

Table 1
Reasons for bank debt applications

Panel A – Reasons for overdrafts applications (N=10673)	%
Working capital/Cash flow	81.30
As a safety net	39.24
To cover a short-term funding gap	26.02
To fund growth of the business in the UK	15.42
Purchase of equipment/machinery	11.72
To fund growth of the business overseas	1.99
Panel B – Reasons for loans applications (N=5864)	%
To fund growth of the business in the UK	28.89
Purchase of premises	26.67
Purchase of equipment/machinery	25.70
To develop new products/services	13.73
To replace other funding	12.33
Purchase of motor vehicles	12.02
Working capital/Cash flow	6.38
To take over another business	2.81
To fund growth of the business overseas	2.46

Notes: Percentages are calculated out of SMEs which applied for overdrafts/loans during the period 2010-2017. Figures do not add up to 100% because respondents can choose more than one answer.

Table 2

Business overdrafts and term loans applications and rejections by sub-periods

Application dates	# of Overdrafts	# of loans	Loans/ overdrafts	% changes overdrafts	% changes loans	Overdrafts Rejections (%)	Loans Rejections (%)
2010	608	350	58%	-	-	18.91	24.29
2011	2227	1103	50%	266%	215%	19.04	27.92
2012	1888	923	49%	-15%	-16%	22.67	29.79
2013	1565	781	50%	-17%	-15%	20.77	29.58
2014	1348	745	55%	-14%	-5%	12.09	20.54
2015	1087	611	56%	-19%	-18%	9.02	16.20
2016	713	367	51%	-34%	-40%	9.82	18.80
2017	523	247	47%	-27%	-33%	8.03	15.38

Notes: Applications in 2010 and 2017 are underestimated due to the way the survey question is formulated (see details in Section 4). Reported data include SMEs which applied for overdrafts/loans over 2010-2017.

Table 3

List of variables and their definitions

Variable	Description
Dependent variable	
Bank debt rejection	A dummy variable which equals 1 if the bank debt application was rejected (refused outright or received less credit than it requested) and 0 otherwise.
Independent variables	
Application date	Dummy variables indicating the exact year when the firm applied for the bank debt: 'applications in 2010', 'applications in 2011', 'applications in 2012', 'applications in 2013', 'applications in 2014', 'applications in 2015', 'applications in 2016' and 'applications in 2017'.
Credit balance	Dummy variables indicating the amount that the firm usually holds in current and deposit accounts: 'no credit balance', '<£5,000', '£5,000-9,999', '£10,000-49,999', '£50,000-99,999', '£100,000-499,999', '£500,000-999,999' and '>£1m'.
Owner/Manager characteristics	
Gender	Dummy variables indicating the gender of the owner/manager: 'male', 'female' and 'both (joint partners)'.
Legal status	Dummy variables indicating the legal status of the firm: 'sole proprietorship', 'partnership', 'limited liability partnership' and 'limited liability company'.
Owner Age	Dummy variables indicating the age of the owner/manager: '18-30 years', '31-50 years' and '>50 years'.
Financial knowledge	A dummy variable which equals 1 if the person in charge of financial management within the firm has a finance qualification or has undertaken some financial trainings and 0 otherwise.
Bank relationship and/or products	
Multiple suppliers	A dummy variable which equals 1 if the firm approached more than one bank/financial institution when the firm did its most business and 0 otherwise.
Main bank	A dummy variable which equals 1 if the firm applied to its main bank and 0 otherwise.
Use of credit card	A dummy variable which equals 1 if the firm uses credit card currently and 0 otherwise
Firm characteristics	
Number of employees	Dummy variables indicating the number of people working in the firm: '0-9', '10-49' and '50-249'.
Annual turnover	Dummy variables indicating the annual turnover of the firm: '<£50,000', '£50,000-99,999', '£100,000-499,999', '£500,000-999,999', '£1m-4.9m' and '>£5m'.
Business age	Dummy variables indicating the number of years since the firm was established: '<2 years', '2-5 years', '6-9 years', '10-15 years' and '>15 years'.
Standard region	Dummy variables indicating the location of the firm in the UK: 'London', 'East Anglia', 'East Midlands', 'North West', 'North/ North East', 'Northern Ireland', 'Scotland', 'South East', 'South West', 'Wales', 'West Midlands' and 'Yorkshire/ Humberside'.
Industry sector	Dummy variables indicating the principal activity of the firm: 'construction', 'agriculture, hunting and forestry fishing', 'health and social work', 'hotels and restaurants', 'manufacturing', 'real estate, renting and business activities', 'transport, storage and communication', 'wholesale/retail' and 'other community, social and personal service'
Profitability	Dummy variables indicating whether the firm made a net profit or loss: 'loss', 'broken even' and 'profit'.
Business plan	A dummy variable which equals 1 if the firm has a formal written business plan and 0 otherwise.
Export	A dummy variable which equals 1 if the firm sells goods or services abroad and 0 otherwise.
Import	A dummy variable which equals 1 if the firm buys goods or services from abroad and 0 otherwise.
Management account	A dummy variable which equals 1 if the firm produces regular monthly or quarterly management accounts and 0 otherwise.
Improvement	A dummy variable which equals 1 if the firm has significantly improved an aspect of the firm in the past 3 years and 0 otherwise.

Innovation	A dummy variable which equals 1 if the firm has developed a new product or service in the past 3 years and 0 otherwise.
D&B risk rating	Dummy variables indicating the external credit risk rating from Dun & Bradstreet (D&B) of the firm: 'minimal', 'low', 'average', 'above average' and 'undetermined' ^a .
<i>Application process-related</i>	
Seeking advice	A dummy variable which equals 1 if the firm sought external advice before applying for the bank debt and 0 otherwise.
Business account	A dummy variable which equals 1 if the main current account used for the business is a business account and 0 otherwise.
Amount applied	Dummy variables indicating the amount of bank debt that the firm initially applied for: '<£5,000', '£5,000-9,999', '£10,000-49,999', '£50,000-99,999', '£100,000-499,999', '£500,000-999,999' and '>£1m'.

^a: 'Undetermined' means the information available to D&B is not enough to allow D&B to assign a risk rating level to the firm.

Table 4
Descriptive statistics and difference in means: business overdrafts and loans

Variables		Business overdrafts					Term loans				
		All (N=10673)	Rejected (N=1738)	Approved (N=8935)	Difference (a-b)	t-statistic	All (N=5864)	Rejected (N=1386)	Approved (N=4478)	Difference (a-b)	t-statistic
		Mean	Mean (a)	Mean (b)			Mean	Mean (a)	Mean (b)		
<i>Application date^b</i>	Applications in 2010	0.0611	0.0691	0.0594	0.0096	1.4293	0.0683	0.0676	0.0685	-0.0009	-0.1134
	Applications in 2011	0.2236	0.2547	0.2174	0.0373	3.2126***	0.2151	0.2448	0.2055	0.0394	2.8603***
	Applications in 2012	0.1896	0.2571	0.1760	0.0810	7.0455***	0.1800	0.2186	0.1675	0.0511	3.8982***
	Applications in 2013	0.1571	0.1952	0.1495	0.0457	4.3615***	0.1523	0.1836	0.1422	0.0415	3.3771***
	Applications in 2014	0.1353	0.0979	0.1429	-0.0450	-5.4606***	0.1453	0.1216	0.1530	-0.0314	-2.8836***
	Applications in 2015	0.1091	0.0589	0.1192	-0.0604	-8.9076***	0.1192	0.0787	0.1323	-0.0536	-5.7385***
	Applications in 2016	0.0716	0.0420	0.0775	-0.0355	-6.1932***	0.0716	0.0548	0.0770	-0.0222	-2.8717***
	Applications in 2017	0.0525	0.0252	0.0580	-0.0328	-7.0894***	0.0482	0.0302	0.0540	-0.0238	-3.9406***
<i>Credit balance^c</i>	No credit balance	0.0663	0.0563	0.0684	-0.0121	-1.8170*	0.0672	0.0568	0.0707	-0.0139	-1.7326*
	<£5,000	0.3404	0.5291	0.3009	0.2283	16.2852***	0.3147	0.4568	0.2670	0.1898	11.6341***
	£5,000-9,999	0.1438	0.1601	0.1404	0.0197	1.9008*	0.1435	0.1712	0.1342	0.0370	2.9868***
	£10,000-49,999	0.2151	0.1654	0.2255	-0.0600	-5.5501***	0.2094	0.1822	0.2185	-0.0363	-2.7448***
	£50,000-99,999	0.0815	0.0355	0.0911	-0.0556	-9.4569***	0.0846	0.0551	0.0946	-0.0395	-4.7710***
	£100,000-499,999	0.0899	0.0415	0.1001	-0.0585	-9.3366***	0.1043	0.0542	0.1211	-0.0668	-7.7792***
	£500,000-999,999	0.0367	0.0067	0.0430	-0.0363	-11.3570***	0.0420	0.0144	0.0513	-0.0369	-7.2446***
>£1m	0.0263	0.0054	0.0307	-0.0253	-9.1043	0.0343	0.0093	0.0427	-0.0334	-7.5683***	
<i>Owner/Manager characteristics</i>	Gender										
	Male	0.7941	0.8061	0.7917	0.0144	1.3810	0.7911	0.7944	0.7901	0.0043	0.3444
	Female	0.1714	0.1755	0.1706	0.0049	0.4945	0.1772	0.1833	0.1753	0.0080	0.6719
	Both (joint partners)	0.0346	0.0184	0.0377	-0.0193	-5.0755***	0.0317	0.0224	0.0346	-0.0122	-2.5398**
	Owner Age ^a										
	18-30 years	0.0245	0.0558	0.0184	0.0374	6.5086***	0.0272	0.0501	0.0201	0.0300	4.7695***
	31-50 years	0.4335	0.5112	0.4183	0.0928	7.0252***	0.4598	0.5596	0.4285	0.1311	8.4988***
	>50 years	0.5420	0.4331	0.5633	-0.1302	-9.9176***	0.5130	0.3903	0.5514	-0.1612	-10.5700***
	Financial knowledge ^a	0.4286	0.3600	0.4420	-0.0820	-6.4244***	0.4462	0.3808	0.4666	-0.0858	-5.6584***
	Legal status										
Sole proprietorship	0.1833	0.3015	0.1603	0.1412	12.0970***	0.1806	0.2973	0.1445	0.1528	11.4370***	
Partnership	0.1394	0.0938	0.1483	-0.0545	-6.8636***	0.1497	0.0974	0.1659	-0.0685	-7.0527***	
Limited Liability Partnership	0.0502	0.0357	0.0530	-0.0174	-3.4460***	0.0554	0.0469	0.0581	-0.0112	-1.6738*	
Limited Liability Company	0.6271	0.5690	0.6384	-0.0693	-5.3656***	0.6143	0.5584	0.6315	-0.0731	-4.8193***	
<i>Bank relationship and/or products</i>	Multiple suppliers	0.0409	0.0397	0.0412	-0.0015	-0.2893	0.0583	0.0584	0.0583	0.0002	0.0217
	Main bank	0.9813	0.9724	0.9830	-0.0106	-2.5476**	0.8852	0.8723	0.8892	-0.0169	-1.6740*

	Use of credit card ^a	0.4482	0.3700	0.4634	-0.0934	-7.3401***	0.4192	0.3636	0.4364	-0.0727	-4.8804***
<i>Firm characteristics</i>	Number of employees										
	0-9	0.4442	0.6318	0.4077	0.2240	17.6590***	0.4205	0.6140	0.2826	0.2533	16.9790***
	10-49	0.3909	0.2975	0.4091	-0.1116	-9.1928***	0.3883	0.3131	0.4116	-0.0984	-6.8027***
	50-249	0.1649	0.0708	0.1832	-0.1124	-15.2160***	0.1912	0.0729	0.2278	-0.1549	-16.5070***
	Annual turnover ^b										
	<£50,000	0.1181	0.2529	0.0917	0.1612	14.4610***	0.1198	0.2405	0.0819	0.1586	12.6350***
	£50,000-99,999	0.1054	0.1428	0.0981	0.0447	4.8582***	0.0964	0.1260	0.0871	0.0388	3.8214***
	£100,000-499,999	0.2379	0.2680	0.2320	0.0360	3.0400***	0.2316	0.2863	0.2144	0.0719	5.1293***
	£500,000-999,999	0.1422	0.1307	0.1445	-0.0138	-1.5160***	0.1353	0.1321	0.1363	-0.0043	-0.3977
	£1m-4.9m	0.2892	0.1585	0.3148	-0.1563	-15.1570***	0.2995	0.1740	0.3389	-0.1649	-12.8910***
	>£5m	0.1071	0.0472	0.1189	-0.0717	-11.3830***	0.1174	0.0412	0.1414	-0.1002	-13.0030***
	Business age										
	<2 years	0.0638	0.1893	0.0394	0.1499	15.5790***	0.0769	0.1746	0.0467	0.1279	11.9820***
	2-5 years	0.1039	0.2186	0.0816	0.1371	13.2660***	0.1129	0.2092	0.0831	0.1262	10.7990***
	6-9 years	0.1147	0.1381	0.1101	0.0280	3.1361***	0.1240	0.1551	0.1143	0.0408	3.7667***
	10-15 years	0.1651	0.1329	0.1713	-0.0384	-4.2385***	0.1572	0.1436	0.1615	-0.0179	-1.6387
	>15 years	0.5525	0.3211	0.5975	-0.2765	-22.3950***	0.5290	0.3175	0.5945	-0.2770	-13.1020***
	Profitability ^a										
	Loss	0.1342	0.2381	0.1143	0.1238	11.1760***	0.1296	0.2248	0.1004	0.1243	10.0010***
	Broken even	0.0675	0.1074	0.0599	0.0476	5.8958***	0.0684	0.0895	0.0620	0.0275	3.1544***
	Profit	0.7983	0.6545	0.8258	-0.1714	-13.7660***	0.8019	0.6858	0.8376	-0.1518	-10.8220***
	Business plan	0.5378	0.5460	0.5362	0.0098	0.7523	0.5781	0.5714	0.5802	-0.0087	-0.5748
	Export	0.1657	0.1387	0.1710	-0.0323	-3.5163***	0.1620	0.1335	0.1708	-0.0374	-3.4813***
	Import	0.1906	0.1542	0.1976	-0.0434	-4.5095***	0.1949	0.1501	0.2088	-0.0587	-5.1707***
	Management account	0.7070	0.6484	0.7184	-0.0700	-5.6400***	0.7091	0.6364	0.7316	-0.0952	-6.5556***
	Improvement	0.5538	0.5587	0.5529	0.0058	0.4458	0.5694	0.5628	0.5715	-0.0087	-0.5701
	Innovation	0.2570	0.2842	0.2517	0.0325	2.7669***	0.2739	0.2908	0.2686	0.0221	1.5930
	D&B risk rating										
	Minimal	0.1558	0.0558	0.1753	-0.1195	-17.5144***	0.1574	0.0671	0.1854	-0.1183	-13.3107***
	Low	0.2732	0.1743	0.2924	-0.1181	-11.4699***	0.2766	0.1696	0.3097	-0.1402	-11.4682***
	Average	0.2636	0.2342	0.2693	-0.0351	-3.1361***	0.2602	0.2799	0.2541	0.0258	1.8831*
	Above Average	0.2340	0.4212	0.1976	0.2235	17.7770***	0.2282	0.3759	0.1824	0.1935	13.5878***
	Undetermined	0.0734	0.1145	0.0654	0.0491	6.0851***	0.0776	0.1075	0.0683	0.0392	4.2866***
<i>Application process -related</i>	Seeking advice ^a	0.1180	0.1697	0.1079	0.0617	6.3881***	0.2461	0.2319	0.2505	-0.0186	-1.4041
	Business account ^d	0.9761	0.9476	0.9816	-0.0340	-6.1466***	0.9710	0.9465	0.9785	-0.0321	-4.9856***
	Amount applied ^c										
	<£5,000	0.1505	0.3202	0.1150	0.2052	16.8940***	0.0630	0.1164	0.0450	0.0714	7.4044***
	£5,000-9,999	0.1057	0.1493	0.0965	0.0527	5.5710***	0.0893	0.1489	0.0692	0.0796	7.3425***
	£10,000-49,999	0.3519	0.3091	0.3609	-0.0518	-4.0749***	0.2830	0.3682	0.2543	0.1138	7.4288***
	£50,000-99,999	0.1293	0.0888	0.1377	-0.0489	-6.0491***	0.1212	0.0879	0.1324	-0.0445	-4.5841***

	£100,000-499,999	0.1940	0.1073	0.2122	-0.1048	-11.6690***	0.2744	0.1900	0.3028	-0.1128	-8.4480***
	£500,000-999,999	0.0397	0.0191	0.0440	-0.0249	-6.0343***	0.0715	0.0412	0.0818	-0.0406	-5.6677***
	>£1m	0.0289	0.0062	0.0337	-0.0275	-9.7371***	0.0976	0.0475	0.1145	-0.0670	-8.4512***

Notes: The sample size is not identical due to the existence of missing values in some specific variables.

^a: The sample includes less than 5% missing values. ^b: The sample includes 5%-10% missing values. ^c: The sample includes more than 10% missing values. *, **, *** indicate that the differences in means between rejected firms and approved firms are significant at 10%, 5% and 1% level, respectively.

Table 5
Bank debt rejection: logistic model

		Model (1)		Model (2)	
		Overdrafts	Loans	Overdrafts	Loans
<i>Application date</i>	Applications in 2011				
	Applications in 2012	0.0283**		0.0157*	
		(0.0110)		(0.0090)	
	Applications in 2013			0.0164*	
				(0.0097)	
	Applications in 2014	-0.0724***	-0.0783***	-0.0343***	-0.0388***
		(0.0104)	(0.0156)	(0.0096)	(0.0149)
	Applications in 2015	-0.1007***	-0.1149***	-0.0576***	-0.0625***
	(0.0103)	(0.0160)	(0.0109)	(0.0164)	
Applications in 2016	-0.0917***	-0.0991***	-0.0399***	-0.0499**	
	(0.0124)	(0.0200)	(0.0119)	(0.0196)	
Applications in 2017	-0.1172***	-0.1253***	-0.0592***	-0.0576**	
	(0.0123)	(0.0222)	(0.0129)	(0.0232)	
<i>Credit balance</i>	£5,000-9,999			-0.0221**	-0.0292*
				(0.0086)	(0.0156)
	£10,000-49,999			-0.0340***	-0.0506***
				(0.0090)	(0.0144)
	£50,000-99,999			-0.0514***	-0.0432**
				(0.0124)	(0.0217)
£100,000-499,999			-0.0476***	-0.0489**	
			(0.0125)	(0.0220)	
£500,000-999,999			-0.0782***	-0.0707**	
			(0.0169)	(0.0313)	
>£1m			-0.0577**	-0.0931***	
			(0.0225)	(0.0339)	
<i>Owner/Manager characteristics</i>	Gender				
	Female			-0.0222***	-0.0329**
				(0.0074)	(0.0129)
	Both (joint partners)			-0.0462***	
			(0.0154)		
Legal status					
Partnership			-0.0217**	-0.0614***	
			(0.0096)	(0.0151)	
Owner age					
31-50 years				0.0397***	
				(0.0128)	
<i>Bank relationship and/or products</i>	Main bank			-0.0582**	
				(0.0278)	
<i>Firm characteristics</i>	Number of employees				
	10-49				-0.0307**
					(0.0143)
	50-249			-0.0301***	-0.0808***
				(0.0103)	(0.0210)
	Annual turnover				
£50,000-99,999			-0.0177*		
			(0.0102)		
£1m-4.9m			-0.0257***	-0.0616***	
			(0.0097)	(0.0184)	
>£5m				-0.1093***	
				(0.0271)	
Business age					

	2-5 years			-0.0654*** (0.0226)	
	6-9 years			-0.1519*** (0.0250)	-0.0845*** (0.0239)
	10-15 years			-0.1804*** (0.0265)	-0.1319*** (0.0240)
	>15 years			-0.1939*** (0.0269)	-0.1642*** (0.0234)
	Profitability				
	Broken even				-0.0778*** (0.0285)
	Profit			-0.0521*** (0.0104)	-0.1073*** (0.0210)
	Business plan			0.0117* (0.0063)	
	Innovation			0.0230*** (0.0081)	0.0428*** (0.0142)
	D & B risk rating				
	Low			0.0400*** (0.0112)	
	Average			0.0374*** (0.0107)	0.0638*** (0.0166)
	Above Average			0.0845*** (0.0144)	0.0923*** (0.0185)
	Undetermined			0.0850*** (0.0181)	0.0778*** (0.0257)
<i>Application process-related</i>	Seeking advice			0.0775*** (0.0146)	
	Business account			-0.0327* (0.0202)	
	Amount applied				
	£5,000-9,999			-0.0317** (0.0145)	-0.0481* (0.0288)
	£10,000-49,999			-0.0618*** (0.0143)	-0.0542** (0.0256)
	£50,000-99,999			-0.0580*** (0.0176)	-0.0996*** (0.0288)
	£100,000-499,999			-0.0627*** (0.0179)	-0.0773*** (0.0277)
	£500,000-999,999			-0.0743*** (0.0244)	-0.0715** (0.0356)
	>£1m			-0.1257*** (0.0262)	-0.0740** (0.0351)
Standard region	No	No	Yes	Yes	
Industry sector	No	No	Yes	Yes	
No. of observations	10673	5864	10673	5864	
Wald test statistics ^a	36.81***	19.20***	23.65***	20.70***	
Wald test statistics (2015=2016) ^b	0.42	0.46	2.60	0.34	
Wald test statistics (2015=2016=2017) ^c	0.06	0.01	0.31	0.09	
McFadden's pseudo R ²	0.0225	0.0132	0.1685	0.1585	

Notes: The table only reports the estimated marginal effects of significant coefficients after variable selection. Pooled standard errors are in parentheses. The dependent variable is whether an overdraft or a loan application is rejected or not. Model 1 only includes the variable application dates. Model 2 adds other explanatory variables as listed in Table 3. We use a multiple imputation to treat missing values.

^a: The null hypothesis of the Wald test is that all coefficients, excluding the constant term, are equal to zero simultaneously. ^b: The null hypothesis of the Wald test is that the coefficient of 'applications in 2015' equals the coefficient of 'applications in 2016'. ^c: The null hypothesis of the Wald test is that the coefficients of 'applications in 2015', 'applications in 2016' and 'applications in 2017' are same. *, **, *** indicate significance at 10%, 5% and 1% level, respectively.

Table 6

Bank debt rejection of firms with international trade: logistic model

Panel A Export and import SMEs				
Application date	Overdrafts		Loans	
	Export	Import	Export	Import
2011				
2012				
2013				
2014	-0.0316** (0.0149)	-0.0487*** (0.0160)		
2015	-0.0361** (0.0165)	-0.0589*** (0.0175)		-0.0656** (0.0283)
2016		-0.0489** (0.0199)		-0.0724** (0.0333)
2017		-0.0611*** (0.0205)		
Control variables	Yes	Yes	Yes	Yes
No. of obs	1769	2034	950	1143
Wald test statistics	8.47***	8.78***	7.41***	8.24***
McFadden's pseudo R ²	0.1443	0.1657	0.1668	0.1738

Panel B Export and import SMEs in industries with a high share of EU trade				
Application date	Overdrafts		Loans	
	Export	Import	Export	Import
2011				
2012				
2013				
2014	-0.0354** (0.0154)	-0.0481*** (0.0177)		
2015	-0.0411** (0.0162)	-0.0529*** (0.0194)	-0.1006* (0.0518)	-0.0856** (0.0400)
2016		-0.0546** (0.0223)		
2017		-0.0763*** (0.0244)		
Control variables	Yes	Yes	Yes	Yes
No. of obs	539	1377	306	753
Wald test statistics	4.30***	6.17***	3.42***	4.70***
McFadden's pseudo R ²	0.2156	0.1687	0.2479	0.1841

Notes: The table only reports the estimated marginal effects of significant coefficients of application date after variable selection. Pooled standard errors are in parentheses. The dependent variable is whether an overdraft or a loan application is rejected or not. The industries with a high share of EU trade are given in Appendix A2. The results for control variables are not reported for brevity, but available upon request. The null hypothesis of the Wald test is that all coefficients, excluding the constant term, are equal to zero simultaneously. *, **, *** indicate significance at 10%, 5% and 1% level, respectively.

Table 7
Bank debt rejection by firm size: logistic model

Application date	Overdrafts			Loans		
	Micro	Small	Medium	Micro	Small	Medium
2011						
2012				0.0567** (0.0248)		
2013				0.0696*** (0.0262)		
2014	-0.0505*** (0.0123)					
2015	-0.0762*** (0.0128)					
2016	-0.0521*** (0.0152)					
2017	-0.0826*** (0.0156)					
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
No. of obs	4679	1073	541	2423	594	351
Wald test statistics	21.97***	4.48***	3.15**	13.25***	3.59***	3.49**
McFadden's pseudo R ²	0.1608	0.1413	0.0721	0.1560	0.1249	0.0286

Notes: The table only reports the estimated marginal effects of significant coefficients of application date after variable selection. Pooled standard errors are in parentheses. The dependent variable is whether an overdraft or a loan application is rejected or not. Firms with 0-9 employees and less than £2m annual turnover are defined as micro firms. Firms with 10-49 employees and £2m-10m annual turnover are defined as small firms. Firms with 50-249 employees and £10m-25m annual turnover are defined as medium-sized firms. Firms with missing turnover are defined according to the number of employees only. The results for control variables are not reported for brevity, but available upon request. The null hypothesis of the Wald test is that all coefficients, excluding the constant term, are equal to zero simultaneously. *, **, *** indicate significance at 10%, 5% and 1% level, respectively.

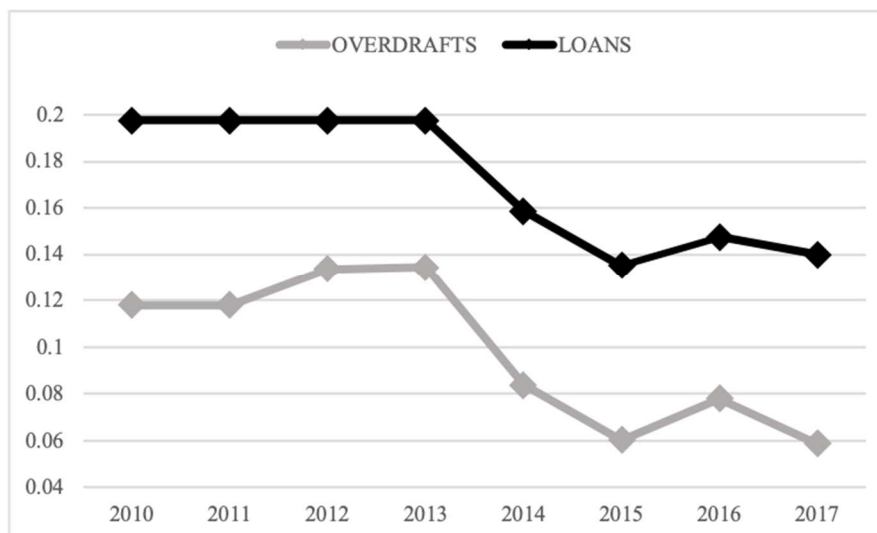
Table 8
Bank debt rejection by firm age: logistic model

Panel A		Overdrafts			
Application date	Start up (<2 years)	Young (2-5 years)	Mature (>5 years)	<i>- of which</i> (6-9 years) (>10 years)	
2011	0.2005*** (0.0545)		-0.0159* (0.0081)		
2012	0.2092*** (0.0545)	0.0379* (0.0231)			
2013	0.2928*** (0.0587)				
2014			-0.0468*** (0.0097)	-0.0532*** (0.0176)	-0.0425*** (0.0123)
2015			-0.0663*** (0.0107)	-0.0317* (0.0168)	-0.0815*** (0.0136)
2016			-0.0543*** (0.0114)	-0.0333* (0.0188)	-0.0633*** (0.0149)
2017		-0.0675** (0.0302)	-0.0657*** (0.0125)	-0.0502** (0.0210)	-0.0751*** (0.0162)
Control variables	Yes	Yes	Yes	Yes	Yes
No. of obs	681	1109	8883	1224	7659
Wald test statistics	5.97***	5.22***	15.34***	6.08***	11.55***
McFadden's pseudo R ²	0.1291	0.0695	0.1020	0.1065	0.0968
Panel B		Loans			
Application date	Start up (<2 years)	Young (2-5 years)	Mature (>5 years)	<i>- of which</i> (6-9 years) (>10 years)	
2011				0.0595** (0.0274)	
2012	0.1783*** (0.0668)			0.0975** (0.0377)	
2013				0.0883** (0.0351)	
2014			-0.0394*** (0.0126)	0.0581** (0.0293)	-0.0585*** (0.0166)
2015			-0.0566*** (0.0137)		-0.0576*** (0.0187)
2016			-0.0578*** (0.0158)	0.1251** (0.0543)	-0.0854*** (0.0207)
2017			-0.0635*** (0.0179)		-0.0675*** (0.0243)
Control variables	Yes	Yes	Yes	Yes	Yes
No. of obs	451	662	4751	727	4024
Wald test statistics	4.52***	5.58***	15.12***	4.21***	13.70***
McFadden's pseudo R ²	0.1235	0.0872	0.1119	0.1480	0.1032

Notes: The table only reports the estimated marginal effects of significant coefficients of application date after variable selection. Pooled standard errors are in parentheses. The dependent variable is whether an overdraft or a loan application is rejected or not. The results for control variables are not reported for brevity, but available upon request. The null hypothesis of the Wald test is that all coefficients, excluding the constant term, are equal to zero simultaneously. *, **, *** indicate significance at 10%, 5% and 1% level, respectively.

Figure 1

Predicted probability of bank debt rejection by sub-periods



Source: SME Finance Monitor (SMEFM) and authors' calculations.

Appendix Table A1

Number of observations and sample size by survey wave

		Total observations	Sample size	
			Overdrafts	Loans
Wave 1	2011 Q1Q2	5063	874	407
Wave 2	2011 Q3	5055	691	332
Wave 3	2011 Q4	5010	533	321
Wave 4	2012 Q1	5023	594	325
Wave 5	2012 Q2	5000	598	297
Wave 6	2012 Q3	5032	499	256
Wave 7	2012 Q4	5000	430	218
Wave 8	2013 Q1	5000	484	233
Wave 9	2013 Q2	5000	417	220
Wave 10	2013 Q3	5008	437	227
Wave 11	2013 Q4	5028	444	234
Wave 12	2014 Q1	5000	353	230
Wave 13	2014 Q2	5008	354	191
Wave 14	2014 Q3	5023	451	294
Wave 15	2014 Q4	5024	350	215
Wave 16	2015 Q1	5038	358	246
Wave 17	2015 Q2	5001	329	194
Wave 18	2015 Q3	5004	314	205
Wave 19	2015 Q4	5003	358	221
Wave 20	2016 Q1	4500	275	158
Wave 21	2016 Q2	4500	234	135
Wave 22	2016 Q3	4500	160	82
Wave 23	2016 Q4	4500	158	118
Wave 24	2017 Q1	4500	199	102
Wave 25	2017 Q2	4507	256	127
Wave 26	2017 Q3	4505	240	106
Wave 27	2017 Q4	4500	283	170
Total		131332	10673	5864

Appendix Table A2

UK trade by industry and region in 2016-2017

Panel A Exports (in £ million)	2016			2017			
	EU	Total		EU	Total		
Construction	946	1955	48%	742	1366	54%	
Agriculture, hunting and forestry fishing	641	995	64%	787	1261	62%	High
Health and social work	86	168	51%	39	93	42%	
Hotels and restaurants	6690	13705	49%	7121	14767	48%	High
Manufacturing	78024	183064	43%	93665	210813	44%	High
Real estate, renting and business activities	16746	51954	32%	19781	58716	34%	
Transport, storage and communication	40881	95523	43%	44448	104664	42%	
Wholesale/retail	60878	99683	61%	66583	107979	62%	High
Other community, social and personal service	3941	10490	38%	4979	12116	41%	
Total	208833	457537	46%	238145	511775	47%	

Panel B Imports (in £ million)	2016			2017			
	EU	Total		EU	Total		
Construction	2731	3715	74%	2972	3791	78%	High
Agriculture, hunting and forestry fishing	663	905	73%	767	1036	74%	High
Health and social work	100	134	75%	121	138	88%	High
Hotels and restaurants	280	688	41%	292	601	49%	
Manufacturing	75414	138422	54%	87943	166921	53%	High
Real estate, renting and business activities	11285	24047	47%	9692	23389	41%	
Transport, storage and communication	36313	76737	47%	35315	75946	47%	
Wholesale/retail	137374	248401	55%	145548	266461	55%	High
Other community, social and personal service	1882	5557	34%	2168	5964	36%	
Total	266042	498606	53%	284818	544247	52%	

Notes: The industrial classifications in our sample (the International Standard Industrial Classification of All Economic Activities Rev.3) are matched with those in the trade data (the Standard Industrial Classification 2007). The reported trade data are obtained by summing up the UK trade in goods and services. Industries with an above-average share of EU trade in both 2016 and 2017 are identified as “High” in the last column.

Sources: Office for National Statistics and author’s calculations; (i) Exports: UK Trade in Goods by industry, country and commodity, 2008-2017; (ii) Imports: UK Trade in Goods by industry, country and commodity, 2008-2017; (iii) Exports: UK Trade in Services by industry, country and service type, 2016-2017; (iv) Imports: UK Trade in Services by industry, country and service type, 2016-2017.

Appendix Table A3

Robustness check

	Overdrafts		Loans	
Panel A Excluding applications in 2010 and 2017				
Application date				
Applications in 2012	0.1710**	(0.0855)		
Applications in 2013	0.1657*	(0.0909)		
Applications in 2014	-0.3836***	(0.1081)	-0.3002***	(0.1108)
Applications in 2015	-0.7701***	(0.1287)	-0.5052***	(0.1298)
Applications in 2016	-0.5230***	(0.1504)	-0.2915*	(0.1567)
Control variables	Yes		Yes	
No. of observations	8828		4530	
Wald test statistics	26.62***		17.01***	
McFadden's pseudo R ²	0.1727		0.1706	
Panel B Ordered logistic model				
Application date				
Applications in 2011				
Applications in 2012	0.1439*	(0.0785)		
Applications in 2013	0.1559*	(0.0838)		
Applications in 2014	-0.3942***	(0.1009)	-0.2753***	(0.1016)
Applications in 2015	-0.7393***	(0.1211)	-0.4729***	(0.1191)
Applications in 2016	-0.4551***	(0.1416)	-0.3731***	(0.1432)
Applications in 2017	-0.7400***	(0.1754)	-0.3993**	(0.1783)
Control variables	Yes		Yes	
Cut-off point (0/1)	-0.4475*	(0.2474)	-0.6633***	(0.1556)
Cut-off point (1/2)	0.1786	(0.2472)	-0.2174	(0.1552)
No. of observations	10673		5864	
Wald test statistics	30.80***		22.29***	
McFadden's pseudo R ²	0.1461		0.1375	
Panel C Selected independent variables with no simultaneity bias				
Application date				
Applications in 2011				
Applications in 2012	0.1208*	(0.0718)		
Applications in 2013				
Applications in 2014	-0.5016***	(0.0951)	-	(0.1001)
Applications in 2015	-0.8985***	(0.1146)	0.3595***	(0.1167)
Applications in 2016	-0.7217***	(0.1328)	0.6134***	(0.1400)
Applications in 2017	-1.0678***	(0.1673)	0.5406***	(0.1751)
Control variables	Yes		Yes	
No. of observations	10673		5864	
Wald test statistics	44.44***		27.55***	
McFadden's pseudo R ²	0.1397		0.1236	

Panel D Applicants surveyed and applying in the same quarter

Application date			
Applications in 2011			
Applications in 2012		0.5075**	(0.2092)
Applications in 2013		0.6401***	(0.2355)
Applications in 2014	-0.5171**	(0.2363)	
Applications in 2015	-0.5889**	(0.2492)	
Applications in 2016	-0.7582**	(0.3666)	
Applications in 2017	-0.7792**	(0.3591)	
Control variables	Yes		Yes
No. of observations	1842		887
Wald test statistics	11.93***		8.87***
McFadden's pseudo R ²	0.2132		0.1619

Notes: The table only reports the significant estimated coefficients of application date after variable selection. Pooled standard errors are in parentheses. The dependent variable is whether an overdraft or a loan application is rejected or not in Panel A, C and D. In Panel B, the dependent variable is an ordinal variable equal 0 when an overdraft or a loan application is approved, 1 when an overdraft or a loan applicant receives less credit than it requests and 2 when an overdraft or a loan application is turned down outright. The results for control variables are not reported for brevity, but available upon request. The null hypothesis of the Wald test is that all coefficients, excluding the constant term, are equal to zero simultaneously. *, **, *** indicate significance at 10%, 5% and 1% level, respectively.