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### IMPACT OF ECONOMIC POLICY UNCERTAINTY ON HERD BEHAVIOR IN CHINA STOCK MARKET

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#### ABSTRACT

This study explores the impact of economic policy uncertainty on herd behaviour in the Chinese stock market. As economic policy uncertainty increases, market information becomes highly chaotic and complex, making reliable information scarce and challenging for investors to make independent decisions. Particularly in the Chinese stock market, where retail investors dominate and generally lack professional financial knowledge and deep market analysis skills, these investors are more likely to mimic the behaviours of other market participants. Using monthly data from January 2011 to December 2023, and employing panel regression for empirical analysis, this research aims to explore the specific effects and mechanisms of economic policy uncertainty on herd behaviour, addressing a gap in the existing literature regarding how economic policy uncertainty directly influences investor behaviour in terms of manner and extent. The study's findings indicate that economic policy uncertainty has a significant and varied impact on herding behaviour across different market segments. Specifically, economic policy uncertainty significantly promotes herding behaviour in the Science and Technology Innovation Board, while it inhibits herding behaviour in the Main Board. Economic policy uncertainty also inhibits herding behaviour in the ChiNext, but not as significantly as in the Main Board. This diversity in impact highlights the complex nature of economic policy uncertainty's influence on herd behaviour.

**Keywords:** Economic policy uncertainty, herding, stock market.

## INTRODUCTION

Following the onset of the global financial crisis in 2008, a succession of "black swan" and "gray rhino" events, including the Arab Spring and its aftermath, the European debt crisis, changes in U.S. government leadership, the U.S.-China trade conflict, the COVID-19 outbreak, and the Russia-Ukraine military conflict, have ushered in a volatile and uncertain new phase in the world's political and economic landscape. In response to the unpredictable global political and economic situation and to smooth out economic fluctuations, governments worldwide have frequently adjusted fiscal, monetary, trade, and other economic policies. In this context, various economic entities have been unable to accurately and in a timely manner predict whether, when, and how the government will change its current economic policies (Gulen & Ion, 2016), leading to unforeseen risks and resulting in Economic Policy Uncertainty (EPU).

In April 2020, the International Monetary Fund (IMF) published the "Global Financial Stability Report," which asserted that emerging market and developing economies' financial systems bear greater financial risks than advanced economies. Consequently, the issue of economic policy uncertainty is especially pronounced in emerging economies relative to Western developed countries. Compared to developed nations, China's government possesses substantial intervention capabilities in shaping economic operations, rendering various economic entities acutely sensitive to policy adjustments and the associated uncertainties (Sun & Shi, 2004). The term "policy-driven markets" characterises China's stock market, highlighting the substantial impact of government policies on stock market dynamics (Feng & Shen, 2017; Tang, 2016). The extensive body of literature has provided empirical insights into the profound impact of policy on the volatility of China's stock market (Chen & Fan, 2015; Wang & Sun, 2018; Zhu et al., 2022), underlining the unique "policy-driven" nature of the market. The growth of China's securities market is distinct from that of other nations. It did not develop incrementally via market dynamics but was instigated and propelled by governmental involvement. In the first phases of the stock market, many listed enterprises and financial institutions were state-owned or government-directed, resulting in a pronounced policy focus. The government has played a crucial regulatory role in the ongoing evolution of the stock market. Consequently, national policies have significantly shaped the evolution of the securities market. In times of substantial stock price volatility or market crises, the China Securities Regulatory Commission and other authorities have implemented diverse economic policies to govern the stock market, significantly influencing stock prices. Economic policies significantly influence China's stock market.

In this environment, economic policy uncertainty may significantly impact the stock market. Frequent policy alterations or an overdependence on the government's "visible hand" may impede the market mechanism's normal functioning, resulting in market dysfunction and distortions in the pricing mechanism. This complicates the assessment of stock valuations for investors based on basic reasons. Instead, they increasingly depend on market consensus and trends influenced by policy. In this context, investors become significantly reliant on policy directives, and their trading frequency adapts in response to policy changes (Li et al., 2002). This reliance often results in investors exhibiting characteristic herd behaviour in their investing decisions. Herd behaviour refers to the phenomenon where investors imitate the actions of others, basing their investment decisions on collective behaviour, thereby aligning their trading activities in the same direction or adopting investment strategies that converge to the prevailing consensus (Banerjee, 1992; Bikhchandani et al., 1992). Many authors argue that herding can destabilise prices, leading to market volatility and inefficiency and inducing financial crises (Bekiros et al., 2017; Bikhchandani & Sharma, 2000; Humayun Kabir & Shakur, 2018; Shiller,

1981, 2006). Meanwhile, the structure of investors in China's stock market is predominantly comprised of retail investors, who comprise over 90 per cent of the participants, in contrast to only 20 per cent in the USA (Sun et al., 2021). These retail investors have consistently contributed more than 80% of the market's trading volume. Research has indicated that herd behaviour among retail investors presents a more significant threat to market stability and integrity than institutional investors (Venezia et al., 2011). Due to market information asymmetry, individual investors struggle to obtain sufficient information for decision-making. They frequently make investment decisions that follow the mainstream, which promotes the occurrence of herd behaviour.

Therefore, reducing and avoiding such behaviour has long been a challenging and significant research topic in behavioural finance and investment practices. However, compared to the extensive study of herd behaviour influenced by investor sentiment and economic events, the relationship between EPU and herd behaviour has not received sufficient attention. Despite the current global rise in EPU, this important relationship has yet to be thoroughly explored. Further, the favourable influence of economic policy uncertainty on stock market volatility (Baker et al., 2016; Pástor & Veronesi, 2013) compels us to infer a potential correlation between economic policy uncertainty and herding, because volatility is primarily connected to herding behaviour (Bekiros et al., 2017; Choi & Yoon, 2020; Huang & Wang, 2017). Moreover, a substantial body of study has established that economic policy uncertainty affects investor sentiment in risk markets (Knight, 1921; Price & Tewksbury, 1997; Shiller, 2001). Investor sentiment can lead to more noise trading, resulting in herding behaviour. Based on these arguments, we can hypothesise that there is a relationship between economic policy uncertainty and herding behaviour.

Considering the rising global economic policy uncertainty and the growing fragility of financial systems, there is a solid empirical environment for investigating the influence of economic policy uncertainty on herding behaviour. This study aims to analyse the specific mechanisms by which economic policy uncertainty impacts herding behaviour, focusing on the extent and manner of this influence. Additionally, given China's economic transition, frequent policy interventions, and the high proportion of retail investors in its stock market, the Chinese market offers an ideal subject for exploring this issue.

China's stock market, characterised by the dominance of retail investors, its ongoing economic transformation and the resulting increase in policy intervention and uncertainty, further enhances its suitability as an empirical testing ground for investigating the influence of economic policy uncertainty on herding behaviour. The stock market in China is segmented into several key components, including the Main Board, the ChiNext market, and the Science and Technology Innovation Board (STAR Market). Together, they constitute the major divisions of the Chinese A-share market, exemplifying the diversity and evolutionary trajectory of the nation's capital market. These sub-markets have been designed to cater to a range of financing requirements, and each board is specifically crafted to support various company types, thereby nurturing innovation and promoting overall development and growth within China's capital market. (See Table 1).

**Table 1**

*Overview of Different Stock Market Segments*

Market Segment	Description	Establishment	Key Features
Main Board	The leading platform for securities issuance, listing, and trading in China, reflecting the state of China's economic development.	1990.12	<ul style="list-style-type: none"> <li>- Generally, includes large, mature companies in traditional industries.</li> <li>- High listing requirements with a focus on stability and profitability.</li> </ul>
ChiNext Market	A second board that supports the development of SMEs, especially in high-tech, high-growth, and innovative sectors.	2009.10	<ul style="list-style-type: none"> <li>-Designed for smaller companies with shorter operating histories and relatively weaker profitability</li> <li>- Less stringent listing requirements than the Main Board but higher demands for information disclosure and regulatory measures.</li> <li>-Facilitates the growth of high-tech enterprises, especially those facing challenges in obtaining bank funding due to non-standard financial information and a lack of collateral.</li> </ul>
STAR Market (Science and Technology Innovation Board)	A significant part of China's "second board" market, alongside the ChiNext Market. A new financing platform for high-tech companies with core technologies and significant growth potential.	2019.7	<ul style="list-style-type: none"> <li>- Supports innovative companies, including those not yet profitable.</li> <li>- Implements the IPO Registration System, enhancing market liberalization and efficiency.</li> </ul>

The Main Board, known for its strict listing requirements and stable trading rules, attracts conservative investors focused on fundamentals, profitability, and market position, favouring stable returns with low volatility due to their lower risk tolerance. In contrast, the ChiNext Market and the STAR Market, with lower listing thresholds and more flexible trading rules, appeal to investors seeking higher returns and willing to take on greater risk. These investors target companies with high growth potential and accept significant price fluctuations and uncertainty. In summary, compared to the Main Board, the ChiNext Market and STAR Market attract more short-term individual investors and thus more speculative activities. Therefore, it is inferred that the impact of EPU on herding will be more significant in these two boards.

This study makes three significant contributions. Firstly, no literature directly examining the impact of EPU on herd behaviour. By linking economic policy uncertainty with herd behaviour, this study introduces new elements to the analysis of herding in capital markets, aims to reach more objective conclusions and encourages theoretical advancements and innovations. Secondly, it addresses limitations in the Efficient Market Hypothesis (EMH) by providing a behavioural finance perspective on herd behaviour, thus contributing to the theoretical development of behavioural finance. Thirdly, it fills a gap in the herding literature by focusing on an emerging market, specifically the Chinese stock market.

The remainder of this study is organized as follows. Section 2 reviews the past literature and develops the hypotheses. Section 3 offers the data and methodology. Section 4 presents the results and analysis. The final section consists of the discussion and conclusion.

## **LITERATURE REVIEW AND HYPOTHESIS**

Recent studies on factors influencing herding focus on external events such as shock, financial crisis and COVID-19. Research demonstrates that stress and crisis periods, including pandemics, induce panic in equity markets, increase market volatility (Baker et al., 2020; Vuong et al., 2022), create uncertainty across multiple dimensions (Avery & Zemsky, 1998), reduce asset values (Ali et al., 2020; Gil-Alana & Monge, 2020), and amplify market fragility (Javaira & Hassan, 2015). These conditions can prompt irrational behaviour among market participants and potentially foster herding tendencies. This research has established a consensus that herd behaviour is prevalent among investors, especially in turbulent situations. During such periods, investors often ignore their information and follow the crowd (Chauhan et al., 2020). Increased uncertainty fuels speculative behaviour (Chiang et al., 2013), as investors scrutinize the actions of others in the market, leading to homogeneity in trading (Schmitt & Westerhoff, 2017), where market participants following each other in and out of stocks as the market is overwhelmed with fear and sentiment (Aharon, 2021). Moreover, emerging financial markets are especially susceptible to exogenous shocks (Do et al., 2020; Ishaq et al., 2022), with herd behaviour likely to be instigated in these markets, particularly during unforeseen disruptions and unexpected shocks (Batmunkh et al., 2020; Chiang et al., 2010).

However, the impact of exogenous shocks, such as policy, has often been overlooked in previous studies. This gap in academic research is becoming obvious, especially during frequent economic policy adjustments by governments, caused by ongoing global uncertainties such as public health events and trade protectionism. Consequently, it is essential to investigate the influence of economic policy uncertainty on herding other than the standard and conventional determinants. It can provide new insight into understanding the investment behaviour of investors in trading stocks during the policy adjustment.

Although there are currently no studies specifically on the impact of EPU on herding behaviour, we can infer from the impact of EPU on stock market volatility that EPU does influence on herding. Scholars generally agree that increased economic policy uncertainty tends to amplify stock market volatility. Antonakakis et al. (2013) observed that stock market volatility escalates with a rise in the Economic Policy Uncertainty Index, a conclusion also reached by Liu and Zhang (2015). Baker et al. (2016), using a newspaper-based EPU index, found that EPU lowers investments and employment in government-related sectors and heightens stock market volatility. Wang et al. (2015) identified a positive association between EPU and stock market volatility, suggesting a long-term equilibrium relationship. Lei et al. (2018), employing the GARCH-MIDAS model, also identified a positive

correlation between EPU and market volatility. Further, Li et al. (2018), through threshold VAR model analysis, indicated that rising EPU intensifies China's stock market volatility, especially as the EPU index and market volatility increase. Li (2020) concluded that EPU positively affects stock market volatility in the short, medium, and long term. Jin and Shu (2020) observed strong clustering effects in short-term volatility, linking it to EPU. Li et al. (2018) found that increased EPU amplifies stock volatility by enhancing investor pessimism. These findings collectively suggest that economic policy uncertainty (EPU) substantially impacts stock market volatility. Given that volatility is closely linked to herding behaviour (Bekiros et al., 2017; Choi & Yoon, 2020; Huang & Wang, 2017), the observed influence of EPU on market volatility raises the possibility of a direct correlation between EPU and herding.

However, while the impact of EPU on stock market volatility has been extensively studied, the effect of EPU on investor behaviour, particularly herding behaviour, remains largely unexplored. This gap in the literature underscores the need for further studies to explore the mechanisms by which EPU shapes investor behaviour. Exploring the relationship between herd and EPU could provide valuable insights into the broader consequences of economic policy uncertainty on both market dynamics and investor behaviour.

Keynes (1936) proposed that herd behaviour is a response to uncertainty. When the degree of EPU increases, the herd behaviour among investors becomes more pronounced. This is because an increase in EPU generates a large amount of chaotic or incomplete information reducing the valid, reliable, and consistent information available to investors, further diminishing their decision-making abilities. When investors believe that others have more information, the former tend to follow the investment strategies of the latter (Bikhchandani et al., 1992). The information asymmetry theory posits that individuals acquire information of differing degrees and quality, shaped by their environment, cognitive capabilities, and social status. Due to a lack of professional financial knowledge and in-depth market analysis skills, as well as limited channels for information acquisition and disparities in information processing capabilities, most investors in China's stock market are retail investors who are unable to sort through the maze of information and make well-informed decisions. Consequently, individuals tend to adhere to the choices of the majority or specialists, depending on prevailing market trends or purported "insider information," under the assumption that such sources possess more credible data. This dependence results in collective actions and herd behaviour. Banerjee (1992) demonstrates individuals in environments with incomplete information might disregard their private signals in favour of others' decisions, leading to herd behaviour. The more effective information investors lack, the more likely they are to heed others' opinions, especially during periods of high market uncertainty or significant economic and policy shifts. Thus, the following hypothesis is proposed:

**Hypothesis 1.** When economic policy uncertainty rises, investor herding behaviour intensifies.

The A-share market in China comprises several essential components: The Main Board, established in 1990; the ChiNext market, established in 2009; and the STAR Market, established in 2019. The primary board has developed a mature market environment characterised by established systems and stable investor structures, with a predominance of rational investors. In contrast, the ChiNext market and the STAR Market represent the second tier and are in the early to mid-stages of market development. Their market environment is characterised by instability, underdeveloped trading systems, and a diminished capacity to endure market shocks. As a result, investors in these segments exhibit increased susceptibility to external factors and herding behaviour, leading to amplified risks. This is particularly evident in the STAR Market, where both the scale of listed companies and the number of investors is

considerably smaller in comparison to the Main Board and ChiNext market counterparts. Their resilience to economic shocks is significantly diminished. On the other hand, the STAR Market operates in a distinct industry with an innovative registration system. The distinctiveness of this market results in an absence of dependable standards for the regulation of listed companies. It continues to be the most hazardous market in relative terms. Consequently, the subsequent hypothesis is proposed:

**Hypothesis 2.** The impact of EPU on herding vary across different boards. The STAR Market exhibits the highest level of herding behaviour, followed by the ChiNex and the main board.

Currently, scholars have explored various angles in studying herd behaviour, but there is a relative scarcity of research on the impact of policies on herd behaviour. This study identifies "policy" as a new focal point of analysis. Multiple studies have established a correlation between economic policy uncertainty and stock markets; however, the effect of economic policy uncertainty on herd behaviour remains unclear, highlighting a notable gap in the literature that requires further exploration.

## METHODOLOGY

### Sample Selection

This study selects monthly data from January 2011 to December 2023, totalling 156 months. For the STAR Market, which was established later, the sample period ranges from January 2020 to December 2023, totalling 48 months. This study selected all ChiNext stocks established before 2011. For the main board, nearly 1,400 stocks were established before 2011. Therefore, we chose the component stocks of the CSI 300 Index. The CSI 300 Index comprises the 300 most representative stocks from the main boards, distinguished by their substantial scale and robust liquidity, effectively reflecting the overall performance of China's mainboard market. Additionally, we selected all STAR Market stocks established before 2020. Then, excluding those delisted or marked with ST or \*ST, we have 281 remaining stocks in the main board, 137 remaining stocks in ChiNext, and 70 remaining stocks in the STAR Market.

### Description of Data

**Table 2**

*Overview of Variables*

Variable	Symbol	Measurement	Unit	Source
Herd Behaviour	$Herd_{i,t}$	Calculated by Equation (1)	Index value	CSMAR database <a href="https://data.csmar.com/">https://data.csmar.com/</a>
Economic Policy Uncertainty	$EPU_t$	EPU Index (Huang and Luk, 2020)	Index value	China Economic Policy Uncertainty website <a href="https://economicpolicyuncertaintychna.weebly.com/">https://economicpolicyuncertaintychna.weebly.com/</a>

(continued)

Variable	Symbol	Measurement	Unit	Source
Turnover Rate	$TUR_{i,t}$	The turnover rate of stock $i$ in period $t$ .	Percentage	
Market Capitalization	$CAP_{i,t}$	The market value of stock $i$ in period $t$ .	Billion Yuan (Main Board, ChiNext) Million Yuan (STAR Market)	RESSET database <a href="https://db.resset.com/index.jsp?lang=en">https://db.resset.com/index.jsp?lang=en</a>
Return Rate	$RET_{i,t}$	The return rate of stock $i$ in period $t-1$ .	Percentage	
Price-to-Earnings Ratio	$EP_{i,t}$	The inverse of the Price-to-Earnings(P/E) ratio of stock $i$ at time $t$ .	Percentage	
Trading Volume	$VOL_{i,t}$	The trading volume of stock $i$ at time $t$ .	Millions of Shares	

We first follow Zhou and Lai (2009) and Hsieh (2013, 2020) 's herding measure, which modifies the Lakonishok et al.(1992) model by focusing on the number of trades rather than changes in institutional investor stockholdings. The model for investor herding behaviour for stock  $i$  in any given period  $t$  is as follows:

$$Herd_{i,t} = |P_{i,t} - P_t| - AF_{i,t} \quad (1)$$

$$P_{i,t} = \frac{B_{i,t}}{N_{i,t}} \quad (2)$$

$$AF_{i,t} = E|P_{i,t} - P_t| \quad (3)$$

Where  $B_{i,t}$  and  $S_{i,t}$  denote the number of buy orders and sell orders of stock  $i$  in period  $t$ , respectively. The aggregate quantity of overall stock orders  $i$  at time  $t$  is  $N_{i,t} = B_{i,t} + S_{i,t}$ . So,  $P_{i,t}$  is the buy ratio of stock  $i$ .  $P_t$  represents the mean of  $P_{i,t}$  over all stock at time  $t$ . The adjustment factor  $AF_{i,t}$  represents the expected value of  $|P_{i,t} - P_t|$  in the case of no herding. It means that  $AF_{i,t}$  is driven by the assumption that  $B_{i,t}$  is randomly selected from a binomial distribution characterized by a probability of  $P_t$  and dimension  $N_{i,t}$  as follow:

$$AF_{i,t} = \sum_{k=0}^{N_{i,t}} \text{proba} (B_{i,t} = k) \left| \frac{k}{N_{i,t}} - P_t \right| = \sum_{k=0}^{N_{i,t}} \binom{N_{i,t}}{k} P_t^k (1 - P_t)^{N_{i,t}-k} \left| \frac{k}{N_{i,t}} - P_t \right| \quad (4)$$

A simple Python script can be utilized to compute the adjustment factor  $AF_{i,t}$ . After computing  $AF_{i,t}$ ,  $P_{i,t}$  and  $P_t$ , substituting the values into Equation (1) yields the monthly herding measure for each stock. The larger  $Herd_{i,t}$  is, the stronger the herding effect. The data on the number of stock transactions was obtained from the CSMAR database.

Then, for EPU, we choose CNEPU developed by Huang and Luk (2020), based on ten different newspapers from mainland China. Compared to other measurements, CNEPU encompasses a broader spectrum of newspapers and a more extensive array of terms, rendering it less susceptible to media biases. Therefore, this paper uses the CNEPU to measure China's Economic Policy Uncertainty. An elevated CNEPU index signifies an increased degree of economic policy uncertainty. The CNEPU data is sourced from the China Economic Policy Uncertainty website maintained by Huang and Luk of Hong Kong Baptist University.

Following the computation of both the EPU and the herding proxy, we can analyse the relationship between EPU and herding behaviour. In accordance with Zhou and Lai (2009), Vlastakis and Markellos (2012), Hsieh et al. (2013, 2020), we also account for and control the additional variables that influence herd behaviour, like the turnover rate, total market capitalization, return rate, the inverse of price-to-earnings ratio, and trading volume of stocks.

### Econometric Technique

This study employs panel data analysis to examine the effects of EPU on herding behaviour. Panel data analysis is appropriate because it accounts for both individual-specific and time-specific effects, helping to handle heterogeneity or individual effects (cross-sectional or time-specific) that may or may not be observed. It provides more precise estimates using larger sample sizes and extended time periods, reducing standard errors and collinearity among variables (Frees, 2004; Hsiao, 1985), as well as controlling for omitted variable bias (Baltagi, 2021).

To determine the most suitable model, we use the Hausman test to select between the fixed effects model (FEM) and random effects model (REM). To mitigate potential endogeneity issues, we employed a Fixed Effects Model to control for the impact of time-invariant individual characteristics on the explanatory variables. The Hausman test (p-value < 0.05) confirmed the appropriateness of the Fixed Effects Model.

Therefore, we ultimately selected the individual fixed effects model to control for individual heterogeneity and reduce endogeneity issues. It is worth noting that EPU is a macro-level time series variable. Including time fixed effects in the model could result in multicollinearity issues, causing the effects of EPU on herding and the time dummy variables to cancel each other out, leading to incorrect estimation results. Therefore, the model does not require time fixed effects and focuses only on the individual fixed effects (Huang et al., 2022). Then, panel regression models are as follows:

$$\text{Main Board Herd}_{i,t} = \beta_0 + \beta_1 EPU_t + \beta_4 \text{Control}_{i,t} + \delta_i + \varepsilon_{i,t} \quad (5)$$

$$\text{ChiNext Herd}_{i,t} = \beta_0 + \beta_2 EPU_t + \beta_5 \text{Control}_{i,t} + \delta_i + \varepsilon_{i,t} \quad (6)$$

$$\text{STAR Herd}_{i,t} = \beta_0 + \beta_3 EPU_t + \beta_6 \text{Control}_{i,t} + \delta_i + \varepsilon_{i,t} \quad (7)$$

were,

$Herd_{i,t}$  = The herding effect of stock i in period t

$EPU_t$  = Monthly EPU

$Control_{i,t}$  include,

$TUR_{i,t}$  =The turnover rate of stock i in period t.

$CAP_{i,t}$  =The market value of stock i in period t.

$RET_{i,t}$  =The return rate of stock i in period t.

$EP_{i,t}$  =The inverse of the Price-to-Earnings(P/E) ratio of stock i at time t.

$VOL_{i,t}$  =The trading volume of stock i at time t.

$\delta_i$  = The stock individual fixed effects

$\varepsilon_{i,t}$  = Regression residual

To validate Hypothesis 1, we anticipate a positively significant coefficient produced by  $\beta_1, \beta_2, \beta_3$ . To validate Hypothesis 2, we anticipate that the  $\beta_1 < \beta_2 < \beta_3$ .

## RESULTS

### Descriptive Statistics

The table below presents the descriptive statistics of three market variables. The variables included are economic policy uncertainty (CNEPU), herding behaviour (HERD), turnover rate (TUR), total market capitalization (CAP), return rate (RET), the inverse of the price-to-earnings ratio (EP), and trading volume of stocks (VOL). In this study, the original values of Herd were multiplied by 1000 to match the scale of EPU. This adjustment was made to facilitate the comparison and analysis between these variables. It should be noted that this transformation does not alter the intrinsic properties or the actual impact of the data but instead aligns the numerical scales for analytical purposes.

**Table 3**

*Result of Main Board*

Statistic	CNEPU	HERD	TUR	RET	VOL	CAP	EP
Mean	145.717	19.167	20.983	0.007	831.063	69.443	0.049
Std	28.907	20.534	23.417	0.113	1655.305	169.674	0.093
Min	98.363	-73.126	0.027	-0.649	1.259	1.534	-2.941
25%	127.092	5.134	7.356	-0.056	189.894	12.478	0.02
50%	141.565	13.42	13.423	-0.004	389.598	23.264	0.046
75%	162.908	26.477	24.973	0.058	873.428	51.614	0.084
Max	238.317	303.337	514.317	3.503	45876.503	2983.051	0.658

**Table 4**

*Result of ChiNext*

Statistic	CNEPU	HERD	TUR	RET	VOL	CAP	EP
Mean	145.717	14.754	43.844	0.013	272.321	10.196	0.006
Std	28.907	18.559	44.133	0.154	465.501	23.102	0.061
Min	98.363	-15.75	0.035	-0.584	0.095	0.671	-1.163
25%	127.092	3.032	16.38	-0.076	57.647	2.808	0.006
50%	141.565	9.551	29.758	-0.0	141.921	4.77	0.016
75%	162.908	19.986	55.055	0.081	308.635	8.83	0.026
Max	238.317	266.06	681.502	3.951	11843.281	381.426	0.286

**Table 5**

*Result of STAR Market*

Statistic	CNEPU	HERD	TUR	RET	VOL	CAP	EP
Mean	152.496	16.899	24.231	0.013	54.225	17.279	0.02
Std	33.63	17.583	20.115	0.173	84.474	25.378	0.033
Min	98.363	-5.12	1.819	-0.416	1.878	1.217	-0.091
25%	129.135	4.356	11.688	-0.085	16.845	4.43	0.01
50%	149.466	11.919	18.545	-0.01	32.907	8.3	0.016
75%	170.113	24.649	30.181	0.087	63.977	17.376	0.024
Max	234.523	122.871	239.429	4.256	1666.696	218.178	0.372

Tables 3, 4, and 5 present descriptive statistics for the Main Board, ChiNext, and STAR Market. The Main Board has the highest market capitalisation levels (mean = 69.443) and trading volume (mean = 831.063), indicating it is the most established market with larger transactions. ChiNext shows the highest turnover rate (mean = 43.844), suggesting more active trading, but its market capitalization is smaller (mean = 10.196). Although the STAR Market is smaller in capitalisation and volume, its turnover rate is not low (mean = 24.231), indicating it is a more speculative and dynamic market. These differences reflect varying levels of market activity, firm stability, and investor behaviour across the three markets.

### **Impact of Economic Policy Uncertainty on Herding Behaviour**

Table 6 presents our main results. To account for cross-sectional dependence, we employ Driscoll and Kraay's (1998) regression method, which is robust to heteroskedasticity, autocorrelation, and any form of cross-sectional and temporal dependence. The Driscoll and Kraay's regressions are executed using the Stata module xtsc command, as provided by Hoechle (2007). Empirical results indicate that increased EPU leads to lower herding behaviour in the Main Board and ChiNext, whereas higher EPU leads to higher herding behaviour in the STAR Market. Therefore, the STAR Market supports Hypothesis 1, while the Main Board and ChiNext show results contrary to Hypothesis 1.

**Table 6**

*Regression Result*

VARIABLES	(1) Main Herd	(2) ChiNext Herd	(3) STAR Market Herd
CNEPU	-0.054*** (-14.23)	-0.018*** (-3.58)	0.022*** (2.80)
TUR	-0.161*** (-15.78)	-0.076*** (-10.22)	-0.156*** (-6.70)
RET	-5.723*** (-7.31)	1.733** (1.93)	5.606*** (3.86)
VOL	0.00002 (0.09)	-0.000 (-0.29)	-0.008* (-1.68)
CAP	-0.010* (-1.88)	-0.026*** (-2.97)	-0.023 (-0.87)
EP	-2.990 (-1.59)	1.067 (0.36)	7.561 (0.82)
Constant	31.294***	20.988***	17.949***
Individual fixed effects	YES	YES	YES
Adjusted R-squared	0.039	0.031	0.028

Robust t-statistics in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Note. The problems of heteroscedasticity and autocorrelation are corrected for robust standard errors.

As previously analysed, when EPU rises, it generates a large amount of confusing information, causing investors to face information asymmetry, which can result in herd behaviour. The Main Board and ChiNext were established earlier and have developed relatively sound regulatory and information disclosure mechanisms over the years (Lan et al., 2013). When EPU rises, these companies may more frequently release relevant information, countermeasures, and future expectations, helping investors better understand the market and company strategies, thus reducing information uncertainty (Du et al., 2023; Nagar et al., 2019). In contrast, the STAR Market is relatively new, and its regulatory mechanisms are still evolving (Wei, 2024). Due to the innovative and high-tech nature of STAR Market companies, much of the information is highly uncertain, making it difficult for investors to understand and evaluate fully. Lacking sufficient confidence and historical data to support their analysis of these companies' future performance under the influence of EPU, investors are more susceptible to market sentiment, thereby increasing herding behaviour.

On the other hand, from the perspective of fundamental options theory, it can be understood that EPU reduces herding behaviour. Fundamental options theory suggests that in the face of uncertainty, firms and investors tend to delay decisions to wait for more information (Bernanke, 1983; Dixit, 1989). This behaviour is the "option to delay investment" (McDonald & Siegel, 1986). Specifically, in a high EPU environment, firms and investors tend to postpone investment decisions to avoid making mistakes in a highly uncertain environment. This means they choose to wait and see, gathering more information to reduce decision-making risks, thus reducing the motivation for large-scale following behaviour in the market (Bloom, 2009; Bonaime et al., 2018; Julio & Yook, 2012). Since the main board and the ChiNext

board have been established for at least a decade, investors in these markets can rely more on relatively well-developed information disclosure systems, making them more likely to adopt a wait-and-see attitude. The STAR Market, which focuses on high-tech and innovative companies, often presents growth potential and market expectations attractive than traditional enterprises. Since its establishment, the STAR Market's P/E ratios have been significantly higher than those of the Main Board and ChiNext, with an average annual P/E ratio exceeding 50% (Shanghai Stock Exchange, 2024). This indicates that investors have overly high expectations for the future growth of the STAR Market, indirectly reflecting their immaturity. This characteristic attracts speculative and short-term traders (Wei, 2024). Even in a high EPU environment, investors may still be reluctant to miss out on potential high returns, making them more willing to take risks.

Hypothesis 2 is partially supported. EPU significantly impacts herd behaviour in the STAR Market compared to the other two boards. At the same time, empirical results show that EPU significantly reduces herd behaviour in the Main Board to a notable extent.

EPU significantly promotes herd behaviour in the STAR Market. Most STAR Market investors are prone to following market trends and exhibit strong herding behaviour when facing high EPU. STAR Market companies are often highly innovative and risky, leading to greater uncertainty about their prospects (Dong et al., 2022). The high-risk, high-reward expectations make investors more prone to emotional decision-making under high EPU, especially in the early stages of the market when investors are more sensitive to policy changes and market fluctuations.

EPU significantly inhibits herding behaviour in the Main Board. Main Board companies are typically large, stable enterprises. The Main Board generally attracts risk-averse investors who prefer long-term investments, resulting in a higher participation rate of institutional investors (Chen, 2022). Institutional investors generally possess strong analytical skills and risk tolerance (Froot & O'Connell, 2003), making more rational decisions under high EPU. This stability and conservatism reduce herding behaviour on the Main Board. When uncertainty increases, investors avoid risks and choose conservative investment strategies, not following market fluctuations impulsively.

EPU also inhibits herding behaviour in the ChiNext, but not as significantly as in the Main Board. ChiNext companies are between the STAR Market and Main Board regarding innovation and growth potential, but also exhibit a certain level of stability (Anderson et al., 2015; Xing et al., 2021). Although many ChiNext companies are small and medium-sized enterprises, they have demonstrated strong adaptability and operational resilience compared to STAR Market companies. The Main Board and ChiNext follow a review-based system (Lu, 2020), where companies generally exhibit good financial health and stability, leading to stable investor expectations. Investors' behaviour in response to increasing EPU lies between adventurous and conservative; they may partially follow the market but not mindlessly, leading to a moderate inhibition of herding behaviour in ChiNext. This is not as strong as on the Main Board, but also not significantly promoted as in the STAR Market.

**Robustness Test**

**Table 7**

*Robust Regression Result*

VARIABLES	(1) Main Herd	(2) Main Herd	(3) ChiNext Herd	(4) ChiNext Herd	(5) STAR Herd	(6) STAR Herd
BKEPU	0.004*** (7.23)		0.003*** (4.05)		-0.005** (-2.58)	
DVEPU		0.009*** (6.96)		0.007*** (4.37)		0.005* (1.70)
TUR	-0.156*** (-15.47)	-0.156*** (-15.55)	-0.074*** (-9.56)	-0.075*** (-9.66)	-0.151*** (-6.42)	-0.155*** (-7.52)
RET	-3.992*** (-5.08)	-4.183*** (-5.31)	2.536*** (2.86)	2.608*** (2.94)	5.211*** (3.71)	5.228*** (2.90)
VOL	-0.000 (-0.08)	-0.000 (-0.08)	-0.001 (-1.19)	-0.001 (-1.18)	-0.008* (-1.76)	-0.008 (-1.37)
CAP	-0.012** (-2.02)	-0.012** (-2.01)	-0.029*** (-2.91)	-0.029*** (-2.98)	-0.047* (-1.86)	-0.030 (-0.88)
EP	-3.990** (-2.05)	-4.290** (-2.16)	3.497 (1.21)	3.300 (1.15)	11.334 (1.13)	11.140 (0.86)
Constant	21.678*** (45.55)	21.593*** (45.34)	17.237*** (46.80)	17.023*** (44.11)	25.015*** (16.35)	19.770*** (15.35)
Individual fixed effects	YES	YES	YES	YES	YES	YES
Adjusted R-squared	0.037	0.036	0.032	0.032	0.027	0.006

Notes. t-statistics in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

To ensure the robustness of our study results, we will further test our findings by substituting the measurement methods for these core variables. Considering the multiple measurement approaches for EPU, and the CNEPU index proposed by Luk and Huang (2020), there are several other widely recognised measurement methods. To test the robustness of our results, we will use two additional EPU measurement methods, which include the DVEPU developed by Davis et al. (2019) and the BKEPU developed by Baker et al. (2016). The results show that EPU significantly promote herding behaviour. Since the newspapers selected for the three indicators are entirely different, there will be specific differences in the calculation of the EPU. Baker's EPU is based on the "South China Morning Post" published in Hong Kong and is more sensitive to international events. Davis's EPU is derived from two prominent mainland Chinese newspapers, "People's Daily" and "Guangming Daily", which focus more on national-level policy changes or international events. Huang and Luk's EPU covers more than a dozen mainland newspapers, including various city dailies, so it includes not only national-level policy changes but also regional, industrial, and other economic policy changes. The robustness test results show that herding behaviour is promoted when changes or announcements in national or international economic policies occur.

## CONCLUSION

This study investigates the relationship between economic policy uncertainty (EPU) and herding behaviour in stock markets. Analysis across multiple markets reveals that EPU significantly affects herding behaviour, with varying directional impacts. In certain markets, EPU enhances herding tendencies, while in others, it diminishes them. These results suggest that market characteristics and investor behaviour patterns differ under EPU's influence, potentially due to factors such as the economic environment, regulatory frameworks, and investor psychology unique to each market.

These findings contribute to the existing literature in several ways. First, this research enhances the field of behavioural finance by offering new insights into how macroeconomic factors influence investor behaviour. Specifically, it introduces EPU as a new significant factor affecting herd behaviour, challenging the theoretical assumption that increased uncertainty always leads to more herding, thereby revealing the complexity of EPU's impact on investor behaviour. Additionally, we provide a comparative analysis of multiple markets, showcasing the diverse effects of EPU across different market environments, which emphasising the critical role of market structure and investor composition in shaping herd behaviour responses to policy uncertainty.

The findings of this study have important implications for policymakers and regulators. Given that EPU influences herding behaviour, enhancing information disclosure and transparency could mitigate the adverse effects of EPU on herd behaviour. Moreover, policymakers should consider market-specific strategies, as the impact of EPU varies across different market environments. Tailored regulatory approaches can help address the unique vulnerabilities of markets, thereby reducing the likelihood of herding behaviour, especially during periods of economic uncertainty. These measures would stabilise markets and enhance investor confidence promoting more informed and rational decision-making.

Although traditional panel data estimators are commonly used in econometric analysis, they have notable limitations. These methods may fail to address endogeneity issues, especially when dealing with macroeconomic variables such as economic policy uncertainty (EPU). To overcome these limitations, future research could consider adopting more advanced econometric techniques, such as the Generalised Method of Moments (GMM) or System GMM estimators. These methods are better equipped to address endogeneity and capture dynamic relationships within panel data, offering more reliable and consistent results when analysing the effects of EPU on herding behaviour.

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