

Summary of *Broadband Internet and the Stock Market Investments of Individual Investors*

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1. What are the research questions?

- Whether the increased internet use impact stock market participation?
- Whether broadband internet affects the trading behavior and portfolio efficiency¹ ?

2. Why are the research questions interesting?

- Prior studies research whether internet use cause democratization of finance find that internet can improve portfolio choices while amplifying behavior biases, but these research has two limits:
 - 1. only focus on subgroup investors;
 - 2. only research platforms.
- This paper uses broadband data and entire population trading records in Norway and research whether internet use can increase market participation and portfolio efficiency which overcome the limits mentioned above.

3. What is the paper's contribution?

- This article contributes to literature on how internet use affects the portfolio choices of individual investors(Allen et al.,2022).
 - **Past studies:** document detrimental effects of internet use such as excessive stock trading, herding and speculation.
 - **Expand:** document positive effects of internet use on the stock market participation and portfolio efficiency of individual investors.
- This article contributes to literature in household finance about the “participation puzzle”: too few individuals invest in equity markets(Lusardi and Mitchell,2014).
 - **Past studies:** suggest factors that affect stock market participation, including personal wealth, educational attainment, computer ownership, and financial literacy.
 - **Expand:** analyze the effects of an exogenous reduction in the fixed costs of equity market participation due to faster internet access.

4. What hypotheses are tested in the paper?

- H1: the use of internet will increase stock market participation;
- H2: the use of internet will help existing investors increase their portfolio efficiency.

a) Do these hypotheses follow from and answer the research questions?

- Yes, the hypotheses research the market participation and portfolio efficiency.

b) Do these hypotheses follow from theory?Explain logic of the hypotheses.

- H1: the use of internet will reduce fixed cost to increase stock market participation.
- H2: the use of internet will provide easier access to financial information, leading to more efficient financial behavior.

5. Sample: comment on the appropriateness of the sample selection procedures.

- this article uses several administrative register data sets from Norway which contain plentiful features, but I wonder that the data of Norway is relatively limited and can't represent the case of other countries.

¹of individuals who are already stock market investors.

6. Comment on the appropriateness of variable definition and measurement.

- dependent variable: y_{kt} is the stock market participation rate for municipality k .
- independent variable: i_{kt} is the broadband user rate.
- instrument variable: z_{kt-1} is the prior year's broadband coverage rate.
- in my view, these variables are measured well since the data source is exact.

7. Comment on the appropriateness of the regress/predict model specification.

- this paper uses IV model that contains two steps:
 - first-stage equation: $i_{kt} = \phi z_{kt-1} + \gamma_k + \theta_t + v_{kt}$
 - second-stage equation: $y_{kt} = \omega i_{kt} + \alpha_k + \tau_t + \epsilon_{kt}$, in which $\omega = \frac{\delta}{\phi}$
- the IV model is specified well because it can overcome the potential problem of endogeneity. This model also controls fixed effects. It could be better if this paper can introduce more control variables that is related to the participation of stock market.

8. What difficulties arise in drawing inferences from the empirical work?

- this paper only focuses on the data of Norway, but there are huge differences between Norway and other countries. For example, the mature degree and structure of its stock market are different from other countries. The results of this article may be driven by other impulses and become wrong or insignificant in other cases.

9. Describe at least one publishable and feasible extension of this research.

- this paper could furtherly research whether the introduction of finance related applications could encourage individual investors participate in stock market.
 - for example, in China, we could research the causal impact of the introduction of Alipay on financial market participation and efficiency.