Why do SMEs not apply for Loans?

Bank Loan Application Behavior and Access to Finance in the Eurozone

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Overview

❖ SMEs bank loan application decisions

❖ Expected utility scenario modelling

❖ Empirical Investigation

❖ Tentative conclusions

Overview of the key findings

❖ Beside application for a bank loan, we distinguish between different forms of non-application: **reliance on internal funds, a believe-driven channel** and a **cost-driven channel.**

❖ In our expected-utility framework, we show that **not applying for a bank loan can be the "best choice"** based on several drivers.

❖ We confirm that **larger, older and healthier firms** are more likely to apply for bank loans and **less likely to switch to non-application**.

❖ After Covid, **supply side stringency is a driver** of firms' switching to non-application behavior.

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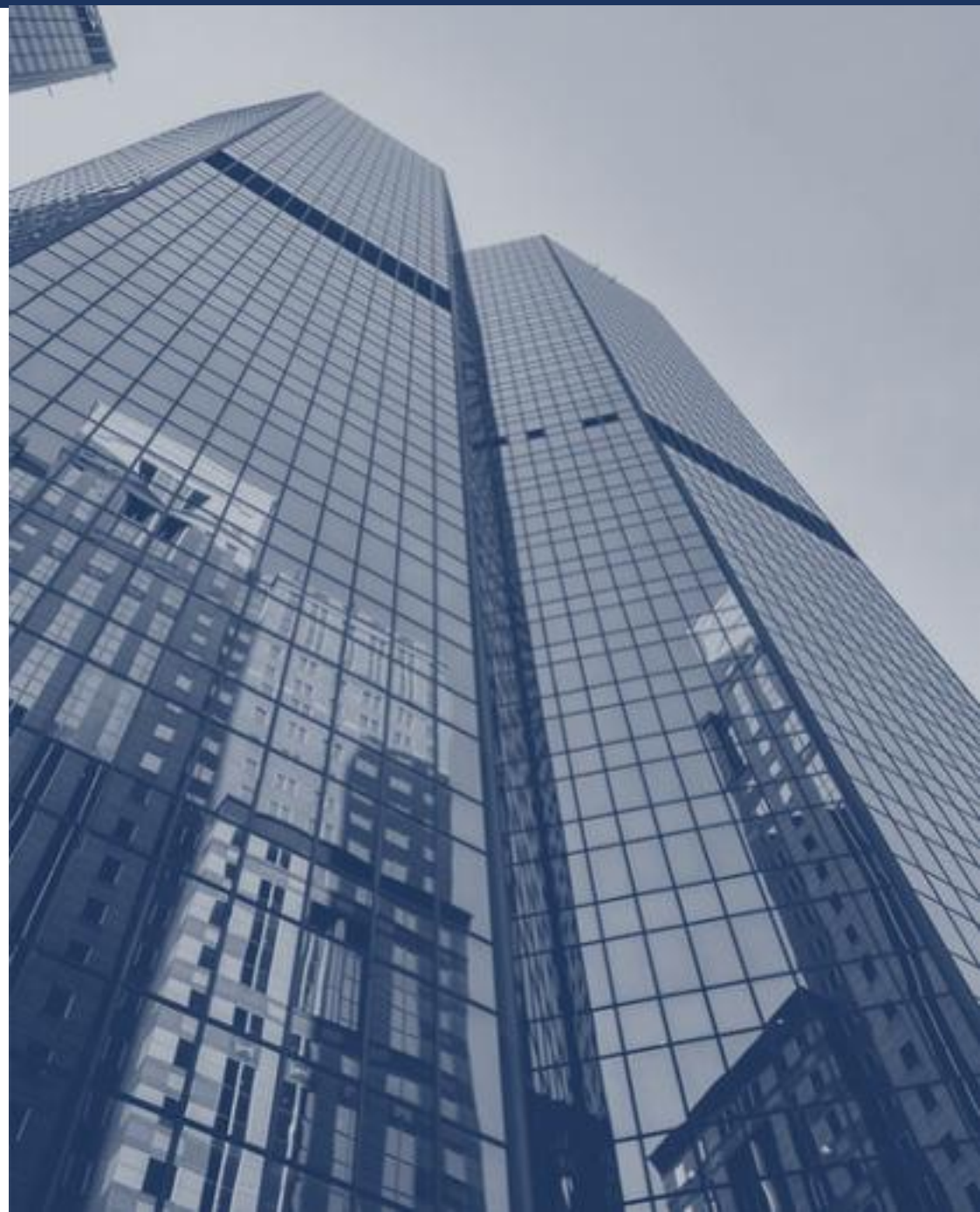
The role of SMEs in Europe

❖ SMEs account for **52%** of EU GDP (Eurostat, 2022). **Approximately 64%** of the private sector jobs in the EU are created by SMEs (Eurostat, 2022).

❖ Many SMEs **do not apply for bank loans** (around 70%).

❖ **Smaller and younger** firms are more likely to be discouraged from loan applications (Chakravarty & Xiang, 2013, Ferrando & Mulier, 2022, Fidrmuc et al., 2024, …).

❖ Berg (2018) finds strong real effects on firms that experience a loan rejection, i.e. **investment cuts and employment reduction.**

SME financing literature

❖ **Kon & Storey (2003)** model loan application decision as a **rational trade-off** in which firms compare the expected benefits against the expected costs. Their framework formalizes why otherwise viable firms may choose not to apply.

❖ **Ferrando & Mulier (2022)** show, that firms needing external finance trade off the costs and benefits of a loan application. They also hint at the **inefficiency of this self-constraining behavior** as 40% of discouraged firms would likely be able to obtain a loan.

❖ Beside application for a bank loan, we distinguish between different forms of non-application: **reliance on internal funds, discouragement,** and **cost driven non-application.**

❖ We further aim to investigate **shifts from application to non-application.**

Data

❖ Our primary data source is the Survey on the Access to Finance of Enterprises (SAFE) from **H1 2014 to H1 2025**. Our main regressions contain **~ 7,000 observations**.

Application

|	
Have you applied for the following types (bank loan) of financing in the past six months?	1) Applied
	2) Did not apply because of possible rejection
(Please take into account renewal of the existing contracts)	3) Did not apply because of sufficient internal funds
	4) Did not apply for other reasons

❖ From the SAFE we extract and construct variables for: Firm **size** and **age**, **perception** (past 6 months) and **expectation** (next 6 months) of bank loan availability, financing use for **investment**, financing use for **refinancing**, past **profits**, bank loan application **experience**, and current **bank loan application behavior.**

❖ From the Bank Lending Survey (BLS) we **construct an index** combining five dimensions of reported credit standards: impact of economic activity, firm/industry situation, liquidity, access to market finance, and banks' risk tolerance.

SMEs bank loan application decisions

Bank loan application behavior over time. Notably, we see a steady decline in bank loan applications **even before** Covid
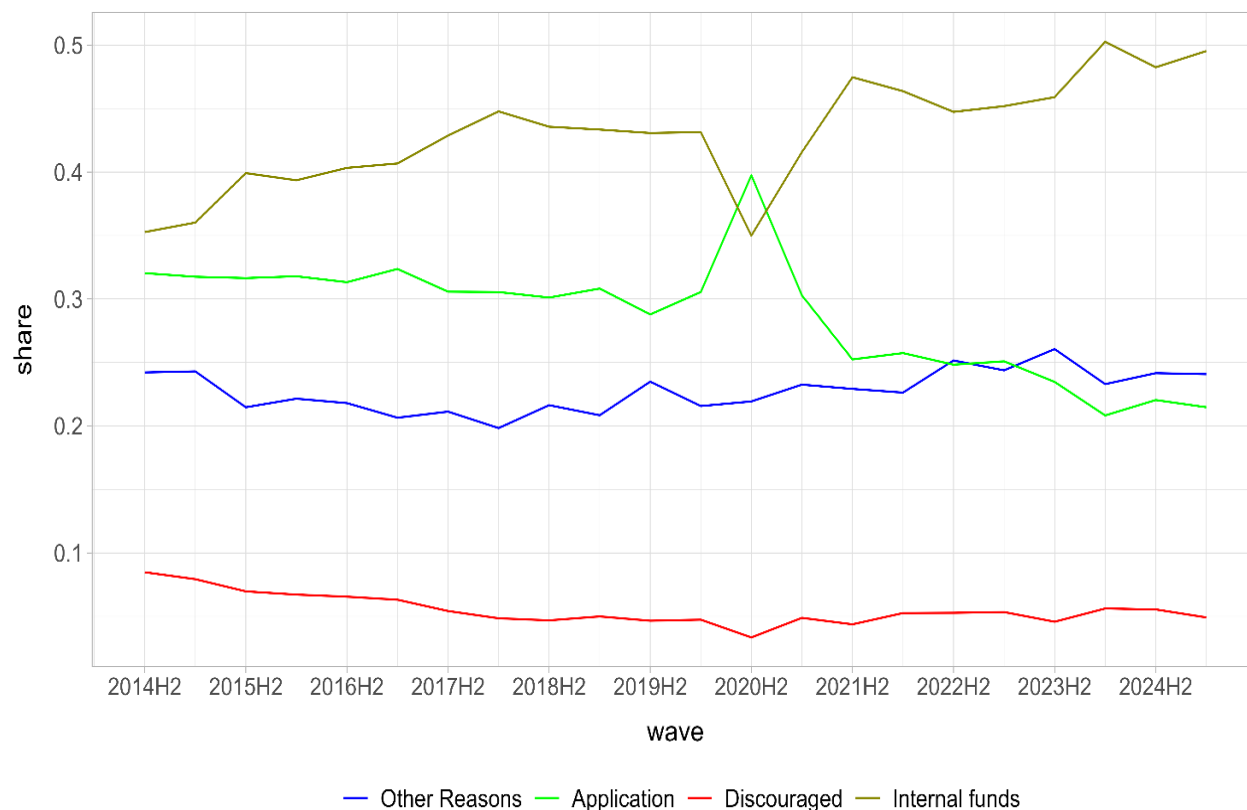
Share of SMEs **switching** from a bank loan application in t-1 to discouragement or non-application due to other reasons
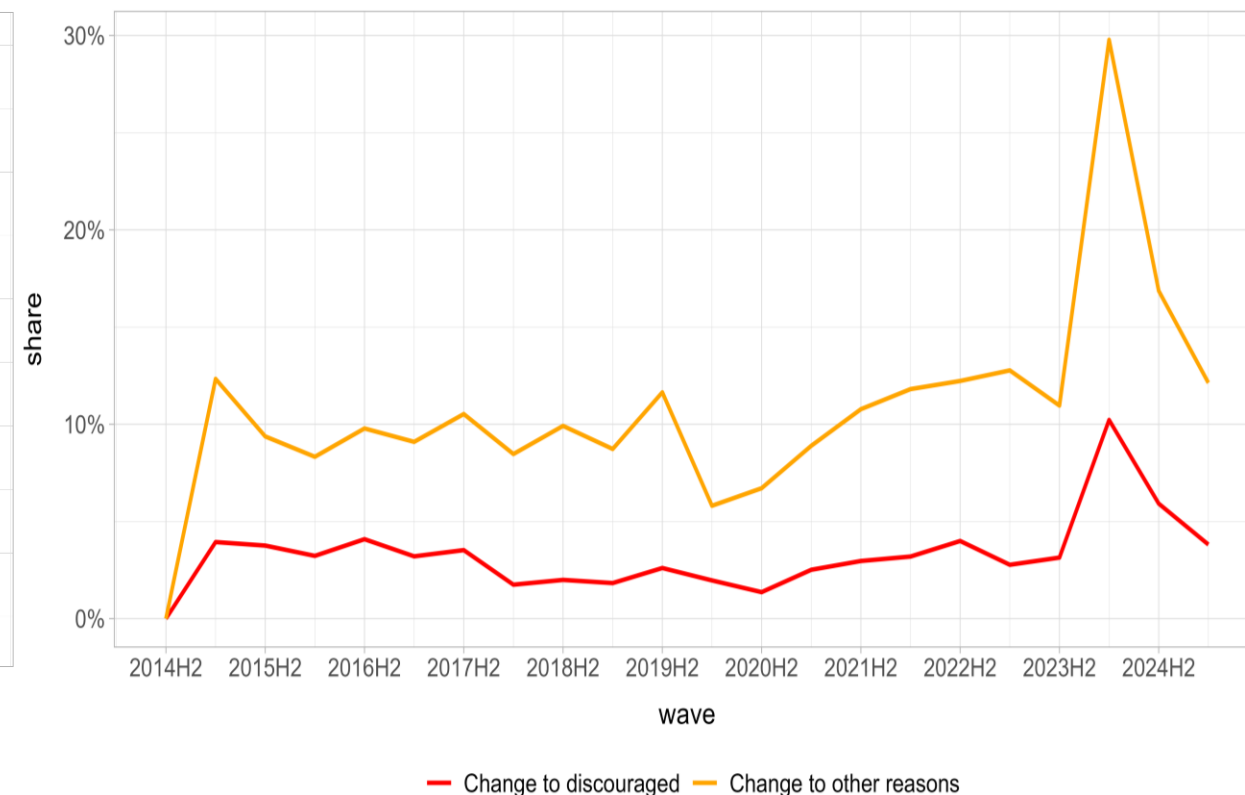
Methods

❖ First, we set up an **expected utility model** to allow a **mechanism-level investigation** in the first step.

❖ Second, we apply **multinomial logit models** to empirically complement our expected utility modelling.

  ❖ The MNL is **jointly estimated on the full set of regressors** for all outcomes and therefore a nice empirical **complement and robustness** check for the proposed mechanisms.

❖ Third, we conduct **logit models** to investigate the **switching behavior** from previous bank loan applications to discouragement or non-application due to other reasons.

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SMEs bank loan application decisions

❖ We, generally follow Kon & Storey (2003) and the hypotheses outlined in Ferrando & Mulier (2022).

❖ As an extension, we distinguish **three conceptually different** forms of non-application.

    ❖ Internal funds: Only applicable if internal funds available and usually preferable.

    ❖ Discouraged: Captures cases where the firm's subjective approval belief p is sufficiently low that applying is not worthwhile even before considering borrowing costs.

    ❖ Other Reasons: Captures cases where p is not the binding constraint but the perceived costs of borrowing.

$$m_A(x) = p(x)\big[R(I,x) - F(x) - \big(1 + r(x)\big)B(x)\big] - C(x)$$

$$m_I(x) = R(I,x) - I, \qquad with\ F(x) \geq I$$

$$m_D(x) = 0 + \psi_D(1 - p(x))$$

$$m_O(x) = 0 + \psi_O(C(x), \phi(x), r(x))$$

Calculating signs and weights

❖ The signs **align broadly** with the expected/proposed mechanisms.

❖ The weights **reflect the importance** of the mapped observables. Observables for internal funds have the least explanatory power.

	Application (A)		Internal Funds (I)		Discouraged (D)		Other Reasons (O)		Values
	Sign	Weight	Sign	Weight	Sign	Weight	Sign	Weight	
Size	+	0.386					-	0.340	0
Age	+	0.019					-	0.020	0.83
Lagged Perception	+	0.017			-	0.439			-0.18
Lagged Outlook	+	0.023			-	0.179			-0.35
Lagged Profits	+	0.015	+	0.116					0.31
Investment Need	+	0.419	-	0.062					0.43
Refinancing Need	+	0.005	-	0.104					0.15
BLS Index	-	0.113					+	0.015	Increments of 0.01

Example scenario

❖ This scenario is modelled with **post Covid beliefs** about bank loan availability and for **medium-sized firms** while keeping all other variables at sample mean and **varying supply levels**.

❖ The scenario suggests, there is a **supply-driven discouragement margin** under certain circumstances.
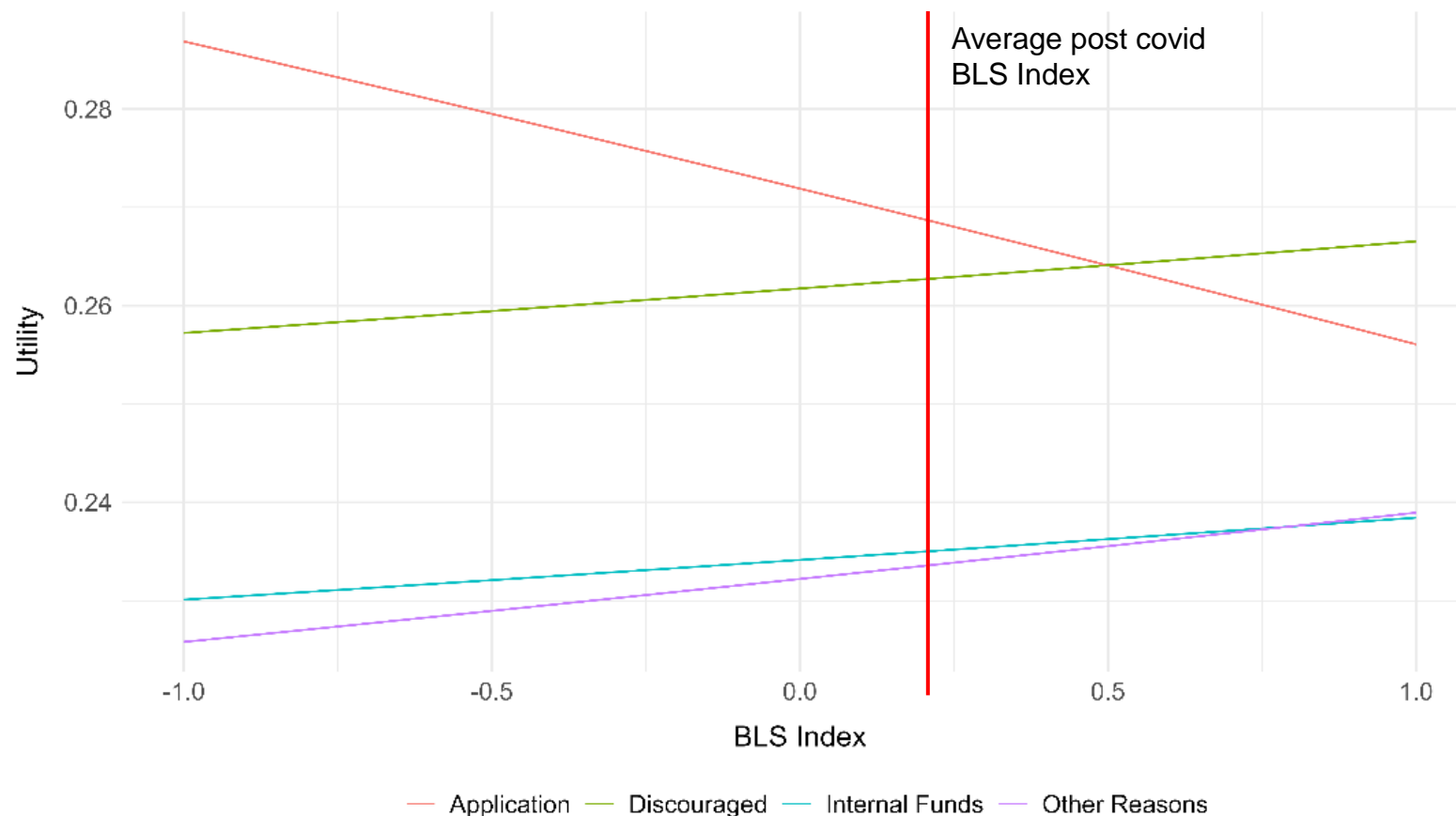
13

Overview

Multinomial Logit Results

❖ Bigger and older firms are **more likely to apply** for a bank loan and **less likely to be discouraged.**

	Other Reasons	Application	Discouraged	Internal Funds	Other Reasons	Application	Discouraged	Internal Funds
Age	−0.014	0.016	−0.020***	0.018	−0.016	0.021	−0.018***	0.013
	(0.013)	(0.014)	(0.004)	(0.018)	(0.012)	(0.013)	(0.005)	(0.017)
Size	−0.039***	0.112***	−0.028***	−0.045***	−0.026**	0.075***	−0.017**	−0.032**
	(0.012)	(0.012)	(0.010)	(0.016)	(0.012)	(0.008)	(0.008)	(0.015)
BLS Index	0.004	−0.011	0.007	−0.001	0.020*	−0.008	0.001	−0.012
	(0.015)	(0.023)	(0.006)	(0.023)	(0.011)	(0.018)	(0.006)	(0.019)
Lagged Profits	−0.029***	0.032**	−0.026**	0.023*	−0.032***	0.039***	−0.019*	0.011
	(0.006)	(0.012)	(0.010)	(0.012)	(0.006)	(0.013)	(0.010)	(0.013)
Investment	−0.042***	0.123***	−0.023***	−0.058***	−0.040***	0.098***	−0.020***	−0.039*
	(0.010)	(0.030)	(0.006)	(0.022)	(0.010)	(0.028)	(0.007)	(0.020)
Refinancing	−0.013	0.079**	0.030***	−0.096***	−0.011	0.051*	0.022***	−0.062**
	(0.014)	(0.033)	(0.004)	(0.036)	(0.012)	(0.029)	(0.004)	(0.031)
Lagged Perception	−0.007*	−0.023***	−0.052***	0.082***	−0.004	−0.017***	−0.034***	0.055***
	(0.004)	(0.006)	(0.008)	(0.005)	(0.005)	(0.006)	(0.007)	(0.008)
Lagged Outlook	−0.005	−0.002	−0.009	0.016**	−0.010***	0.005	−0.004	0.009
	(0.003)	(0.006)	(0.006)	(0.007)	(0.003)	(0.005)	(0.004)	(0.006)
Sector, wave and country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Experience	No	No	No	No	Yes	Yes	Yes	Yes
Observations	7,333	7,333	7,333	7,333	6,891	6,891	6,891	6,891
Adjusted R²	0.094	0.094	0.094	0.094	0.156	0.156	0.156	0.156

Multinomial Logit Results

❖ Investment and Refinancing need are **strongly connected** to bank loan applications.

	Other Reasons	Application	Discouraged	Internal Funds	Other Reasons	Application	Discouraged	Internal Funds
Age	−0.014	0.016	−0.020***	0.018	−0.016	0.021	−0.018***	0.013
	(0.013)	(0.014)	(0.004)	(0.018)	(0.012)	(0.013)	(0.005)	(0.017)
Size	−0.039***	0.112***	−0.028***	−0.045***	−0.026**	0.075***	−0.017**	−0.032**
	(0.012)	(0.012)	(0.010)	(0.016)	(0.012)	(0.008)	(0.008)	(0.015)
BLS Index	0.004	−0.011	0.007	−0.001	0.020*	−0.008	0.001	−0.012
	(0.015)	(0.023)	(0.006)	(0.023)	(0.011)	(0.018)	(0.006)	(0.019)
Lagged Profits	−0.029***	0.032**	−0.026**	0.023*	−0.032***	0.039***	−0.019*	0.011
	(0.006)	(0.012)	(0.010)	(0.012)	(0.006)	(0.013)	(0.010)	(0.013)
Investment	−0.042***	0.123***	−0.023***	−0.058***	−0.040***	0.098***	−0.020***	−0.039*
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Refinancing	−0.013	0.079**	0.030***	−0.096***	−0.011	0.051*	0.022***	−0.062**
	(0.014)	(0.033)	(0.004)	(0.036)	(0.012)	(0.029)	(0.004)	(0.031)
Lagged Perception	−0.007*	−0.023***	−0.052***	0.082***	−0.004	−0.017***	−0.034***	0.055***
	(0.004)	(0.006)	(0.008)	(0.005)	(0.005)	(0.006)	(0.007)	(0.008)
Lagged Outlook	−0.005	−0.002	−0.009	0.016**	−0.010***	0.005	−0.004	0.009
	(0.003)	(0.006)	(0.006)	(0.007)	(0.003)	(0.005)	(0.004)	(0.006)
Sector, wave and country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Experience	No	No	No	No	Yes	Yes	Yes	Yes
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Multinomial Logit Results

❖ Beliefs are **drivers of discouragement** but not for the other reasons category

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BLS Index	0.004	−0.011	0.007	−0.001	0.020*	−0.008	0.001	−0.012
	(0.015)	(0.023)	(0.006)	(0.023)	(0.011)	(0.018)	(0.006)	(0.019)
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	(0.003)	(0.006)	(0.006)	(0.007)	(0.003)	(0.005)	(0.004)	(0.006)
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Multinomial Logit Results

❖ Tightened supply **drives the other reasons category**, especially in the post covid period

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Adjusted R²	0.094	0.094	0.094	0.094	0.156	0.156	0.156	0.156

Logit Results

❖ Our estimates indicate a clear protection of **larger, older and healthier** firms against moving into discouragement or non-application due to other reasons.

❖ Most notably, in the post covid sample, the **supply side stringency is a driver** of firms' switching into discouragement and even stronger into the other reasons category
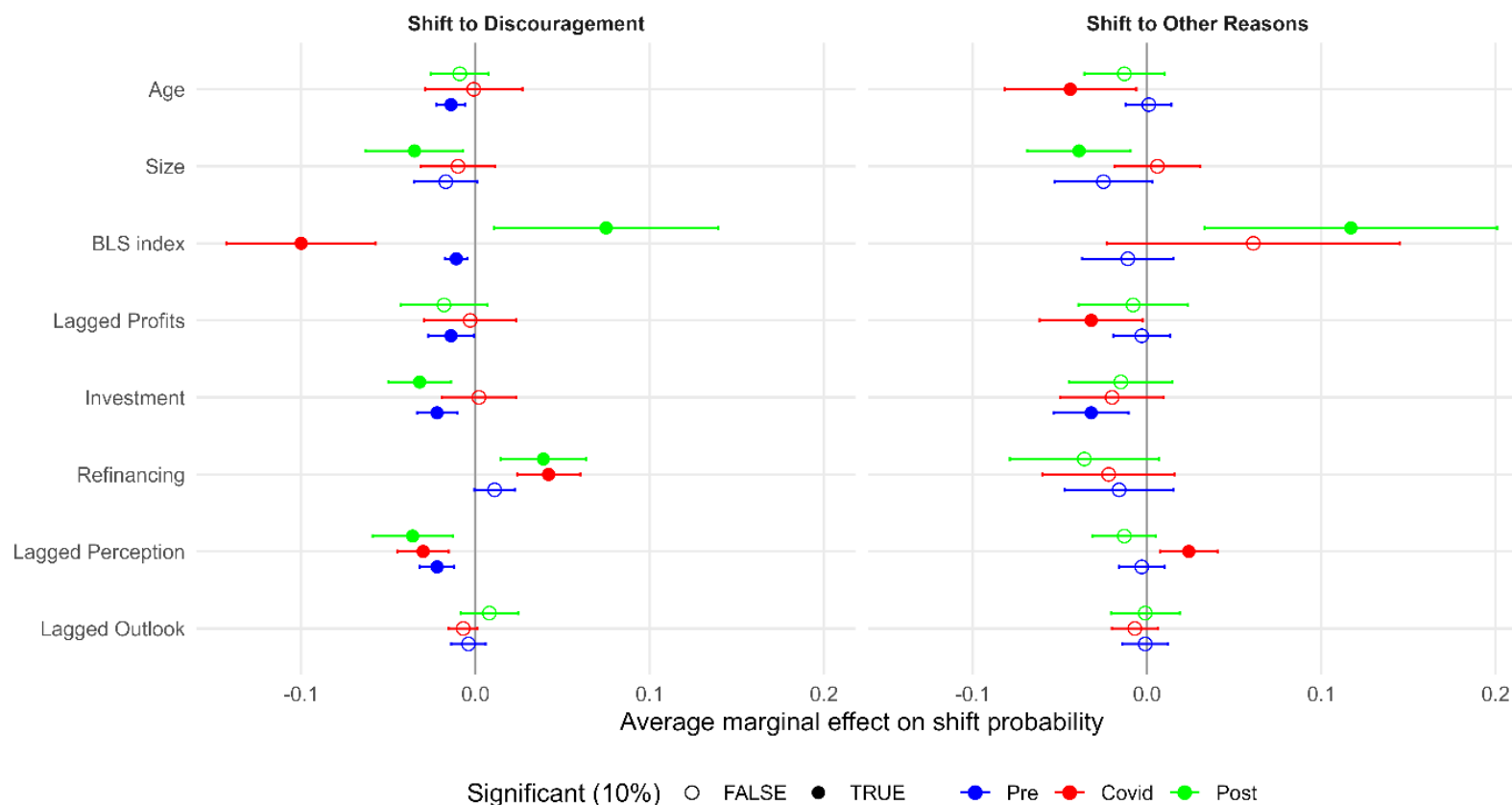
19

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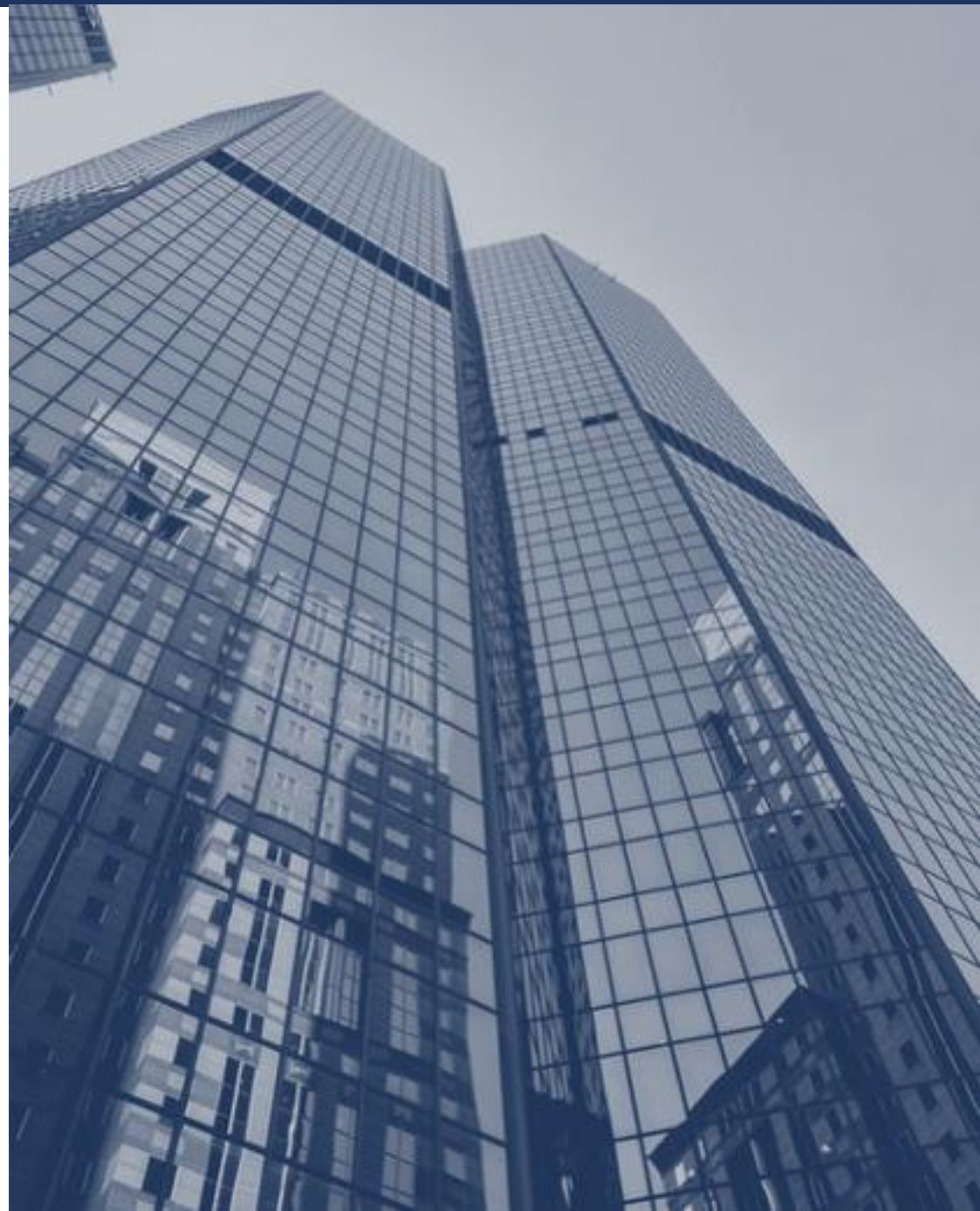
Summary of Results

❖ Reliance on bank funding and internal funds **is largely consistent with standard investment theory** and firm health.

❖ Discouragement is mainly driven by **behavioral factors and refinancing needs**, where the latter might indicate troubled firms.

❖ Other non-application reasons are more closely **linked to perceived costs and supply conditions**. **Tighter credit conditions** reinforced the role of the supply side.

❖ The scenarios show that **non-application can be the best choice**, either based on beliefs or based on a cost assessment.

❖ The post covid environment **substantially influences** SMEs bank loan application behavior

Conclusions and Implications

❖ Preserving favorable and more importantly **predictable and transparent lending conditions** is key to preventing inefficient non-application.

❖ **Targeted interventions** to counteract negative perceptions are essential.

❖ Tightening of supply conditions can **trigger sharp increases** in discouragement and non-application due to other reasons, especially for smaller firms.

❖ **When designing policy support schemes for SMEs, a close look at the different reasons why SMEs are not applying for bank loans and the economic forces shaping SMEs' behavior is necessary.**

Thank you very much for your attention!

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Reference List

Alfaro, L., García-Santana, M., & Moral-Benito, E. (2021). On the direct and indirect real effects of credit supply shocks. Journal of Financial Economics, 139(3), 895-921.

Amore, M. D., Schneider, C., & Žaldokas, A. (2013). Credit supply and corporate innovation. Journal of financial economics, 109(3), 835-855.

Andrieu, G., R. Staglianò, and P. van der Zwan. (2018). "Bank Debt and Trade Credit for SMEs in Europe: Firm-Industry-And Country-Level Determinants." Small Business Economics 51 (1): 245–64.

Bachas, N., Kim, O. S., & Yannelis, C. (2021). Loan guarantees and credit supply. Journal of Financial Economics, 139(3), 872-894.

Barrero, J. M. (2022). The micro and macro of managerial beliefs. Journal of Financial Economics, 143(2), 640-667.

Beck, T., Demirgüç-Kunt, A., & Maksimovic, V. (2008). Financing patterns around the world: Are small firms different?. Journal of financial economics, 89(3), 467-487.

Becker, B., & Ivashina, V. (2014). Cyclicality of credit supply: Firm level evidence. Journal of Monetary Economics, 62, 76-93.

Berg, T. (2018). Got rejected? Real effects of not getting a loan. The Review of Financial Studies, 31(12), 4912-4957.

Berger, A. N., & Udell, G. F. (2006). A more complete conceptual framework for SME finance. Journal of Banking & Finance, 30(11), 2945-2966.

Bernanke, B. S. (2020). The new tools of monetary policy. American Economic Review, 110(4), 943-983.

Bianchi, F., Ludvigson, S. C., & Ma, S. (2022). Belief distortions and macroeconomic fluctuations. American Economic Review, 112(7), 2269-2315.

Canton, E., Grilo, I., Monteagudo, J., & van der Zwan, P. (2013). Perceived credit constraints in the European Union. Small Business Economics, 41(3), 701-715.

Carroll, C. D. (2003). Macroeconomic expectations of households and professional forecasters. the Quarterly Journal of economics, 118(1), 269-298.

Cavallo, A., Cruces, G., & Perez-Truglia, R. (2017). Inflation expectations, learning, and supermarket prices: Evidence from survey experiments. American Economic Journal: Macroeconomics, 9(3), 1-35.

Cavalluzzo, K. S., Cavalluzzo, L. C., & Wolken, J. D. (2002). Competition, small business financing, and discrimination: Evidence from a new survey. The Journal of Business, 75(4), 641-679.

Chakravarty, S., & Xiang, M. (2013). The international evidence on discouraged small businesses. Journal of Empirical Finance, 20, 63-82.

Chittenden, F., Hall, G., & Hutchinson, P. (1996). Small firm growth, access to capital markets and financial structure: Review of issues and an empirical investigation. Small business economics, 8, 59-67.

Coluzzi, C., Ferrando, A., & Martinez-Carrascal, C. (2015). Financing obstacles and growth: an analysis for euro area non-financial firms. The European Journal of Finance, 21(10-11), 773-790.

Danielson, M. G., & Scott, J. A. (2004). Bank loan availability and trade credit demand. Financial Review, 39(4), 579-600.

Degryse, H., De Jonghe, O., Jakovljević, S., Mulier, K., & Schepens, G. (2019). Identifying credit supply shocks with bank-firm data: Methods and applications. Journal of Financial Intermediation, 40, 100813.

De Haan, L., & Hinloopen, J. (2003). Preference hierarchies for internal finance, bank loans, bond, and share issues: evidence for Dutch firms. Journal of Empirical Finance, 10(5), 661-681.

De Meza, D., & Southey, C. (1996). The borrower's curse: optimism, finance and entrepreneurship. The Economic Journal, 106(435), 375-386.

Dell'Ariccia, G., Igan, D., & Laeven, L. U. (2012). Credit booms and lending standards: Evidence from the subprime mortgage market. Journal of Money, Credit and Banking, 44(2-3), 367-384.

De Marzo, P. M., Fishman, M. J., He, Z., & Wang, N. (2012). Dynamic agency and the q theory of investment. The journal of Finance, 67(6), 2295-2340.

Dimou, M., Ferrando, A., Köhler-Ulbrich, P., & Rariga, J. (2025). Insights from banks and firms on euro area credit conditions: a comparison based on ECB surveys. Economic Bulletin Boxes, 2.

Drexler, A., Fischer, G., & Schoar, A. (2014). Keeping it simple: Financial literacy and rules of thumb. American Economic Journal: Applied Economics, 6(2), 1-31.

Eurostat (2022). EU small and medium-sized enterprises: an overview. https://ec.europa.eu/eurostat/web/products-eurostat-news/-/edn-20220627-1 (retrieved: 06.12.2023)

Ferrando, A., & Mulier, K. (2022). The real effects of credit constraints: Evidence from discouraged borrowers. Journal of Corporate Finance, 73, 102171.

Reference List

Fidrmuc, J., Hainz, C., & Hölzl, W. (2024). Individual credit market experience and beliefs about bank lending policy: Evidence from a firm survey. Scandinavian Journal of Economics, forthcoming.

Fidrmuc, J., & Horky, F. (2023). Experience and Firms' Financing Behavior: A Behavioral Perspective. German Economic Review, forthcoming.

Grömping, U. (2007). Estimators of relative importance in linear regression based on variance decomposition. The American Statistician, 61(2), 139-147.

Hackbarth, D., Hennessy, C. A., & Leland, H. E. (2007). Can the trade-off theory explain debt structure?. The Review of Financial Studies, 20(5), 1389-1428.

Hernández-Cánovas, G., & Martínez-Solano, P. (2010). Relationship lending and SME financing in the continental European bank-based system. Small Business Economics, 34, 465-482.

Horky, F. (2024). SMEs' Perceptions of Availability of External Finance. Ekonomický časopis, 72(03-04), 105-139.

Hyun, J. S., & Rhee, B. K. (2011). Bank capital regulation and credit supply. Journal of Banking & Finance, 35(2), 323-330.

Kon, Y., & Storey, D. J. (2003). A theory of discouraged borrowers. Small business economics, 21, 37-49.

Kruskal, W. (1987). Relative importance by averaging over orderings. The American Statistician, 41(1), 6-10.

Lawrence, E. C., & Arshadi, N. (1995). A multinomial logit analysis of problem loan resolution choices in banking. Journal of Money, Credit and Banking, 27(1), 202-216.

Leary, M. T. (2009). Bank loan supply, lender choice, and corporate capital structure. The Journal of Finance, 64(3), 1143-1185.

Lin, H. (2011). Foreign bank entry and firms' access to bank credit: Evidence from China. Journal of Banking & Finance, 35(4), 1000-1010.

Lindeman, R. H., Merenda, P. F., & Gold, R. Z. (1980). Introduction to bivariate and multivariate analysis (Vol. 4). Glenview, IL: Scott, Foresman.

Martinez, L. B., Guercio, M. B., & Bariviera, A. F. (2022). A meta-analysis of SMEs literature based on the survey on access to finance of enterprises of the European central bank. International Journal of Finance & Economics, 27(2), 1870-1885.

Massenot, B., & Pettinicchi, Y. (2018). Can firms see into the future? Survey evidence from Germany. Journal of Economic Behavior & Organization, 145, 66-79.

Mitchell, K., & Pearce, D. K. (2020). How did unconventional monetary policy affect economic forecasts?. Contemporary Economic Policy, 38(1), 206-220.

Moro, A., Fink, M., & Maresch, D. (2015). Reduction in information asymmetry and credit access for small and medium-sized enterprises. Journal of Financial Research, 38(1), 121-143.

Moscarini, G. (2004). Limited information capacity as a source of inertia. Journal of Economic Dynamics and control, 28(10), 2003-2035.

Orgler, Y. E. (1970). A credit scoring model for commercial loans. Journal of money, Credit and Banking, 2(4), 435-445.

Roger, T., Roger, P., & Schatt, A. (2018). Behavioral bias in number processing: Evidence from analysts' expectations. Journal of Economic Behavior & Organization, 149, 315-331.

Sharpe, S. A. (1990). Asymmetric information, bank lending, and implicit contracts: a stylized model of customer relationships. The Journal of Finance, 45(4), 1069–1087.

Sims, C. A. (2003). Implications of rational inattention. Journal of monetary Economics, 50(3), 665-690.

Véron, N., & Wolff, G. B. (2016). Capital Markets Union: a vision for the long term. Journal of Financial Regulation, 2(1), 130-153.

Data & Methods

Variable	N	Mean	Std. Dev.	Min	Max
Lagged Other Reasons	42,765	0.212	0.407	0	1
Lagged Internal Funds	42,765	0.441	0.496	0	1
Lagged Discouraged	42,765	0.054	0.226	0	1
Lagged No Money	42,765	0.022	0.149	0	1
Lagged Received Everything	42,765	0.231	0.421	0	1
Lagged Received Parts	42,765	0.040	0.196	0	1
size	241,282	−0.580	0.473	−1	1
age	241,519	0.830	0.646	−1	1
bls	241,519	0.062	0.251	−0.80	1.77
Lagged Profits	66,692	0.306	0.460	0	1
Investment	205,035	0.434	0.495	0	1
Refinancing	204,594	0.152	0.359	0	1
Lagged Bank Loan Perception	16,604	0.228	0.900	−1	1
Lagged Bank Loan Outlook	18,193	0.049	0.970	−1	1

Category	Count	Share (%)
BLApp	241,519	100
Application	41,330	17.11
Internal Funds	59,689	24.71
Other Reasons	31,882	13.22
Discouraged	7,816	3.24
NA	100,802	41.72

26

Calculating signs and weights (appendix)

❖ The signs **align broadly** with the expected/proposed mechanisms.

❖ The weights **reflect the importance** of the mapped observables. Observables for internal funds have the least explanatory power.

	Application	Internal Funds	Discouraged	Other Reasons
Size	0.386	0.015	0.077	0.340
Age	0.019	0.004	0.023	0.020
Lagged Perception	0.017	0.493	0.439	0.149
Lagged Outlook	0.023	0.177	0.179	0.115
Lagged Profits	0.015	0.116	0.073	0.148
Investment Need	0.419	0.062	0.066	0.208
Refinancing Need	0.005	0.104	0.096	0.004
BLS Index	0.113	0.024	0.045	0.015
Observations	7,333	7,333	7,333	7,333
Total Response Variance	0.239	0.227	0.067	0.147

Logit Results

	(1)	(2)	(3)	(4)	(5)	(6)
Age	-0.011*** (0.002)	-0.012** (0.004)	-0.012** (0.005)	−0.005* (0.003)	−0.011 (0.009)	−0.011 (0.008)
Size	-0.018*** (0.006)	-0.021** (0.008)	-0.019** (0.008)	−0.023*** (0.006)	−0.017* (0.009)	−0.021** (0.009)
BLS Index	0.007*** (0.002)	-0.004 (0.006)	-0.002 (0.006)	−0.001 (0.012)	0.007 (0.020)	0.007 (0.019)
Lagged Profits	-0.016*** (0.003)	-0.014 (0.009)	-0.013 (0.008)	−0.013*** (0.003)	−0.011 (0.007)	−0.009 (0.007)
Investment	-0.015*** (0.003)	-0.018*** (0.005)	-0.019*** (0.005)	−0.025** (0.010)	−0.022** (0.008)	−0.025*** (0.008)
Refinancing	0.020*** (0.003)	0.025*** (0.006)	0.022*** (0.005)	−0.008 (0.007)	−0.017** (0.008)	−0.021** (0.008)
Lagged Perception		-0.036*** (0.006)	-0.027*** (0.005)		0.001 (0.005)	0.002 (0.005)
Lagged Outlook		-0.003 (0.005)	-0.003 (0.004)		−0.005 (0.004)	−0.003 (0.004)
Lagged Internal Funds			-0.0305*** (0.006)			
Lagged No Money			0.025*** (0.006)			0.036** (0.015)
Lagged Receive all			0.030*** (0.011)			0.033*** (0.011)
Lagged Receive parts			0.001 (0.008)			0.053*** (0.012)