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資訊透明度與銀行經營績效之研究

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中文摘要： 本研究探討透明度對銀行財務績效之影響，透明度的衡量考慮銀行內部的特質與外部的國家特性。使用 115 個國家，共 984 家公開上市銀行為研究樣本，本研究發現透明度與銀行績效存在正向與負向關係。在銀行內部透明度方面，銀行產業的放款具備特有的不透明性，實證結果顯示放款比重愈大，銀行績效愈好，隱含資產透明度與績效的負向關係；銀行的盈餘管理會增加銀行營運的不透明，不利於銀行績效表現，因此盈餘透明度與績效呈現正向關聯。至於國家特性方面，信用資訊分享程度愈高及資訊科技發展程度愈大，銀行的績效皆較差，顯示資訊內容及科技透明度的增加，可能對銀行產業產生競爭效果，反而降低銀行經營績效；而一國的治理能力高低與銀行績效呈現顯著正向關係，凸顯政府治理能力對銀行產業營運的重要性。

中文關鍵詞： 透明度、財務績效、盈餘管理、資訊分享、資訊科技

英文摘要： This study investigates the impact of transparency on bank performance. Transparency is measured by bank characteristics and country features, which considers the internal and external transparency. Using 984 listed and still active commercial banks in 115 countries, we find both positive and negative impacts of transparency on bank financial performance. As for the internal transparency, bank characteristics show that the inherited opacity (less transparency) of loan assets positively correlated with performance, implying a negative impact of transparency. Moreover, the transparency of earnings management has a positive impact on performance. As for the external transparency, country features reveal that, in a country with better credit information sharing and advanced technology, banks' financial performance is affected negatively by better transparency. The negative impact implies a competition-enhancing effect of transparency. However, the governance is positively correlated with bank performance. It highlights the importance of macro conditions and the role of the government.

英文關鍵詞： transparency, financial performance, earnings management, information sharing, information technology

摘　要

　　本研究探討透明度對銀行財務績效之影響，透明度的衡量考慮銀行內部的特質與外部的國家特性。使用 115 個國家，共 984 家公開上市銀行為研究樣本，本研究發現透明度與銀行績效存在正向與負向關係。在銀行內部透明度方面，銀行產業的放款具備特有的不透明性，實證結果顯示放款比重愈大，銀行績效愈好，隱含資產透明度與績效的負向關係；銀行的盈餘管理會增加銀行營運的不透明，不利於銀行績效表現，因此盈餘透明度與績效呈現正向關聯。至於國家特性方面，信用資訊分享程度愈高及資訊科技發展程度愈大，銀行的績效皆較差，顯示資訊內容及科技透明度的增加，可能對銀行產業產生競爭效果，反而降低銀行經營績效；而一國的治理能力高低與銀行績效呈現顯著正向關係，凸顯政府治理能力對銀行產業營運的重要性。

關鍵詞：透明度、財務績效、盈餘管理、資訊分享、資訊科技

Abstract

This study investigates the impact of transparency on bank performance. Transparency is measured by bank characteristics and country features, which considers the internal and external transparency. Using 984 listed and still active commercial banks in 115 countries, we find both positive and negative impacts of transparency on bank financial performance. As for the internal transparency, bank characteristics show that the inherited opacity (less transparency) of loan assets positively correlated with performance, implying a negative impact of transparency. Moreover, the transparency of earnings management has a positive impact on performance. As for the external transparency, country features reveal that, in a country with better credit information sharing and advanced technology, banks' financial performance is affected negatively by better transparency. The negative impact implies a competition-enhancing effect of transparency. However, the governance is positively correlated with bank performance. It highlights the importance of macro conditions and the role of the government.

Keywords：transparency, financial performance, earnings management, information sharing, information technology

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一、前言

　　資訊是金融交易中一個重要的關鍵，也是影響效率的重要因素，然而金融市場中普遍存在的資訊不對稱問題，使交易雙方成本增加或交易規模降低，影響市場整體表現，因此被視為是影響效率的重要因素。如何提升資訊內容與品質，以增進市場效率，不僅是學術界關心的議題。

　　銀行產業對資訊的依賴更重，因為銀行傳統業務仰賴銀行和顧客間資訊的流動，而這些資訊流動對銀行外部投資人及監理機構而言是相對不透明的，從資訊揭露的角度，若銀行增加本身營運資訊的透明度，對銀行財務績效會產生何種影響？若市場或產業的資訊透明度增加,銀行會因為不確定性降低而獲利,還是因為資訊透明提升了市場競爭而受害呢?

　　對於透明度的衡量，可從個體的角度，檢視企業本身對資訊的揭露程度，或從總體環境分析，比較市場或國家整體面的資訊要求或傳遞。然而不管從個體或國家整體的角度，資訊透明度是相當抽象的概念，其衡量自然相當困難，在學術研究上仍有許多不同之看法。

　　本研究認為透明度應該包含銀行內部與外部透明度。首先，銀行內部透明度方面，銀行產業特性本身就會製造不透明（opaqueness），降低銀行整體透明性，這些特性包含銀行傳統的授信業務，個別的授信合約包含客戶個人及信用資訊和授信條件，因此個別授信合約即屬於不透明資產，加總之後的授信總額自然是不透明的；而其他交易性資產因牽涉到產品設計與市場風險，也增加了銀行的不透明性，因此 Morgan（2002）認為銀行不透明的原因即是放款與交易性資產，而這種不透明可能對銀行是有利的，Jones, Lee, and Yeager（2013）的實證顯示，相較於透明性資產，銀行投資在不透明資產的獲利較高。

　　另外，銀行經理階層可能操作銀行的授信組合和放款備抵呆帳（loan loss provisions），甚至是銀行的經營成果，亦即一般所謂的盈餘管理（earnings management），這些行為都使銀行本身的透明度降低。Leuz, Nanda, and Wysocki（2003）的跨國研究顯示，一個國家的投資人保護法規較佳可以降低盈餘管理現象；Cornett, McNutt, and Tehranian（2009）則認為某些公司治理機制（corporate governance mechanisms）與美國控股公司的盈餘管理有關。

其次，銀行外部的市場透明度也會影響銀行營運。透明度高可能有兩種效果，一個效果是降低不確定性，可以增加銀行對違約風險的預測，進而增加銀行的盈餘；另一個效果則是增加市場競爭，因為潛在競爭者更容易接觸銀行顧客或取得顧客資料，讓銀行既有的顧客關係受到挑戰。因此，市場透明度增加對於銀行營運的總效果仍無法確定。

在銀行產業中一個常被討論的市場透明度指標是資訊分享（information sharing），是指銀行透過信用報告機構（credit bureaus）蒐集顧客的信用資料。信用報告機構蒐集並分享信用資料給會員機構，由於銀行的放款有違約風險，若能正確預期違約機率，將可降低損失，因此除了透過內部行員在徵信過程中蒐集顧客信用資訊外，信用報告機構亦能提供顧客過去的信用紀錄，因此，信用報告機構能降低銀行蒐集信用資料的成本，Pagano and Jappelli（1993）的理論模型中顯示，當貸款者的移動性（mobility）和異質性（heterogeneity）愈高時，這種信用分享功能愈重要。

然而，還有其他影響市場透明度的因素應該同時被考慮，如影響資訊處理與傳遞功能的科技能力和管理市場資訊傳播與使用的治理能力。資訊科技的進步降低了資訊蒐集、處理與管理的成本，進而提升資訊傳遞的功能，有助於提升金融市場透明度。Peterson（2004）指出科技增加了硬性資料使用性，Berger and DeYoung（2006）認為與時俱進的科技進步，提升的銀行總行的控制能力，降低總行與分行間，因地理距離產生的代理成本。

至於市場（國家）治理能力對銀行產業更是重要，其一是治理能力影響市場上資訊使用的規範與管理，影響市場整體透明度，其次是因銀行業務受到法規高度管制與監督，法治環境和品質會直接影響市場參與者和金融活動。Buch, Koch, and Loetter (2009)針對德國銀行的研究顯示，地主國的治理能力會影響德國銀行的國際業務，Houston, et al. (2012)則認為銀行傾向於將資金移轉至法規較鬆散的市場。

二、研究目的

本計畫以銀行產業為研究對象，分析總體經濟之資訊透明度，以及個別銀

行本身透明度，對銀行經營績效之影響。選擇銀行業的原因有二，第一，銀行業在借貸關係中，蒐集許多借款人的質性資料，其中許多不易透過資訊科技處理或傳遞的，Peterson（2004）定義其為軟性資料（soft information），而銀行被認為是軟性資料的寶庫（repositories）（Peterson, 2004），因此銀行業本身具備資訊上的比較優勢；第二，由於對資訊的高度仰賴，銀行業者間有所謂的資訊分享（information sharing）機制，亦即透過信用報告機構（credit reporting agencies）蒐集借款者信用紀錄，再提供給（會員）銀行使用，因此銀行業可以衡量產業透明度，是相當適合的研究對象。

關於資訊分享功能對銀行產業的影響，學術研究不多，且在探討總體資訊環境透明度的文獻中，尚未被納入討論。有鑑於資訊分享功能是銀行業取得資訊的重要管道之一，因此本計畫希望能彌補文獻之不足，檢驗資訊分享對銀行業經營績效的影響。在樣本選擇部分，本計畫原考慮以全球 1000 大銀行為觀察樣本，但考慮法規對上市公司的財務資料揭露較嚴格，資料應較為完整，因此改以全球上市銀行為研究對象，而研究期間，受限於信用報告分享指標的資料自 2005 年起較為完整，因此本研究期間為 2005 年至 2011 年。

三、文獻探討

(一) 銀行特質

就個別銀行而言，兩個因素會影響內部透明度，一是銀行本身行業特性造成得，因為銀行資產組合的關係，外部人無法清楚其放款內容，因此使得銀行本身即具有不透明的特性；其次是銀行刻意造成的，即銀行管理階層操弄盈餘或經營成效的行為。

1. 資產組合

Morgan (2002)認為放款與交易性（trading assets）兩種主要資產，造成銀行的不透明。放款是借款者與貸款者間的私人契約，銀行擁有比貸款者和投資者較多的內部資訊，增加評估銀行的不確定性；交易性資產則是因為產品複雜度與高度流動性，因此要正確且即時的評估相對困難。Jones, et al. (2013)檢視銀行不透明對銀行獲利的影響，他們的結論顯示，銀行投資在不透明的資產獲利性較投資透明資產高。

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對商業銀行而言，放款是核心業務，往往反應了其企業規模，有助於提升銀行報酬，但放款屬於不透明的資產，因此上述兩篇文獻隱含銀行資產透明度愈低，獲利應較佳。

2. 盈餘管理

Bhattachaya, Daouk, and Welker (2003)指出有三種型態的盈餘管理：積極創造盈餘（earnings aggressiveness）、避免損失（loss avoidance）及盈餘平滑（earnings smoothing）。Leuz et al. (2003)分析 31 個國家，非金融業的盈餘管理，發現法律對外部投資者的保護，是影響財務資訊品質的關鍵因素；而針對銀行業，Shen and Chih (2005)的實證則顯示，對投資者的保護較高及會計資訊的透明度較大，銀行的盈餘管理較低。

上述的實證針對國家法治環境，而 Cornett et al. (2009)則著眼於公司治理與盈餘管理的關係，作者認為公司治理機制對盈餘管理會產生不同的效果，績效、董事會獨立性與資本與盈餘管理有負向關係，而績效連結的執行長薪酬（CEO pay for performance）則與盈餘管理呈現正向關聯。

然而，文獻著重於探討影響盈餘管理的決定因素，而忽略了盈餘管理的影響。這也是本計畫要探討的一個議題。

(二) 國家特性

1. 信用資訊分享

信用報告機構的信用資訊分享功能，多以研究信用報告機構資訊分享對總體經濟的影響為主，如 Jappelli and Pagano（2002）的實證結果顯示，資訊分享與較大的信用市場規模和較低的違約率有關。Cowan and De Gregorio（2003）以智利為研究對象，實證發現公共信用報告機構的存在會增加貸款額，而且正面與負面資訊皆與違約的預測相關。Houston, Lin, Lin and Ma（2010）以 69 個國家的追蹤資料，探討各國信用分享程度對信用市場的影響，作者發現授信者之間的資訊分享能產生正面的效益，使銀行利潤增加，降低銀行風險，減少一國發生金融危機的機率，並能促進該國經濟成長。Brown and Zehnder (2010)進一步探討借款者分享信用資訊的動機，作者發現資訊不對稱程度會增加借款者分享信用資訊的誘因。

然而，Dell'Ariccia and Marquez (2006)的模型顯示，信用資訊分享對銀行獲利的影響是銀行的動機而定，如果資訊分享是銀行產業內生（endogenously）的，銀行獲利會增加；相反的，若銀行是基於政策要求，被強迫分享資訊，則銀行獲利會降低。

因此，資訊分享功能增加信用資訊透明度，但對銀行的獲利影響，在文獻中尚無一致性結論。

2. 資訊科技

資訊科技的進步影響金融市場運作與銀行管理，但由於科技進步難以單一衡量指標衡量，因此以國家層級的資料探討銀行產業資訊的文章很少，[1]實證文章中多選擇與資訊科技進步攸關的代理變數衡量，如Buch（2003）探討EU及OECD國家之間相互持有債權的高低，是否受到資訊成本或法規的影響，作者以距離、共同語言與法規系統為資訊成本的代理變數時發現，訊息成本對持有債權有顯著影響，當成本愈高，持有的外國債權較低；若以電話和電視的密集度為資訊成本的代理變數，則無顯著影響；而以電腦網路主機（internet hosts）為代理變數時，僅在德國與荷蘭的子樣本中有正面的影響。Herrero and Martínez Pería（2007）在分析跨國債權的決定因素時，也使用電腦網路主機為資訊成本的代理變數，實證顯示資訊成本會影響外國債權，但顯著程度較小。

而以銀行資料進行實證分析的文獻，往往因為銀行資訊科技資料取得的問題，可能另外選擇資訊的替代變數，如 Petersen and Rajan（2002）和 DeYoung et al.（2011），或直接認定資訊科技持續發展，而不使用特定代理變數，如 Berger and DeYoung（2006）。Petersen and Rajan（2002）認為資訊科技會增加貸款業務的效率，進而降低銀行負責貸款業務的人員，因此作者使用銀行員工人數為資訊進步的代理變數，他們的實證結果顯示，資訊科技進步增加了處理硬性資訊（hard information）和遠距離的放款；DeYoung et al.（2011）觀察運用資訊科技處理小型企業貸款申請案的影響，發現小型企業貸款的貸款者與借款者間的地理距離因此增加，且使用信用評分（credit scoring）也會增加與顧客間的距離。Berger and DeYoung (2006)認為資訊科技隨著時間持續成長，因此未使用特定衡量指標，作

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[1] 文獻多以分析銀行使用的銀行資訊系統為主，如 Hoenig and Morris (2011)的文章。

者的實證顯示資訊進步降低總行與分行間，因地理距離產生的代理成本，進而增加美國多銀行控股公司（multibank holding companies）總行的控制力。

即使多數的文獻顯示資訊科技有利於銀行營運，但資訊科技也可能增加銀行家的競爭，而影響獲利。Carr（2003)將科技區分為獨特性（proprietary）與基礎建設（infrastructural）兩種，銀行可能因為獨特性科技的應用而獲利，但基礎建設型的資訊科技會增加整個產業或市場的效率，因而可能增加彼此的競爭，因此資訊科技與銀行獲利的關係仍需更多研究。

3. 資訊治理

如何有效蒐集與傳遞正確訊息，同時避免資訊被濫用，應該考慮資訊治理能力，Vishwanath and Kaufmann（2001）認為主管當局的法規與要求，會影響市場的資訊成本與表現，因此政府有責任將資訊基礎建設和治理能力提升，以增進資訊的蒐集與分享。

後續關於銀行業的研究，將政府治理能力視為是影響銀行業務之因素。如Buch, Koch and Loetter（2009）將政府治理能力視為是資訊成本的代理變數，實證顯示治理能力愈佳，德國銀行國際業務愈多；Houston et al.（2010）在分析信用分享對銀行風險承擔的文章中，發現政府治理能力較佳的國家，其銀行穩定性愈高。

四、研究方法

(一)模型設定

本研究以 115 個國家中，仍然上市的商業銀行為研究樣本，該資料自 *BankScope* 銀行資料庫蒐集。由於資料為追蹤資料（panel data），本研究設定研究模型如方程式(1)。

$$Y_{ijt} = \alpha + \beta' \mathbf{X_{ijt}} + \gamma' \mathbf{Z_{ijt}} + \delta' \mathbf{C_{ijt}} + \varepsilon_{ijt} \qquad (1)$$

上式中，Y_{ijt} 代表 j 國第 i 家銀行在 t 年度的財務績效，分別以平均資產報酬率（returns on average assets）和平均股東權益報酬率（returns on average equity）衡量。向量 $\mathbf{X_{ijt}}, \mathbf{Z_{ijt}},$ 和 $\mathbf{C_{ijt}}$ 分別代表銀行特有透明度變數、國家特有透明度變數

和控制變數，表 1 列示其詳細定義和資料來源。

表 1 變數定義與資料來源

變數	定義	資料來源
ROA/ROE	ROA/ROE, 資產報酬率/股東權益報酬率，為銀行財務機較之代理變數。	*BankScope*
LOAN	淨放款/總資產，為銀行資產透明度的代理變數，數值愈高表示透明度愈低。	*BankScope*
DLLP	任意的放款備抵呆帳，為方程式(2)的殘差項/總放款，數值愈高表示銀行盈餘管理愈多，營運透明度愈低。	本文估計結果
PCR	公共信用報告覆蓋率，數值愈高表示貸款者信用資訊愈透明。	World Bank
PCB	私人信用報告覆蓋率，數值愈高表示貸款者信用資訊愈透明。	World Bank
TECH	資訊科技發展指標，衡量每 100 位人民中，申請行動通訊設備的人數。數值愈高表示資訊發展程度愈高。	International Telecommunication Union
WGI	全球治理指標，該指標包含六個構面，分別為：人民言論自由（*WGI_VA*), 政治穩定程度(*WGI_PS*), 政府部門執行力(*WGI_GE*), 法規品質(*WGI_RQ*), 法律規則(*WGI_RL*), 和貪污的控管 (*WGI_CC*). 其估計值為-2.5 (弱) 至 2.5 (強) 分。	World Bank
GDP	固定 2005 年，美元衡量之 GDP，估計過程中已將其取對數值。	*UNDATA*, United Nations
FREEDOM	財務自由度指標，分數愈高表示限制愈少，自由度愈高。	Heritage Foundation
BRANCH	分行數，衡量每 10 萬成人擁有的銀行分行數目。	*Financial Access Survey*, International Monetary Fund
CRISIS	金融海嘯之虛擬變數，2008 和 2009 年為海嘯期間，設虛擬變數為 1，其餘年度為 0。	–

銀行（內部）透明度由資產透明度和盈餘管理二個指標衡量，前者屬於銀行本身資產的特質，後者則為銀行蓄意操作產生。由於銀行放款是銀行核心業務，因為業務本身牽涉到客戶個別契約，因此對銀行外部人而言是不透明的，本研究已淨放款佔資產比重衡量，變數符號為 LOAN。

　　在盈餘管理部分，Cornett et al. (2009)認為放款備抵呆帳（loan loss provisions）是商業銀行經營者操縱盈餘的主要工具。放款備抵呆帳的功能像緩衝器，在貸款者違約時提供緩衝的功能，但因為其為損益表的費用科目，因此當管理者想要提高（降低）盈餘時，會降低（調高）放款備抵呆帳。一旦管理者想操縱盈餘，放款備抵呆帳會包括任意的（discretionary）和非任意（nondiscretionary）的準備兩部分，非任意的準備是根據銀行對呆帳的預期所提列的費用，而任意的部分則是銀行藉以操弄盈餘的部分。

　　為了估計任意的放款備抵呆帳，本計畫使用 Kanagaretnam, Lobo, and Mathieu (2003)的方法加以估計，其估計式如方程式(2)。

$$LLP_t = \theta_0 + \theta_1 NPL_{it-1} + \theta_2 CHNPL_{it} + \theta_3 CHLOAN_{it} + \varepsilon_{it} \qquad (2)$$

LLP 是銀行預防放款損失所必須提列的放款備抵呆帳，NPL 為銀行的逾期放款（nonperforming loans），因為本期的逾期放款會影響銀行下一期的預期，因此採用落後一期資料，CHNPL 和 CHLOAN 分別表示當期銀行逾期放款和放款總金額的變化量。將該期的放款備抵呆帳扣除方程式(2)估計所得的任意準備部分，即為任意的放款備抵呆帳，為銀行盈餘管理的代理變數。

　　國家（外部）透明從資訊分享、資訊科技及資訊治理三方面衡量。資訊分享以信用報告機構覆蓋率為代理變數，因為信用報告機構蒐集並分享貸款者資訊給會員銀行，有利於提升整體產業的信用資訊透明度。信用報告機構可分為公共信用報告機構（public credit registries, PCRs）和私人信用 報告機構（private credit bureaus, PCBs），世界銀行提供各國的信用報告機構覆蓋率，即擁有信用資訊的個人或企業佔該國 15 歲以上人口的比率，此比率愈高表示信用報告機構提供的信用資訊愈多，及資訊內容透明度愈高。如果分享信用資訊可以提升貸款者信用資訊的透明度，降低銀行壞帳比率，則此係數的預期符號為正；反之，若信用資訊的分享反而增加銀行間的競爭，則預期符號為負。

第二個關於國家透明度的變數是資訊科技進步,變數名稱為*TECH*。由於銀行特有的資訊系統資料無法取得,本文以國家整體的科技基礎建設為衡量變數,由於行動電話科技高速成長,能使用於一般金融交易且使用普遍,因此本文以國際通訊協會(International Telecommunication Union)提供的各國行動電話用戶數(mobile/cellular subscriptions)為代理變數,數字愈大表示資訊科技愈進步,技術透明度愈高,若科技進步使銀行和客戶的溝通聯繫更佳,對銀行營運產生正面助益,則預期估計係數為正;反之,若科技進步反而導致銀行間競爭加劇,使獲利降低,則係數為負。

最後一個國家透明度考慮的是政府的治理能力,好的治理能力能規範資訊的合法蒐集和使用,並降低業者對整體法規環境和市場規律的不確定。本研究採用世界銀行提供的全球治理指標(*Worldwide Governance Indicators*, WGI)為代理變數,該指標包含六個構面,分別為人民言論自由(voice and accountability)、政治穩定程度(political stability)、政府部門執行力(government effectiveness)、法規品質(regulatory quality),法律規則(rule of law)及貪污的控管(control of corruption),每個構面的分數皆從-2.5 到 2.5 分,分數愈高表示治理程度愈佳,為了避免主觀判斷個別構面的重要性,且不同構面間的相關程度大,因此實證中分別使用不同的治理指標構面。由於國家整體透明度提升,對市場效率具有正面效益,因此預估整體透明度代理變數的係數估計值為正。

至於控制變數部分,包括經濟規模、金融市場自由度和市場競爭狀況。經濟規模的代理變數是境內生產毛額(GDP),本文使用固定 2005 年,美元衡量之GDP。市場自由度影響地主國的金融業務,實證發現自由度有利於跨國金融業務(Buch and DeLong, 2004; and Ho, Ahmad, and Dohan, 2013),有助於銀行取得成本優勢,提升整體效率(Chortareas, Girardone, and Ventouri,2013),因此我們考量地主國的金融產業自由化程度,此指標由傳統基金會(Heritage Foundation)提供,分數愈高表示相關法規限制較少,自由度較高。最後一個控制變數考慮銀行產業的競爭狀況,本文以每 10 萬人擁有的商業銀行家數為代理變數,衡量客戶取得金融服務的程度。另外,因為研究期間包含全球金融海嘯發生期間,為了檢驗可能的影響,在模型中增加虛擬變數,設 2008 年與 2009 年為 1,其餘時間為 0。

(二)資料來源與基本統計量

1. 資料來源

本文研究樣本來源為 Bureau van Dijk and Fitch IBCA出版的 *BankScope*資料庫,由於本研究檢驗信用資訊分享功能的影響,其對授信影響較為直接,因此挑選商業銀行為樣本,同時考慮公開發行公司的資訊揭露較為整,故設定樣本為公開上市的商業銀行,共 984 家銀行符合設定的條件。銀行財務資料亦採用該資料庫資料,信用報告機構覆蓋率和全球治理指標資料由世界銀行提供,資訊科技進步指標由國際通訊協會提供,GDP資料取自聯合國的 *Undata*,財務自由度指標來源為傳統基金會,而銀行家數資料由貨幣基金會的*Financial Access Survey*提供。

2. 基本統計量

本研究變數的資本統計量列於表 2,樣本 ROA 和 ROE 的平均值分別為 1.17% 和 10.48%,由於研究期間涵蓋金融海嘯期間,因此有些銀行的財務績效很低,如 Piraeus Bank SA 銀行在 2011 年的 ROE 是-992%,是所有樣本中最低的;BTA Bank JSC 在 2008 年的 ROE 高達 817%,是所有樣本中最高值。關於銀行資產部分,銀行放款仍佔最大比重,放款佔資產比率平均值達 57.18%。在信用報告機構覆蓋率部分,因為部分國家未設立 PCR 或 PCB ,因此 PCR 和 PCB 的最小值是 0,二者平均值分別為 4.7%和 36.68%,其中有 12 個國家的 PCB 覆蓋率高達 100%。行動通訊用戶數平均達 88.5%,最高的國家甚至達到 210%,顯示資通訊科技使用之盛行。各國的治理指標大致為正,僅政治穩定程度的構面分數為負。

表 3 顯示變數間的相關係數,在銀行透明度變數中,僅放款和證券兩項資產呈現高度負相關,由於二者皆為資產組合的一部分,因此此消彼長。關於國家特性部分,PCR 和 PCB 覆蓋率顯著負相關,此證實了 Jappelli and Pagano's (2002) 的看法,認為缺乏 PCB 的國家比較傾向設立 PCR,為了避免變數間的高度相關影響估計結果,因此後續的估計中,本研究分別使用 PCR 和 PCB 於不同的迴歸式中。

表 2 基本統計量

變數	Obs.	Mean	Std. Error	Min.	Max.
ROA (%)	5382	1.17	3.24	-72.44	51.04
ROE (%)	5379	10.48	33.44	-992.29	817.24
LOAN (%)	5372	57.18	15.57	-0.19	93.25
SECURITY (%)	5355	0.20	0.14	0	0.99
DLLP (%)	3418	0.01	0.02	-0.32	0.48
PCR	6696	4.70	11.01	0	81.3
PCB	6558	35.68	39.98	0	100
TECH	6829	85.2	38.06	0.83	209.64
WGI_VA	6881	0.20	0.91	-2.06	1.77
WGI_PS	6881	-0.18	0.96	-2.83	1.59
WGI_GE	6881	0.41	0.94	-1.77	2.41
WGI_RQ	6881	0.40	0.88	-2.21	2.00
WGI_RL	6881	0.29	1.01	-1.93	2.00
WGI_CC	6881	0.24	1.04	-1.58	2.56
GDP(billions USD)	6791	238.21	424.58	0.54	1322.60
FREEDOM	6731	54.10	19.51	10	90
BRANCH (per100 thousand adults)	6488	24.76	17.35	0.93	120.15

註：變數定義與來源詳見表 1。

表 3 變數相關係數

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
(1) *LOAN*	1														
(2) *SECURITIES*	-0.566***	1													
(3) *DLLP*	0.012	0.0017	1												
(4) *PCR*	-0.012	-0.019	0.042**	1											
(5) *PCB*	0.117	0.134***	0.03*	-0.122***	1										
(6) *TECH*	0.150***	-0.147***	0.056***	0.083***	0.256***	1									
(7) *WGI_VA*	0.124***	0.212***	0.006	-0.111***	0.636***	0.204***	1								
(8) *WGI_PS*	0.163***	0.041***	0.013	-0.021*	0.498***	0.485***	0.634***	1							
(9) *WGI_GE*	0.166***	0.175***	0.012	-0.104***	0.628***	0.366***	0.799***	0.777***	1						
(10) *WGI_RQ*	0.166***	0.158***	0.001	-0.095***	0.671***	0.397***	0.806***	0.578***	0.956***	1					
(11) *WGI_RL*	0.161***	0.196***	0.006	-0.132***	0.644***	0.302***	0.805***	0.774***	0.968***	0.949***	1				
(12) *WGI_CC*	0.163***	0.160***	0.007	-0.105***	0.601***	0.326***	0.797***	0.794***	0.960***	0.938***	0.962***	1			
(13) *GDP*	0.097***	0.188***	0.008	-0.157***	0.721***	0.030**	0.476***	0.308***	0.553***	0.573***	0.592***	0.498***	1		
(14) *FREEDOM*	0.052***	0.051***	0.010	-0.062***	0.561***	0.322***	0.651***	0.510***	0.668***	0.770***	0.670***	0.691***	0.466***	1	
(15) *BRANCH*	0.139***	-0.043***	0.018	0.266***	0.373***	0.473***	0.558***	0.476***	0.513***	0.562***	0.489***	0.494***	0.302***	0.482***	1

註：變數定義與來源詳見表 1。*, **, 和 ***分別表示顯著水準為 0.1, 0.05 和 0.01。

五、結果與討論（含結論與建議）

(一)實證結果

1. 主要結果

本研究首先根據方程式(2)估計銀行非任意的放款備抵呆帳，估計結果如表4。全部樣本的估計結果顯示，非任意的放款備抵呆帳與前一期的逾期放款和本期逾期放款變動量呈正相關，符合預期，但與本期放款變動量呈現負相關，與預期不符。為了檢驗此負相關是否與金融海嘯有關，本研究將樣本分為2007（含）年以前和 2007 之後二個子樣本，重新估計的結果亦列於表 4，結果顯示係數估計直接為正數，符合預期，此結果也隱含金融海嘯可能影響本研究的實證結果，因此後續迴歸模型中本文皆加入金融海嘯的虛擬變數。

表 4 非任意放款備抵呆帳估計結果

變數名稱	全樣本	金融海嘯前	金融海嘯後
NPL_{t-1}	0.0010***	0.0014***	0.0006***
	(21.96)	(8.03)	(12.52)
$CHNPL_t$	0.0012***	0.0014***	0.0008***
	(31.67)	(9.23)	(20.21)
$CHTLOAN_t$	-0.0028***	0.0008	0.0048***
	(4.08)	(0.89)	(5.95)

註：*LLP* 衡量非任意的放款備抵呆帳，*NPL* 為逾期放款，*CHNPL* 代表逾期放款變動量，*CHLOAN* 為放款變動量。以追蹤資料固定模型估計，Hausman 檢定顯示固定效果較適合，括弧內為絕對 *t* 值，*,**, 和 ***分別表示顯著水準為 0.1,0.05 和 0.01。

由於本研究的資料為平衡的追蹤資料，因此估計時分別使用固定與隨機效果之追蹤資料模型，因 Hausman 檢定顯示固定效果模型較為適合，故僅列式固定效果模型之估計結果，分別呈現於表 5 至表 8，其中表 5 和表 6 是使用 PCR 為信用分享資訊代理變數的估計結果，表 7 和表 8 則是使用 PCR 的結果。

表 5 的被解釋變數為 ROA，實證結果顯示放款比重與 ROA 呈現正相關，因為放款為不透明資產，因此這個結果符合資產透明度與財務績效負相關的預期；其次銀行盈餘管理的估計值顯著為負，隱含銀行任意調整放款備抵呆帳，使銀行

營運的透明度降低，對 ROA 產生負面影響。

　　至於國家透明度方面，公共信用報告機構的資訊分享影響不顯著，而資訊科技的進步與 ROA 呈現負向關係，隱含資訊科技增加資訊處理的透明度，使銀行間的競爭增加，反而降低銀行的資產報酬；六個治理指標中，三個顯著為正，其餘不顯著，隱含較佳的國家治理，有助於整體產業的發展，提高銀行的財務績效。

表 5 透明度對 ROA 影響之估計結果_以 PCR 為信用資訊代理變數

變數	A	B	C	D	E	F
LOAN	0.022*** (3.14)	0.022*** (3.04)	0.023*** (3.22)	0.023*** (3.22)	0.023*** (3.27)	0.020*** (2.83)
DLLP	-55.77*** (46.68)	-55.94*** (46.85)	-55.83*** (46.65)	-55.83*** (46.69)	-55.76*** (46.59)	-55.84*** (46.76)
PCR	-0.0002 (0.02)	-0.003 (0.32)	-0.001 (0.07)	-0.001 (0.07)	0.001 (0.14)	-0.002 (0.18)
TECH	-0.023*** (7.09)	-0.022*** (6.82)	-0.023*** (6.85)	-0.022*** (6.53)	-0.023*** (6.87)	-0.023*** (7.08)
WGI_VA	1.357** (2.14)					
WGI_PS		0.754*** (3.03)				
WGI_GE			0.219 (0.49)			
WGI_RQ				0.504 (1.17)		
WGI_RL					-0.487 (0.97)	
WGI_CC						0.935*** (2.72)
GDP	5.534*** (6.50)	5.092*** (5.90)	5.492*** (6.43)	5.301*** (6.08)	5.370*** (6.21)	5.852*** (6.80)
FRDDEOM	0.010 (1.34)	0.012 (1.56)	0.012 (0.51)	0.012 (1.51)	0.011 (1.47)	0.012 (1.55)
BRANCH	0.041*** (2.90)	0.041*** (2.89)	0.040*** (2.68)	0.038*** (2.62)	0.043*** (3.04)	0.041*** (2.86)
CRISIS	-0.022 (0.31)	0.010 (0.13)	-0.014 (0.19)	-0.022 (0.31)	-0.024 (0.33)	-0.0001 (0.01)
$\overline{R}^2$	0.5866	0.5874	0.5858	0.5860	0.5859	0.5871
Obs	3116	3116	3116	3116	3116	3116

註：變數定義與來源詳見表 1。以追蹤資料固定模型估計，Hausman 檢定顯示固定效果較適合，括弧內為絕對 t 值，*, **, 和 ***分別表示顯著水準為 0.1, 0.05 和 0.01。

表 6 列出被解釋變數為 ROE 的估計結果，放款比例仍然顯著為正，但盈餘管理估計係數不顯著，與表 5 的結果相較，顯示盈餘管理影響公司的資產使用效率。在國家透明度部分，資訊科技與治理的估計結果與表 5 相似，僅治理指標的顯著性增加，隱含政府治理能力對 ROE 的影響更顯著。

表 6 透明度對 ROE 影響之估計結果_以 PCR 為信用資訊代理變數

變數	A	B	C	D	E	F
LOAN	0.291** (2.24)	0.283** (2.17)	0.301** (2.32)	0.298** (2.31)	0.298** (2.29)	0.232* (1.77)
DLLP	-1.833 (0.05)	-10.97 (0.31)	-6.597 (0.19)	-6.452 (0.18)	-7.789 (0.22)	-2.933 (0.08)
PCR	-0.265 (1.46)	-0.318* (1.74)	-0.292 (1.60)	-0.293 (1.62)	-0.322* (1.74)	-0.307* (1.69)
TECH	-0.278*** (4.60)	-0.261*** (4.31)	-0.253*** (4.15)	-0.210*** (3.39)	-0.283*** (4.65)	-0.277*** (4.60)
WGI_VA	28.41** (2.44)					
WGI_PS		12.91*** (2.82)				
WGI_GE			15.42* (1.87)			
WGI_RQ				33.29*** (4.22)		
WGI_RL					14.69 (1.60)	
WGI_CC						25.27*** (4.01)
GDP	73.71*** (4.71)	66.11*** (4.17)	71.77*** (4.58)	59.19*** (3.71)	77.71*** (4.89)	82.41*** (5.23)
FRDDEOM	-0.115 (0.82)	-0.082 (0.59)	-0.082 (0.58)	-0.084 (0.60)	-0.082 (0.58)	-0.081 (0.58)
BRANCH	0.202 (0.77)	0.203 (0.78)	0.074 (0.27)	-0.031 (0.12)	0.170 (0.65)	0.185 (0.71)
CRISIS	-0.448 (0.34)	0.146 (0.11)	-0.116 (0.08)	-0.670 (0.51)	-0.106 (0.08)	0.114 (0.09)
$\overline{R}^2$	0.2025	0.2031	0.2016	0.2063	0.2013	0.2058
Obs	3113	3113	3113	3113	3113	3113

註：變數定義與來源詳見表 1。以追蹤資料固定模型估計，Hausman 檢定顯示固定效果較適合，括弧內為絕對 *t* 值，*, **, 和 ***分別表示顯著水準為 0.1,0.05 和 0.01。

表 7 使用 PCR 為信用分享功能的代理變數,放款和盈餘管理的效果與使用 PCR 的結果相同,而 PCB 的估計係數顯著為負,Barth et al. (2009)認為,相較於 PCR,PCB 提供更多個別放款的資料且整合更多來源的信用資料,這隱含 PCB 位銀行和他們的競爭者更多透明的信用資訊,因此 PCB 與 ROA 的負向關係隱含信用透明度的競爭效果,此負項結果與 Houston et al. (2010)發現信用分享功能與銀行獲利正向關聯的研究不同,可能原因是使用的代理變數不同,因為 Houston et al. (2010)僅使用是否存在信用報告機構的代理變數,無法考慮時間改變,以及覆蓋率不同的差異造成的影響。

表 7 和表 8 中,其他變數對銀行財務績效的影響與表 5 和 6 的結果大致相同,僅國家治理指標的係數在表 8 中完全變為正向顯著,凸顯了國家治理能力對於銀行經營績效的重要性。

2. 穩健性檢定

(1) 不透明資產

Morgan (2002) 認為放款和交易性資產是導致銀行不透明的二個主要資產,而因二者負相關,且考量放款是銀行主要業務,因此在本研究前面的實證中僅使用放款比重,為了檢驗交易性資產的影響,本研究以證券佔資產比重為代理變數重新進行估計。

實證結果顯示,證券資產與 ROA 無顯著關係;若以 ROE 為被解釋變數,當信用報告機構代理變數為 PCR 時,證券資產與 ROE 顯著負相關(顯著水準 90%),與 Jones et al. (2013)的結果一致。

表 7 透明度對 ROA 影響之估計結果_以 PCB 為信用資訊代理變數

變數	A	B	C	D	E	F
LOAN	0.024*** (3.34)	0.023*** (3.22)	0.024*** (3.40)	0.024*** (3.39)	0.025*** (3.43)	0.022*** (3.01)
DLLP	-56.00*** (46.76)	-56.21*** (46.94)	-56.08*** (46.75)	-56.06*** (46.77)	-56.02*** (46.68)	-56.08*** (46.84)
PCB	-0.022*** (3.95)	-0.021*** (3.94)	-0.021*** (3.81)	-0.020*** (3.67)	-0.020*** (3.66)	-0.020*** (3.72)
TECH	-0.018*** (5.14)	-0.018*** (4.96)	-0.018*** (5.01)	-0.018*** (4.92)	-0.018*** (5.15)	-0.019*** (5.19)
WGI_VA	1.481** (2.29)					
WGI_PS		0.802*** (3.21)				
WGI_GE			0.403 (0.90)			
WGI_RQ				0.514 (1.17)		
WGI_RL					-0.167 (0.34)	
WGI_CC						0.956*** (2.66)
GDP	5.027*** (5.79)	4.598*** (5.22)	5.056*** (5.81)	4.927*** (5.59)	5.057*** (5.76)	5.341*** (6.12)
FRDDEOM	0.011 (1.44)	0.013 (1.64)	0.013* (1.66)	0.013* (1.67)	0.013* (1.65)	0.03 (1.62)
BRANCH	0.046*** (3.25)	0.045*** (3.20)	0.043*** (2.89)	0.042*** (2.90)	0.047*** (3.29)	0.045*** (3.16)
CRISIS	-0.015 (0.21)	0.018 (0.26)	-0.004 (0.06)	-0.015 (0.21)	-0.011 (0.15)	0.011 (0.16)
$\overline{R}^2$	0.5973	0.5982	0.5965	0.5966	0.5964	0.5976
Obs	3016	3016	3016	3016	3016	3016

註：變數定義與來源詳見表 1。以追蹤資料固定模型估計，Hausman 檢定顯示固定效果較適合，括弧內為絕對 t 值，*, **, 和 ***分別表示顯著水準為 0.1, 0.05 和 0.01。

表 8 透明度對 ROE 影響之估計結果_以 PCB 為信用資訊代理變數

變數	A	B	C	D	E	F
LOAN	0.321** (2.44)	0.310** (2.34)	0.329** (2.49)	0.323** (0.46)	0.325** (2.46)	0.256* (1.92)
DLLP	-5.862 (0.16)	-15.666 (0.44)	-11.44 (0.32)	-10.73 (0.30)	-13.09 (0.37)	-7.953 (0.22)
PCB	-0.462*** (4.59)	-0.452*** (4.51)	-0.456*** (4.52)	-0.412*** (4.10)	-0.465*** (4.59)	-0.431*** (4.31)
TECH	-0.174*** (2.66)	-0.165** (2.50)	-0.157** (2.37)	-0.132** (1.98)	-0.192*** (2.90)	-0.178*** (2.71)
WGI_VA	32.66*** (2.75)					
WGI_PS		13.61*** (2.95)				
WGI_GE			18.36** (2.22)			
WGI_RQ				33.05*** (4.10)		
WGI_RL					18.66** (2.04)	
WGI_CC						27.07*** (4.09)
GDP	59.99*** (3.69)	52.13*** (3.21)	58.60*** (3.66)	49.59*** (3.06)	65.48*** (4.05)	67.44*** (4.20)
FRDDEOM	-0.136 (0.95)	-0.103 (0.72)	-0.098 (0.69)	-0.090 (0.63)	-0.100 (0.70)	-0.109 (0.76)
BRANCH	0.282 (1.08)	0.272 (1.04)	0.120 (0.44)	0.028 (0.11)	0.235 (0.89)	0.243 (0.93)
CRISIS	-0.318 (0.24)	0.319 (0.24)	0.049 (0.04)	-0.596 (0.45)	0.088 (0.07)	0.390 (0.29)
$\overline{R}^2$	0.2168	0.2172	0.2159	0.2199	0.2157	0.2199
Obs	3013	3013	3013	3013	3013	3013

註：變數定義與來源詳見表 1。以追蹤資料固定模型估計，Hausman 檢定顯示固定效果較適合，括弧內為絕對 *t* 值，*, **, 和 ***分別表示顯著水準為 0.1,0.05 和 0.01。

(2) 董事會結構

　　公司治理可能影響銀行內部透明度，而典型的代理變數是董事會結構。Andres and Vallelado (2008)的實證結果顯示董事會規模與銀行績效呈現 U 型關係，並指出規模和董事薪酬和董事的監理能力有關。根據作者的看法，董事會特性可

能影響銀行透明度和經營績效。

　　本研究以董事會的獨立性指標為代理變數，檢驗董事會的影響。該資料取自 *BankScope* 資料庫，在本文主要實證中未使用此變數是因為該資料闕漏較多。獨立性指標依據銀行的股東結構區分不同程度的獨立，共有 5 種基本的分類：A 類表示沒有直接持股或總持股超過 25% 的記名股東；B 類表示有直接持股或總持股超過 25% 的記名股東，但其持股未超過 50%；C 類表示有總持股或計算後總持股超過 50% 的股東；D 類表示有直接持股超過 50% 的股東，U 則為無法辨別者。由於為類別資料，在估計進行中，本研究將其轉換為數字，從 A 類依序給分，由於股權愈分散表示獨立性愈高，可能增加監督董事會的效能，因此隱含較高的透明度。

　　實證估計結果顯示董事會的獨立性，與銀行的 ROA 或 ROE 沒有顯著關係，而其他變數的估計結果與主要實證結果無明顯差異。

　　(3) 信用資訊分享品質

　　在信用資訊分享部分，可以從信用報告機構提供資料的量與質加以衡量，本研究主要實證中，以覆蓋率為衡量變數，這是屬於量的衡量，而質的衡量可從信用資訊的深度（depth）加以衡量，Houston et al. (2010)使用信用深度為信用分享的代理變數，發現其與銀行獲利顯著正相關。

　　信用資訊深度由世界銀行提供，其衡量透過信用報告機構取得信用報告的覆蓋率、範疇和取得性（accessibility），根據六個信用報告機構的特性給予 0 和 1 的評分，因此信用資訊深度的分數為 0 至 6，分數愈高表示可取得愈多的信用資訊。

　　使用信用資訊深度指標為代理變數的結果顯示，信用資訊深度和 ROA 及 ROE 呈現負向關係，此結果隱含信用資訊透明度增加銀行業的競爭，對銀行財務表現有負面影響，與使用 PCB 為信用資訊透明度的代理變數相同。因此，改變信用資訊透明度衡量指標，並不影響信用資訊透明度與財務績效負向之關係，實證結果是穩健的。

　　(4) 金融海嘯

　　雖然在本文主要實證中，金融海嘯的虛擬變數估計值不顯著，但表 4 中對

銀行盈餘管理的估計結果顯示金融海嘯前後有差異,因此本研究將樣本分成海嘯前、後二個子樣本,檢視其差異。

附錄 A 列示以 ROA 為被解釋變數的估計結果,金融海嘯前後的一個主要差別是放款比重的影響。海嘯前放款比重的估計係數顯著為正,但海嘯後變為不顯著。銀行盈餘管理、PCB 覆蓋率的負向影響在全樣本和二個子樣本皆相同。

附錄 B 為使用 ROE 為被解釋變數的估計結果,放款比重和資訊科技變數的顯著值,在海嘯前後有顯著差異;而放款比例、PCB、資訊科技和治理指標的係數估計值正負號與顯著性,皆與全樣本的估計結果相同。

(二) 結論與建議

本研究探討透明度對銀行財務指標的影響,此議題相關文獻仍相當缺乏,且在本研究的架構中,同時考慮銀行內部與外部的透明度,擴大了以單一指標衡量透明度的範疇。

本研究使用 115 個國家,計 984 家公開上市銀行為研究樣本,研究期間涵蓋 2005 年至 2011 年,研究結果顯示不同透明度構面對銀行財務績效的影響不同:銀行內部透明度部分,銀行資產的不透明是銀行的本質,這是銀行特有的資訊,因此不透明資產愈多,銀行獲利愈佳,隱含資產透明度與銀行經營績效有負向關係;但銀行管理階層刻意操縱的盈餘管理,可能影響資產配置與使用效率,因此操縱放款備抵呆帳的程度愈高,降低銀行的營運透明度,反而不利銀行的經營,隱含盈餘透明度愈高,財務績效愈佳。

在國家透明度方面,銀行家的信用資訊分享和資訊科技進步,提高了銀行家的訊息傳遞效率,可能增加銀行家的競爭,使銀行財務績效降低,此結果隱含整體環境的透明度可能產生競爭效果,使銀行營運更加困難。至於一國的治理能力與銀行經營績效呈現正向關係,顯示治理能力愈佳的國家,能提供較佳的整體經營與法規環境,降低市場不確定性,有利於銀行營運,也彰顯了政府治理能力的重要性。

由本研究的實證結果,可提供相關建議如下:首先,對銀行而言,盈餘管理對銀行財務績效產生負面影響,因此董事會及股東應加強監控管理階層,避免盈餘管理產生;對政策制定者而言,提供一個透明的市場與法治環境,是讓銀行

業營運績效提升的重要因素，若政府想提升產業整體發展，應加強國家的法制環境與治理能力。

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附錄 A 金融海嘯前後透明度對 ROA 影響之估計結果

變數	金融海嘯前						金融海嘯後					
	A	B	C	D	E	F	A	B	C	D	E	F
LOAN	0.023** (1.98)	0.023* (1.92)	0.022* (1.91)	0.023** (1.97)	0.023** (1.99)	0.023* (1.96)	0.007 (0.66)	0.007 (0.73)	0.007 (0.74)	0.007 (0.70)	0.008 (0.80)	0.006 (0.63)
DLLP	-32.62*** (8.37)	-32.42*** (8.30)	-32.74*** (8.42)	-32.66*** (8.30)	-32.84*** (8.44)	-32.16*** (8.21)	-61.26*** (40.61)	-61.36*** (40.60)	-61.37*** (40.61)	-61.33*** (40.56)	-61.34*** (40.55)	-61.32*** (40.57)
PCB	-0.024** (2.38)	-0.024** (2.39)	-0.024** (2.39)	-0.024** (2.42)	-0.025** (2.50)	-0.026** (2.57)	-0.030*** (3.08)	-0.031*** (3.12)	-0.030*** (3.04)	-0.026*** (2.74)	-0.029*** (2.91)	-0.027*** (2.85)
TECH	-0.015* (1.88)	-0.016** (1.99)	-0.016** (2.05)	-0.015* (1.89)	-0.013 (1.57)	-0.013 (1.64)	-0.009* (1.66)	-0.009* (1.71)	-0.009 (1.60)	-0.009 (1.64)	-0.010* (1.88)	-0.010* (1.89)
WGI_VA	-0.023 (0.02)						3.082*** (2.96)					
WGI_PS		0.246 (0.62)						0.611 (1.63)				
WGI_GE			-0.799 (1.00)						1.112 (1.52)			
WGI_RQ				-0.055 (0.07)						0.805 (1.19)		
WGI_RL					-1.268 (1.10)						0.593 (0.77)	
WGI_CC						-0.596 (0.94)						0.734 (1.45)
GDP	2.295 (1.14)	2.250 (1.15)	2.888 (1.41)	2.289 (1.16)	1.623 (0.79)	2.163 (1.10)	3.918*** (3.30)	3.673*** (3.04)	3.883*** (3.25)	3.823*** (3.19)	4.109*** (3.42)	4.301*** (3.56)
FRDDEOM	0.009 (1.23)	0.010 (1.26)	0.0101 (1.31)	0.009 (1.22)	0.008 (1.06)	0.009 (1.20)	0.003 (0.19)	0.008 (0.56)	0.012 (0.87)	0.008 (0.59)	0.008 (0.58)	0.008 (0.57)
BRANCH	0.033 (0.77)	0.031 (0.74)	0.033 (0.79)	0.034 (0.73)	0.038 (0.89)	0.019 (0.43)	0.041** (2.10)	0.044** (2.27)	0.040** (1.99)	0.041** (2.04)	0.045** (2.27)	0.043** (2.19)
$\overline{R}^2$	0.7327	0.7330	0.7335	0.7327	0.7338	0.7334	0.6653	0.6640	0.6639	0.6637	0.6635	0.6638
Obs	819	819	819	819	819	819	2197	2197	2197	2197	2197	2197

附錄 B 金融海嘯前後透明度對 ROE 影響之估計結果

變數	金融海嘯前						金融海嘯後					
	A	B	C	D	E	F	A	B	C	D	E	F
LOAN	0.055 (0.37)	0.043 (0.28)	0.075 (0.50)	0.090 (0.60)	0.059 (0.39)	0.062 (0.41)	0.462** (2.54)	0.468** (2.57)	0.467** (2.57)	0.425** (2.35)	0.488*** (2.69)	0.428** (2.35)
DLLP	-170.1*** (3.41)	-163.1*** (3.25)	-166.2*** (3.33)	-152.5*** (3.03)	-166.4*** (3.32)	-171.7*** (3.40)	-254.3*** (5.48)	-259.9*** (5.60)	-257.6*** (5.55)	-250.4*** (5.42)	-253.4*** (5.47)	-247.5*** (5.33)
PCB	-0.078 (0.59)	-0.107 (0.83)	-0.124 (0.96)	-0.081 (0.63)	-0.109 (0.84)	-0.102 (0.77)	-0.818*** (4.73)	-0.857*** (4.83)	-0.849*** (4.85)	-0.744*** (4.32)	-0.878*** (5.00)	-0.793*** (4.60)
TECH	-0.197* (1.89)	-0.249** (2.45)	-0.222** (2.19)	-0.285*** (2.77)	-0.262** (2.48)	-0.253** (2.40)	0.006 (0.06)	0.006 (0.06)	0.022 (0.22)	0.049 (0.50)	-0.031 (0.31)	-0.019 (0.19)
WGI_VA	-20.16 (1.59)						39.35** (2.10)					
WGI_PS		6.362 (1.24)						11.65* (1.73)				
WGI_GE			15.34 (1.49)						27.91** (2.12)			
WGI_RQ				23.23** (2.17)						49.36*** (4.10)		
WGI_RL					12.01 (0.81)						37.63*** (2.73)	
WGI_CC						4.33 (0.53)						24.19*** (2.66)
GDP	33.90 (1.32)	41.33 (1.64)	31.60 (1.21)	49.74** (1.97)	49.25* (1.86)	43.82* (1.73)	55.93*** (2.62)	50.58** (2.33)	53.97** (2.52)	46.26** (2.16)	63.91*** (2.97)	67.09*** (3.09)
FRDDEOM	0.078 (0.79)	0.095 (0.96)	0.076 (0.76)	0.106 (1.08)	0.100 (1.00)	0.090 (0.91)	-0.294 (1.19)	-0.226 (0.92)	-0.119 (0.47)	-0.215 (0.88)	-0.220 (0.90)	-0.231 (0.94)

變數	金融海嘯前						金融海嘯後					
	A	B	C	D	E	F	A	B	C	D	E	F
BRANCH	0.471 (0.87)	0.460 (0.85)	0.486 (0.90)	-0.051 (0.09)	0.452 (0.83)	0.600 (1.05)	0.220 (0.62)	0.254 (0.72)	0.126 (0.35)	-0.033 (0.09)	0.187 (0.53)	0.183 (0.52)
$\overline{R}^2$	0.7134	0.7125	0.7131	0.7153	0.7117	0.7114	0.3910	0.3904	0.3911	0.3960	0.3922	0.3921
Obs	819	819	819	89	819	819	2194	2194	2194	2194	2194	2194

註：變數定義與來源詳見表 1。以追蹤資料固定模型估計，Hausman 檢定顯示固定效果較適合，括弧內為絕對 *t* 值，*, **, 和 ***分別表示顯著水準為 0.1,0.05 和 0.01。

科技部補助專題研究計畫出席國際學術會議心得報告

<div align="right">日期： 103 年 8 月 6 日</div>

計畫編號	MOST　102－2410－H－263－005－
計畫名稱	資訊透明度與銀行經營績效之研究

出國人員 姓名	周秀霞	服務機構 及職稱	致理技術學院 助理教授
會議時間	103 年 4 月 2 日至 103 年 4 月 4 日	會議地點	日本名古屋

會議名稱	(中文) 2014 企業與管理國際研討會 (英文) 2014 ISBM International Symposium on Business and Management
發表題目	(中文) 透明度對銀行財務績效之影響 (英文) The impact of transparency on bank financial performance

一、 參加會議經過

本次研討會共三天，第一天為報到和歡迎會，第二、三天為論文發表場次。

本人於前一晚到達日本名古屋，並於 4 月 2 日下午至名古屋大學報到(圖一)，參加開幕典禮。在簽到場合遇到許多國家的學者，其中包含多位台灣的學者(圖二)。

圖一　報到處　　　　　　　　　　　圖二　　與台灣學者合影

在歡迎會中請來 Yasuhiko Taniwake 擔任 Keynote speaker (圖三)，

會後舉辦歡迎晚會。

圖三 開幕典禮專題演講

本人論文發表場次安排在 4 日下午 16:00~17:20 （詳附件），該

場次共有六篇文章(圖四、圖五)。發表人於發表文章之後，開放在場

學者問答。對於本人發表之文章，學者提出兩個疑問，一是資料時間的問題，一是變數設定的問題，本人皆一一回答，資料的蒐集時間主要受限於資料來源所提供的期間，而變數衡量部分，因發表論文主要在研究銀行財務表現，因此僅使用財務指標。

圖四　文章發表(一)

圖五　文章發表(二)

除了發表文章之外，本人也聆聽其他場次的發表(圖六)，並參觀poster 的部分(圖七)。
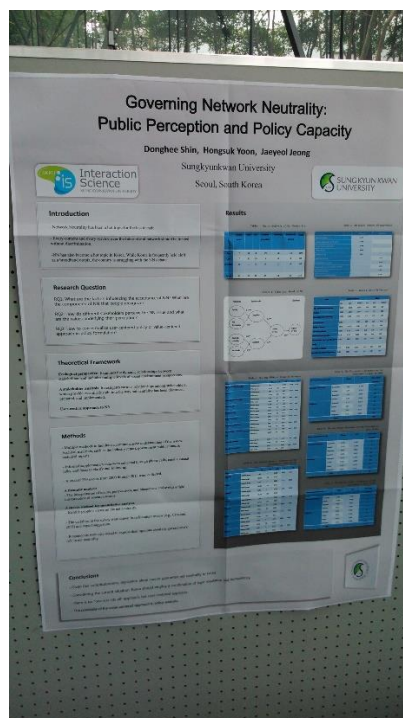
| 圖六　參與其他場次 | 圖七　Poster presentation |

二、 與會心得

這是本人第一次參加國外學術研討會，因此在過程中學習到很多參與國際學術活動應注意事項，包括投稿、準備發表和參與研討會禮儀等。而在行程規畫上，應該考慮交通狀況與時間，不要太過緊湊，本人因執著於搭乘本國航空公司，而選擇晚上 10 點左右到達日本的班次，孰料因航班延誤，到達日本已經深夜，輾轉到旅館後，已經影響第二天參與活動的精神。

其次，在國內的研討會中，大多以口頭報告方式發表文章，此次參觀到很多 Poster presentation，這種方式可以面對面與讀者溝通，是很有趣的方式。讓我印象深刻的是位日本女性學者，雖然看起來已經相當資深，可是還是在現場說明自己的研究，與其他學者交流，認真

的態度是相對資淺的我們該學習的。

三、 發表論文全文或摘要

The impact of transparency on bank financial performance

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Abstract

The aim of this paper is to investigate the impacts of transparency on bank performance. The transparency is measured by bank characteristics and country features. Using listed banks around the world, we find positive and negative impacts of transparency on bank performance. Bank characteristics show that the transparent on operational results is positive correlated with the performance. Country features reveal that countries with advanced technology, bank performance is weaker, which presents a negative impact of transparency. However, countries with better governance, the performance is better, which indicates a positive impact of transparency. These results are robust in developed and developing countries.

1. Introduction

Information is a key component of financial transactions and a determinant of financial market efficiency. Banking industry relies on information particularly because banking activities involve information flows between banks and their customers. As a result, banks are opaque for outsiders and for their supervisions from the viewpoint of information disclosure. What is the impact if banks improve their transparency? Will it relate to banks' financial performance? Or, will market transparency affect banks' performance?

Issues about transparency arrest researchers' attention recently because transparency mitigates the asymmetric information problem between fund demanders and supplier or between lenders and borrowers. However, financial literatures on transparency focus on two strands, one is the role of transparency in preventing financial crises and in monetary policy-making, and the other is related to corporate governance. The impact of information transparency on bank performance is still neglected.

This study aims to fill up the gap on literature by investigating the relationship between information transparency and bank performance. We investigate the information transparency inside and outside the banks. First, bank specific features create opaqueness. For example, bank loans are the accumulation of debt contracts which contain default risks of individual borrowers. Morgan (2002) argues that loans and trading assets are sources of bank opacity. Jones, Lee and Yeager (2013) further conclude that investments in opaque assets are more profitable than investments in transparent assets. Moreover, loan portfolios and loan loss provisions are manipulative by bank managers. Even the operating results can be artful managed. The behavior of earnings management is examined by Leuz, Nanda and Wysocki (2003). They show that better investor protection prevents earnings management. Cornett, McNutt and Tehranian (2009) find that corporate governance mechanism affects the

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U.S. holding companies' earnings management. However, the relationship between bank transparent and performance still not been discussed.[1]

Second, market conditions affect bank's ability to reduce the uncertainty, i.e. increase transparency. One condition is the information sharing mechanism provided by credit bureaus. Credit bureaus are institutions that collect and share credit information, normally among members. Banks face default risks in loan contracts, to accurately predict the default probability, they can collect credit information and records of loan applicants either by bank officers or by credit bureaus. Information collected by officers contains quantitative and qualitative information. The former contains financial statements and annual reports; the latter includes personal characteristics, economic projections, and a statement of manager's future plans. Even though some credit information belongs to soft information, which could not reach from credit bureaus. But in generally, sharing borrowers' credit information helps banks reduce the cost of collecting credit information, especially when the level of borrowers' mobility and heterogeneity rise (Pagano and Jappelli, 1993).

The second condition is the technological advancement, which reduces the costs of information processing and management, and improves the efficiency of information dissemination. Technology progress helps to increase the transparency of financial markets. Peterson (2004) points out that technology has increased the opportunities for using hard information. Berger and DeYoung (2006) argue that technological progress has improved the control of banking and reduced the agency costs of distance.

The last market condition is about the governance. Bank activities are highly regulated and governed. The institutional quality affects market participants and their

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[1] Akhigbe, McNulty and Stevenson (2013) examine the relationship between transparency and bank financial performance; however, they discuss firm's transparency instead of bank's transparency.

activities. Buch, Koch and Loetter (2009) investigate the German banks' international activities and indicate that the governance is an important factor. Houston, Lin and Ma (2012) argue that banks have transferred funds to markets with fewer regulations.

Bank characteristics and market conditions affects bank performance simultaneously. To investigate the impacts of transparency should consider bank transparency and market transparency.

This study contributes to literatures from two aspects. Firstly, while many studies discuss the determinants of banking performance, the role of information transparency is neglected. This study tries to investigate the effects of information transparency on bank performance. Secondly, this study measures transparency by considering both banks' transparency characteristics (inside) and the transparency of whole country (outside). The former is proxied by earnings management and banks' asset components. The latter comprise three dimensions: the information sharing, the information technology and the information governance.

The paper has six sections. The next reviews the literature on transparency. Section 3 presents our model and transparency measures. Section 4 shows the source of the data and descriptive statistics. Section 5 reports empirical results and checks robustness. Section 6 presents our conclusions.

2. Literature Review

2.1. Bank transparency

2.1.1 Earnings management

Bhattachaya et al (2003) indicate three types of earnings management: earnings aggressiveness, loss avoidance, and earnings smoothing. Leuz et al. (2003) analyze

systematic differences of non-financial firms' earnings management across 31 countries. They find that the legal protection of outside investors is a key determinant of the quality of financial information communicated by insiders to outsiders, which includes anti-director rights, quality of legal enforcement and accounting disclosure. For banking industry, Shen and Chih (2005) prove that the incentive for earnings management can be explained by the *Prospect Theory* (Kahneman and Tversky, 1979), which suggests that individuals derive values from gains and losses with respect to a reference point, rather than being from absolute levels of wealth. Furthermore, stronger protection of investors and greater transparency in accounting disclosure can reduce banks' incentives to manage earnings.

Cornett et al. (2009) examine the relationship between corporate governance and earning management. They argue that corporate governance mechanisms show different impacts on earnings management: the performance, board independence, and capital are negatively related to earnings management, while CEO pay-for-performance induces earnings management.

*2.1.2 A*sset components

Morgan (2002) argues that the uncertainty over the banks stems from their assets. Two main assets leads to banks' opacity are loans and trading assets because the risks are hard to observe or easy to change. For loans, they are private contracts between banks and borrowers. Banks own information advantages than borrowers and investors, the pool of loan contracts raises the uncertainty for outsider to evaluate banks. As for trading assets, due to the complexity of products and highly liquidity, investors can't monitor accurately and timely.

Jones, Lee and Yeager (2013) examine the effects of opacity on bank profitability and conclude that investments in opaque assets are more profitable than investments in transparent assets.

2.2. Country transparency

2.2.1 Information Sharing

The role of credit bureaus in credit markets has been addressed. Pagano and Jappelli (1993) first present a model with adverse selection to discuss information sharing mechanisms and show that information sharing improves the pool of borrowers, decreases defaults and reduces the average interest rate. Brown and Zehnder (2010) design an experiment to investigate lenders' information sharing behavior and the degree of information asymmetry; they find the asymmetry increases lender's incentives to engage in information sharing.

Empirical studies provide evidence to show that information sharing mechanism enlarges the scale of bank lending (Cowan and De Gregorio, 2003; Djankov et al., 2007; Jappelli and Pagano, 2002; Kallberg and Udell, 2003), lowers risk (Houston et al., 2010; Jappelli and Pagano, 2002) and the likelihood of financial crisis (Houston et al., 2010), increases bank profitability (Houston et al., 2010, Büyükkarabacak and Nalev, 2012) and attracts more international bank flows (Houston, Lin and Ma, 2012).

2.2.2 Technology advance

Technology advance changes almost every aspect about financial markets and bank management. Because technological progress is difficult to specify and its effects are hard to parameterize, empirical studies about banking technology at the country level are rare.[2]

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[2] Most studies about banking technology are concerned with the banking system at the bank level, for example, Hoenig and Morris (2011), Khan et al. (2008) and Pozar et al. (2012).

Buch (2003) uses the density of telephones or TV sets and Internet hosts as proxies for the degree of technological advancement of the host economy. She finds that the number of Internet hosts produces a significantly positive effect on German and Dutch banks' cross-border investment. Herrero and Martínez Pería (2007) also use the number of Internet hosts as a proxy for information costs. They conclude that information costs seem to be important determinants of the share of local claims to total claims.

Using the idea that technology progress leads to reduce information costs, empirical studies either choose substitute proxy for technology (Petersen and Rajan ,2002; DeYoung et al., 2011) or do not use proxy for technology progress Berger and DeYoung, 2006). Petersen and Rajan (2002) argue that greater use of information technology can reduce the number of loan officers required by the lender, such that technology increases the productivity of lenders. Hence, they adopt the number of bank employees as a proxy for technological progress. Their empirical results show that advances in technology have increased the handling of hard information and impersonal and distant lending. DeYoung et al. (2011) provide further evidence to confirm Petersen and Rajan's (2002) conjecture based on the observable application of information technology to small business lending. They find the borrower–lender distance for small businesses is accelerated. In addition, for banks that adopt credit scoring, the lending distances were larger.

Berger and DeYoung (2006) do not choose a specific proxy for technology advance but presume that technology has improved over time. They argue that technological progress has reduced the agency costs of distance and improved the control of the U.S. multibank holding companies.

2.2.3 Governance

The governance capability is related to the macroeconomic and institutional condition of a country. Due to the highly regulated nature of banking industry, the governance affects bank activities and performance profoundly. Buch et al. (2009) investigate the German banks' international activities and indicate that the governance is more important for banks with limited international experience. Houston et al. (2010) find positive relation between the governance and bank stability.

3. Empirical Model

We choose public listed and still active banks in 126 countries as samples, which are collected from the *BankSope* data. The data belongs to a panel data and the benchmark model is set as equation (1).

$$Y_{ijt} = \alpha + \boldsymbol{\beta}^{'}\mathbf{X}_{ijt} + \boldsymbol{\gamma}^{'}\mathbf{Z}_{ijt} + \boldsymbol{\delta}^{'}\mathbf{C}_{ijt} + \varepsilon_{ijt} \qquad (1)$$

Dependent variable Y_{ijt} represents of the financial performance of bank i in country j, $i=1,\ldots,717$; $j = 1,\ldots,126$, at time t, $t = 2005,\ldots, 2011$. Bank financial performance is measured by return on average assets and return on average equity. $\mathbf{X}_{ijt}, \mathbf{Z}_{ijt}$, and $\mathbf{C}_{ijt}$ represents the vector of bank specific transparency variables, country specific transparency variables, and control variables.

Bank transparency measured by earnings management and asset opacity; the former related to the behavior of managers to manipulate performance deliberately, the latter concerned about the nature of bank assets. To capture the earnings management, we use loan loss provision as proxy. Cornett et al. (2009) argue that loan loss provisions are a main tool used by management to manage earnings for commercial banks. Managers can manipulate the loan loss provision to reach the ideal figure they want. Loan loss provision should be a buffer to absorb the expected future losses when borrowers default their payments. However,

this provision is an expense item on the income statement. When managers intend to raise the net income, loan loss provision would be decreased. In fact, loan loss provisions compose discretionary and nondiscretionary provisions. Nondiscretionary loan loss provisions bring loan loss allowances to an acceptable level; however, the part of discretionary leaves a room for managers. To distinguish the discretionary loan loss provisions, we follow Kanagaretnam, Lobo and Mathieu (2003) and estimate discretionary loan loss provisions by adopting equation (2).

$$LLP = \theta_0 + \theta_1 NPL_{it-1} + \theta_2 CHNPL_{it} + \theta_3 CHLOAN_{it} + \varepsilon_{it} \tag{2}$$

LLP presents the nondiscretionary provision for loan losses, NPL denotes the nonperforming loans, CHNPL is the change value of nonperforming loans, and CHLOAN means the change value of loans. To calculate the discretionary loan loss provisions, we use the total loan loss provision minus the estimated nondiscretionary loan loss provision estimated by equation (2).

As for asset components, Morgan (2002) points out that loans and trading assets are the main assets cause banks' opacity. Therefore, we choose net loans and securities as proxies. However, banks' intangible assets and off-balance sheet activities also involved uncertainty for outsiders. They are difficult to evaluate and leave a room for manipulate. To capture the transparency of bank assets, we add intangible and off-balance items as variables. Four proxies are divided by total assets.

Country transparency measure three dimensions: information sharing, technology advance and governance. The proxy for information sharing is the coverage rate of credit bureaus. Credit bureaus collect information and share it among their members, and utilize the information sharing mechanism in credit markets. Credit bureaus can be categorized into

public credit registries (PCRs hereafter) and private credit bureaus (PCBs hereafter).[3] The World Bank provides the coverage rates of PCRs and PCBs for each country. The coverage indicator reports the number of individuals and firms listed in a PCR/PCB, with information on their borrowing history over the past 5 years. The number is expressed as a percentage of the adult population.[4] According to the survey conducted by Jappelli and Pagano (2002), PCRs are more likely to be established in countries that lack private credit reporting firms. It implies that PCRs and PCBs serve some of the same functions. Countries with higher coverage rates have more implied transparency regarding borrowers' credit history, which means more information is available for predicting clients' default risks. Therefore, the expected impacts of credit information on debt contracts are positive.

The second variable for measuring country transparency is the technology advance, denoted as *Tech*. Because data on proprietary banking technology is not available, to capture the importance of infrastructural technologies, this paper uses mobile-cellular subscriptions to measure technological infrastructure. The data are provided by the International Telecommunication Union (ITU hereafter). A higher rate implies more advanced technology, and higher technology transparency. However, the impact of technology transparency is ambiguous. If advance technology helps banks to contact, communicate with their customers and provide services to customers, the expected effect on bank performance is positive. On the other hand, if the technology creates more competition among financial institutions, it may deteriorate banks business opportunities. For example, internet transactions reduce the

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[3] According to the World Bank, "a PCR is defined as a database managed by the public sector, usually by the central bank or the superintendent of banks, which collects information on the creditworthiness of borrowers (individuals or firms) in the financial system and facilitates the exchange of credit information among banks and other regulated financial institutions." And, "a PCB is defined as a private firm or nonprofit organization that maintains a database on the creditworthiness of borrowers (individuals or firms) in the financial system and facilitates the exchange of credit information among creditors.

[4] The population age is defined as 15 and above according to the World Bank's World Development Indicators.

fees charged at front desk. If then, the expected impact of technology on bank performance is negative.

The last variable concerning about country transparency is the governance. Good governance helps banks to reduce the uncertainty about macro regulation conditions and market disciplines. This paper adopt the *Worldwide Governance Indicators* (WGI hereafter) provided by the World Bank as proxy for governance. It comprises six dimensions of indices, which are voice and accountability, political stability, government effectiveness, regulatory quality, the rule of law and control of corruption. A higher value indicates better institutional quality. To avoid the arbitrage judgment of the importance of separate dimensions of the WGI, we use the average of six indices.

Several control variables are included in our model, which are economic size, financial market freedom and market competition condition. The typical proxy for economy scale is GDP. We use the GDP at constant (2005) in US Dollars. The economic freedom of the host country affects financial activities. Studies find the positive impact of freedom on cross-border banking activities (Buch and DeLong, 2004; Bengoa and Sanchez-Robles, 2003; Quazi, 2007;and Ho, Ahmad and Dohan, 2013). And Chortareas, Girardone and Ventouri (2013) suggest that financial freedom benefit banks in terms of cost advantages and overall efficiency. Follow those studies, we choose the measure of financial freedom published by the Heritage Foundation. Financial freedom is a measure of banking security and independence from government control. Higher scores indicate more freedom for regulation. The last variable concerns about the competition among financial services, we adopt an indicator, commercial bank branch per 100,000 adults, as proxy for access to and use of financial services.

4. Data

4.1. Source of Data

The samples are selected from the *BankScope* data, published by Bureau van Dijk and Fitch IBCA. It provides the financial data used in this research. We retrieve PCR coverage and WGI from the World Bank website. The source of data on technology advances is the ITU. The GDP data is provided by the United Nations in *UNDATA*. The source of financial freedom is the Heritage Foundation. The data of access of bank service measured by branch are collected from *Financial Access Survey*, provided by IMF.

4.2. Basic Statistics

Table 1 reports the basic statistics of bank financial data, transparency measures and control variables. Because the financial tsunami and European debt crisis are covered in our research period, some banks' performance are poor, the minimum ROE is -992%, which reported by Piraeus Bank SA, a Greek bank. The range of off-balance sheet items among banks is huge, from 0 to 1399% of assets. The high value of off-balance sheet items may correlates with higher risk than traditional loans, which increases the uncertainty about bank operation and stability. The minimum value of PCR coverage is zero because some countries do not exist a PCR. The mean of mobile-cellular subscriptions reaches 88.5%, and the maximum value is around 210%. It shows the high adoption of technology.

5. Empirical Results and Robustness

5.1. Benchmark Results

The correlation coefficients are reported in Table 2. Because loans and securities are highly correlated, we do not use them simultaneous. And the correlation among PCB and other variables are high; we use PCR only in our estimation. The data belongs to a panel data; we adopt the panel model regression with both fixed effect and random effect method.

The Hausman test reveals fixed effect method is more suitable, we shows the results estimated by fixed effect method only.

Table 3 displays the impacts of transparency on bank performance; the left and right panel presents the impacts on ROA and ROE respectively. For ROA, the values of discretionary loan loss provision are significantly negative. It implies that if bank manage the earnings more, i.e. the less transparency, the ROA is decreased. That is, more transparent on bank operational results benefits the financial performance. Asset components show different impacts on performance. The higher ratio of loan-to-asset is negatively correlated with ROA; while intangible, securities and off-balance sheet items are positively correlated with ROA.

Two measures of country transparency affect bank performance significantly: the technology advance and governance. For countries with higher usage of mobile phone, the ROA is lower. It implies that the technology improvement strengthens the competition and deteriorates banks' profitability. Better governance is connected with better performance, which highlights the importance of the macro condition the economic environments. It is worth to mention that the estimated value of PCR coverage is negative with less significance. The negative effect is inconsistent with the expectation. However, it supports the argument of Dell'ariccia and Marquez (2006). Their model shows that as banks obtain private information about borrowers, banks may loosen their lending standards, which leads to lower profits.

For ROE, earnings management through manipulating loan loss provisions has negative effects on ROE. The impacts of assets are less significant, only intangible shows positive effects. The impacts of technology and governance transparency are as same as in ROA equations.

5.2 Robustness

The economic development among countries are different, which affects the financial industry development. To check the impacts of transparency on different development countries, we divide our samples into developed and developing countries. The re-estimated results are presented in Table 4.

In developed countries, the left panel, the earnings management still negatively correlates with ROA and ROE. However, the loan-to-asset ratio becomes positive in ROA equation. Other variables show the same effects on performance as in the whole samples. In developing countries, the negative impact of earnings management only exists in the ROA equation. The off-balance items are positively correlated with ROA and ROE.

Two major differences between developed and developing countries. First, the estimated values for coefficients of asset components have opposite signs. Second, the coefficients of governance transparency are significantly positive in developed countries; while they are insignificant in developing countries. It implies that the positive effects of governance on banking industry can be fulfilled only in better developed economies.

The effect of financial tsunami is also examined. We set dummy equals one for year 2008 and 2009. The evidence shows that the financial tsunami has significantly negative effects on ROA and insignificant effects on ROE. The signs and significances of major variables are not affected, to avoiding iteration, the results are not reported.

6. Conclusions

This paper investigates the impacts of transparency on bank financial performance from two new angles. First, we consider the role of transparency in performance which has

been neglected in literature. Second, both bank transparency and country transparency is examined, which comprises the transparency inside and outside banks.

Adopting 2158 public listed and still active banks in 126 countries from 2005 to 2011, we found that transparency affects bank financial performance in different ways. As bank transparency is concerned, if banks manage their earnings less, i.e. more transparency on operation results, the returns on equity and assets increased. It implies the positive effect of transparency. However, the opacity assets have different impacts on performance which depends on assets.

As country transparency is concerned, the technology advance improves the information transparency which may strengthen the competition among banks and financial institutions and lead to lower bank performance. The transparency governance is positively related to bank performance, which highlights the important of macro environments and the government.

Our findings provide some implications. For banks, earnings management creates opacity which connects with poor financial performance. Manager who intends to manage earnings should take it into account. For policymakers, the governance of whole economy benefits bank performance. If the government eagers to upgrade the development of banking industry, they should upgrade the governance first.

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Table 1 Basic Statistics

Variable	Obs.	Mean	Std. Error	Min.	Max.
ROA (%)	11048	1.5	5.3	-149.1	131.7
ROE (%)	11037	8.7	5.3	-992.3	817.3
Net Loan / asset(%)	10544	56.1	21.1	-0.7	98.2
Intangible / asset(%)	7769	1.4	3.9	0	73.1
Security / asset(%)	10924	22.5	19.3	0	98.0
Off balance / asset(%)	8021	26.9	199.7	0	1399.4
Discretionary llp / loan(%)	6325	1.4	3.0	-31.7	108.5
PCR	14639	3.5	10.0	0	81.3
PCB	14361	55.9	42.9	0	100
Mobile	15048	88.5	32.6	0.8	209.6
WGI	15085	0.6	0.9	-1.8	1.9
GDP(trillions USD)	14860	4,958	5,808	0.5	13,226
Freedom	14784	69.1	11.9	21.4	90
Branch (per100 thousand adults)	14327	27.6	15.7	0.9	120.2

Table 2 Correlation Coefficients

	Loan	Intangible	Securities	Off balance	DLLP	PCR	PCB	Mobile	WGI	GDP	Freedom	Branch
Loan	1											
Intangible	0.473	1										
Securities	0.727	0.463	1									
Off balance	0.380	0.211	0.397	1								
DLLP	0.386	0.249	0.335	0.223	1							
PCR	0.345	0.162	0.297	0.196	0.202	1						
PCB	0.820	0.528	0.718	0.301	0.286	0.154	1					
Mobile	0.937	0.496	0.809	0.402	0.393	0.385	0.790	1				
WGI	0.649	0.409	0.562	0.151	0.151	0.139	0.833	0.646	1			
GDP	0.659	0.510	0.557	0.214	0.225	0.033	0.865	0.580	0.735	1		
Freedom	0.966	0.535	0.847	0.403	0.394	0.330	0.866	0.956	0.711	0.712	1	
Branch	0.859	0.475	0.732	0.333	0.341	0.482	0.780	0.867	0.718	0.658	0.879	1

Table 3 Impacts of transparency on financial performance

Variables	ROA		ROE	
DLLP	-15.90***	-12.85***	-134.34***	-130.86***
	(10.82)	(8.78)	(5.73)	(4.84)
Loan	-0.018***		0.005	
	(3.08)		(0.05)	
Intangible		27.28***		366.02***
		(4.48)		(3.26)
Securities		1.836***		-9.56
		(2.73)		(0.77)
Off balance		0.487***		5.282*
		(2.86)		(1.68)
PCR	-0.005	-0.021*	-0.251	-0.437*
	(0.47)	(1.80)	(1.51)	(2.00)
Mobile	-0.029***	-0.026***	-0.246***	-0.165**
	(9.29)	(7.60)	(4.93)	(2.57)
WGI	1.096*	1.335*	48.34***	60.17***
	(1.72)	(1.93)	(4.77)	(4.70)
LGDP	4.954***	5.091***	56.52***	59.43***
	(5.74)	(5.35)	(4.12)	(3.38)
Freedom	-0.034	-0.042*	0.070	0.022
	(1.63)	(1.76)	(0.21)	(0.05)
Branch	0.008	0.012	-0.033	0.09
	(0.56)	(0.64)	(0.14)	(0.27)
$\overline{R}^2$	0.3406	0.4851	0.1606	0.3010
Obs	5850	3659	5842	3657

* The results are estimated by panel regression model with fixed effects. The Hausman tests are all significant, which suggests that the estimation by fixed effects is preferable. Absolute t-statistics are reported in parentheses. *, **, *** indicate significance at 10, 5, and 1 percent levels, respectively.

Table 4 Transparency and bank performance in developed/developing countries

Variables	Developed				Developing			
	ROA		ROE		ROA		ROE	
DLLP	-10.60***	-8.486***	-185.5***	-206.99***	-15.62***	-16.99***	2.715	170.0***
	(8.70)	(8.19)	(5.78)	(6.73)	(4.42)	(4.55)	(0.11)	(4.34)
Loan	0.015**		-0.155		-0.051***		0.138**	
	(2.55)		(0.95)		(5.25)		(2.04)	
Intangible		48.99***		573.1***		9.355		11.48
		(9.59)		(3.78)		(1.03)		(0.12)
Securities		1.783***		16.285		1.511		-50.41***
		(3.08)		(0.95)		(1.48)		(4.71)
Off balance		-0.474**		-2.467		0.767***		4.311**
		(2.48)		(0.43)		(3.74)		(2.00)
PCR	-0.031	-0.032*	-0.246	-0.238	0.005	-0.008	-0.001	0.028
	(1.59)	(1.92)	(0.46)	(0.48)	(0.36)	(0.28)	(0.10)	(0.16)
Mobile	-0.028***	-0.013***	-0.393***	-0.192*	-0.018***	-0.022***	-0.091***	-0.029
	(7.45)	(3.76)	(3.69)	(1.95)	(3.47)	(3.55)	(2.58)	(0.46)
WGI	2.549***	1.738**	63.66***	58.78***	-0.279	-1.362	1.449	-9.082
	(3.20)	(2.43)	(2.88)	(2.77)	(0.29)	(1.33)	(0.22)	(0.84)
LGDP	7.092***	8.102***	121.8***	162.8***	2.443**	3.042**	13.15	9.000
	(4.66)	(6.84)	(2.88)	(4.62)	(2.00)	(2.18)	(1.54)	(0.61)
Freedom	-0.100***	-0.116***	-0.113	-0.899	-0.056*	-0.085**	-0.359*	-0.869**
	(3.97)	(5.41)	(0.16)	(1.41)	(1.84)	(2.06)	(1.70)	(2.01)
Branch	-0.013	0.027*	0.439	0.583	0.010	0.034	0.080	0.275
	(0.71)	(1.79)	(0.83)	(1.31)	(0.49)	(0.98)	(0.59)	(0.75)
$\overline{R}^2$	0.3366	0.5840	0.0743	0.3509	0.3683	0.5453	0.4921	0.3872
Obs	3085	2180	3081	2178	2268	1180	2266	1180

* The results are estimated by panel regression model with fixed effects. The Hausman tests are all significant, which suggests that the estimation by fixed effects is preferable. Absolute t-statistics are reported in parentheses. *, **, *** indicate significance at 10, 5, and 1 percent levels, respectively.

四、 建議

　　參與國際研討會有助於與國外學者交流，希望科技部在預算許可下，

能多多鼓勵並補助學者參與。

五、 攜回資料名稱及內容

　1. 研討會議程

　2. 資料光碟：包括研討會簡介，以及部分論文摘要/全文。

六、 其他

　（無）

附件：論文議程（摘錄）

Effects of Workplace Friendship and Workplace Incivility on Coworker Helping
Ida Rosnita Ismail, Universiti Kebangsaan Malaysia

Marketing Mix Affecting Purchasing Behavior of Instant Cat Food of Cat Owner in Thailand
Jirawan Ruyan, King Mongkut's Institute of Technology Ladkrabang
Jirasek Trimethsoontorn, King Mongkut's Institute of Technology Ladkrabang
Nuttawut Rojniruttikul, King Mongkut's Institute of Technology Ladkrabang

The Impact of Supply Chain Management Implementation on Organization
Chia-Hung Chen, Shu-Te University
Yu-Chung Tsao, National Taiwan University of Science and Technology

Yu-Chiang Wang, Shu-Te University

Does an Own-Brand Produce Higher Profitability? Evidence from Taiwan's Manufacturing Firms
Chih-Hai Yang, National Central University
Meng-Wen Tsou, National Central University

The impact of transparency on bank financial performance
Hsiu-Hsia Chou, Chihlee Institute of Technology

A Business Artifact Centric Information Modeling Methodology
Ci-Wei Lan, Institute for Information Industry
Chien Lin, Institute for Information Industry
Jiunhau Ye, Institute for Information Industry
S.P. Tseng, Institute for Information Industry
Morris Hsiao, Institute for Information Industry

科技部補助計畫衍生研發成果推廣資料表

科技部補助計畫	計畫名稱: 資訊透明度與銀行經營績效之研究
	計畫主持人: 周秀霞
	計畫編號: 102-2410-H-263-005-　　　　　　學門領域: 財務

無研發成果推廣資料

102 年度專題研究計畫研究成果彙整表

計畫主持人：周秀霞　　計畫編號：102-2410-H-263-005-

計畫名稱：資訊透明度與銀行經營績效之研究

成果項目			量化			單位	備註（質化說明：如數個計畫共同成果、成果列為該期刊之封面故事...等）
			實際已達成數（被接受或已發表）	預期總達成數(含實際已達成數)	本計畫實際貢獻百分比		
國內	論文著作	期刊論文	0	0	100%	篇	
		研究報告/技術報告	0	0	100%		
		研討會論文	1	1	50%		
		專書	0	0	100%		
	專利	申請中件數	0	0	100%	件	
		已獲得件數	0	0	100%		
	技術移轉	件數	0	0	100%	件	
		權利金	0	0	100%	千元	
	參與計畫人力（本國籍）	碩士生	2	2	100%	人次	
		博士生	0	0	100%		
		博士後研究員	0	0	100%		
		專任助理	0	0	100%		
國外	論文著作	期刊論文	0	2	100%	篇	
		研究報告/技術報告	0	0	100%		
		研討會論文	1	1	100%		
		專書	0	0	100%	章/本	
	專利	申請中件數	0	0	100%	件	
		已獲得件數	0	0	100%		
	技術移轉	件數	0	0	100%	件	
		權利金	0	0	100%	千元	
	參與計畫人力（外國籍）	碩士生	0	0	100%	人次	
		博士生	0	0	100%		
		博士後研究員	0	0	100%		
		專任助理	0	0	100%		

計畫主持人：周秀霞　　計畫編號：102-2410-H-263-005-

計畫名稱：資訊透明度與銀行經營績效之研究

其他成果 (無法以量化表達之成果如辦理學術活動、獲得獎項、重要國際合作、研究成果國際影響力及其他協助產業技術發展之具體效益事項等,請以文字敘述填列。)	無

	成果項目	量化	名稱或內容性質簡述
科教處計畫加填項目	測驗工具(含質性與量性)	0	
	課程/模組	0	
	電腦及網路系統或工具	0	
	教材	0	
	舉辦之活動/競賽	0	
	研討會/工作坊	0	
	電子報、網站	0	
	計畫成果推廣之參與（閱聽）人數	0	

科技部補助專題研究計畫成果報告自評表

請就研究內容與原計畫相符程度、達成預期目標情況、研究成果之學術或應用價值（簡要敘述成果所代表之意義、價值、影響或進一步發展之可能性）、是否適合在學術期刊發表或申請專利、主要發現或其他有關價值等，作一綜合評估。

---

1. 請就研究內容與原計畫相符程度、達成預期目標情況作一綜合評估

   ■達成目標

   □未達成目標（請說明，以 100 字為限）

   　　□實驗失敗

   　　□因故實驗中斷

   　　□其他原因

   　說明：

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2. 研究成果在學術期刊發表或申請專利等情形：

   論文：□已發表　■未發表之文稿　□撰寫中　□無

   專利：□已獲得　□申請中　■無

   技轉：□已技轉　□洽談中　■無

   其他：（以 100 字為限）

   本研究計畫完成兩篇未發表之文稿，一篇為透明度對銀行經營績效之研究，探討銀行內外部透明度，對於銀行整體績效的影響，這是本研究主要的研究主題；另一篇為透明度對銀行授信之影響，探討銀行授信對象的透明度，是否影響銀行的授信行為，是由研究計劃衍生出來的議題。二篇文稿皆已完成，正進行投稿過程。

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3. 請依學術成就、技術創新、社會影響等方面，評估研究成果之學術或應用價值（簡要敘述成果所代表之意義、價值、影響或進一步發展之可能性）（以500 字為限）

   一、在學術成就方面：透明度的議題是屬於起步中的議題，學術研究從不同面向探討相關主題，因為在實務管理上，透明度可能影響公司或銀行的日常營運、資金取得或最終的經營績效，因此本研究的議題在學術上有其重要性。

   二、在社會影響方面：銀行產業使用大眾資金做為生財工具，財務槓桿非常高，如果經營不善影響的層面非常廣。在本研究的結果中顯示，若銀行刻意操弄盈餘透明度，將會對銀行經營績效產生負面影響，因此本計畫的研究成果可供主管機關和銀行董事會參考，主管機關可以要求銀行揭露必要資訊，增加銀行對外的透明度；對銀行董事會而言，有必要加強對銀行盈餘透明度的要求，避免管理階層不當的盈餘管理行為。

   三、學術發展可能性：在計畫執行中，對於「透明度」的衡量，因為無現有指標，因此傾向以較廣泛的定義衡量透明度，在未來研究上，可考慮建構透明度指標，讓其定義與範圍更明確，在實證結果的解釋上會更為直接，更具說服力。