Economic policy uncertainty in banking: a literature review

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a literature review

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ABSTRACT

This paper is a survey of the most important research in the economic policy uncertainty literature. Economic policy uncertainty, although still under-researched relative to mainstream topics in economics and finance, has recently received increased scholarly attention. Through synthesizing common themes in the literature, the paper highlights the progress made so far and suggest some avenues for future research which allows future researchers to position their research and differentiate themselves from other studies in the literature. The paper finds that economic policy uncertainty affects banks through a reduction in credit supply and loan re-pricing. High economic policy uncertainty compel bank managers to discretionary distort bank financial reporting in ways that help them to mitigate the depressing effect of economic policy uncertainty on their profitability.

Keywords: economic policy uncertainty, banking, banks, uncertainty, index, news, government, tax code, inflation, elections.

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1. INTRODUCTION

The purpose of this paper is to review the existing literature on economic policy uncertainty (EPU). I begin by defining the term "economic policy uncertainty". After this, I present a summary of what we know in the literature, then I discuss how it relates to banking. I end the paper with a summary of what we do not know about economic policy uncertainty. Hopefully, this will help to set the agenda for future research. The articles selected for this concise review were chosen after applying a high research quality threshold which allows us to focus only on the relevant, recent and high quality research articles in the literature.

Economic policy uncertainty is defined as uncertainty regarding economic policies such monetary policy, fiscal policy and regulatory policies, and it derives mainly from whether existing policies will change in the future (Baker et al. 2016; Danisman et al, 2021). Economic policy uncertainty describes the unknown impact of new policies on the economy and the private sector (Ng et al. 2020), while policy uncertainty is defined as uncertainty about government policies. Economic policy uncertainty is a hot topic in the finance literature, even though 'policy uncertainty' is not a new topic.

Policy uncertainty has been discussed in the past few decades. For example, Hassett and Metcalf (1999) examine the effect of uncertain tax policy on investment decisions, and find that uncertain tax policies that follow a jump process have detrimental effects on investments. Hermes and Lensink (2001) show that policy uncertainty, measured by the uncertainty of budget deficits, tax payments, government consumption and inflation rate, leads to higher capital flight. Chen and Funke (2003) analyse the impact of policy uncertainty on foreign direct investment strategies, and show that political uncertainty is detrimental to foreign direct investment decisions. These studies suggest that policy uncertainty has detrimental economic consequences.

Understanding the implication of economic policy uncertainty for the financial and economic system is important because it can give an idea of how uncertainty about government's economic policies affect firms, households and individuals. The major sources of economic policy uncertainty, according to Baker et al (2016), are: (i) newspaper-based reports on the economy, (ii) tax code expirations, (iii) disagreement over consumer price index (CPI) forecasts, and (iv) disagreement over government purchases forecasts. Many recent studies have used these sources as reliable indicators of economic policy uncertainty (see., Bhagat and Obreja, 2013; Brogaard and

Detzel, 2015; Gulen and Ion, 2016; Kim and Kung, 2017; Nguyen and Phan, 2017). Other sources of economic policy uncertainty, which are less commonly used in the literature, are increased political polarization, change in governments following elections, budget deficits, trade wars, etc.

Few studies conduct a survey on economic policy uncertainty. For example, Hassett and Sullivan (2016), in their survey, show that new empirical measures of uncertainty have emerged which allows economists to assess the impact of uncertainty in various aspects of the economy. Also, Castelnuovo et al (2017), in a survey, show the interaction between uncertainty and financial frictions. Al-Thaqeb and Algharabali (2019) conduct a review of studies that use the economic policy uncertainty index (EPU) of Baker et al (2016) as a key factor in measuring uncertainty. They also reviewed the impact of EPU on financial markets, macro and micro level, stock markets, corporate behavior, and risk management. But the study did not focus on banks. Dai and Zhang (2019) conduct a survey on the impact of political uncertainty on financial markets from the perspective of asset prices, corporate policies, households and the economy. Taken together, these studies did not focus on the banking sector. The current study is different from prior review studies in that it focuses on EPU in the banking sector. This study reviews the literature that examine the impact of EPU on the banking sector, and offer some suggestions for future research.

This study contributes to the recent literature on economic policy uncertainty. Economic policy uncertainty is an increasingly common macroeconomic phenomenon, and earlier studies have focused more on its economic implications while recent studies examine how economic policy uncertainty affects corporate decisions (e.g. Baker et al., 2014; Baker et al, 2016; Kim and Kung, 2017, Nguyen and Phan, 2017). This paper complements the recent literature by providing a concise review of the recent EPU literature in banking in order to set the agenda for future research. A review of the recent literature has not emerged in the recent literature with particular focus on economic policy uncertainty in banking.

The rest of the paper is organized as follows. In Section 2, I review the EPU literature to identify what we know. The section discusses the theory, EPU measurement, the effect of economic policy uncertainty on firms, the effect of economic policy uncertainty on the financial sector, and the effect of economic policy uncertainty on banks. Section 3 summarises the effect of EPU on the economic and financial system. Section 4 is devoted to identifying what we do not know in the

literature and other research gaps. This section also identifies possible areas for future research. Section 5 concludes.

2. WHAT WE KNOW IN THE LITERATURE

2.1. Theory

The theoretical literature on uncertainty dates back to four decades ago. Bernanke (1983) points out that high uncertainty gives firms an incentive to delay investment and hiring when investment projects are costly to undo or workers are costly to hire and fire. But when uncertainty reduces, firms increase hiring and investment to meet demand. Bernanke (1983) studied the optimal timing of real investment under the assumptions that investment is irreversible and that new information about returns arrives over time. He argued that investment should be undertaken only when the costs of deferring the investment project exceed the expected value of information gained by waiting, and that uncertainty diminishes the current rate of investment.

Eaton and Rosen (1980) examine the structure of an optimal linear income tax when workers are uncertain about their wages at the time they choose their labor supplies. They show that, given imperfect information about wages, lump-sum taxation is not efficient because a wage tax reduces the riskiness of wage income while some combination of a lump-sum tax and a wage tax will minimize the excess tax burden. Pindyck (1980) examines the effects of two sources of uncertainty on the behavior of exhaustible resource markets. They examine two dimensions of uncertainty: the uncertainty over the future demand for the resource, and uncertainty over the reserve base that will ultimately be available for exploitation. They focus on the implication of these uncertainties for market-price evolution, the optimality of the competitive market, and for the role and value of exploration. They argue that these uncertainties are likely to be present in most exhaustible resource markets because of the inherent long-run dynamics involved in resource production. They show that demand uncertainty has no effect on the expected dynamics of market price while reserve uncertainty shifts the expected rate of change of price only if extraction costs are nonlinear in reserves. More recently, Baker et al (2014) argue that economic policy uncertainty is caused by growth in government spending, increases in taxation, increased regulation, and political polarization.

Chichilnisky (1996) show that economic agents, such as traders, take optimal positions with respect to the uncertainty induced by their own actions and that this self-induced uncertainty can be hedged while uncertainty induced by economic changes such as unknown level of output cannot be hedged fully by traders. Starks and Sun (2016) formulated a theory which suggests that the ability of economic agents to respond to uncertainty is not constant in different policy environments. They analyse the case of mutual fund managers, and predict that the fund manager's skill is unlikely to be constant over different policy environments. They argue that, when market learning weakens during periods of higher uncertainty, managers would be less inclined to signal their ability because of the lower marginal effect their actions have on future compensation in uncertain times.

2.2. Measuring EPU

Economic policy uncertainty is commonly measured using an aggregate index developed by Baker, Bloom, and Davis (2016). The index, also known as the BBD index, is considered to be a reliable measure of the overall level of economic policy uncertainty present in the economy. The BBD index is derived as a weighted average of three components. The first component is news-related reports on economic policy uncertainty. Baker, Bloom, and Davis (2016) quantifies the volume of news about policy-related uncertainty, every month starting in January 1985 to December 2020. This is done using a search of the archives of ten large newspapers, and counting the number of articles containing at least one of the terms 'uncertainty' or 'uncertain', and at least one of the terms 'economic' or 'economy', and at least one of the terms 'congress', 'legislation', 'white house', 'regulation', 'federal reserve', or 'deficit'. The number of policy uncertainty articles is then normalized by the total number of articles in that newspaper. These ten series are then normalized to a unit standard deviation and summed within each month. The resulting index is then scaled to have an average value of 100 from 1985 to 2009 (Baker, Bloom, and Davis, 2016; Gulen and Ion, 2016). The second component measures the level of uncertainty related to future changes in the tax code. This component is estimated by the discounted value of the revenue effects of all tax provisions set to expire in the following ten years using data from the Congressional Budget Office on the tax provisions set to expire in the near future. The third and final component captures forecast disagreement about future monetary and fiscal policies. The forecast data is derived from the Survey of Professional Forecasters provided by the Federal Reserve Board of

Philadelphia which is commonly used to obtain forecasts of consumer price index, and purchases of goods and services by all levels of governments. The forecast disagreement index is usually obtained by taking the average of the interquartile ranges of these two forecasts. To obtain the overall measure of economic policy uncertainty, each of the three components is first normalized and then a weighted average of the resulting series is calculated using a weight of one-half for the news-based component, one-sixth for the tax component, and one-third for the forecaster disagreement component (Baker et al, 2016; Gulen and Ion, 2016).

2.3. Effect of EPU on firms

Wang et al (2014) examine how economic policy uncertainty influences the level of corporate investment for Chinese listed companies. They show that, when economic policy uncertainty is higher, firms lower their investment. Also, firms that have higher return on invested capital use more internal finance to mitigate the negative effect of economic policy uncertainty on corporate investment. Demir and Ersan (2017) examine the effect of economic policy uncertainty on cash holding decisions of firms in BRIC countries. Using firm-level data from 2006 to 2015, they find that firms prefer to hold more cash when uncertainty increases. They also find that economic policy uncertainty has a significant positive impact on corporate cash holdings. Dang et al (2019) examine the effect of economic policy uncertainty on corporate tax burden, and find that economic policy uncertainty is positively related to corporate tax burden, and the effect is stronger when the tax quotas are higher. They also find that economic policy uncertainty strengthens tax collection by increasing government fiscal pressure, and thereby increasing the corporate tax burden.

Dash et al (2019) examine the causality and co-movement between economic policy uncertainties and stock market liquidity using monthly data from G7 countries. They find a positive relationship between economic policy uncertainty and stock market illiquidity, and a negative relationship between economic policy uncertainty and stock market liquidity. In times of crises, the relationship between economic policy uncertainty and illiquidity is stronger, and illiquidity leads to high economic policy uncertainty. Nagar et al (2019) find that high government policy uncertainty is associated with increased bid-ask spreads and decreased stock price reactions to earnings surprises. They also show that managers respond to government policy uncertainty by increasing their voluntary disclosures, but these disclosures only partly mitigate the bid-ask spread increase. Chen et al (2019) examine the impact of economic policy uncertainty on firm-level capital

investment. They show that firms decrease short-term, long-term, and total firm investments when faced with higher economic policy uncertainty.

Khan et al (2019) investigate the effects of firm-specific, market-based, CAPM-based, and economic policy uncertainty on the relationship between leverage and investment for state-owned enterprises and non-state-owned enterprises. They analyse Chinese listed firms from 1999 to 2016, and find that leverage has a significant and adverse impact on non-state-owned enterprises investment behavior. They also find that economic policy uncertainty and CAPM-based uncertainty reduces the association between leverage and investment for state-owned enterprises and non-state-owned enterprises. Chang et al (2019) examine the relationship between CEO-Chairman duality and firm performance, and find that CEO duality benefits a firm when economic policy uncertainty is high, which suggest that CEO-Chairman duality is a beneficial governance mechanism for coping with economic policy uncertainty. Wang et al (2019) use a news-based index of economic policy uncertainty, and find that economic policy uncertainty is positively associated with credit default swap spreads, and negatively associated with the number of liquidity providers in the credit default swap market. The findings suggest that investors find it more costly and difficult to buy credit protection when economic policy uncertainty is high.

Su et al (2020) investigate the relationship between economic policy uncertainty and corporate precautionary cash holdings in firms. They find a U-shaped relationship between economic policy uncertainty and precautionary cash holdings in firms. Duong et al (2020) find that U.S. corporations increase their cash holdings in times of high economic policy uncertainty. The increase in cash holdings is more pronounced for financially constrained firms or firms with larger exposure to economic policy uncertainty. Also, holding more cash in the presence of increasing economic policy uncertainty helps firms to alleviate the negative impact of economic policy uncertainty on capital investment and firm innovation. Schwarz and Dalmácio (2020) investigate the relationship between economic policy uncertainty and corporate leverage for firms in Brazil, and find that the leverage ratio of Brazilian firms increases when economic policy uncertainty increases. Yao et al (2020) examine the impact of economic policy uncertainty on non-executive employees from the perspective of pay-performance sensitivity. They find that better-performing firms pay higher wages, which they adjust during uncertain times. Xu (2020) examines the cost-of-capital transmission channel through which government economic policy uncertainty may

affect corporate innovation activities. They find that government economic policy uncertainty increases the cost of capital of firms, which in turn translates into lower innovation activities. Also, firms with more exposure to higher government economic policy uncertainty face a higher weighted average cost of capital and tend to reduce the level of investment further.

Iqbal et al (2020) examine the relationship between economic policy uncertainty and firm performance of listed non-financial firms in the United States. They find that economic policy uncertainty has a strong negative effect on the return on assets, return on equity, net profit margin and Tobin's Q of firms. Jory et al (2020) investigate the effect of government economic policy uncertainty on trade credit and its value implication for U.S. public firms. They find that firms reduce their receivables period, and face shorter payables period from suppliers during times of high economic policy uncertainty. The tightening of trade credit during periods of high economic policy uncertainty increases shareholder value only to a certain point beyond which it is value-destroying because high reduction of trade credit can lead to losing customers to competitors. Liu and Zhang (2020) show that economic policy uncertainty significantly impedes real investment and reduces net debt issuance for private firms while economic policy uncertainty has no significant impact on firms' cash-holding decisions.

He et al (2020) examine the effects of economic policy uncertainty on corporate innovation in China from 2000 to 2017. They find that in the low economic policy uncertainty period before 2008, economic policy uncertainty induced more innovation activity, but it decreased corporate innovation in the higher economic policy uncertainty period after 2008. Borghesi and Chang (2020) find that firms in high intangible-intensity industries and those engaging in research and development (R&D) activities suffer the most from restrictive governance policies when economic instability is high. Frye and Pham (2020) examine whether economic policy uncertainty affects the decision of the Board to remove and replace the chief executive officer (CEO) of the firm. They argue that performance assessment may be more difficult when uncertainty is high. The Board of directors may find it difficult to appraise the performance of the CEO in times of high economic policy uncertainty as the CEO is likely to attribute his/her poor performance to the rising uncertainty in the business environment. In their analysis, the authors find that high economic policy uncertainty reduces the likelihood of forced CEO turnover. The results suggest that Boards

take into account macroeconomic pressures, such as economic policy uncertainty, when making personnel firing decisions.

D'Mello and Toscano (2020) examine the impact of economic policy uncertainty on trade credit. They find a decline in accounts payable, receivable, and net credit during periods of high economic policy uncertainty, and that firms react quickly to changes in economic policy uncertainty. Their findings suggest that uncertainty about monetary and fiscal policies, taxes, and regulations are the major drivers of trade credit changes. El Ghoul et al (2020) examine how economic policy uncertainty affects accounting quality using data from 19 countries from 1990 to 2015. They find that accounting quality increases during periods of high economic policy uncertainty. The positive relationship between economic policy uncertainty and accounting quality is more pronounced for government-dependent firms and firms with higher political risk. Farooq et al (2020) investigate the impact of political uncertainty on the decision of private firms to use external auditors to verify their financial statements. The findings show that firms with high exposure to political uncertainty are more likely to use external auditors to verify their financial statements.

2.4. Effect of EPU on the financial sector

Economic policy uncertainty affects the economy through its effect on economic output (Bloom et al, 2007), investment (Bloom et al., 2007; Kang et al., 2014; Drobetz et al., 2018) and level of employment (Caggiano et al., 2017; Fontaine et al., 2018). Economic policy uncertainty also affects corporate decisions through its effect on asset prices (Pastor and Veronesi, 2013; Brogaard and Detzel, 2015), corporate investment decisions (Julio and Yook, 2012; Gulen and Ion, 2016), costs of external financing (e.g. Pastor and Veronesi, 2012; Gilchrist et al, 2014), and initial public offering (IPO) activities (Colak et al., 2017)

Bloom et al (2007) show that higher uncertainty increases real option values which makes firms more cautious when investing or disinvesting. Julio and Yook (2012) find that political uncertainty is an important channel through which the political process affects real economic outcomes. Pástor and Veronesi (2013) find that political uncertainty commands a risk premium whose magnitude is larger in weaker economic conditions, and reduces the implicit protection that the government provides to the market. Gulen and Ion (2016) investigate how corporate capital investment at the firm and industry level is affected by the uncertainty related to future policy and regulatory

outcomes. They find that policy-related uncertainty is negatively related to firm and industry level investment, and the economic magnitude of the effect is substantial.

Kang et al (2014) examine the effect of economic policy uncertainty and its components on firm-level investment, and find that economic policy uncertainty in interaction with firm-level uncertainty depresses firms' investment decisions. They observe that when firms are uncertain about costs of doing business due to possible changes in regulation, cost of health care and taxes, they become more cautions with investment plans. This behavior is more pronounced for firms with higher firm-level uncertainty and during a recession. Caggiano et al (2017) examine the effects of high economic policy uncertainty on unemployment during economic recessions and expansions. They find that the relationship between economic policy uncertainty and unemployment is stronger during recessions. Drobetz et al (2018) examine the effect of economic policy uncertainty on the relationship between investment and the cost of capital. They find that the negative relationship between investment and cost of capital decreases in times of high economic policy uncertainty. They conclude that economic policy uncertainty distorts the relationship between investment and the cost of capital. Ozili (2021) shows that economic policy uncertainty is correlated among countries and regions.

Table 1 summarizes the literature. The literature has examined economic policy uncertainty in single country contexts (Zhang et al., 2015; Arouri et al., 2016; Bordo et al., 2016; Caggiano et al., 2017; Kang et al., 2014), and in multi-country contexts (Colombo, 2013; Dakhlaoui and Aloui, 2016; Bernal et al., 2016; Demir and Ersan, 2017). The most common method of analysis used in the literature is the time-series techniques.

2.5. Effect on the banking system

Much studies have been done on the effects of economic policy uncertainty on financial systems, particularly on the banking system (Hammoudeh and McAleer, 2015; Chi and Li, 2017; Hu and Gong, 2018; Lee et al.,2017).

Bank credit supply and loan pricing are the main transmission channels through which economic policy uncertainty affects the banking system (Claus, 2011; Ciccarelli et al., 2015; Wulandari, 2012). Economic policy uncertainty affects the loan portfolio of banks. Banks will often respond to high economic policy uncertainty by changing interest rates and reducing the amount of loan

given to borrowers, which leads to a reduction in credit supply (Bordo et al., 2016). Bordo et al (2016) examine the impact of economic policy uncertainty on aggregate bank credit growth. They find that economic policy uncertainty has a significant negative effect on bank credit growth. Chi and Li (2017) examine the effect of economic policy uncertainty on banks' credit risk and lending decisions using data for Chinese commercial banks from 2000 to 2014. They find a positive relationship between economic policy uncertainty and non-performing loan ratios, loan concentration and the normal loan migration rate. Danisman et al (2020a) explores the impact of economic policy uncertainty on credit growth, and finds that uncertainty in economic policies hampers the credit growth of European banks, and the negative impact of economic policy uncertainty on credit growth is more pronounced in civil law countries. It increases with debt maturity, and weakens for banks with a larger number of employees and branches. Hu and Gong (2019) find that economic policy uncertainty significantly hinders the growth of bank credit but the effect varies across banks. The negative effect of economic policy uncertainty on loan growth is greater for larger banks and riskier banks, and weaker for more liquid banks and more diversified banks. Nguyen et al (2020) examine the influences of economic policy uncertainty at domestic and global levels on aggregate bank credit growth. They find that higher level of economic policy uncertainty has negative impact on bank credit growth, and the positive change in economic policy uncertainty has favorable effects on bank credit growth.

Economic policy uncertainty also affects banks' financial performance through lower profitability arising from low demand and low supply of credit in periods of high uncertainty. Killins et al (2019) explores the impact of financial regulation policy uncertainty (FRPU) on bank profit and risk using data of 4760 US banks from Q1 2000 to Q4 2016. They find that FRPU negatively affects the profit for small and large banks. Saffar et al (2019) investigate whether firm-level political uncertainty affects bank loan contracting. They find that firms facing higher firm-level political uncertainty are charged higher bank loan costs. Tran (2020) examines whether economic policy uncertainty affects bank dividend policy using a large sample of US bank holding companies from 2000 to 2015. They find that high economic policy uncertainty leads to a decrease in bank dividend payouts and stock repurchases, and large banks seem to experience the largest impacts. Also, they find that the majority of the explanatory power of the overall economic policy uncertainty is derived from its government spending economic policy uncertainty. Berger et al (2020) show that bank liquidity hoarding is an important channel through which economic policy

uncertainty hurts the real economy. They show that banks hoard liquidity in response to economic policy uncertainty.

Economic policy uncertainty also affects banks' managerial discretion in financial reporting (Stein and Wang, 2016; Yung et al., 2019; Ng et al., 2020). In uncertain times, managers have incentives to alter financial (or accounting) numbers in the financial reporting process in order to achieve a desired financial reporting outcome particularly earnings and capital outcomes in uncertain times (Ng et al., 2020). Yung and Root (2019) argue that economic policy uncertainty influences the financial and investment decisions of the firm, and they find evidence that economic policy uncertainty is positively associated with earnings management which implies that firms will increase (or decrease) earnings management when economic policy uncertainty is high (or low). Jin et al (2019) investigate whether economic policy uncertainty is systematically related to bank earnings opacity. They argue that when economic policy is uncertain, it is easier for bank managers to distort financial information, increase the fluctuation in banks' earnings and cash flows, which provides some incentives and opportunities for bank managers to engage in earnings management. Using a sample of U.S. banks and an index for economic policy uncertainty developed by Baker et al. (2016), they find that high economic policy uncertainty leads to greater earnings management. Danisman et al (2020b) examine the effect of economic policy uncertainty on loan loss provisions using data of 6384 US banks from 2009 to 2019. They find that in times of higher economic policy uncertainty, banks increase their loan loss provisioning. US banks use provisions for income smoothing purposes rather than for capital management purposes during times of high economic policy uncertainty. Ng et al (2020) examine how banks accrue for loan losses in response to economic policy uncertainty and the implications of these accruals in terms of actual loan losses and future liquidity creation. They show that banks recognize more loan losses in anticipation of high economic policy uncertainty, and the association is more pronounced for banks with a riskier loan portfolio and for banks that have a history of lower loan loss reserves.

3. SUMMARY OF THE EFFECT OF EPU ON THE ECONOMIC AND FINANCIAL SYSTEM

Table 1: Effects of high economic policy uncertainty

Transmission channel	Consequence	Evidence
Cost of equity	(i) high risk premium	Pástor and Veronesi (2013), Brogaard and Detzel (2015), Pham (2019)
Stock markets	(i) high economic policy uncertainty leads to higher risk premium, and (ii) increase in transaction costs	Pástor andVeronesi (2013), Gungoraydinoglu et al. (2017), Dakhlaoui and Aloui (2016), Xiong et al. (2018)
Bond spreads	(i) high economic policy uncertainty leads to decline in bond spreads	Qi et al. (2010)
Cost of external financing	(i) high economic policy uncertainty leads to higher borrowing costs	Bradley et al. (2016), Gilchrist et al. (2014), Pastor and Veronesi (2012), Pastor and Veronesi (2013)
Bank loan contracting	(i) high economic policy uncertainty leads to increase in interest rates, (ii) it imposes additional costs on loan contracts, and (iii) unfavourable changes in terms of loan contract	Ashraf and Shen (2019), Francis et al. (2014), Bordo et al. (2016), Chi and Li (2017), Gissler et al. (2016), Hu and Gong (2018), Lee et al. (2017)
Level of investment	(i) high economic policy uncertainty has a negative shock on investment, (ii) it reduces investment activity	Bloom et al. (2007), Drobetz et al. (2018), Kang et al. (2014), Bloom et al. (2007), Drobetz et al. (2018), Kang et al. (2014), Gulen and Ion (2016)
Employment	(i) high economic policy uncertainty leads to increase in unemployment levels	Caggiano et al. (2017), Fontaine et al. (2018)
Economic output	(i) high economic policy uncertainty lowers GDP growth	Bloom (2009), Colombo (2013), Bloom et al. (2012), Baker and Bloom (2013)
The banking system	(i) high economic policy uncertainty negatively hurts the banking system through increased nonperforming loans, reduced loan supply, and it lowers bank performance	Bordo et al. (2016), Chi and Li (2017), Lee et al. (2017), Hammoudeh and McAleer (2015), Hu and Gong (2018), Lee et al. (2017), Gissler et al. (2016)
Credit default swap spread	(i) credit default swap spread is significantly responsive to economic policy uncertainty shocks	Wisniewski and Lambe (2015)
Monetary policy	(i) high economic policy uncertainty reduces the effect of monetary policy on economic activities	Aastveit et al. (2017)
Financial services	(i) high economic policy uncertainty reduces demand for financial services	Junttila and Vataja (2018)

4. WHAT WE DO NOT KNOW: AREAS FOR FUTURE RESEARCH

4.1. Effect of economic policy uncertainty and political polarization on institutional monitoring

The effect of economic policy uncertainty on institutional quality has not been explored in existing studies. It is possible that political polarization in uncertain times can create an environment that weaken the effectiveness of strong institutions. In politically uncertain times, strong institutions may lower their monitoring of firm behavior, and may be reluctant to discipline rule-breaking politically-connected firms in times of high uncertainty to avoid attracting the anger of politicians and to avoid direct political inference in the institution's ability to operate. Future research can investigate the effect of economic policy uncertainty on institutional monitoring and institutional quality.

4.2. Do politically-connected firms perform better under high economic policy uncertainty?

This is another question that has not been answered in the recent literature. It is possible that politically-connected firms enjoy preferential treatment from regulators and government agencies such as low taxation, preferential treatment in competition for government contracts, relaxed regulatory oversight, or stricter regulatory oversight of its rivals (Faccio, 2006), and these benefits can make politically connected firms outperform their peers and competitors in times of high economic policy uncertainty. Future research should investigate the performance of politically-connected firms in times of high economic policy uncertainty to determine whether they perform better than firms that are not politically-connected.

4.3. Effect of high economic policy uncertainty on financial inclusion and exclusion

The literature suggests that financial institutions, particularly banks, will reduce the supply of financial services to firms and individuals through a reduction in loan supply and by charging high interest rates in times of high economic policy uncertainty as shown in section 2. Moreover, it is possible that households and poor individuals, who cannot find cheap loans in the formal sector when they want it, will exit the formal financial system in search for alternative financial services in the informal sector even though it comes at a high cost to them. It is worth exploring whether this behavior is stronger during times of high economic policy uncertainty. Future studies should

investigate whether high economic policy uncertainty leads to greater financial exclusion or reduces financial inclusion.

4.4. Economic policy uncertainty in low and high concentrated markets

The literature has not explored how firms in high and low concentrated markets respond to high economic policy uncertainty, and the role of market power in influencing firm behaviour. It is possible that firms with high market power and in concentrated markets are able to better withstand the effects of high economic policy uncertainty due to their market share advantage, and such firms will have incentives to delay their reaction to high economic policy uncertainty in the business environment compared to firms in less concentrated markets who are more likely to respond very quickly to high economic policy uncertainty in the business environment.

4.5. Further research on the effect of each economic policy uncertainty indicator in the BDD index.

Many studies use the aggregate economic policy uncertainty index to test the effect of economic policy uncertainty on firm behavior and performance. Only few studies test the effect of each economic policy uncertainty component on the firm behavior and performance. Additional research is needed to explore the effect of the separate economic policy uncertainty components on firms' behaviour and performance. Each separate component of economic policy uncertainty may have a different effect on firms' behavior and performance.

4.6. Alternative economic policy uncertainty indicators other than the BDD index.

Finally, there is need to develop alternative indicators of economic policy uncertainty – particularly indicators that are not influenced or affected by political actions or political polarization.

5. CONCLUSION

This paper has reviewed the emerging literature on economic policy uncertainty, with a focus on the interaction between economic policy uncertainty, corporate decisions and banking. In the process, the paper offered several areas for future research that can set the agenda for economic policy uncertainty research in the coming years. The paper has two limitations, One, the paper focuses exclusively on economic policy uncertainty in relation to banking, firms' corporate decisions and the economy, and as such, may not cover other areas outside this focus. Another limitation is the application of a research quality threshold which led to deliberately neglecting other works that might have provided additional insights. However, such omissions would not have altered the findings and avenues for future research.

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