**ATM (Automated Teller Machine) networks**

**Key Aspects of ATM Networks in the U.S.**

**History and Evolution**

* **Introduction**: The first ATM in the U.S. was installed by Chemical Bank in Rockville Centre, New York, in 1969.
* **Growth**: The number of ATMs grew rapidly in the 1980s and 1990s as banks expanded their networks to offer 24/7 banking services.

**Major ATM Networks**

* **Cirrus (Mastercard)**: One of the largest ATM networks, offering access to millions of ATMs worldwide.
* **PLUS (Visa)**: Another major network, providing global ATM access.
* **Star Network**: Operated by First Data, widely used in the U.S.
* **NYCE**: A network providing extensive regional coverage in the U.S.
* **Pulse**: A network owned by Discover Financial Services, offering broad access across the U.S.

**Technological Advancements**

* **Cardless Transactions**: ATMs now support cardless withdrawals using mobile banking apps or QR codes.
* **Enhanced Security**: Introduction of EMV chip technology and biometric authentication to enhance security.
* **Multi-Functionality**: Modern ATMs offer additional services such as bill payments, mobile top-ups, and mini-statements.
* **Integration with Digital Wallets**: ATMs are increasingly integrated with digital wallets like Apple Pay, Google Pay, and Samsung Pay.

**Current Trends**

* **Decline in ATM Usage**: Due to the rise of digital banking and contactless payments, there has been a decline in traditional ATM usage.
* **ATM Consolidation**: Banks are consolidating ATMs to reduce costs and focus on digital channels.
* **Surveillance and Security**: Enhanced surveillance systems to prevent fraud and theft.
* **Fee Structures**: Changes in fee structures, including surcharge-free networks for customers.

**Number of ATMs Over Time (2010-2023)**

**Interpretation:**

* **Growth Until 2016**: The number of ATMs in the U.S. increased from 450,000 in 2010 to 500,000 in 2016. This period likely reflects the expansion of banking services and the growing demand for convenient access to cash and other banking services.
* **Decline Post-2016**: After peaking at 500,000 in 2016, the number of ATMs started to decline, reaching 440,000 in 2023. This decline can be attributed to the rise of digital banking and mobile payment solutions, which reduce the dependency on physical ATMs. Additionally, banks might be consolidating ATM locations to cut costs and encourage the use of digital channels.

**2. Growth of Card less Transactions (2018-2023)**

**Interpretation:**

* **Steady Increase**: The percentage of card less transactions at ATMs has steadily increased from 5% in 2018 to 30% in 2023. This trend highlights the adoption of new technologies that allow customers to withdraw cash and perform other transactions using mobile apps or QR codes, rather than physical cards.
* **Technology Adoption**: The growth in card less transactions reflects the broader trend of integrating digital solutions into traditional banking services. This shift enhances convenience for customers and aligns with the overall movement towards digital-first banking experiences.

**3. Average ATM Fees Over Time (2010-2023)**

**Interpretation:**

* **Consistent Increase**: The average ATM fee has consistently increased from $2.00 in 2010 to $3.50 in 2023. This upward trend suggests that banks are gradually raising fees, possibly to offset the costs associated with maintaining and securing ATM networks amid declining usage.
* **Impact on Consumers**: Higher ATM fees can impact consumer behavior, potentially driving customers to seek out surcharge-free ATMs or opt for digital transactions to avoid these fees. The increase in fees might also reflect the increased costs of regulatory compliance and security measures.