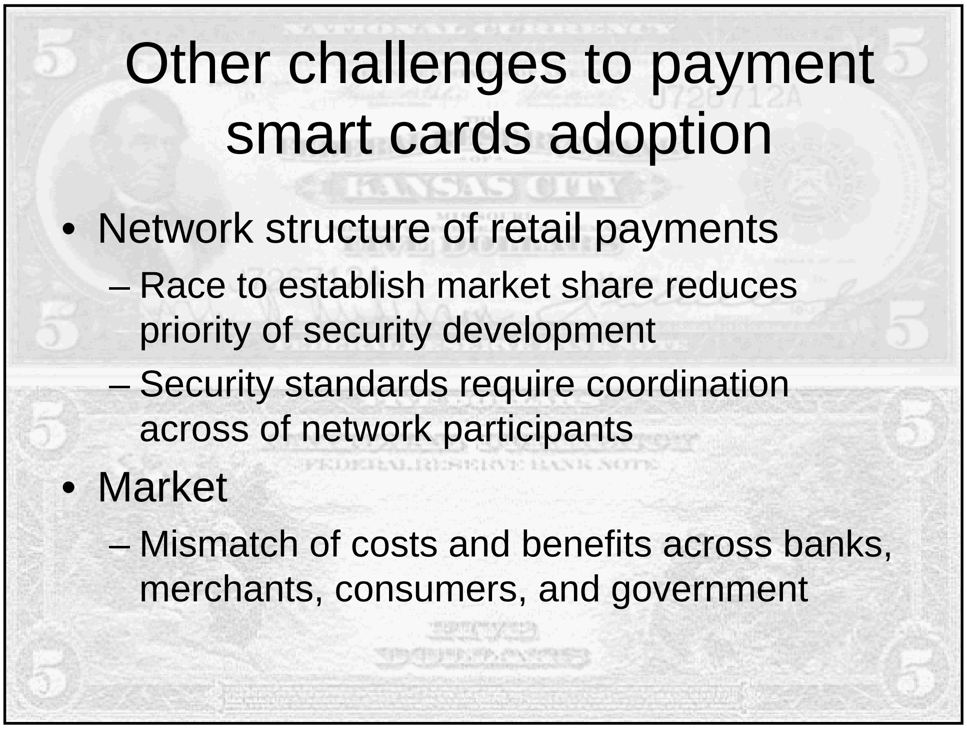
U.S., Monthly, April 2005-January 2009

Sources: Privacy Rights Clearinghouse website and author calculations. Note: twenty-one states implemented breach notification laws through May 2006, and 24 additional states implemented notification laws from June 2006 to July 2008. ; (See Perkins Cole law firm web site.)



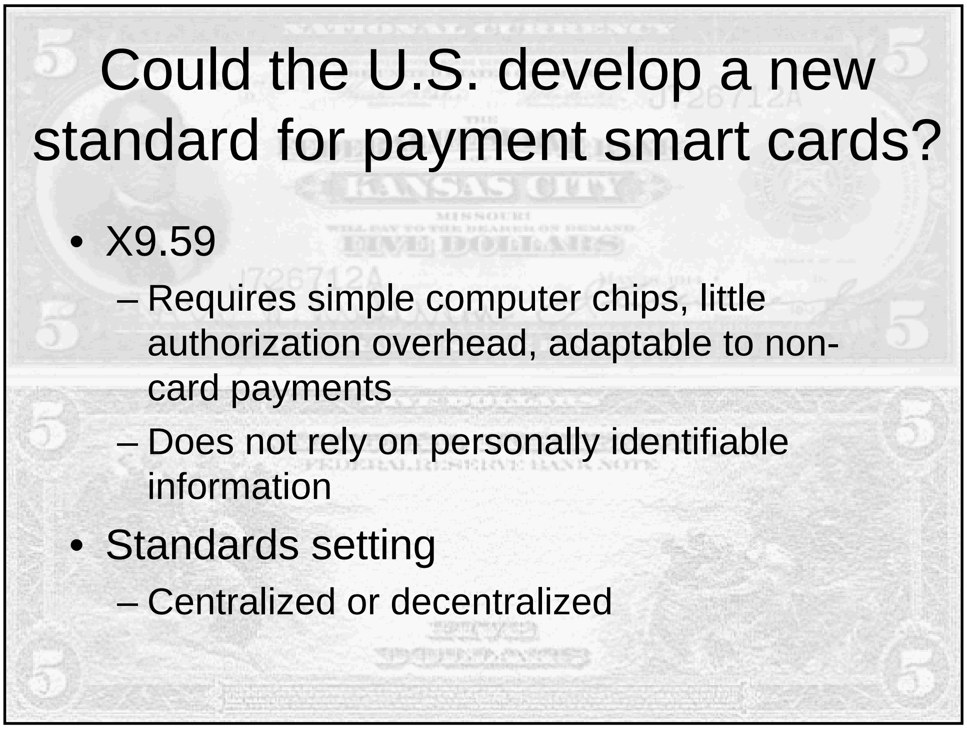
Trends in ID Fraud

Source: Javelin Research



Other challenges to payment smart cards adoption

- Network structure of retail payments
  - Race to establish market share reduces priority of security development
  - Security standards require coordination across of network participants
- Market
  - Mismatch of costs and benefits across banks, merchants, consumers, and government

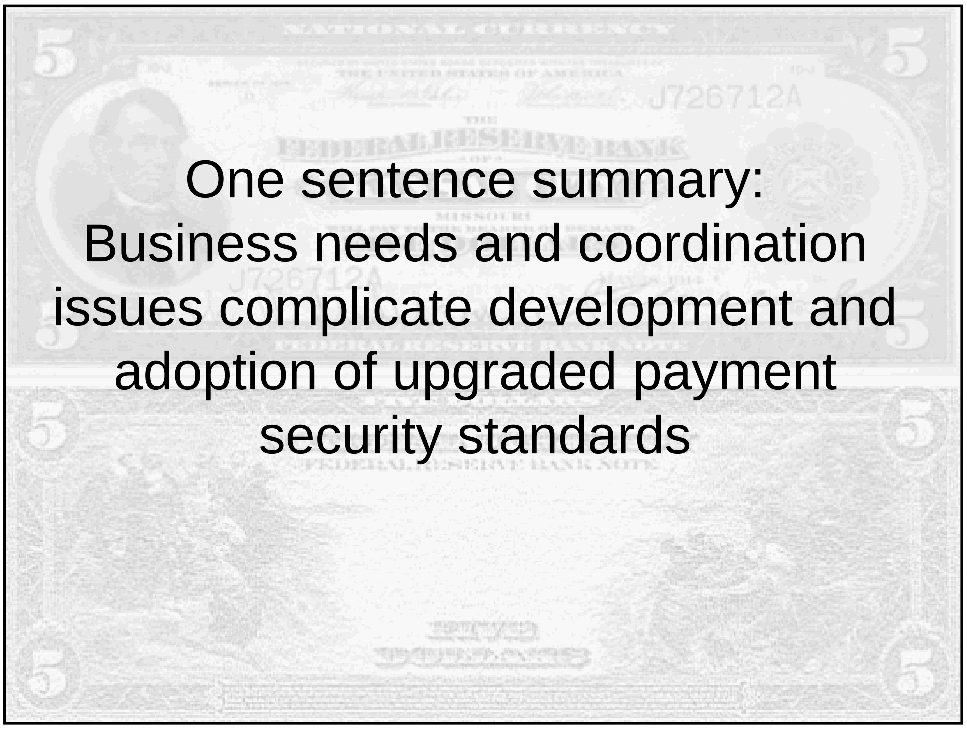


Could the U.S. develop a new standard for payment smart cards?

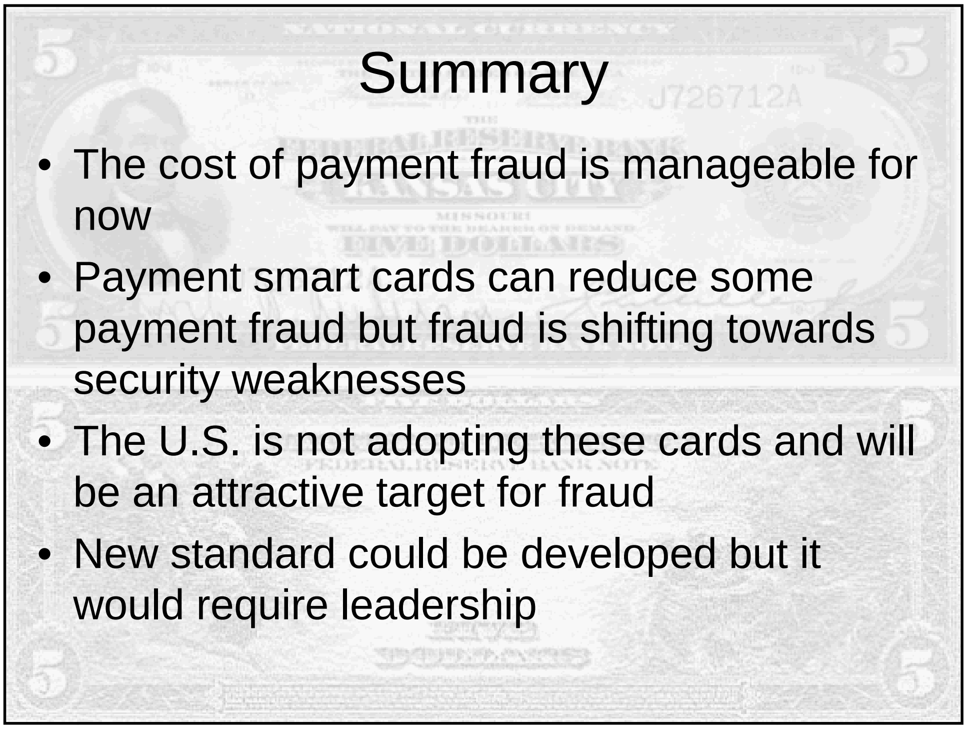
- X9.59
  - Requires simple computer chips, little authorization overhead, adaptable to non-card payments
  - Does not rely on personally identifiable information
- Standards setting
  - Centralized or decentralized

Success of SSOs

- Carefully design governance and scope
- Participation
  - – Open with broad representation
  - – Include key industry members
- Decision process fosters consensus
- Standard is well-defined, complete, and flexible
- Follow-up to maintain the standard

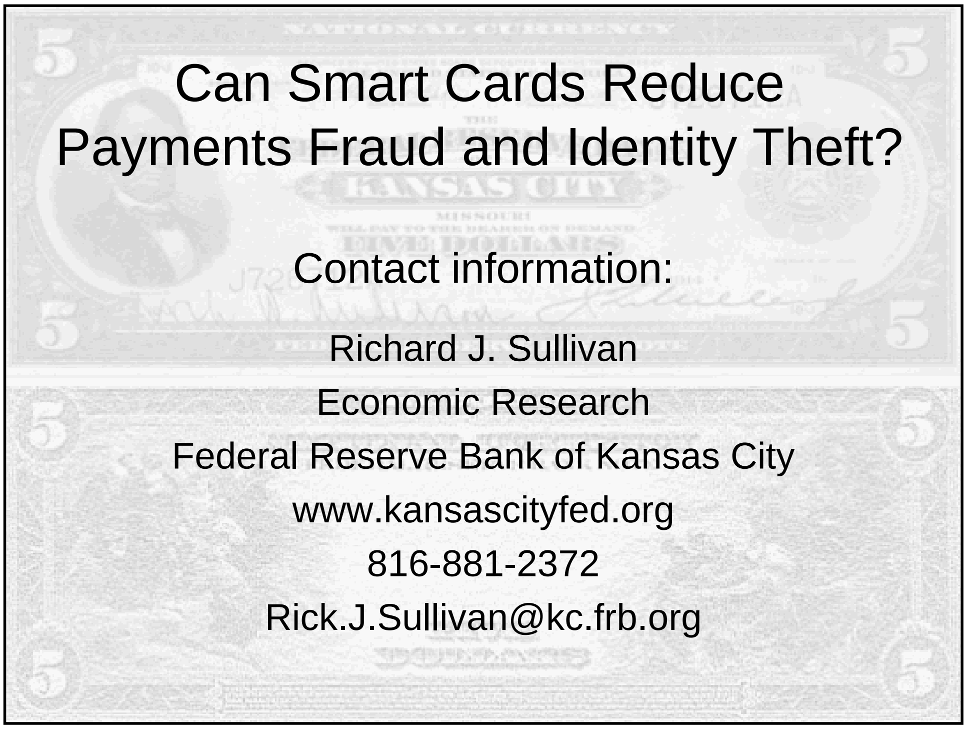


One sentence summary:
Business needs and coordination issues complicate development and adoption of upgraded payment security standards



Summary

- The cost of payment fraud is manageable for now
- Payment smart cards can reduce some payment fraud but fraud is shifting towards security weaknesses
- The U.S. is not adopting these cards and will be an attractive target for fraud
- New standard could be developed but it would require leadership



Can Smart Cards Reduce Payments Fraud and Identity Theft?

Contact information:

Richard J. Sullivan
Economic Research
Federal Reserve Bank of Kansas City
www.kansascityfed.org
816-881-2372
Rick.J.Sullivan@kc.frb.org