A New Dataset of *Banker Surveys*:

Credit Conditions for 44 Countries over 1993–2021

Yan Liu[†] Xueqing Zhao[‡]

[†]Wuhan University
[‡]Peking University

New York University Shanghai
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Motivation

Credit is back, so are *financial cycles*, after 2008

- Fisher-Kindleberger-Minsky-Koo: narratives, conceptions, and theories
  - Eggertsson and Krugman (2012, QJE), Mian et al. (2017, QJE), Greenwood et al. (2022, JF)

Key idea: excesses in ***credit supply*** cause trouble in the future

- Credit supply but not demand: more credit at lower costs $\Rightarrow$ lower quality, higher valuation, more risk and losses in the future
- Excesses: inefficient amount, exceeding some social optimal

A classic question: how to test/identify this type of stories?

1. How to measure credit supply, from demand?
2. What are the implications of variations in credit supply?

Identifying credit supply at macro level

(Ultra-)long time series data on aggregate credit, enabling VAR type approach

- Schularick and Taylor (2012, AER), Jordà et al. (2017, NBER Annual), etc.
  - Mumtaz et al. (2018) for some caveats of VAR approach
- Cross country data on credit typically in annual frequency, with limited sample countries

Macro level shocks

- Bank branching deregulation in the US, e.g. Jayaratne and Strahan (1996, QJE)
- Financial liberalization, e.g. Larrain and Stumpner (2017, JF)

Cross-section heterogeneity

- Industry level external financing dependence, e.g. Rajan and Zingales (1998, AER)

Identifying credit supply at macro level *and* business cycle frequency

Capital market based signals

- Credit spreads from bond market, e.g. Gilchrist and Zakrajšek (2012, AER)
- Issuer quality, e.g. Greenwood and Hanson (2013, RFS)
- Above combined, *credit market sentiment*, e.g. López-Salido et al. (2017, QJE)
- Bank equity returns, e.g. Baron and Xiong (2017, QJE)

Challenges remain, as

1. Bond markets not equally developed across countries
2. Missing banking market
3. Prices are equilibrium results as quantities, hence endogenous as well

Beyond prices and quantities for credit markets

Credit markets, especially banking, differ from conventional markets where prices and quantities suffice to characterize transactions

- *Information* and *contractual incompleteness* prevail in banking, between borrowers and lenders

Crucial to consider additional dimensions: *screening*, *monitoring*, *control*, etc.

- In particular, pre-transaction ***screening*** plays a central role in banking — or any intermediated credit markets

Conceptually, ***Screening*** is also a key aspect of credit supply

- Credit worthiness assessment, i.e., ***lending standards***
- Higher ***lending standards*** imply lower probability to receive credit for the borrower from the lender, *ceteris paribus*

Measuring lending standards using central bank surveys

Central banks across the world conduct ***banker surveys***, directly asking information on ***lending standards*** and other aspects of credit conditions

- Pioneered by Federal Reserve, *Senior Loan Officer Opinion Survey* (SLOOS)
- And adopted and made widely applicable by ECB in Euro Area, *Bank Lending Survey* (BLS)

In each country, a representative sample of banks are selected and respond directly to the central bank

- Survey frequency is quarterly, with few exceptions

Survey questions typically include

- How ***lending standards*** change relative to the previous quarter, and ***factors*** causing ***lending standards*** changes
- Lending terms, credit demand, etc
- By sectors, bank size, etc.

Overview of this paper

Dataset contruction

- Manually search and collect quarterly ***banker surveys*** for 44 countries, dating back to 1993
  - Prior to this work, unclear how many countries have this type of surveys
- Standardize and harmonize data variables across sources from each country and period

Data validation

- Following Lown and Morgan (2006), we test the dynamic implications of the variable measuing lending standards
- We confirm that lending standards in the cross-country data sample display similar empirical properties as those of SLOOS for the US
- Moreover, lending standards are closely related to the market based measures
  - Credit spreads; high yield shares of bond issuances

Relations to the literature

Literature on ***banker surveys***

- Early use of SLOOS for the US, focusing on monetary policy transmission
  - Lown et al. (2000); Lown and Morgan (2002, 2006)
- Lending standards as proxies of credit supply and/or risk-taking
  - US: Maddaloni and Peydró (2011), Bassett et al. (2014), Ciccarelli et al. (2015), Vojtech et al. (2020), Chen et al. (2021)
  - EU: Berg et al. (2005), de Bondt et al. (2010), Del Giovane et al. (2011), van der Veer and Hoeberichts (2016)
- Cross country banker surveys
  - Filardo and Siklos (2020) for 16 + 1, Brandão-Marques et al. (2022) for 25

Literature on ***credit supply***

- Market based measures for the US
  - Gilchrist and Zakrajšek (2012) for credit spreads, Greenwood and Hanson (2013) for high yield bond shares
- Credit spreads for a global sample
  - Krishnamurthy and Muir (2020)

Country list and sample periods: 44 countries

Country	Period	Country	Period	Country	Period
Albania	2009Q1-2021Q2	Greece	2002Q4-2021Q2	Poland	2003Q4-2021Q2
Argentina	2009Q4-2019Q4	Hungary	2002Q4-2021Q2	Portugal	2002Q4-2021Q3
Australia	1993Q3-2019Q3	Ireland	2002Q4-2021Q3	Romania	2007Q4-2021Q2
Austria	2002Q4-2021Q2	Italy	2002Q4-2021Q3	Russia	2009Q2-2021Q3
Belgium	2002Q4-2021Q2	Japan	2000Q1-2021Q3	Serbia	2014Q1-2021Q2
Brazil	2011Q1-2021Q2	Korea	2002Q1-2021Q3	Slovakia	2005Q1-2021Q2
Canada	1999Q2-2021Q2	Lithuania	2005Q4-2020Q4	Slovenia	2007Q1-2020Q4
China	2004Q1-2021Q3	Luxembourg	2003Q1-2020Q2	Spain	2002Q4-2021Q2
Croatia	2012Q3-2021Q3	Latvia	2007Q1-2021Q2	Sweden	2005Q4-2018Q4
Cyprus	2009Q1-2021Q2	Macedonia	2006Q2-2021Q2	Thailand	2007Q4-2021Q3
Czech	2012Q2-2021Q2	Malta	2006Q2-2021Q1	Turkey	2005Q4-2021Q3
Denmark	2008Q4-2021Q3	Netherlands	2002Q4-2021Q3	Ukraine	2013Q4-2021Q3
Estonia	2011Q1-2021Q2	Norway	2007Q4-2021Q3	United Kingdom	2007Q2-2021Q1
France	2002Q4-2021Q2	New Zealand	2009Q2-2021Q3	United States	1996Q4-2019Q2
Germany	2002Q4-2021Q2	Philippines	2009Q1-2021Q3		

Map of sample countries

Variables and data organization

3 main categories of variables

1. Changes in lending standards
2. Factors for changes of lending standards
   a. Cost of funds and balance sheet constraints, including Capital position, Liquidity position and Market finance
   b. Pressure from competition, including Bank competition, Non-bank competition and Market competition
   c. Risk perception, including Economic outlook, Borrower risk, Collateral risk and Risk tolerance
3. Changes in credit demand

3 types of credit

- Credit to (i) enterprises, (ii) housing related (mortgage), (iii) consumption (non-housing)

Typical wording and answers of a question

"Over the past three months, how have your bank's credit standards as applied to the approval of loans or credit lines to enterprises changed? Please note that we are asking about changes in credit standards, not their levels."

Typically 5 answers:

1. "tightened considerably" (TC)
2. "tightened somewhat" (TS)
3. "basically unchanged" (UC)
4. "eased somewhat" (ES)
5. "eased considerably" (EC)

which can be reduced to 3: "tightened," "unchanged," and "eased"

Standard codings for the answers

Following codings are used for 3 and 5 answers respectively

$$P = \begin{cases} 1, & \text{if answer TC or TS (IC or IS),} \\ 0, & \text{if answer UC,} \\ -1, & \text{if answer EC or ES (DC or DS).} \end{cases} \quad \text{and} \quad P = \begin{cases} 1, & \text{if answer TC (IC),} \\ 0.5, & \text{if answer TS (IS),} \\ 0, & \text{if answer UC,} \\ -0.5, & \text{if answer ES (DS),} \\ -1, & \text{if answer EC (DC).} \end{cases}$$

where "I" denotes "increase" and "D" denotes "decrease"

Measures displayed in central bank reports: net percentage index

Individual banks' responses are confidential, and central banks only publish aggregate indices, either the net percentage or the diffusion index, or both

Changes in credit standards (CCS) and credit demand (CCD) measured by the net percentage index as follows:

$$CCS_{NP} = \frac{\#\text{TC} + \#\text{TS} - \#\text{ES} - \#\text{EC}}{\#\text{Banks}} \times 100$$

$$CCD_{NP} = \frac{\#\text{IC} + \#\text{IS} - \#\text{IS} - \#\text{IC}}{\#\text{Banks}} \times 100$$

Measures displayed in central bank reports: diffusion index

Changes in credit standards (CCS) and credit demand (CCD) measured by the diffusion index as follows:

$$CCS_{DI} = \frac{\#\text{TC} + \#\text{TS} \times 0.5 - \#\text{ES} \times 0.5 - \#\text{EC}}{\#\text{Banks}} \times 100$$

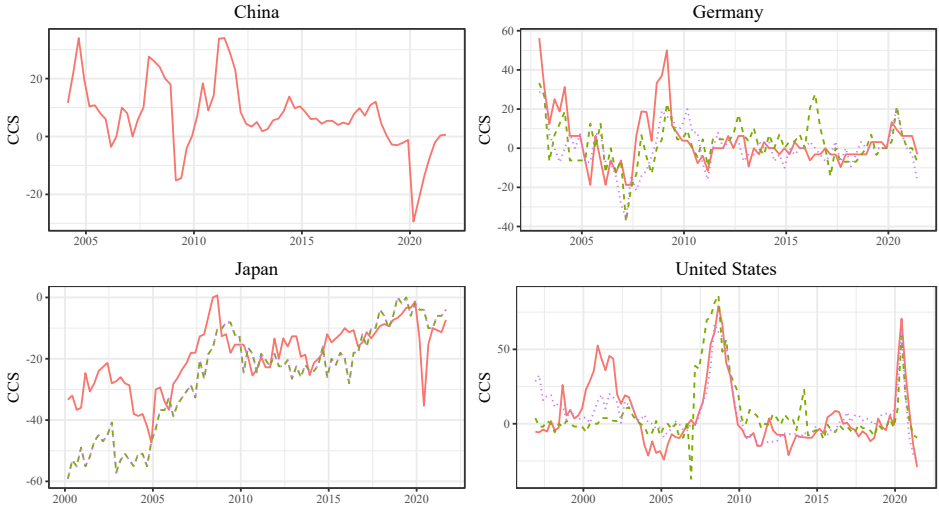
$$CCD_{DI} = \frac{\#\text{IC} + \#\text{IS} \times 0.5 - \#\text{IS} \times 0.5 - \#\text{IC}}{\#\text{Banks}} \times 100$$

For availability, we set the net percentage index as the benchmark; and whenever only the diffusion index is reported by the central bank, we use it to supplement the benchmark data

Summary statistics for core variables

Code	Explanation	Obs	Mean	Std	Min	Max
ECCS	Enterprise-Change-Credit standard	2758	5.12	21.83	-92.4	100
ECCD	Enterprise-Change-Credit demand	2424	6.88	26.35	-100	100
HCCS	Housing-Change-Credit standard	2440	3.32	22.10	-100	100
HCCD	Housing-Change-Credit demand	2366	6.61	34.44	-100	100
CCCS	Consumer-Change-Credit standard	2350	2.92	21.28	-91.3	100
CCCD	Consumer-Change-Credit demand	2258	2.79	28.61	-100	100

Enterprise lending standards for China, Germany, Japan, and the US



A panel VAR model

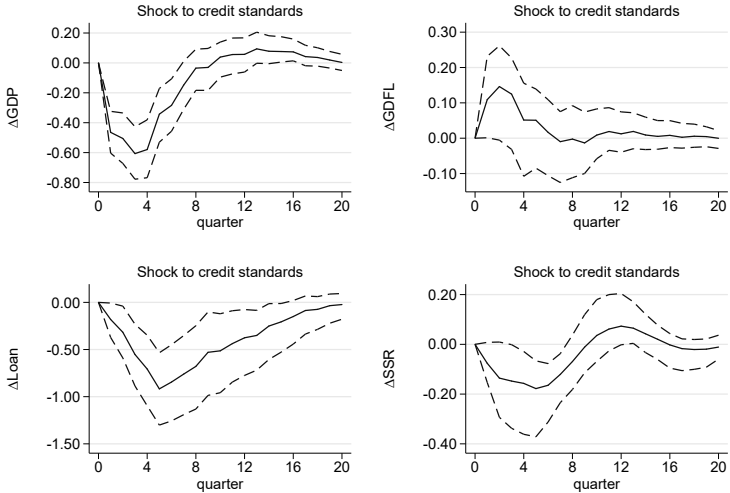
Extend Lown and Morgan (2006, JMCB) 5 variable VAR model into a panel VAR model, with identical variable and ordering specification:

$$Y_{it} = \alpha_i + \Theta(\mathcal{L})Y_{it-1} + \epsilon_{it},$$

where $Y_{it} = \{\Delta GDP_{it}, \Delta GDFL_{it}, \Delta Loan_{it}, \Delta SSR_{it}, ECCS_{it}\}$

- $\Delta GDFL_{it}$ is GDP deflator, $Loan_{it}$ is non-financial enterprise loan, and SSR_{it} is shadow short-term rate
- Use SSR_{it} to deal with zero lower bound problem prevalent in the aftermath of 2008 financial crisis, and data source is Krippner (2020), which modifies the original method of Wu and Xia (2016)

Impulse responses of key variables to the lending standards shock

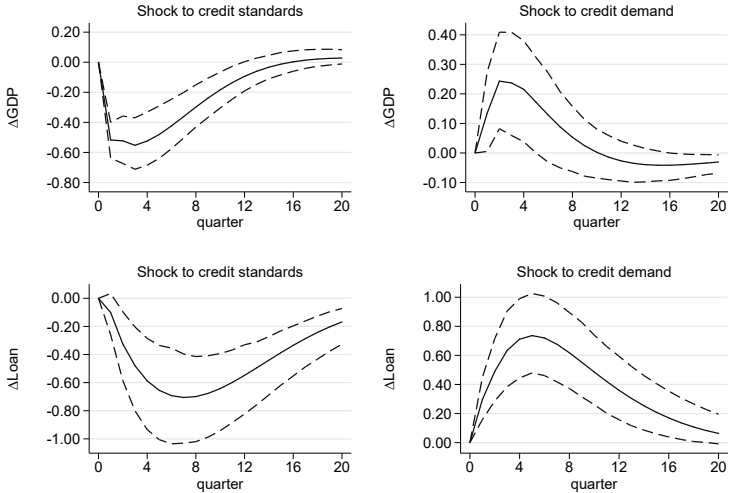


Notes: The credit standards used here are for enterprises. Errors are 5% on each side generated by Monte-Carlo with 500 reps.

Variance decomposition

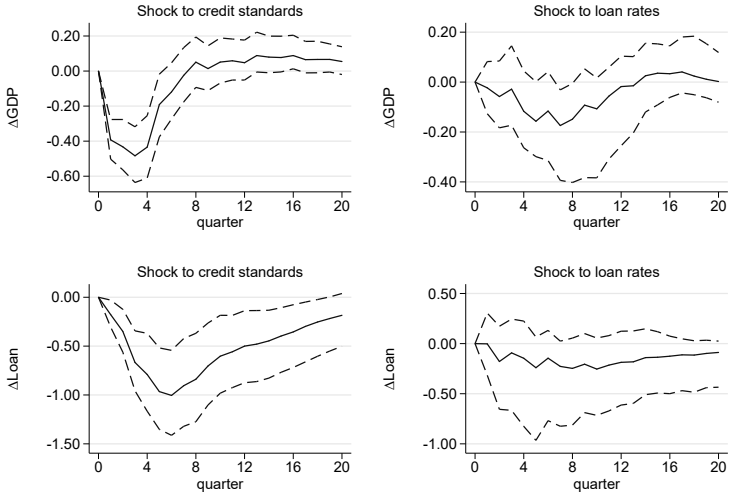
Quarters	ΔGDP	$\Delta GDFL$	$\Delta Loan$	ΔSSR	$ECCS$
		ΔGDP			
10	0.8817	0.0134	0.0097	0.0105	0.0846
30	0.8640	0.0169	0.0157	0.0186	0.0848
		$\Delta GDFL$			
10	0.0317	0.9426	0.0101	0.0062	0.0095
30	0.0326	0.9369	0.0112	0.0098	0.0095
		$\Delta Loan$			
10	0.0371	0.0424	0.8476	0.0022	0.0707
30	0.0469	0.0409	0.8263	0.0037	0.0822
		ΔSSR			
10	0.0169	0.0751	0.0178	0.8458	0.0444
30	0.0173	0.1130	0.0229	0.8031	0.0437

Impulse responses: adding the credit demand variable



Notes: Both the credit standards and credit demand used here are for enterprises.

Impulse responses: adding the bank lending rate variable

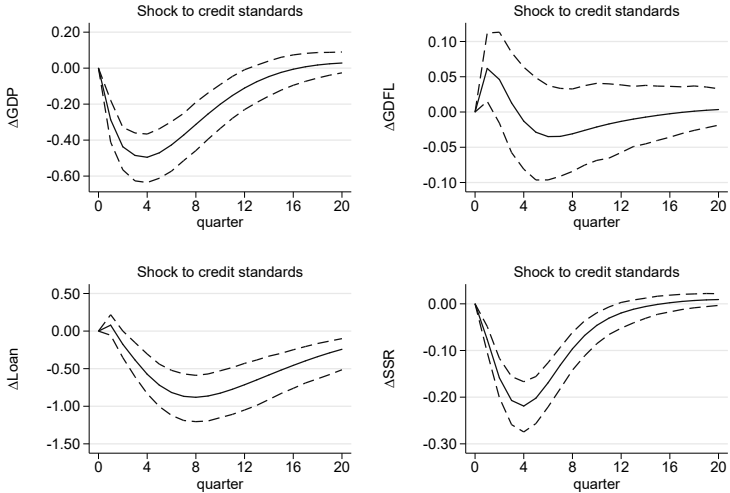


Notes: The credit standards used here are for enterprises.

Variance decomposition: two extended models

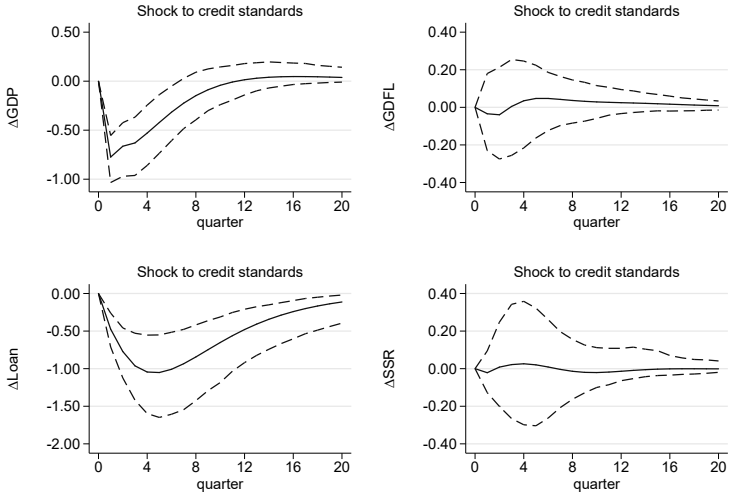
Variables	ΔGDP	$\Delta GDFL$	$\Delta Loan$	$ECCD$	ΔSSR	$ECCS$
Adding credit demand $ECCD$						
ΔGDP	0.8380	0.0079	0.0346	0.0133	0.0075	0.0989
$\Delta Loan$	0.0468	0.0450	0.7425	0.0657	0.0216	0.0783
Variables	ΔGDP	$\Delta GDFL$	$\Delta Loan$	ΔLR	ΔSSR	$ECCS$
Adding bank lending rate ΔLR						
ΔGDP	0.8430	0.0069	0.0544	0.0095	0.0257	0.0605
$\Delta Loan$	0.0940	0.0229	0.7385	0.0105	0.0074	0.1267

Impulse responses: subsample of developed countries



Notes: The credit standards used here are for enterprises.

Impulse responses: subsample of emerging market countries



Notes: The credit standards used here are for enterprises.

Alternative market based measures of credit supply

Recent literature uncovers two sets of market based measures, which are informative about credit supply

1. Corporate credit spreads: corporate bond yields minus risk free rates
   - Following the data sources and methodology of Krishnamurthy and Muir (2020), standardize the credit spreads with country sample mean

$$Corp\_spr_{it} = Spread_{it} / \overline{Spread_i}$$

   - Append the benchmark VAR with $Corp\_spr_{it}$ ordered last, as it is measured at the end-of-quarter
2. High yield bond share: the share of high yield bonds among new bond issuances
   - Data provided by Kirti (2018), covering 38 countries in our sample

Correlations of credit spreads and lending standards

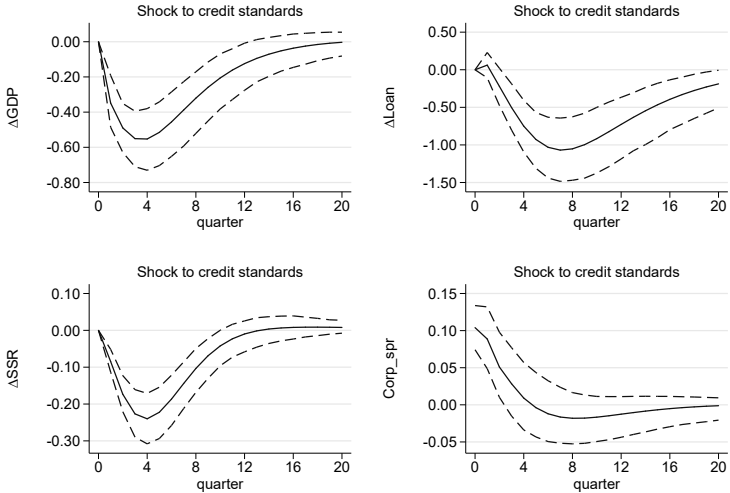
Predominantly *positive*, i.e., higher credit spreads associated with higher lending standards

Country	Correlation	p-value	Country	Correlation	p-value
Australia	0.78***	0.00	Korea	0.03	0.78
Austria	0.20	0.17	Malta	0.42	0.58
Belgium	0.41***	0.01	Netherlands	0.54***	0.00
Canada	0.19	0.31	Poland	-0.04	0.81
Denmark	0.35	0.25	Portugal	0.20	0.20
France	0.27*	0.07	Slovakia	0.11	0.39
Germany	0.23**	0.04	Spain	-0.11	0.37
Greece	0.06	0.71	Sweden	0.28	0.17
Ireland	0.20	0.20	United Kingdom	0.26*	0.06
Italy	0.07	0.57	United States	0.53***	0.00
Japan	0.25**	0.02			

Regression: credit spreads on lending standards

	$Corp\_spr_t$	$Corp\_spr_{t+1}$	$Corp\_spr_{t+2}$	$Corp\_spr_{t+3}$	$Corp\_spr_{t+4}$
$ECCS_t$	0.009***	0.007**	0.005*	0.003	-0.000
	(3.20)	(2.76)	(1.76)	(1.25)	(-0.02)
ΔGDP_t	-0.031**	-0.016	-0.004	0.004	0.004
	(-2.25)	(-0.91)	(-0.23)	(0.20)	(0.18)
$\Delta Loan_t$	-0.007	-0.006	-0.003	-0.002	-0.003
	(-0.73)	(-0.66)	(-0.36)	(-0.28)	(-0.47)
ΔSSR_t	0.014	0.037	0.039	0.040	0.041
	(0.26)	(0.71)	(0.71)	(0.65)	(0.65)
$\Delta GDFL_t$	0.037**	0.032*	0.010	-0.011	-0.015
	(2.41)	(1.99)	(0.61)	(-0.62)	(-0.90)
Cons.	1.001***	1.008***	1.040***	1.077***	1.108***
	(14.44)	(13.85)	(14.57)	(15.01)	(15.92)
Country FE	Y	Y	Y	Y	Y
R^2 (within)	0.0671	0.0380	0.0128	0.0071	0.0061
N	942	924	904	883	863

Impulse responses: corporate credit spreads ordered the last



Notes: The credit standards used here are for enterprises.

Correlations of high yield shares and lending standards

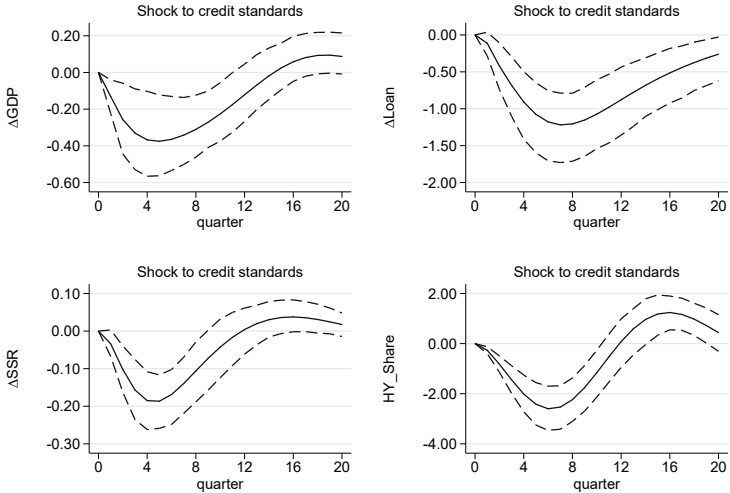
Predominantly *negative*, i.e., lower shares associated with higher lending standards

Country	Correlation	p-value	Country	Correlation	p-value
Argentina	-0.28	0.54	Japan	-0.79***	0.00
Australia	-0.12	0.60	Korea	0.03	0.91
Austria	-0.12	0.69	Netherlands	-0.34	0.23
Belgium	-0.06	0.83	Norway	-0.46	0.21
Brazil	0.76*	0.08	New Zealand	-0.43	0.33
Canada	-0.42*	0.10	Poland	-0.54*	0.06
China	0.00	0.99	Portugal	-0.52*	0.05
Czech	0.75	0.25	Russia	0.17	0.71
Denmark	-0.37	0.36	Spain	-0.18	0.54
France	-0.41	0.14	Sweden	-0.09	0.78
Germany	-0.57**	0.03	Thailand	-0.17	0.66
Greece	-0.28	0.33	Turkey	0.15	0.67
Hungary	-0.60**	0.02	United Kingdom	-0.28	0.46
Ireland	-0.40	0.16	United States	-0.10	0.66
Italy	-0.26	0.37			

Regression: high yield shares on lending standards

	HY_Share_t	HY_Share_{t+1}	HY_Share_{t+2}	HY_Share_{t+3}	HY_Share_{t+4}
$ECCS_t$	-0.138**	-0.153**	-0.157**	-0.154**	-0.144***
	(-2.29)	(-2.43)	(-2.55)	(-2.69)	(-2.84)
ΔGDP_t	0.203	-0.082	-0.340	-0.492	-0.557
	(0.58)	(-0.23)	(-0.87)	(-1.09)	(-1.01)
$\Delta Loan_t$	-0.239	-0.262	-0.298	-0.331	-0.357
	(-0.80)	(-0.86)	(-0.99)	(-1.14)	(-1.29)
ΔSSR_t	0.224	0.425	0.628	0.699	0.649
	(0.29)	(-0.55)	(0.84)	(0.94)	(0.81)
$\Delta GDFL_t$	-0.329	-0.277	-0.259	-0.258	-0.285
	(-0.88)	(-0.81)	(-0.79)	(-0.75)	(-0.76)
Cons.	18.24***	18.84***	19.44***	19.82***	20.00***
	(11.23)	(11.20)	(10.44)	(9.40)	(8.40)
Country FE	Y	Y	Y	Y	Y
R^2 (within)	0.0593	0.0665	0.0745	0.0814	0.0844
N	1190	1163	1136	1109	1082

Impulse responses: high yield bond shares ordered as next to the last



Notes: The credit standards used here are for enterprises.

Summary statistics of factors behind lending standards

Code	Explanation	Obs	Mean	Std	Min	Max
EO	Economic outlook	1352	11.44	29.16	-85.6	100
BR	Borrower risk	1432	14.91	26.13	-91.9	100
CR	Collateral risk	1048	9.38	18.21	-72.1	93.4
LP	Liquidity position	1237	-2.06	16.43	-66.2	91
CP	Capital position	1218	4.73	12.06	-34.2	80
MF	Market finance	986	1.98	15.06	-66	88
BC	Bank competition	997	-11.74	19.42	-98	91
NC	Non-bank competition	930	-0.91	7.68	-48	67
MC	Market competition	918	-1.56	9.03	-48	66

Regression: lending standards on factors

	(1)	(2)	(3)	(4)
EO	0.186***	0.147**	0.198**	0.175**
BR	0.249***	0.279***	0.237***	0.253***
CR	0.211**	0.322***	0.233***	0.282***
LP	0.268***	0.209**	0.285***	0.229***
CP	0.0576	0.0735	0.0657	0.0915
MF	0.0942**	0.0937**	0.163**	0.162***
BC	0.246***	0.237***	0.0684*	0.0700
NC	-0.00984	-0.0355	0.00537	-0.0918
MC	0.0117	0.114	-0.0247	0.128
Country FE	Y	Y	Y	Y
Time FE	N	Y	N	Y
Controls	N	Y	N	Y
R^2 (within)	0.708	0.730	0.752	0.764
N	848	749	848	749

Regression: lending standards on factors (contd.)

	(1)	(2)	(3)	(4)
$EO \times Easing$			-0.105	-0.127
$BR \times Easing$			-0.149	-0.130
$CR \times Easing$			-0.285*	0.0871
$LP \times Easing$			-0.0660	-0.0353
$CP \times Easing$			-0.124	-0.311
$MF \times Easing$			-0.0480	-0.228
$BC \times Easing$			0.346***	0.408***
$NC \times Easing$			0.0195	0.0561
$MC \times Easing$			0.211	0.0538
Country FE	Y	Y	Y	Y
Time FE	N	Y	N	Y
Controls	N	Y	N	Y
R^2 (within)	0.708	0.730	0.752	0.764
N	848	749	848	749

Summary

- Global Banker Surveys (GBS) dataset contains useful information
- Lending standards variable is an informative measure of credit supply, beyond the typical market based measures
- Shocks to lending standards have important macroeconomic implications

Thank you very much!

References I

Baron, M. and W. Xiong (2017): "Credit Expansion and Neglected Crash Risk," *Quarterly Journal of Economics*, 132, 713–764.

Bassett, W. F., M. B. Chosak, J. C. Driscoll, and E. Zakrajšek (2014): "Changes in Bank Lending Standards and the Macroeconomy," *Journal of Monetary Economics*, 62, 23–40.

Berg, J., A. Ferrando, G. de Bondt, and S. Scopel (2005): "The Bank Lending Survey for the Euro Area," Occasional Paper Series 23, European Central Bank.

Brandão-Marques, L., Q. Chen, C. Raddatz, J. Vandenbussche, and P. Xie (2022): "The Riskiness of Credit Allocation and Financial Stability," *Journal of Financial Intermediation*, 51, 100980.

Chen, K., P. Higgins, and T. Zha (2021): "Cyclical Lending Standards: A Structural Analysis," *Review of Economic Dynamics*, 42, 283–306.

Ciccarelli, M., A. Maddaloni, and J.-L. Peydró (2015): "Trusting the Bankers: A New Look at the Credit Channel of Monetary Policy," *Review of Economic Dynamics*, 18, 979–1002.

de Bondt, G., A. Maddaloni, J.-L. Peydró, and S. Scopel (2010): "The Euro Area Bank Lending Survey Matters: Empirical Evidence for Credit and Output Growth," Working Paper Series 1160.

Del Giovane, P., G. Eramo, and A. Nobili (2011): "Disentangling Demand and Supply in Credit Developments: A Survey-Based Analysis for Italy," *Journal of Banking & Finance*, 35, 2719–2732.

Eggertsson, G. B. and P. Krugman (2012): "Debt, Deleveraging, and the Liquidity Trap: A Fisher-Minsky-Koo Approach," *Quarterly Journal of Economics*, 127, 1469–1513.

Filardo, A. J. and P. L. Siklos (2020): "The Cross-border Credit Channel and Lending Standards Surveys," *Journal of International Financial Markets, Institutions and Money*, 67, 101206.

References II

Gilchrist, S. and E. Zakrajšek (2012): "Credit Spreads and Business Cycle Fluctuations," *American economic review*, 102, 1692–1720.

Greenwood, R. and S. G. Hanson (2013): "Issuer Quality and Corporate Bond Returns," *Review of Financial Studies*, 26, 1483–1525.

Greenwood, R., S. G. Hanson, A. Shleifer, and J. A. Sørensen (2022): "Predictable Financial Crises," *Journal of Finance*, 77, 863–921.

Jayaratne, J. and P. E. Strahan (1996): "The Finance-Growth Nexus: Evidence from Bank Branch Deregulation," *Quarterly Journal of Economics*, 111, 639–670.

Jordà, O., M. Schularick, and A. M. Taylor (2017): "Macrofinancial History and the New Business Cycle Facts," in *NBER Macroeconomics Annual 2016*, ed. by M. Eichenbaum and J. A. Parker, University of Chicago Press, vol. 31.

Kirti, D. (2018): *Lending standards and output growth*, International Monetary Fund.

Krippner, L. (2020): "Documentation for Shadow Short Rate Estimates," https://www.ljkmfa.com/wp-content/uploads/2020/05/Documentation-for-SSR-estimates-29-May-2020.pdf.

Krishnamurthy, A. and T. Muir (2020): "How Credit Cycles across a Financial Crisis," Working Paper 23850, NBER.

Larrain, M. and S. Stumpner (2017): "Capital Account Liberalization and Aggregate Productivity: The Role of Firm Capital Allocation," *Journal of Finance*, 72, 1825–1858.

López-Salido, D., J. C. Stein, and E. Zakrajšek (2017): "Credit-market Sentiment and the Business Cycle," *Quarterly Journal of Economics*, 132, 1373–1426.

References III

Lown, C. S. and D. P. Morgan (2002): "Credit Effects in the Monetary Mechanism," *FRBNY Economic Policy Review*, 8, 217–235.

——— (2006): "The Credit Cycle and the Business Cycle: New Findings Using the Loan Officer Opinion Survey," *Journal of Money, Credit and Banking*, 38, 1575–1597.

Lown, C. S., D. P. Morgan, and S. Rohatgi (2000): "Listening to Loan Officers: The Impact of Commercial Credit Standards on Lending and Output," *Economic Policy Review*, 6, 1–16.

Maddaloni, A. and J.-L. Peydró (2011): "Bank Risk-taking, Securitization, Supervision, and Low Interest Rates: Evidence from the Euro-area and the U.S. Lending Standards," *Review of Financial Studies*, 24, 2121–2165.

Mian, A., A. Sufi, and E. Verner (2017): "Household Debt and Business Cycles Worldwide," *Quarterly Journal of Economics*, 132, 1755–1817.

Mumtaz, H., G. Pinter, and K. Theodoridis (2018): "What Do VARs Tell Us about the Impact of a Credit Supply Shock?" *International Economic Review*, 59, 625–646.

Rajan, R. G. and L. Zingales (1998): "Financial Dependence and Growth," *American Economic Review*, 88, 559–586.

Schularick, M. and A. M. Taylor (2012): "Credit Booms Gone Bust: Monetary Policy, Leverage Cycles, and Financial Crises, 1870–2008," *American Economic Review*, 102, 1029–61.

van der Veer, K. J. and M. M. Hoeberichts (2016): "The Level Effect of Bank Lending Standards on Business Lending," *Journal of Banking & Finance*, 66, 79–88.

Vojtech, C. M., B. S. Kay, and J. C. Driscoll (2020): "The Real Consequences of Bank Mortgage Lending Standards," *Journal of Financial Intermediation*, 44, 100846.

Wu, J. C. and F. Xia (2016): "Measuring the Macroeconomic Impact of Monetary Policy at the Zero Lower Bound," *Journal of Money, Credit and Banking*, 48, 253–291.