

**Impact case study (REF3b)**

<b>Institution:</b> 10007857 – Bangor University
<b>Unit of Assessment:</b> UoA 19
<b>Title of case study:</b> Market Power & Efficiency in Banking
<b>1. Summary of the impact</b> (indicative maximum 100 words)
<p>At Bangor there is an extensive tradition of empirical research addressing the long standing public-policy concern of balancing banking sector market power with regulation. The impact of Professor Molyneux’s research during 2008-2013 has been to inform policy formulation surrounding the debate about bank monopoly behaviour and its links to industry efficiency. In particular, his empirical analysis has focused on the use of non-structural (price-cost or/and price-revenue relationships) and structural (concentration ratio) measures of competition (and their links to cost and profit efficiency and various risks). Evidence of the impact and scope of this research is found in the extensive use of these measures in publications by, and policy debate within, a variety of financial organizations at the national, European and international level.</p>
<b>2. Underpinning research</b> (indicative maximum 500 words)
<p>Empirical research involving public policy issues in banking at Bangor University date back to the seminal contributions of Jack Revell in the 1980s and by the group led by Edward P. M. Gardener in the 1990s. Professor Molyneux, has contributed to this collaborative research effort since joining Bangor in 1986 and he took over its leadership in 2008. The impact of his work on the formulation of “policy analysis of banking sector competition and efficiency” [<b>b1</b>] rests on the design and dissemination of alternative measures of market power and linking these to efficiency and risk in banking.</p> <p>The underpinning research focuses on methodological advances relating to modelling the competitive characteristics of banking markets using non-structural (price-cost or/and price-revenue relationships) [<b>a1</b>, <b>a3</b>, <b>a4</b> and <b>a5</b>] and structural (concentration ratio) indicators [<b>a1</b>, <b>a4</b> and <b>a6</b>]. Methodological advances also sought to model bank efficiency using a variety of approaches [<b>a2</b> and <b>a6</b>] and link the indicators of bank efficiency and risk to the market power measures [<b>a5</b> and <b>a6</b>]. An important contribution of this work is to identify three critical dimensions of bank behaviour – competition, efficiency and risk-management – that cannot be viewed in isolation and (for accuracy and policy relevance) must be considered as related and modelled accordingly.</p>
<b>3. References to the research</b> (indicative maximum of six references)
<p>(<b>Bold</b> denotes currently member of academic staff at Bangor)</p> <p>[<b>a1</b>] Lloyd-Williams, M., <b>Molyneux, P.</b>, and <b>Thornton, J. S.</b> (1994) 'Competitive conditions in European banking' <i>Journal of Banking and Finance</i>, 18: 445-460 (submitted to RAE 2001). DOI 10.1016/0378-4266(94)90003-5.</p> <p>[<b>a2</b>] <b>Altunbas, Y.</b>, Evans, L., and <b>Molyneux, P.</b>, (2001), 'Bank ownership and efficiency', <i>Journal of Money, Credit and Banking</i>, 33: 926-954 (submitted to RAE 2008). Available at: <a href="http://www.jstor.org/stable/2673929">http://www.jstor.org/stable/2673929</a></p> <p>[<b>a3</b>] <b>Goddard, J.</b>, <b>Molyneux, P.</b>, and Wilson, J.O.S., (2004), 'Dynamics of growth and profitability in banking', <i>Journal of Money, Credit and Banking</i> 36, 1069-1090. (<i>Google Scholar Citations in October 2013: 210</i>). Available at: <a href="http://www.jstor.org/stable/3839101">http://www.jstor.org/stable/3839101</a></p> <p>[<b>a4</b>] <b>Carbó, S.</b>, Humphrey, D, Maudos, J and <b>Molyneux, P.</b> (2009) 'Cross-country comparisons of competition and pricing power in European banking', <i>Journal of International Money and Finance</i>, 28, 115-134. (<i>Google Scholar Citations in October 2013: 149</i>). DOI: 10.1016/j.jimonfin.2008.06.005</p> <p>[<b>a5</b>] Liu, H., <b>Molyneux, P.</b>, and Wilson, J.O.S (2013) 'Competition and stability in European</p>

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banking: A regional analysis' *Manchester School*, 81, 176-201. DOI: 10.1111/j.1467-9957.2011.02285.x

[a6] Fiordelisi, F., Marques-Ibanez, D. and Molyneux, P. (2010) 'Efficiency and risk in European banking', *European Central Bank Working Paper*, No 1211, June 2010 and appeared in *Journal of Banking and Finance*, 2011, 35: 1315-1326. DOI: 10.1016/j.jbankfin.2010.10.005

**Evidence of research quality:**

Molyneux's work on competition, efficiency and risk is heavily cited with [a2] listed as the most cited paper in Google Scholar searches for 'ownership and efficiency' (426 citations). Other areas that appear at the top in Google Scholar searches include those on 'competitive conditions in banking' (345 citations); 'efficiency in European banking' (337 citations) and 303 citations for a Wiley textbook on Efficiency in European Banking; 'efficiency and risk in banking' (316 citations); and 88 citations for [a6].

**4. Details of the impact** (indicative maximum 750 words)**Context:**

To maximise impact, from the outset critical elements of this research were developed in conjunction with policymakers and practitioners. Molyneux and his team were involved in the design and production of a variety of studies, including projects, consultancies and advisory work that helped advance policymakers' insights in the aforementioned areas. Examples of these interactions include projects for the World Bank on the integration of financial services (1997-1998), a study for the European Commission on examining the competitive impact of the Single Market Programme in Financial Services (between 2002 and 2004) and, more recently, the analysis of bank competition, consolidation and efficiency for the European Commission (2002-2004), the European Central Bank (2002 and 2008), and the Italian Banking Association (2009-2011), as well as on-going research with FUNCAS (Spanish Savings Banks Foundation).

**Pathways to impact:**

Molyneux's research team aims to influence and inform policy formulation surrounding the debate about bank monopoly behaviour through methodological approaches that model competition, efficiency and risk. Its pathways to impact since 2008 are the following routes (as exemplified under "selected users and beneficiaries" below):

- Highly cited work disseminated widely and replicated within policy papers of central banks and international financial organizations [b4, b5, b6 and b8].
- Attendees to presentations and workshops show an interest in adopting and becoming users of the methodology [b1 and b3].
- Users liaise with Molyneux's team, who act in an advisory capacity to help develop and implement ideas [b1, b3 and b7].
- Users build, develop and utilise modelling and methodological approaches based on Molyneux and his teams work to inform public policy on banking sector competition, efficiency and risk issues in their region / country / continent [b3 and b5]; which, in turn, further disseminates the research findings [b8].

**Dissemination:**

Users of the research by Molyneux and his team since 2008 include a wide range of commercial and public organisations. The research has been disseminated in seminar presentations, workshops and through advisory work. The latter includes: AB Bank, Riga (May 2008); International Monetary Fund, Geneva (June 2008); EVLI (Bank), Helsinki, (August 2008); University College Dublin / Central Bank of Ireland, Dublin (May, 2009); Italian Banking Association, Rome (September 2009, January 2010, October, 2010); Italian Leasing Association, Milan (September 2010); Banque Centrale du Luxembourg & STATEC, Luxembourg (March 2011); Unicredit, Bologne, (April, 2011); Bank of England, London (November, 2011); European Central Bank, Frankfurt, (January 2012); FUNCAS (Spanish Savings Banks Foundation), Madrid (January 2012); Unicredit, Bologne, (April, 2011); and the Welsh Government, Cardiff (May, 2012).

**Selected users and beneficiaries:**

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Italian Banking Association, Rome (2008, 2009, 2010) Project commissioned by IstEin (Istituto Einaudi, established in July 2008 by the Italian Banking Association) and directed by Roberto Violi (Senior Director at the Bank of Italy) [b1 and b2]. The aim of the project was to examine banking competition in Europe while “aim[ing] at improving knowledge of this phenomenon, both in terms of methodology and in terms of quantitative measurements” [b1]. The research outcomes were directed towards the Italian banking community as well as the Bank of Italy and other European regulators. Molyneux and his team attended a range of workshops (September 2009, January 2010, October, 2010) with research and operational colleagues from the Bank of Italy, the Italian Banking Association as well as employees from the main banks including Unicredit.

Molyneux helped co-ordinate workshops and work programmes undertaken by academics and policymakers on aspects of competition in European banking using methodological approaches stemming from a1, a2 and a3. This work examined market power aspects of banking systems using structural and non-structural indicators as well as interactions between competition, risk and efficiency [b2], some of which appeared subsequently as a European Central Bank study [a6]. The significance and reach of the impact of this and Molyneux’s earlier research has been to inform the policy debate on bank competition (including product pricing and access to finance). This impact is also evidenced in policy documents from the Bank of Canada [b5], European Central Bank [b6], Welsh Government [b7] and African Development Bank [b8].

**FUNCAS (Fundación de las Cajas de Ahorros) / Spanish Savings Banks Foundation**

The research of Molyneux’s team has been used by FUNCAS since 2008 to evaluate industry structure and competition, risk and efficiency linkages in banking. Some of the work has been pan-European (as is the case of the work linked to a2, a4, and a6) and some has focused on Spain, which, in turn “has been of major importance to study the evolution of banking markets” [b4] in that country. Furthermore, in 2009 Molyneux completed a FUNCAS sponsored project on “Size Revisited in European Banking” where bank efficiency, value creation and ownership were analyzed and presented to regional savings banks in Alicante (June, 2008), Malaga (February 2009), Granada (May 2010), Valencia (November 2010), Santiago de Compostella (February 2011) and Santander (May, 2012). The impact of the workshops and the policy advice was to help regional banks in the adoption and use in their decision making of the analytical approaches developed by Molyneux and his collaborators.

Other work by Molyneux’s team during the 2008-2013 period aimed at comparing the performance of commercial, savings and co-operative banks. Here the focus was on ownership features emanating from research highlighted in [a2] and confirmed by [b3]. Ongoing research with FUNCAS is investigating ways in which savings banks can boost their efficiency without impacting adversely on risk. Molyneux’s team work worked closely with staff at individual banks to assist them in incorporating the methodological innovations into their decision-making processes. In addition to annual workshops and advisory work, Molyneux disseminates the results of his team’s research to staff at savings banks through regular contributions to FUNCA’s annual *Papeles de la Economía Española* publication (in Spanish).

**Welsh Government’s Access to Finance Review**

In 2013 Molyneux was invited to be a member of the advisory group reviewing whether High Street banks are meeting the financing needs of Welsh SME’s, and the difficulties in gauging whether the competitive environment is promoting or inhibiting credit availability in the country. One aspect of this review notes the difficulties in measuring competition in banking (based on a1 and a6) and thus confirms the impact of this research in informing policy [b7].

**International Organisations and Central Banks**

During the 2008 to 2013, the research of Molyneux’s team on non-structural measures of banking sector competition, efficiency and risk has been cited by an extensive array of influential policy documents of international financial organizations as diverse as the Group of 20 (G20) [b4] and the African Development Bank [b8]. This is further corroboration of the impact of Molyneux’s research on policy formulation at the international level.

**5. Sources to corroborate the impact (indicative maximum of 10 references)**

**[b1]** Letter from the Senior Director, Portfolio Management Dept., Banca d'Italia (Bank of Italy)

**[b2]** Details of the Italian Banking Association project and outputs (working papers 1,2,3 and 10) can be seen at :

<http://www.istein.org/research/projects/item/977-european-banking-competition.html>

“The purpose of the [European Banking Competition] project is to carry out a research study concerning “Banks and Competition in Europe” specifically aimed at improving knowledge of this phenomenon, both in terms of methodology and in terms of quantitative measurements....Two topics have been studied in detail: 1) ‘Competition in the European Banking Sector’, coordinated by Professor Philip Molyneux (Bangor Univerisity);...”

**[b3]** Letter from the President of Funcas (Fundación de las Cajas de Ahorros) – the Spanish Savings Banks Foundation,

**[b4]** G 20 Workshop on Competition in the Financial Sector, co-organized by *Bank of Indonesia* and *Banco de Mexico* on February 16-17, 2008,

<http://www.banxico.org.mx/publicaciones-y-discursos/publicaciones/seminarios/%7B9FF34154-2399-AEA7-2F99-B8245F927173%7D.pdf> (**work cited on pp 327 and 330**).

**[b5]** Bank of Canada (2010) Étienne Bordeleau and Christopher Graham, The Impact of Liquidity on Bank Profitability, Bank of Canada Working Paper 2010-38, December (**work cited on pp. 6 and 8**) <http://www.bankofcanada.ca/wp-content/uploads/2010/12/wp10-38.pdf>

**[b6]** European Central Bank (2010) Does Monetary Policy Affect Bank Risk-Taking, Y. Altunbas, L. Gambacorta and D. Marqués-Ibáñez, ECB Working Paper, No 1166, March (**work cited on p. 27**) <http://www.ecb.europa.eu/pub/pdf/scpwps/ecbwp1166.pdf>

**[b7]** Welsh Government's (2013) Access to Finance Review. Member of the voluntary advisory group reviewing whether high street banks are meeting the financing needs of Welsh SME's and if the competitive environment is promoting or inhibiting credit availability in the country.

<http://wales.gov.uk/docs/det/publications/130625accesstofinanceen.pdf> (**work cited on p. 32**).

“..there is increased interest in the growing role of the Swedish Bank Handelsbanken, with its localised approach, as a supplier of capital to the SME sector in Wales [Various studies emphasise that concentration may not be a good indication of competitive behaviour... See **[a1, a4]**..” (p. 32).

**[b8]** African Development Bank (2013) A. M. Simpasa, Competition and market structure in the Zambian banking sector, African Development Bank Working Paper, 168, January, Tunis: African Development Bank. Available at:

<http://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/Working%20Paper%20168%20-%20Competition%20and%20Market%20Structure%20in%20the%20Zambian%20Banking%20Sector.pdf>

(**work cited on p. 7**). “Table 4: Interpretation of the Panzar-Rosse H Statistic. Source: **[a1]**” (p.7).