Are ATMs going extinct?

Galvanize DSI
NYC Cohort 13

Before all of these ....

Cash App

Pay

Zelle®

venmo

CIRCLE

PayPal

Pay

Square Cash

facebook


Remember Cash?

My name is Linda and I'm fascinated by how we pay for things

Interest: Fintech

Disinterest: Teaching my parents how to use Zelle

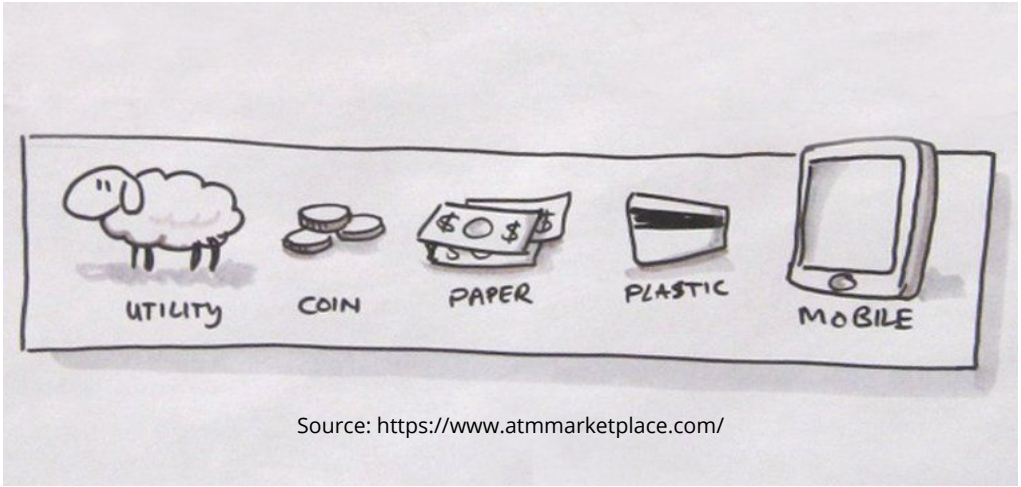
Hobbies: Playing with mortgage early payoff calculators

Did you know?

- First ATM debuted in 1967 at a Barclays branch in London.
- Today: 4 million ATMs worldwide

The Evolution

- Only for account holders
- Debit Cards mainstream in 1970s
- Used between worldwide ATMs in mid 2000
- Sound and Video
- Not just for cash
- Not just for banks
- Now...Bitcoin ATMs!



Source: https://www.atmmarketplace.com/

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ATM Influencers

Cancel Culture Factors:

- Rise of card and mobile payments
- Rise of Peer to Peer Payments
- Rise of online shopping

https://www.norwoodnews.org/residents-shocked-at-chase-bank-closure-in-norwood/

Trending Factors:

- Increasing functionality
- Increasing physical bank branch closures
- Increasing financial inclusion in developing countries

Source: https://www.pantagraph.com/

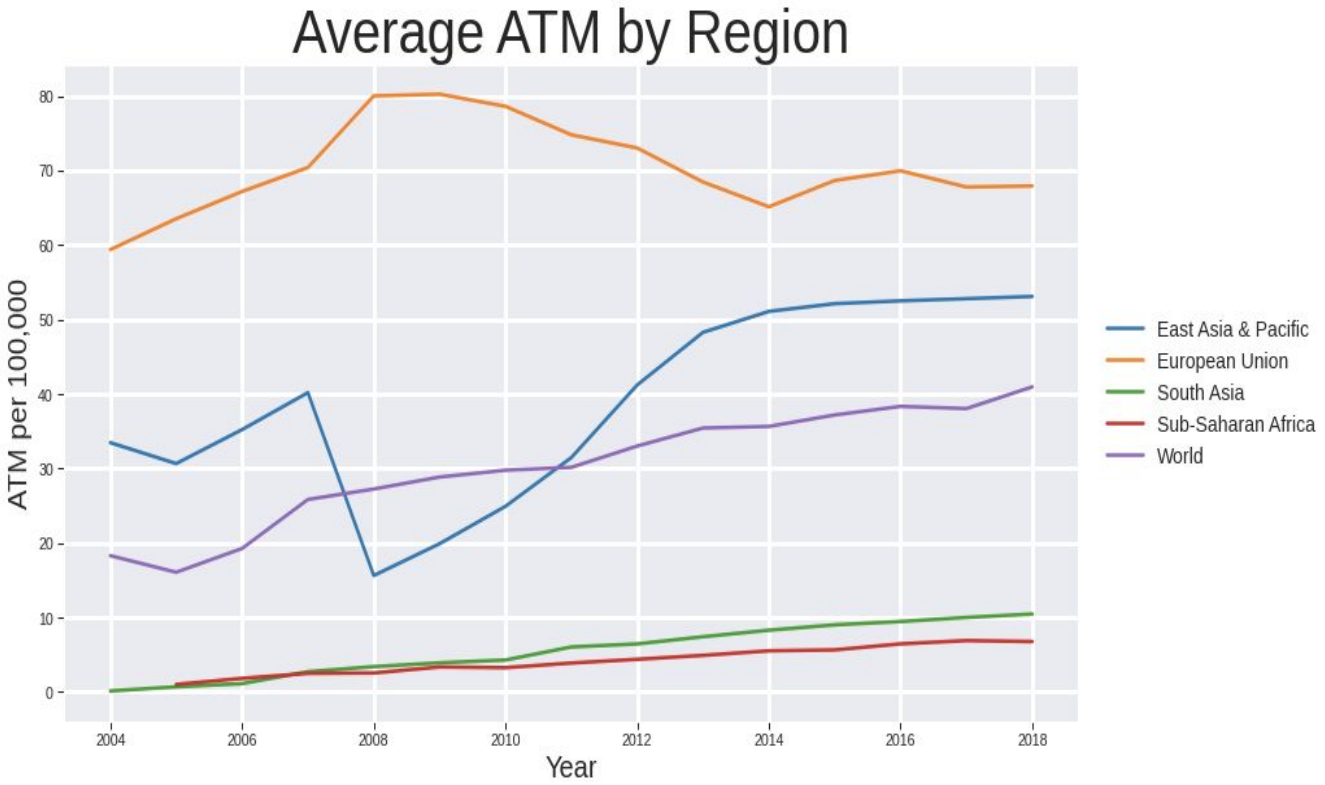
Data and Tools

- Source: World Bank Development Indicators
  - ATM per 100,000
  - GDP
  - GDP per capita
  - GDP Growth
  - Mobile subscriptions per 100,000
- 233 Countries
- 6 Regions
- Timeframe: 2004-2019
- Analysis and Plotting Tools: Pandas, Statsmodels, Matplotlib, Seaborn

Global and Regional Impact

Most regions are steady or trending up in the the number of ATMs

Note: North America not shown due to scale with more than twice that of the European Union



GDP Impact

The data was split into three equal categories for analysis based on GDP size.

All GDP categories show increasing ATM numbers

GDP Per Capita Impact

Small GDP Per Capita Countries:

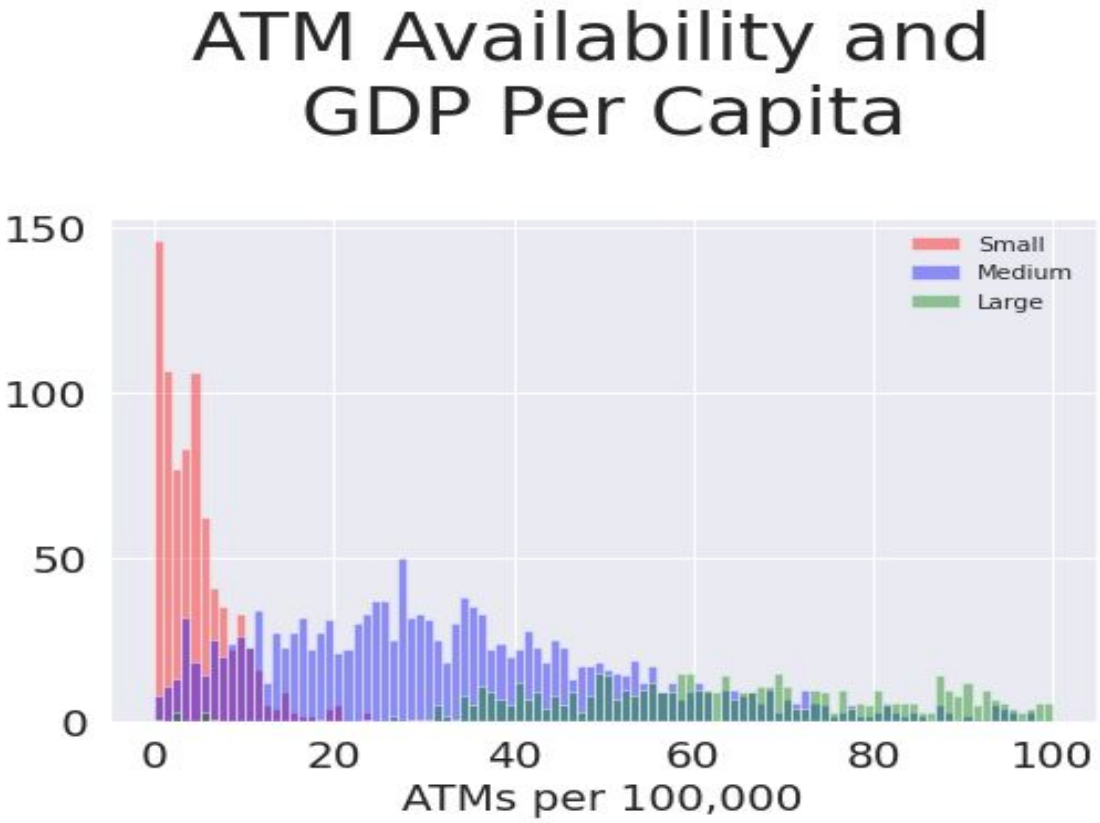
- **Mean: 4.8**
- Max: 39
- Var: 25

Medium GDP Per Capita Countries:

- **Mean: 35**
- Max: 185
- Var: 648

Large GDP Per Capita Countries:

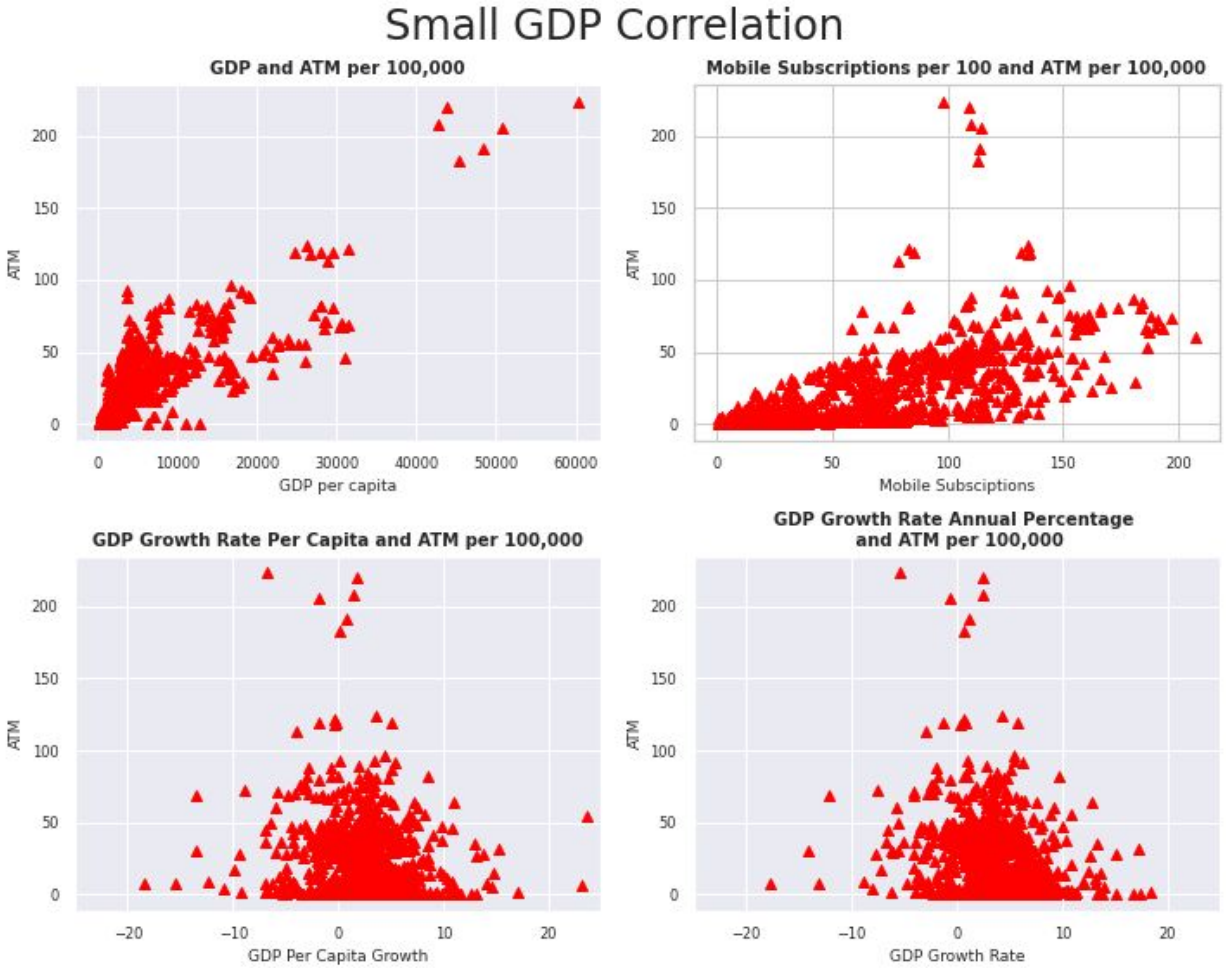
- **Mean: 90**
- Max: 325
- Var: 2752



Closer Look:

Small GDP

None of the features have an obvious relationship to ATM numbers

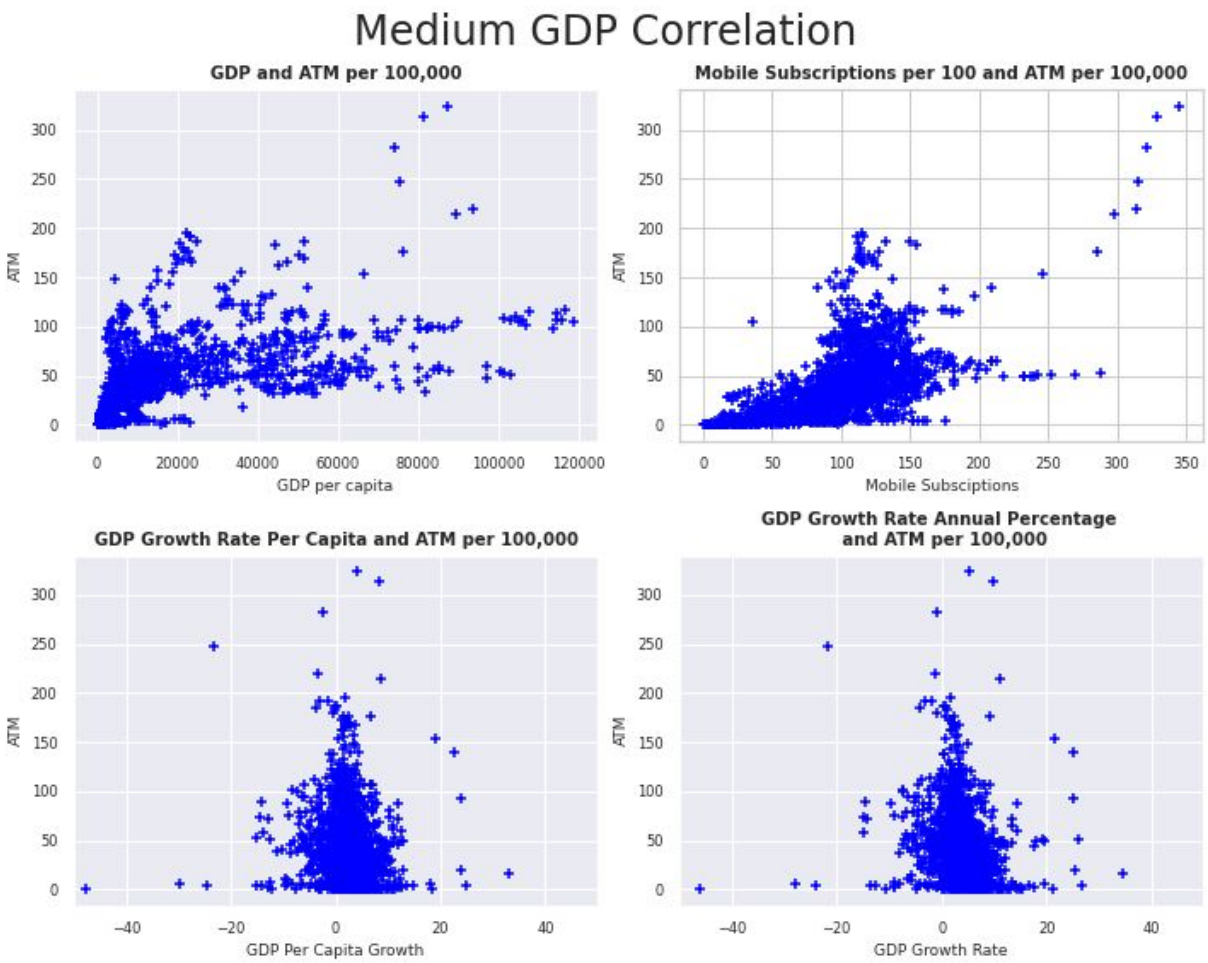


Closer Look:

Medium GDP

GDP per capita and GDP Growth rates could indicate a relationship with ATM availability.

There is significantly less noise compared to the small GDP countries



Closer Look:

Large GDP

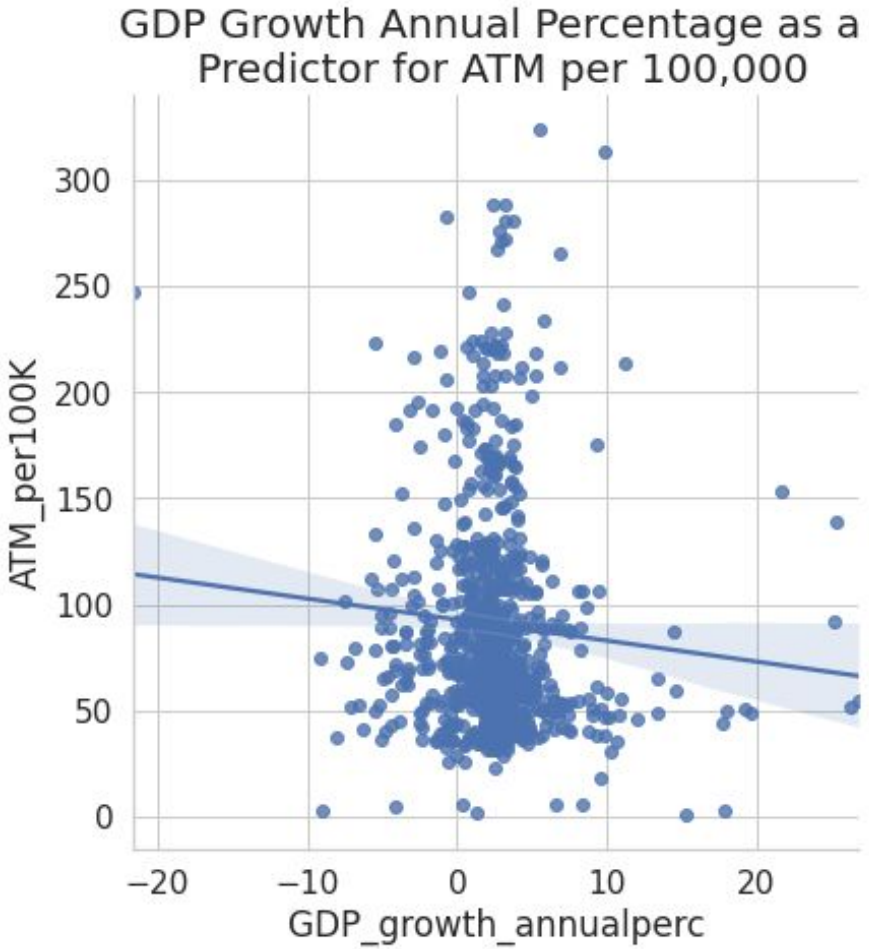
GDP per capita and GDP growth could indicate a relationship with positive growths.

Partial Regression to Predict ATM Availability

The most significant factor in predicting ATM availability was the GDP Growth Percentage.

The greatest correlation impact was for Large GDP subset.

Prediction confidence interval range smallest with low GDP growth rates.



So, back to the original question... are ATMs going extinct?

Nope!

(At least not yet)

Conclusion

- ATM Availability is increasing (slowly) around the world
- In Large GDP countries:
  - A positive GDP growth rate is predict to result in less ATM availability
  - A negative GDP growth rate is predicted to result increased demand for ATMs
- Future research:
  - As banking and payment technology continues to advance and be adopted around the world, the impact can translate to increased GDP growth rates and the ATM extinction could come sooner.

Questions

https://github.com/choski23/Capstone-1