

‘Banks and SME Financing: Does Distance Matter?’

Kent Matthews

Sir Julian Hodge Professor of Banking & Finance

Cardiff Business School

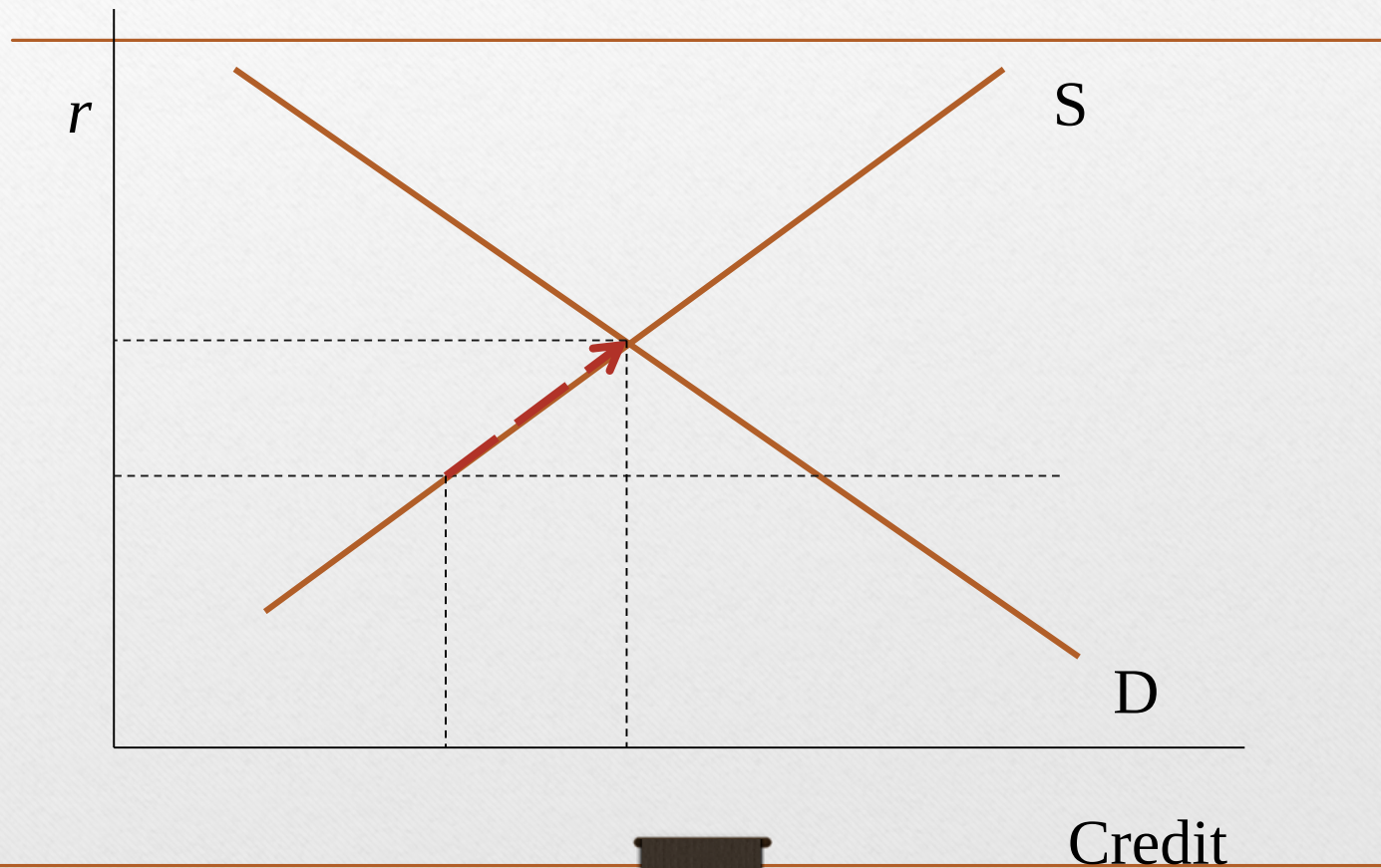
Is there a geographic dimension to Bank SME lending?

- Petersen and Rajan (2002) would suggest not.
- Petersen M and Rajan R (2009), 'Does distance still matter? The information revolution in small business lending', *Journal of Finance*, LVII, 6, 253-2569
- Banks have responded to pressures of competition and declining margins with greater arms-length operations.
- Consolidation, branch closure, merger, increased use of technology, online banking – all aimed at reducing unit costs.
- Decision making is dictated by a technocratic approach - e.g. credit scoring models, online applications etc.

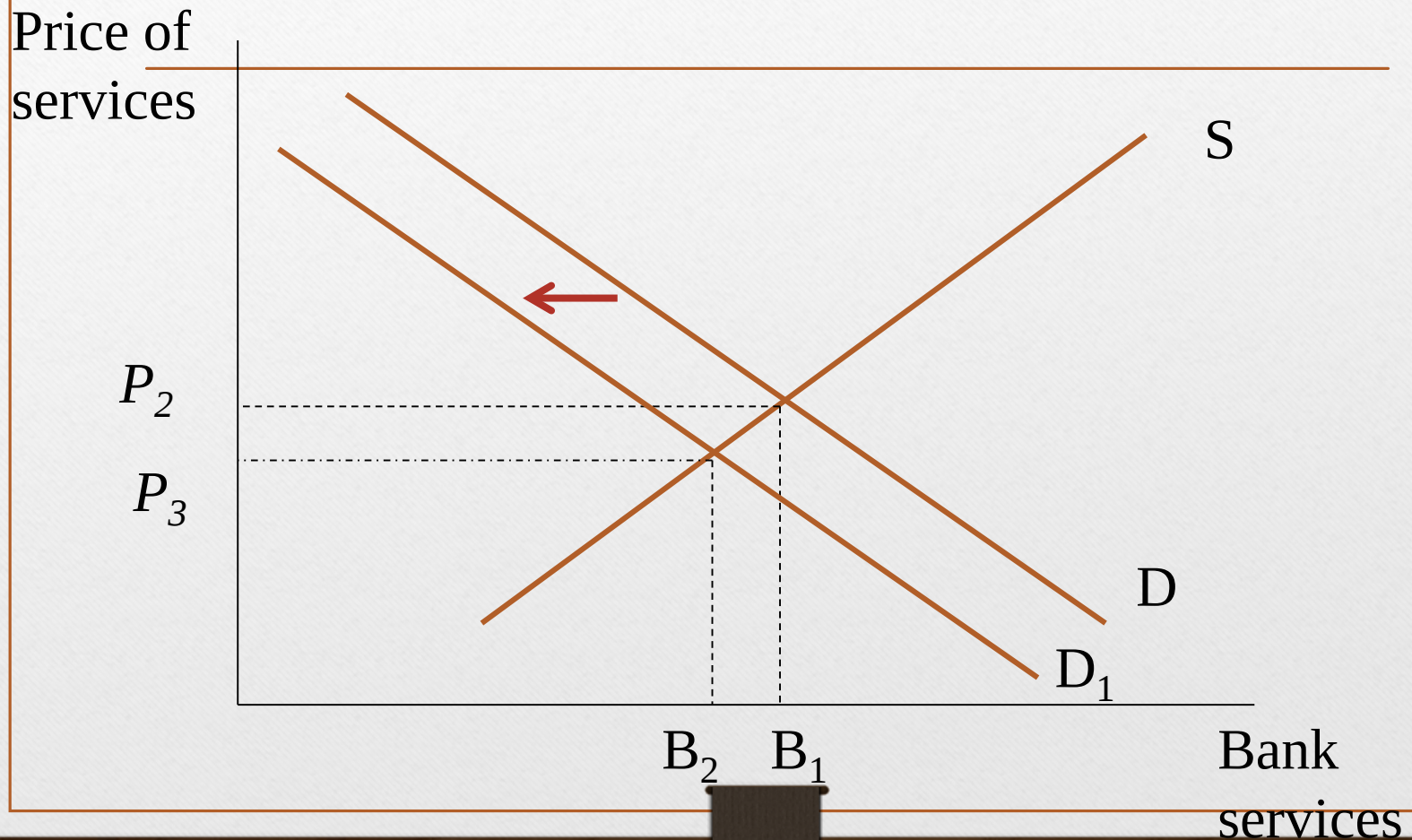
How did this come about?

- The three forces of the last two decades of the 20th century.
- Deregulation
- Financial Innovation
- Globalisation

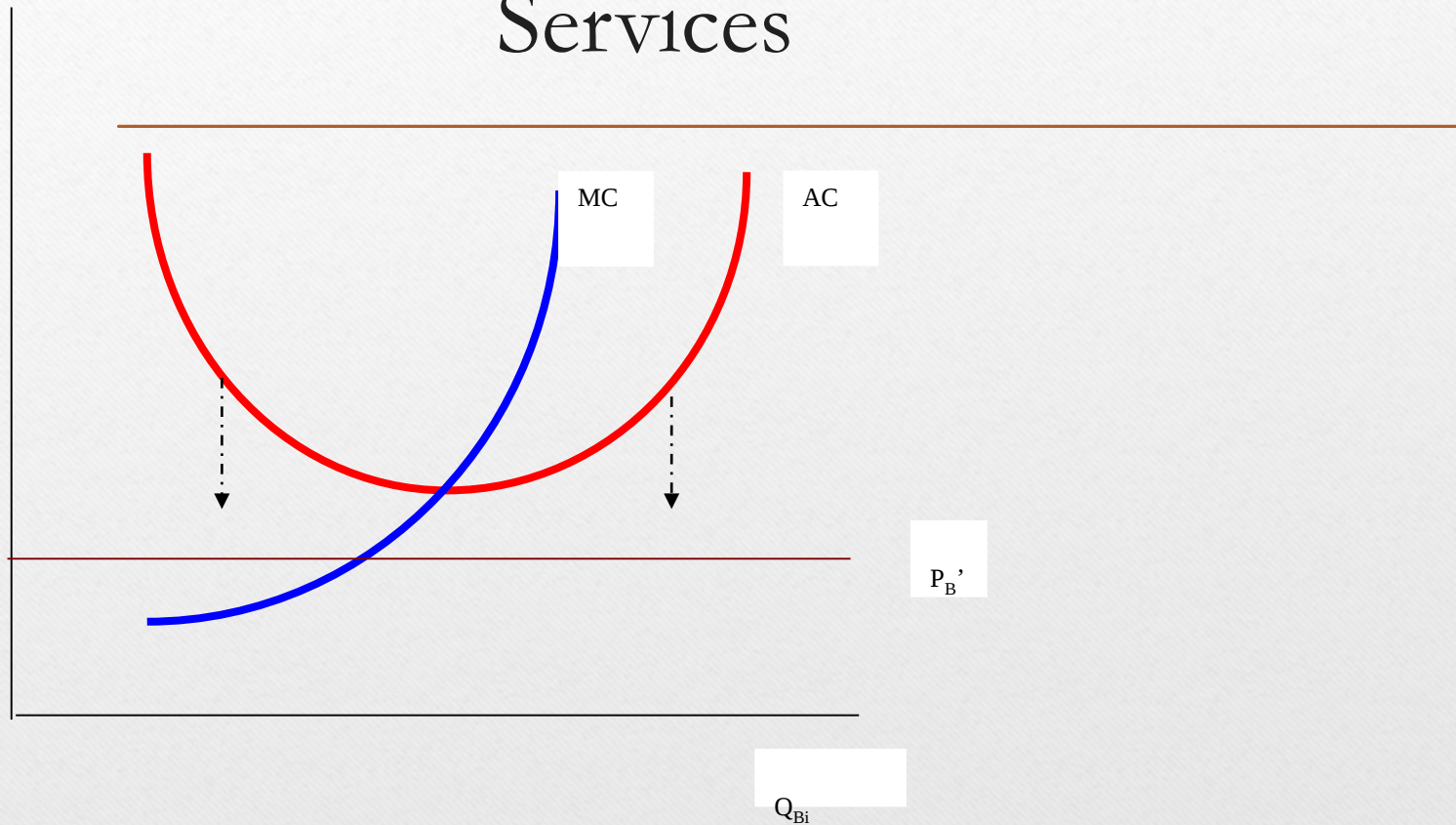
Began with the removal of controls



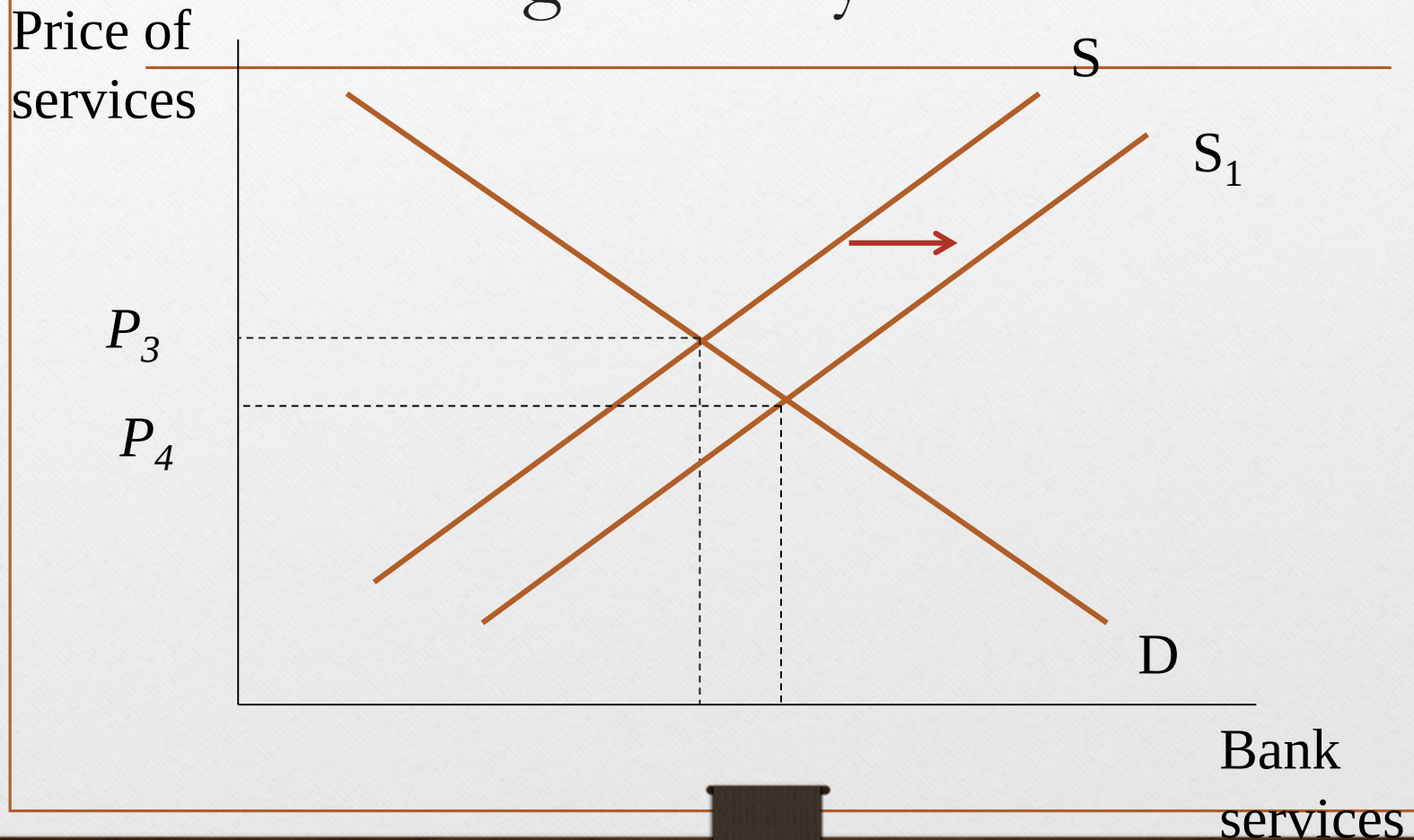
Competition from NBFIs



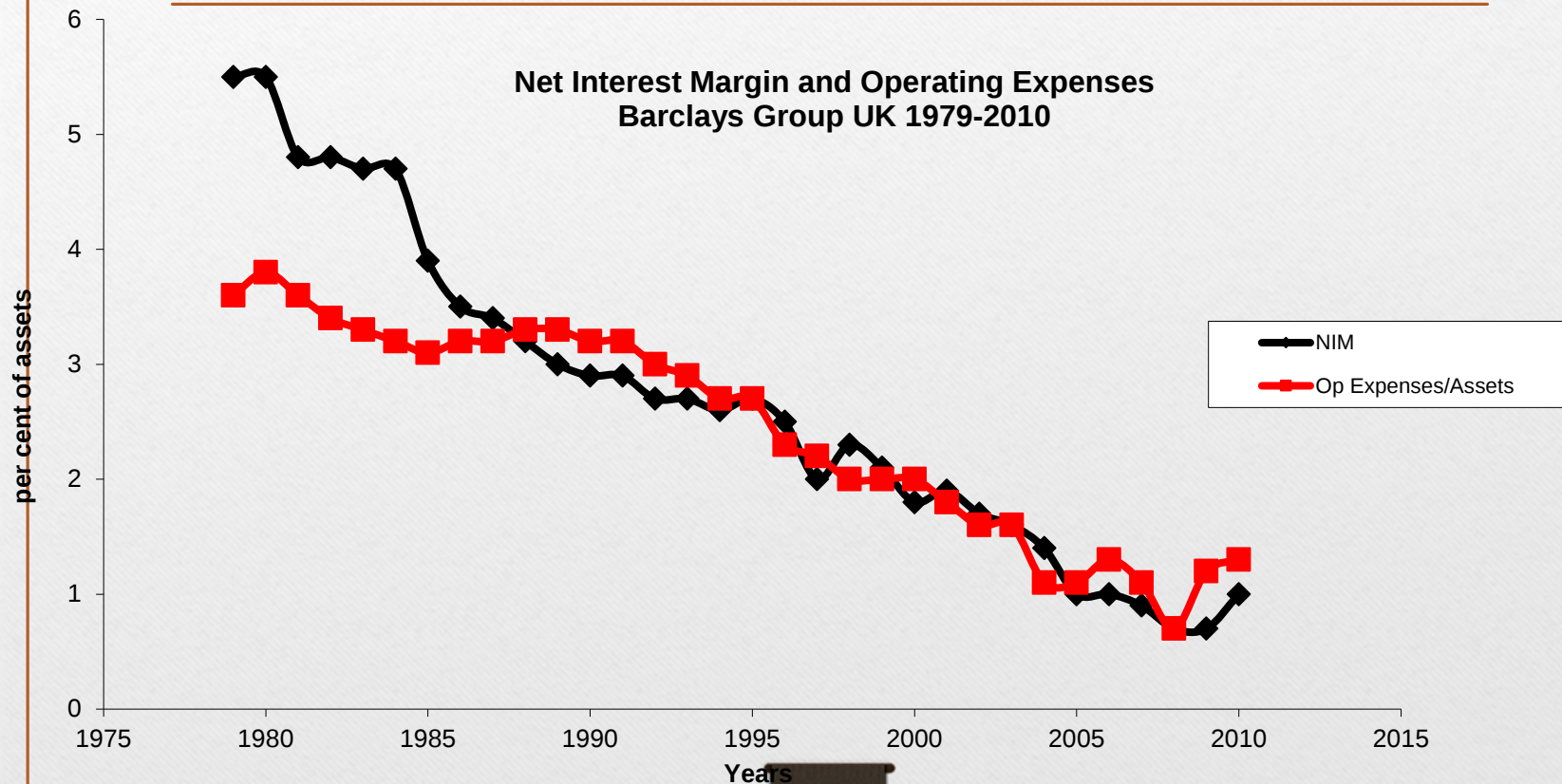
Fall in Price of Bank Services



Reduction in Costs in Banking Industry



Declining NIM and Operational Costs



Distance Matters?

- Economic geographers highlight the importance of location in the access to finance.
- Spatial imbalances in the access to finance have been identified by Alessandrini et al, (2009), Özildirim and Önder (2008), Martin and Sunley (2015) and also Degryse et al (2015).
- Regular contact between the supplier of credit and the firm facilitates greater credit access and distance is an element in this.

Some references

- Alessandrini, P., Presbitero, A.F., & Zazzaro, A., (2009), 'Banks, distances and firms' financing constraints', *Review of Finance*, 13, 261–307.
- Özyildirim S and Önder Z (2008), 'Banking activities and local output growth: Does distance from centre matter?', *Regional Studies*, 42(2), 229-244
- Martin R and Sunley P (2015), 'On the notion of regional economic resilience: conceptualization and explanation', *Journal of Economic Geography*, 15(1), 1-42
- Degryse H. Matthews K. and Zhao T. (2015), 'SMEs and access to bank credit: Evidence on the regional propagation of the financial crisis in the UK', *CESifo Working Paper* No 5424

Relationship banking v Transactional banking

- Big firms v SMEs; Big banks v niche banks; Opaqueness v transparency; Soft v Hard information
- But this is too simplistic. Banks offer both types of lending relationship but there is a trade-off Berger and Udell (2006).
- Berger A and Udell G (2006), 'A more complete conceptual framework for SME finance', *Journal of Banking and Finance*, 30 2945-2966.
- Large banks have SME lending operations. The mix on offer will depend on relative rates of return.
- Similarly SMEs may choose a transactional relationship because the alternative of relationship banking is costly.

SME finance and geography

- The existence of funding gaps – evidence is mixed.
- It is argued that while specific funding imbalances may exist a general funding gap does not exist – Hughes (1996), Mason and Harrison (1994), Hutchinson and McKillop (1990).
- However, start-ups and SMEs dependence on bank credit – bank credit funding gaps – Jones-Evans (2015), Zhao & Jones-Evans (2015), Dow and Rodrigues-Fuentes, (1997).

Funding gaps

- Dow S and Rodríguez-Fuentes C (1997), 'Regional Finance: A Survey', *Regional Studies*, 31:9 903-920
- Jones-Evans D (2015), A Feasibility Study into the Creation of a Development Bank for Wales, *A Report to the Minister for Economy, Science and Transport from the Development Bank for Wales Task and Finish Group*, March
- Zhao T and Jones-Evans D (2015), 'SMEs, banks and the spatial differentiation of access to finances in the UK' Unpublished paper, *Birmingham Business School*

SME experience in Wales

- A study I led for the FSB in Wales in 2014.
- Summarises the findings of a study that aims to answer the research question ‘does relationship banking provide benefit to its recipients?’
- Survey of FSB Wales members on their experience of relationship banking and credit conditions produced 217 responses of which around 25% were usable as valid responses.

Survey Findings

- The results indicated that SMEs that have a customer-loan relationship with their banks had a lower probability of experiencing a worsened credit outcome than those that do not.
- But this benefit usually comes at a higher interest cost.
- Literature suggests that from bank perspective relationship banking is more costly than transactional banking and requires a premium

Survey questions

- These related to the provision of credit by a banking institution regarding:
- the interest rate on loans,
- the size of available loans,
- the maturity of loans
- the covenant of the loan contract in the post financial crisis period, compared to pre-crisis.

Questions

- The questionnaire also asked the respondents' experience of bank financing during the last year.
- the change in the respondents' financial and operational position in the post-crisis period compared with the pre-crisis and that in last 12 months.
- Answers were classified in binary form as improved/unchanged {0} or worsened {1} compared with the pre-crisis period

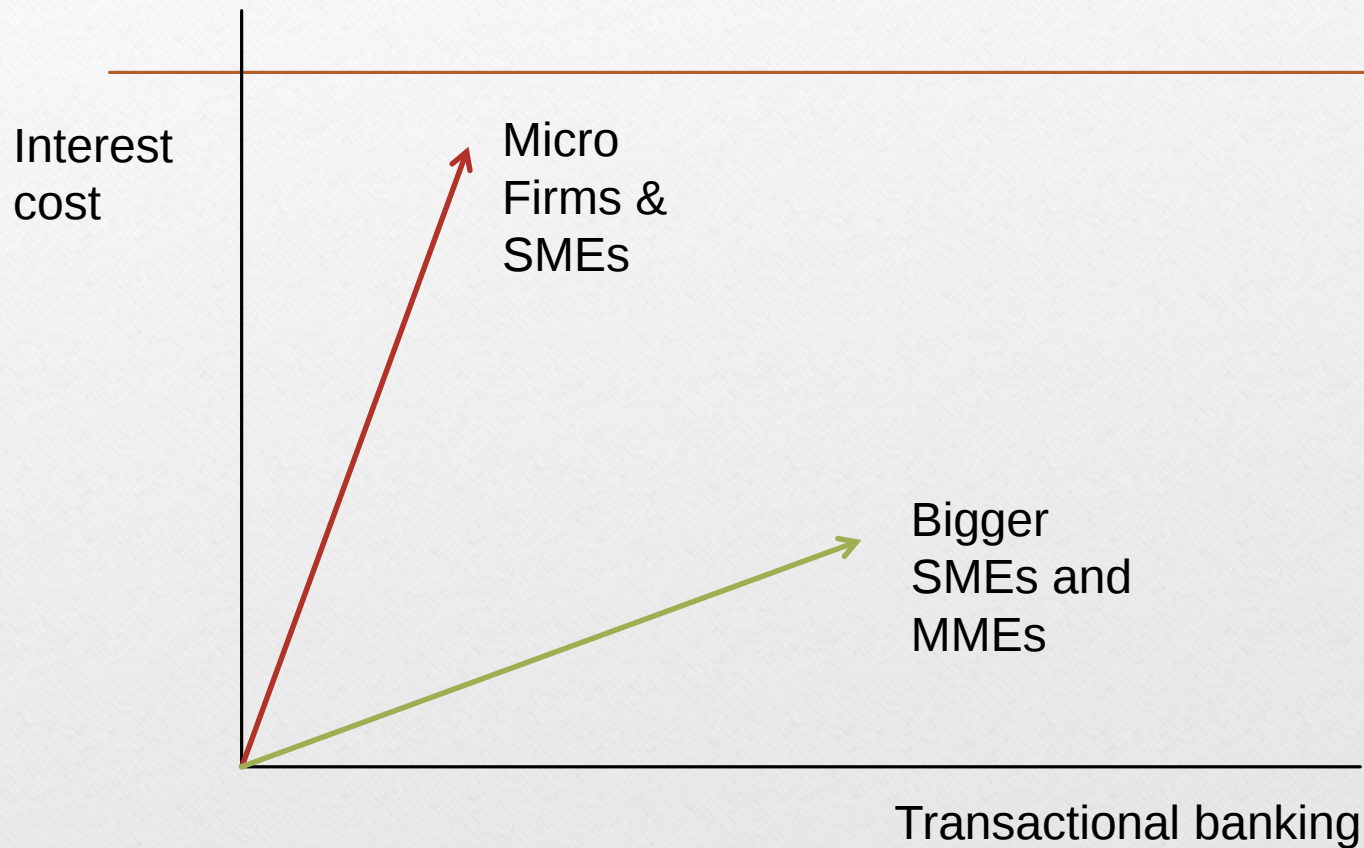
Measuring relationship banking

- Duration with main banks – number of years with the main bank.
- Exclusivity of the bank relationship {single bank relationship = 1, multiple bank relationship = 0}
- Modelling using probit – probability of whether credit condition worsened {1}, improved/unchanged {0}

Results

- The longer the duration of the relationship tie with the bank, the lower the probability of a worsened interest cost.
- However, an exclusive relationship increases the probability of worsened interest cost.
- That relationship banking results in a better lending outcome in terms of both maturity, size of loans, and covenant.

Relationship Banking v Transactional banking



Geographical difference in SME bank finance. Why?

- Two strands of the literature
- 1. Relationship banking informational asymmetries.
- 2. Bank organisation and the spatial transmission of credit shocks – informational diseconomies, through centralisation.
- 1a. Demise of relationship banking often blamed among other factors for the regional disparity in bank SME finance.
- 2a. Financial stress at the centre sees banks responding by a ‘flight to Head Quarters’.

‘Soft information’ - Relationship banking

- The basis of relationship banking is the transmission of soft information to the decision making centre, (Udell, 2009)
- Consistent also with the ‘social embeddedness’ theory of finance – Uzzi (1990), Uzzi and Lancaster (2003).
- ‘Closeness’ to home (HQ) is an effective way to overcome enhanced informational asymmetries in times of financial stress.
- *Operational distance* is the distance between the borrower and the bank
- *Functional distance* is the distance from the bank branch to the bank HQ

Distance is a proxy

- *Operational distance* relates to the informational asymmetry between the borrower and the bank that is mitigated by 'relationship banking'. The closer the proximity of the two actors as measured by physical distance, the greater the effectiveness of relationship banking in transmitting 'soft information'
- *Functional distance* relates to the 'principal-agent' problem between the local branch and senior management at headquarters. The argument is made that senior managers at HQ depend on the filtered information from local managers to make credit allocations

Informational diseconomies – centralisation

- Organisational diseconomies arise from expansion and centralisation – Stein (2002)
- Stein, J., (2002), 'Information production and capital allocation: Decentralized versus hierarchical firms', *Journal of Finance*, 57, 1891-1921.
- Branch closure and the drive towards the centre has a spatial dimension (Leyshon et al, 2008; French et al 2013) – pronounced in ethnically diverse and socially deprived areas.
- Centralisation may also contribute to the differential pass-through of national monetary shocks to the regions (Dow and Montagnoli, 2007). Heterogeneous effects of regional credit contraction (Ivashina and Scharfstein, 2010; Chava and Purnanandam, 2011; Jiménez et al., 2012; Iyer et al., 2014).
- These two explanations are not necessarily mutually exclusive. But we think we have a way of distinguishing them.

Take these issues to the data

- Since Q2 2013 seven of the UK's major lenders have published the outstanding stock of lending over 9000 individual postcode sectors on a quarterly basis, according to BBA specifications.
- The personal mortgage dataset contains, Barclays, Lloyds Banking Group, HSBC, RBS Group, Santander UK, Clydesdale & Yorkshire Banks and Nationwide Building Society.
- The SME lending dataset has 6 lenders, Barclays, Lloyds Banking Group, HSBC, RBS Group, Santander UK and Clydesdale & Yorkshire Banks.

Measure of locality

-
- SME lending and personal mortgage lending in 120 Postcode areas, England, Scotland and Wales, by provider.
 - Time period 2013(2) – 2014(4)
 - All figures deflated by the CPI
 - Bank branch postcode data obtained from Experian Shop*Point data.
 - Functional distance – physical distance from the branch in the postcode area to the bank HQ

Social capital variables

- Locality-specific social capital variables based on 2011 census
- HHI(Faith) = calculated as proportions of declared groups (Christian, Buddhist, Hindu, Jewish, Muslim, Sikh, Other, None, not stated in location (j))
- HHI (ethnic) = calculated as proportion white (British); mixed/multiple - black/African (British)/African; Other – Arab; Any others in location (j)
- MIN(Reg) = ratio of non-Christian to total in location (j)
- MIN (Ethnic) = ratio of non-white over total in each locality (j)
- TURN = proportion of election turnout in locality (j) for 2011 election.

The Model

$$\begin{aligned} \Delta CR_{i,b,l,t} &= \alpha + \beta LDIST_{b,l} \\ &+ \gamma SOC_CAP_l * LDIST_{b,l} + \kappa SHARE_AREA_{b,l} + \xi SHARE_AREA_TOTAL_{b,l} + \varpi_{b,l,t} \end{aligned}$$

CR = Lending of type (i), by bank (b) in location (l) at time (t). i=1..7; j=1..120; t=1..7

DJ = location dummy variable

DI = bank dummy variable; T = time variable

LDIST = natural log of the average physical distance between bank (b) in locality (l) and the bank's HQ

SHARE_AREA = ratio of number of branches of bank (b) to the number of branches of all banks in locality (l).

SHARE_AREA-TOTAL = ratio of number of branches of bank (b) in locality (l) to total branches of bank in (l)

SOC_CAP = Social variables of election turnout, ethnic and religious dimensions in locality (l)

Summary Statistics

Variable	Observations	Mean	SD	Min	Max
$\Delta SME_{b,l,t}$	3834	-1.07577	8.586604	-139.129	86.60611
$\Delta MORT_{b,l}$	4559	3.270699	15.69743	-114.775	170.9933
$\Delta CR_{i,b,l,t}$	8393	1.285191	13.12242	-139.129	170.9933
LDIST	5400	214.772	153.9401	0.684984	763
SHARE_A REA	5400	0.830791	0.824922	0	10.83333
SHARE_A REA_TOT AL	5400	11.38297	8.142726	0	50

SME and Mortgage lending

	$\Delta \text{SME}_{b,l,t}$			$\Delta \text{MORT}_{b,l,t}$		
Independent Variables	1	2	3	4	5	6
SHARE_AREA	-.115*** (.033)	-.115*** (.033)	-.127*** (.038)	-0.021 (.055)	-0.022 (.055)	-0.060 (.051)
SHARE_AREA_TOTAL	-0.003 (.328)	-0.006 (.328)	0.017 (.359)	1.383*** (.384)	1.381*** (.385)	1.452*** (.393)
LDIST	-.998*** (.360)	-.996*** (.361)	-1.037** (.408)	0.185 (.465)	0.181 (.466)	-0.053 (.472)
Location dummy	YES	YES		YES	YES	
Bank dummy	YES			YES		
Quarterly dummy	YES			YES		
Quarterly dummy * bank dummy		YES	YES		YES	YES
Location dummy*quarterly dummy			YES			YES
The postcode area where the outstanding shows as zero included (YES/NO)	YES	YES	YES	YES	YES	YES
N	3834	3834	3834	4559	4559	4559
R-SQ	0.108	0.158	0.287	0.411	0.534	0.601

Pooled Estimation

Dependent Variable: $\Delta CR_{i,t}$						
	1	2	3	4	5	6
SHARE_AREA	-0.066* (.034)	-0.067** (.034)	-0.092*** (.034)	-0.005 (.038)	-0.005 (.038)	0.008 (.039)
SHARE_AREA_TOTAL	0.730** (.294)	0.728** (.294)	0.773** (.307)	1.695*** (.407)	1.690*** (.407)	1.501*** (.429)
LDIST	0.626 (.435)	0.621 (.436)	0.353 (.446)	1.027** (.451)	1.023** (.452)	0.781* (.461)
SME lending*LDIST	-2.089*** (.516)	-2.079*** (.517)	-1.818*** (.542)	-2.984*** (.574)	-2.978*** (.575)	-2.778*** (.602)
SME lending*SHARE_AREA				-0.132*** (.038)	-0.134*** (.038)	-0.213*** (.038)
SME lending*SHARE_AREA_TOTAL				-2.062*** (.478)	-2.057*** (.479)	-1.575*** (.464)
Location dummy*lending type dummy	YES	YES		YES	YES	
Bank dummy	YES			YES		
Quarterly dummy	YES			YES		
Quarterly dummy*bank dummy		YES	YES		YES	YES
Location dummy*lending type dummy*quarterly dummy			YES			YES
The postcode area where the outstanding shows as zero included (YES/NO)	YES	YES	YES	YES	YES	YES
N	8393	8393	8393	8393	8393	8393
R-sq	0.328	0.398	0.501	0.334	0.404	0.508

Results

- Distance matters for lending to SMEs
- Distance does not appear to matter for lending to mortgages
- Except for Nationwide (Building Society), these are the same banks lending in the same postcode locality

Interpretation

- Organisational and informational diseconomies à la Stein (2002) cannot be the explanation for any geographical dimension in bank lending.
- The same banks base mortgage lending on ‘hard information’ which is independent of the element of distance.
- But relationship banking is an important partner in in SME bank financing, which in turn relates to the transmission of ‘soft information’.

Local market competition

- The ratio of the number of branches of bank (i) to all bank branches in locality (j) (Variable X) measures the intensity of local competition. The larger this measure the greater the dominance of bank (i) in locality (j).
- The lack of local competition has a negative effect on SME lending in the locality but there is no corresponding equivalent for mortgage lending.

Relative importance of locality

- The ratio of the number of branches of bank (i) in locality (j) to all the branches of that bank in the UK measures the relative importance of the locality to the bank.
- This represents a strategic decision by bank (i) to concentrate resources in the locality and has a positive effect on lending to SMEs.
- This is also the case for mortgage lending.

Intensity of local demand

- The level of bank lending to SMES by the sum of other banks k ($k \neq i$) in the locality (j) measures the intensity of local demand.
- The higher is local SME lending by other banks the greater the incentive for bank (i) to lend in locality (j).
- The same argument holds for mortgage lending as shown by the significant positive effect on mortgage lending of bank (i).

Robustness - Social capital variables

- Social capital as a screening mechanism has been recognised as an omitted variable in the process of economic development (Guiso et al 2004; Hegde and Tumlinson, 2015).
- We use three measures of social capital that proxy local cohesion: religion, ethnicity and voter turnout.
- Allowing for distance, none of them add to the explanation of SME lending
- However, areas of concentrated religious and ethnic groups have a positive effect on mortgage lending.
- Digging deeper we see that areas of concentration of non-white and non-Christian have lower mortgage credit.

Conclusion

- Using data of lending by individual banks to firms and individuals in postcode districts, we examine the role of geography in explaining the allocation of credit to SMEs and mortgages.
- Two explanations underpin the geographical dimension in bank lending.
- The first is the translation of soft information by Relationship Managers from the SME to the ultimate decision maker at bank HQ, where distance is inversely related to the efficacy of information flow (also social embeddedness theory)
- The second relates to informational diseconomies in large organizations.

‘Run for Home’

- In banking the two explanations are not mutually exclusive.
- There is evidence that in times of financial stress banks concentrate resources closer to home (De Haas and Van Horen, 2012).
- In turn that may imply the reduction in relationship banking and a lean towards transactional banking.
- The removal of Relationship Managers will then worsen the flow of soft information and improves the avenue of transactional banking.
- By using mortgages as the ‘control’ we believe we have evidence that supports the former of the two interpretations over the latter.