ESTABILIDAD FINANCIERA

5/2014

N.º 26

BANCO DE ESPAÑA
Eurosistema

ESTABILIDAD FINANCIERA MAYO 2014

Número 26

ESTABILIDAD FINANCIERA es una revista semestral que tiene como objetivo servir de plataforma de comunicación y diálogo sobre cualquier aspecto relativo a la estabilidad financiera, con especial dedicación a las cuestiones de regulación y supervisión prudenciales.

ESTABILIDAD FINANCIERA es una publicación abierta, en la que, junto a contenidos institucionales, tienen cabida colaboraciones personales de investigadores y profesionales del sector financiero, que serán sometidas a un proceso de evaluación anónima. Los trabajos y comentarios sobre la revista deberán enviarse a la dirección de correo electrónico (ef@bde.es).

El Consejo Editorial agradece la colaboración del consejero saliente D. Gonzalo Gil, impulsor de Estabilidad Financiera durante su mandato de Subgobernador del Banco de España.

Los artículos firmados son responsabilidad exclusiva de sus autores y no reflejan necesariamente la opinión del Banco de España.

ISSN: 1579-3621 (edición electrónica)

ÍNDICE

Sentando las bases de la política macroprudencial: de las falencias pre-Lehman a los desafíos pos-Lehman 9
Augusto de la Torre y Alain Ize

Systemic risk, monetary and macroprudential policy 35
José-Luis Peydró

SEPA 2.0 – Avanzando en la integración europea: la Zona Única de Pagos en Euros (SEPA) en perspectiva 49
Sergio Gorjón Rivas y Ana Fernández Bedoya

Sovereign risk and financial stability 73
Christian Castro and Javier Mencía

Financial disintermediation in international markets and global banks funding models 109
José María Serena Garralda

A first approach to creditor monitoring, the paradoxical missing lever of corporate governance in Spain 133
Carlos Ara

SENTANDO LAS BASES DE LA POLÍTICA MACROPRUDENCIAL: DE LAS FALENCIAS PRE-LEHMAN A LOS DESAFÍOS POS-LEHMAN

Augusto de la Torre y Alain Ize (*)

(*) Los autores laboran para el Banco Mundial como economista regional en jefe (adelatorre@worldbank.org) y como consultor senior (aize@worldbank.org), respectivamente. Este artículo se basa en dos artículos previos más completos [De la Torre e Ize (2013a y 2013b)], que revisan la literatura sobre fricciones financieras desde una perspectiva similar, aunque más técnica. Los autores agradecen los comentarios sobre estos artículos ofrecidos por Tito Cordella, Anton Korinek, Carlos Montoro, Lev Ratnovski y Carlos Vegh, así como la excelente asistencia de investigación por parte de Magali Pinat. Las interpretaciones y opiniones expresadas en este artículo son enteramente las de los autores y no coinciden necesariamente con las del Banco Mundial, sus directores ejecutivos o los países que ellos representan. Tampoco reflejan necesariamente la opinión del Banco de España ni del Eurosistema.

SENTANDO LAS BASES DE LA POLÍTICA MACROPRUDENCIAL: DE LAS FALENCIAS PRE-LEHMAN A LOS DESAFÍOS POS-LEHMAN

Este artículo explora los desafíos de la política macroprudencial. Primero, examina interpretaciones alternativas de la arquitectura regulatoria pre-Lehman e identifica sus falencias, preanunciando así las direcciones por las que debe transitar la agenda de reforma. Luego, argumenta que la volatilidad agregada es el factor clave que separa el mundo macroprudencial del microprudencial y establece cuatro motivaciones esencialmente ortogonales de la política macroprudencial: i) contrarrestar el riesgo moral público generado por la red de seguridad financiera; ii) alinear los incentivos agente-principal entre «ingenuos» y «sagaces» a lo largo del ciclo financiero; iii) inducir la internalización de externalidades negativas; y, iv) mitigar la exuberancia o el pánico irracional de los mercados. Cada motivación pone el acento sobre distintos tipos de regulación. Subsecuentemente, el artículo evalúa el progreso hecho hasta ahora en la agenda de la política macroprudencial y explora las implicaciones de su multidimensionalidad, incluyendo los problemas de identificación (¿qué fricciones y fallas dominan las dinámicas de acumulación de riesgo sistémico?) y los conflictos de objetivos (regulaciones que mitigan problemas de riesgo moral tienden a fortalecer la disciplina de mercado, pero pueden exacerbar problemas de acción y de cognición colectivas). Finalmente, discute dos enfoques tipológicos para el diseño de la política macroprudencial.

1 Introducción

A raíz de la crisis financiera global se han multiplicado las propuestas de política macroprudencial y la experimentación con estas propuestas se encuentra en pleno auge, especialmente en los países emergentes. Sin embargo, los fundamentos conceptuales de este nuevo marco de política están aún en un estado embrionario. A decir verdad, en los últimos quince años ha habido un progreso impresionante en el desarrollo de modelos macroeconómicos con fricciones financieras —una agenda de investigación muy relevante para el desarrollo de políticas macroprudenciales—, de forma tal que la tendencia a teorizar sobre la macroeconomía, tratando al dinero y a las finanzas como si fuesen un simple «velo», ha ido perdiendo terreno[1]. Pero las brechas son tan grandes como los avances. En particular, la conexión entre teoría macrofinanciera y política macroprudencial es todavía muy débil y las brechas enormes, incluyendo la necesidad de identificar con mayor precisión las diferentes fuentes de inestabilidad financiera; definir y evaluar mejor los tipos de inestabilidad financiera que justifican la intervención de política macroprudencial; y equilibrar apropiadamente los conflictos de objetivos que surgen cuando un instrumento de política macroprudencial mitiga una fuente de riesgo sistémico a expensas de exacerbar otra.

Existe una tendencia a pensar que la volatilidad financiera (por ejemplo, los *booms* crediticios seguidos por colapsos) *per se* es socialmente costosa y, por lo tanto, requiere intervenciones de política, más aun cuando dicha volatilidad es de magnitud significativa. Pero esta forma de pensar no toma en cuenta que la volatilidad financiera, aunque costosa, puede ser «socialmente eficiente dadas las restricciones» *(constrained efficient).* Este sería el caso si la inestabilidad financiera se debiese a factores que el mercado trata de mitigar de todos modos y de la mejor manera posible, dadas las restricciones, mientras que el Estado no tuviese ninguna ventaja comparativa para mejorar la situación *a través de la política macroprudencial.* La intervención del Estado en este caso solo tendría costos y no produciría beneficio alguno. Por lo tanto, un primer gran desafío para la política

1 Una reseña muy completa y rigurosa de esta literatura aparece en Brunnermeier *et al.* (2012).

macroprudencial, tanto conceptual como empírico, es delinear la frontera entre la volatilidad financiera, que es socialmente ineficiente dadas las restricciones (para la cual se justifica la intervención), y la volatilidad, que resulta ser socialmente eficiente dadas las restricciones (para la cual no se justifica).

Un segundo gran desafío para la política macroprudencial es identificar los distintos tipos de fallas de mercado que dan lugar a dinámicas financieras que son socialmente ineficientes. Tal identificación es esencial, ya que se requieren políticas prudenciales diferentes para enfrentar fallas de mercado diferentes. Sin embargo, esta identificación se complica por el hecho de que fallas de mercado de distinta naturaleza suelen producir equilibrios y dinámicas financieras similares. Más aun, políticas prudenciales destinadas a enfrentar un tipo de falla de mercado pueden empeorar otro. En particular, regulaciones y políticas orientadas a resolver las fallas de acción colectiva pueden exacerbar los problemas de riesgo moral. Dichas tensiones ya se encontraban latentes en la regulación prudencial tipo Basilea que prevalecía antes de la crisis (a la que nos referiremos de ahora en adelante como regulación «pre-Lehman»). El caso más obvio era el del seguro de depósitos, orientado a limitar el riesgo de corridas bancarias ineficientes (un problema de acción colectiva), pero que podía socavar la disciplina de mercado al exacerbar el riesgo moral. Pero las tensiones son aún mayores en el mundo de la regulación pos-Lehman porque los problemas de acción colectiva —en particular, las externalidades no internalizadas— están en el corazón mismo del nuevo pensamiento macroprudencial. Esto plantea el ineludible desafío de, por un lado, establecer la frontera entre dinámicas financieras que obedecen principalmente a fricciones de agente-principal (esto es, fricciones de agencia) y las que obedecen mayormente a fricciones colectivas, y, por otro lado, administrar adecuadamente las correspondientes tensiones y *trade-offs.*

Un tercer gran desafío para la política macroprudencial es distinguir bien entre fallas de mercado y fallas de política, así como identificar correctamente las posibles consecuencias adversas, pero inevitables, de buenas medidas de política. Mientras que este problema se aplica tanto al mundo regulatorio pre-Lehman como al pos-Lehman, las nuevas justificaciones para la regulación prudencial en el mundo post-Lehman han hecho crecer en forma sustancial la magnitud y complejidad del problema. El *riesgo moral público (i.e.*, que los participantes de mercado tengan incentivos para transferir riesgos y costos al seguro de depósitos y, en última instancia, al Estado) es el ejemplo más conocido. Dependiendo de las circunstancias, el riesgo moral público puede verse como el resultado de una falla de política o como una consecuencia inevitable de una buena política. Pero el ámbito de este desafío de identificación es amplio y hay muchas otras fallas de política que están presentes en la regulación, incluyendo, como veremos más adelante, la asociada a normas prudenciales insuficientemente contracíclicas.

Este artículo explora estos desafíos y establece relaciones entre ellos. Para el efecto, hace uso de un marco analítico desarrollado en detalle en otros artículos [De la Torre e Ize (2013a y 2013b)]. Dicho marco permite examinar las implicaciones específicas de tres tipos de complicaciones que son de importancia medular para un buen entendimiento del papel de la política macroprudencial, a saber: el riesgo agregado, las fallas de acción colectiva y la racionalidad acotada *(bounded rationality)*[2]. Con dicho marco analítico en el trasfondo, la sección 2 de este artículo revisa los componentes principales de la arquitectura regulatoria pre-Lehman

2 La existencia de riesgo agregado (que se produce cuando los riesgos que enfrenta cada agente económico están correlacionados) es una condición necesaria, pero no suficiente, para que exista riesgo sistémico que pueda poner en juego la estabilidad del sistema como un todo.

y ofrece dos posibles maneras de justificar, con base en la teoría económica, dicha arquitectura. La primera justificación está basada en la presencia de jugadores ingenuos o menos sagaces (normalmente, los pequeños depositantes) que requieren ser representados y protegidos por el regulador. La segunda justificación está basada en la existencia de la red de seguridad financiera (el seguro de depósitos y el banco central en cuanto prestamista de última instancia) que genera riesgo moral público, el cual requiere ser contrarrestado a través de la regulación y de la supervisión prudencial. La sección 2 también identifica las limitaciones y tensiones básicas de la arquitectura de regulación prudencial pre-Lehman, preanunciando así las direcciones por las que debe transitar la nueva agenda macroprudencial.

La sección 3 arranca con la premisa de que la presencia de volatilidad agregada (asociada a factores comunes o a choques agregados que afectan a todo o a una parte sustancial del sistema financiero, y no solo a jugadores o contratos financieros individuales) es el factor clave que separa el mundo macroprudencial del mundo microprudencial. Luego, utilizando el mencionado marco analítico más explícitamente, identifica cuatro paradigmas (marcos conceptuales interpretativos) que enfatizan dimensiones o motivaciones, esencialmente ortogonales, de política macroprudencial.

Dos de estos cuatro paradigmas ponen el acento en fricciones de agencia y fallas de política e ilustran que la política macroprudencial puede justificarse incluso si los problemas de acción colectiva *(i.e.*, de externalidades no internalizadas) no tienen efectos de primer orden. Sin embargo, las justificaciones son muy distintas, dependiendo de la importancia que podría tener la racionalidad acotada en la actividad financiera. En el primer caso, la política macroprudencial se vuelve necesaria, incluso si la racionalidad impera, para corregir el riesgo moral público que surge del hecho de que puede ser socialmente eficiente que el Estado intervenga agresivamente (a través del prestamista de última instancia, del seguro de depósitos y de las operaciones de salvamento) después de la erupción de una crisis financiera sistémica. En el segundo caso, la política macroprudencial se justifica una vez que el Estado asume la responsabilidad de proteger a los jugadores ingenuos de los posibles abusos de los jugadores más sagaces. Para cumplir con dicha responsabilidad, el Estado tiene que calibrar y recalibrar las normas prudenciales, a fin de mantener los incentivos de agente-principal alineados a lo largo del ciclo financiero y en respuesta a choques agregados.

Los otros dos paradigmas enfatizan fallas de mercado en las que los problemas de acción colectiva juegan un papel preponderante. Estos paradigmas dan lugar a dos justificaciones adicionales de política macroprudencial, cuya especificidad depende, otra vez, de la relevancia que puede tener la racionalidad acotada en las dinámicas financieras. En el primer caso, la justificación es la necesidad de inducir a los jugadores racionales del mercado financiero a internalizar mejor las consecuencias sistémicas (el interés social) de sus acciones individuales (motivadas por el puro interés privado). En el segundo caso, la justificación es tratar de evitar grandes oscilaciones en el estado de ánimo del mercado financiero, que no obedecen a factores fundamentales sino que, más bien, son el resultado de la exuberancia o el pánico irracional. La discusión de estos cuatro paradigmas deja claro que distintos instrumentos de política macroprudencial se adaptan mejor a distintos paradigmas.

La sección 4 parte de la mencionada multidimensionalidad de la política prudencial y discute brevemente, en primer lugar, el estado del progreso de la agenda macroprudencial en relación con cada uno de los cuatro paradigmas. Luego explora los problemas de identificación (¿qué paradigma o marco analítico se adecúa mejor a distintos momentos de la evolución del sistema financiero?) y las tensiones y *trade-offs* que surgen entre paradigmas.

Dichas tensiones emergen, en particular, porque: i) las regulaciones macroprudenciales orientadas a mitigar los problemas de acción colectiva tienden a exacerbar los problemas de agencia y, ii) las políticas macroprudenciales que tratan de mitigar fallas de mercado amplían el espacio para la gestación de fallas de política.

Mientras que todas las fricciones y fallas son parte de la estructura de la realidad financiera, no todas tienen efectos de primer orden siempre y en todo lugar. El artículo concluye (sección 5), por tanto, contrastando dos opciones polares de política macroprudencial. La primera es elaborar un sistema de regulación y supervisión «para todo terreno», es decir, que contenga en todo momento del tiempo una mezcla de normas para atacar los problemas asociados a los cuatro paradigmas. La segunda opción es diseñar un sistema de política bimodal y contingente. Esto es, dotado de un marco aplicable a tiempos «normales» —por ende, enfocado en la disciplina de mercado y en las fallas básicas de agencia— y de otro, más intrusivo y agresivo, para tiempos extraordinarios de formación o ruptura de burbujas —por tanto, enfocado en el riesgo sistémico y en las dinámicas desestabilizantes asociadas a grandes fallas de acción colectiva—.

2 El mundo pre-Lehman de la regulación microprudencial

La arquitectura de la regulación prudencial pre-Lehman descansaba sobre dos grandes pilares, en gran parte desconectados, y un perímetro de aplicación de la regulación estrechamente definido. El primer pilar (el pilar *ex ante*) consistía en un conjunto de regulaciones prudenciales orientadas a promover una intermediación financiera sana y prudente[3]. El otro pilar (el pilar *ex post*) consistía en una red de seguridad financiera que incluía un seguro de depósitos y un prestamista de última instancia. Sin embargo, como veremos en esta sección hay dos formas, en gran parte antitéticas, de racionalizar esta construcción: una basada en racionalidad acotada y riesgo moral privado, y la otra en fallas de acción colectiva y riesgo moral público. Esta duplicidad refleja el desfase histórico en los eventos que motivaron la introducción de la regulación microprudencial y de la red de seguridad financiera en Estados Unidos. La red de seguridad se introdujo tempranamente, en respuesta a las grandes corridas bancarias del siglo XIX y a la Gran Depresión (dominadas por problemas de acción colectiva). El aparato prudencial de Basilea I y II fue, en contraste, una respuesta a la toma excesiva de riesgo en la crisis más reciente de las sociedades de ahorro y crédito (S&Ls) (en la que dominaron los problemas de riesgo moral). Esta fragilidad conceptual del edificio regulatorio pre-Lehman saldría plenamente a la luz durante la reciente crisis financiera global.

2.1 JUGADORES INGENUOS Y RACIONALIDAD ACOTADA

La primera forma de racionalizar el edificio regulatorio pre-Lehman consiste en acotar la racionalidad, esto es, en reconocer que el mercado financiero está poblado, al menos en parte, por jugadores ingenuos. Dado que los jugadores más racionales (los «más sagaces») pueden abusar sistemáticamente de los jugadores menos racionales (los «ingenuos» o «menos sagaces»), se hace necesaria la presencia de un regulador prudencial que represente y proteja a los ingenuos. Es la ingenuidad y no la desinformación la que da pie a la regulación prudencial. Contrariamente a lo que a menudo se piensa, la presencia de información asimétrica («principales» menos informados que los «agentes») no basta por sí misma para justificar la regulación prudencial *si todos los jugadores son racionales.*

3 La característica básica de la regulación prudencial es que apunta a influir en la toma de riesgo por parte de los jugadores del mercado financiero. En general, las regulaciones prudenciales están acompañadas y complementadas por regulaciones no prudenciales, en particular, por estándares de transparencia e integridad de mercado cuyo objetivo es mejorar el entorno para la contratación financiera. Véase De la Torre e Ize (2013a, 2013b) para una discusión más extensa de las fricciones financieras y de las imperfecciones de mercado que justifican este tipo de regulación.

Este es el mensaje profundo del artículo seminal de Akelrof (1970) sobre el «mercado de limones» (automóviles usados de mala calidad). Este mercado, análogamente al mercado de servicios financieros, está afectado por fricciones de información asimétrica. El vendedor conoce cosas que el potencial comprador no conoce sobre la calidad de los vehículos. En equilibrio, los compradores racionales *no* comprarán *vehículos a ningún precio* sabiendo que los vendedores, mejor informados, pueden ofrecerles automóviles que parecen ser de buena calidad pero que en realidad son «limones». En el mundo financiero, esto se aplica a deudores (o banqueros) mejor informados que acceden a fondos de ahorristas menos informados para financiar malos proyectos. Si son racionales, los ahorristas no entrarán en transacciones financieras a menos que existan garantías que resuelvan el problema de información asimétrica mediante una alineación de incentivos entre «agentes» y «principales.»

Afortunadamente, la actividad del mercado naturalmente busca soluciones a los problemas de agente-principal para hacer posible transacciones de mutuo beneficio para las partes. En particular, la industria de servicios financieros surge espontáneamente para ayudar a resolver los problemas de información asimétrica, a través, por ejemplo, de requisitos de colateral, así como de protocolos de revelación de información y monitoreo[4]. La política prudencial podría mejorar este equilibrio de mercado solo si los reguladores tuviesen alguna ventaja comparativa de información en las actividades crediticias. Puesto que resulta difícil argumentar que dicha ventaja exista de manera sistemática y duradera, no es posible justificar la política prudencial exclusivamente con base en información asimétrica en un mundo de perfecta racionalidad[5].

Sin embargo, estas conclusiones se alteran radicalmente una vez que se reconoce la presencia de jugadores ingenuos, esto es, de participantes con racionalidad acotada que tienen dificultades en procesar la información (y, por tanto, en entenderla). Como señalan Akelrof y Shiller (2013) en un libro en preparación *(Phishing for Phools),* el mundo racional sin contratos de Akelrof (1970) se metamorfosea de repente en un mundo con una plétora de contratos abusivos, mediante los cuales los más sagaces se aprovechan de las debilidades cognitivas o emocionales de los menos sagaces. Proveer información gratuita no resuelve el problema porque los ingenuos no pueden hacer uso óptimo de ella (el problema subyacente es de comprensión y sesgos cognitivos, no de información). En cambio, el Estado tiene ahora un importante papel que cumplir porque tiene una ventaja comparativa en «representar» a los poco sagaces. Defiende los intereses de los ingenuos exigiendo, en representación de ellos, garantías y compromisos, de la misma forma que lo harían los inversionistas más sagaces cuando transan con sus proveedores de servicios financieros[6]. Por ejemplo, el Estado, actuando en representación de los menos sagaces, puede certificar (otorgar licencias de funcionamiento) a intermediarios financieros que cumplan con requisitos mínimos de probidad y exigirles el capital *(skin-in-the-game)* que los inversionistas más sagaces exigirían de ellos antes de entregarles su dinero.

---

4 Los bancos, por ejemplo, se especializan en sistemas de identificación de buenos deudores para superar los problemas de selección adversa, y recurren a tecnologías crediticias específicas para superar los problemas de inconsistencia temporal o riesgo moral que podrían debilitar la voluntad de pago por parte de los deudores.

5 Si bien el Estado no tiene una ventaja sistemática sobre el sector privado para prestar dinero, sí la tiene para endeudarse. En efecto, el Estado tiene ventajas comparativas en el endeudamiento debido a su capacidad para imponer impuestos, un tema al cual regresaremos más adelante.

6 Esta manera de racionalizar la regulación prudencial pre-Lehman es coherente con los principios de «supervisión delegada» expuestos por Dewatripont y Tirole (1994), y responde al principio básico de un bien público.

2.2 RIESGO MORAL Y RACIONALIDAD COMPLETA

El abandono del supuesto de racionalidad, piedra angular de la teoría microeconómica básica, nunca fue popular entre los economistas profesionales[7]. La justificación de la regulación prudencial con base en la racionalidad acotada nunca fue presentada en términos nítidos en el mundo pre-Lehman y, por lo tanto, nunca se volvió una parte generalmente aceptada de los fundamentos económicos de la estructura regulatoria. Los participantes en los mercados financieros se describían simplemente como «desinformados», sin ir más allá y sin explorar en profundidad lo que pudiera motivar esta falta de información.

Quizás por este motivo, la regulación prudencial pre-Lehman también tendía a justificarse desde una perspectiva «racionalista» alternativa. Bajo esta óptica, la regulación prudencial era necesaria, no para proteger a los ingenuos, sino para mitigar el daño creado por la presencia de la red de seguridad financiera (el seguro de depósitos y el prestamista de última instancia). A su vez la justificación más aceptada para la red de seguridad, desde una perspectiva estrictamente racional, se basaba en fallas de acción colectiva al estilo Diamond-Dybvig (1983). Dado que los jugadores no eran capaces de internalizar los beneficios sociales de actuar de manera coordinada, se podían dar corridas bancarias que no obedecían a factores fundamentales y que eran, por tanto, socialmente ineficientes[8]. Mientras que la red de seguridad financiera podía resolver estas fallas de coordinación, podía también socavar la disciplina de mercado y promover el riesgo moral público al incentivar a los participantes a traspasar riesgo al Estado. Estos efectos nocivos debían, por tanto, ser contrarrestados por la regulación microprudencial.

No obstante ser compatible con el postulado de racionalidad, esta justificación alternativa de la regulación prudencial pre-Lehman tampoco fue de gran aceptación entre los economistas. Muchos de ellos pensaban que las corridas bancarias normalmente reflejaban problemas reales más que corridas ineficientes. Desde esta perspectiva, las corridas eran una deseable manifestación de la disciplina de mercado, mientras que la red de seguridad financiera era una indeseable fuente de riesgo moral. No debe sorprender, por tanto, que muchos economistas simpatizaran (y simpatizan aún hoy) con la opinión de Allen y Gale (2007) de que «una mala política (el seguro de depósitos bancarios) no justifica otra (requisitos de adecuación de capital)».

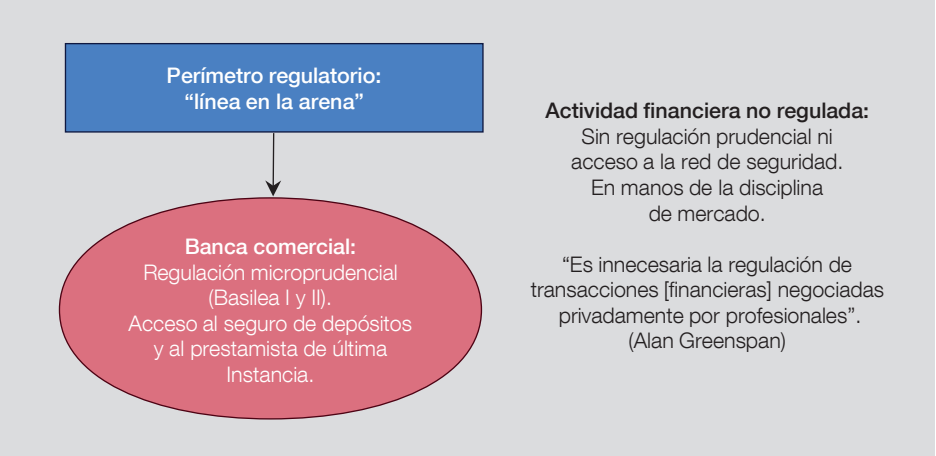
2.3 EL PERÍMETRO REGULATORIO

Aunque basadas en razonamientos de muy distinta naturaleza, las dos justificaciones discutidas anteriormente eran congruentes con un perímetro regulatorio bien definido (véase gráfico 1). Bajo la primera justificación, el perímetro en el mundo pre-Lehman separaba el mundo de los (pequeños depositantes) menos sagaces —quienes son representados por el Estado y a quienes les conviene mantenerse bien abrigados dentro del ámbito regulado prudencialmente— del mundo de los más sagaces —que pueden prosperar y disciplinarse entre ellos sin necesidad de regulación prudencial—. Concomitantemente, bajo esta óptica, se justificaba también un seguro de depósitos para proteger a los pequeños (ingenuos)

7 La teoría microeconómica básica sustentada en el principio de racionalidad fue formulada matemáticamente y de manera general por Arrow y Debreu en 1954, pero ya se perfilaba desde mediados del siglo XIX en los trabajos de Jevons, Menger y Walras. El supuesto de racionalidad se fortaleció enormemente en la teoría económica moderna gracias a la «revolución de las expectativas racionales.» Esta revolución liberó a la racionalidad del determinismo y puso las bases para el despliegue de racionalidad en un mundo estocástico. En ese mundo, lo que pasa en la realidad es una de muchas posibilidades, y la gama de lo que puede pasar está gobernada por probabilidades cuya distribución se conoce de antemano. La revolución de expectativas racionales sentó los cimientos para la teoría financiera que hasta ahora domina el mundo académico, a saber, la teoría de «mercados eficientes.»

8 Debido a una falla de coordinación, los depositantes racionales podrían retirar sus depósitos aunque pensaran que su banco fuera solvente. Lo harían para proteger su interés privado dado el temor de que otros depositantes se adelanten, a sabiendas de que los bancos nunca tienen suficiente dinero en efectivo para cubrir una retirada del total de los depósitos. Este tipo de corrida tiene la naturaleza de una profecía autocumplida y refleja el hecho de que los jugadores racionales no son capaces de internalizar los beneficios sociales de actuar de manera coordinada.

REPRESENTACIÓN ESQUEMÁTICA DE LA ARQUITECTURA REGULATORIA PRE-LEHMAN GRÁFICO 1



FUENTE: Elaboración própia.

depositantes, no solo de los abusos potenciales de sus banqueros, sino también de sí mismos —de su propio comportamiento impulsivo, al evitar corridas no justificadas por factores fundamentales— y del comportamiento potencialmente errático del Estado —cuyas fallas regulatorias podrían conducir a quiebras bancarias fortuitas—. Dado que el seguro de depósitos era limitado y se aplicaba solo a instituciones financieras (principalmente los bancos comerciales) que operan con los menos sagaces, los perímetros de la regulación prudencial y del seguro de depósitos coincidían plenamente[9].

La segunda justificación también favorecía un perímetro de regulación prudencial claramente trazado, pero por una razón muy diferente, esto es, para contener el daño (riesgo moral público) causado por la red de seguridad financiera. En este caso, el perímetro delimitaba el ámbito de las instituciones financieras que tenían acceso a dicha red, normalmente los bancos comerciales. Bajo esta óptica, lo que calificaba a estas instituciones a acceder al prestamista de última instancia no era ya el hecho de que operaban con jugadores menos sagaces, sino su íntima conexión con el sistema de pagos, a través del cual se podían propagar las consecuencias más adversas de corridas bancarias ineficientes. Concomitantemente, la regulación prudencial solo se extendía hasta donde alcanzaba la cobertura de la red de seguridad. Además, para mitigar aún más el riesgo moral público, el prestamista de última instancia trataba de circunscribirse, por diseño, a situaciones de iliquidez y no de insolvencia.

2.4 LAS LIMITANTES DEL EDIFICIO REGULATORIO PRE-LEHMAN

Visto a posteriori, sin embargo, las dos justificaciones alternativas de la arquitectura regulatoria pre-Lehman nunca fueron satisfactoriamente integradas y dejaron amplios espacios de tensión y de aparente contradicción. Por una parte, un seguro de depósitos limitado parece incongruente con el objetivo de disuadir corridas en un mundo de fallas de acción colectiva —pues son los grandes depositantes no asegurados los que más ágilmente inician una corrida—. Por otra parte, resulta difícil entender porqué las fallas de acción colectiva se tomaban en cuenta solo con respecto al pilar *ex post* de la red de seguridad y no con respecto al pilar *ex ante* de la regulación prudencial. Probablemente, esta última contradicción haya sido la limitante más importante de la arquitectura regulatoria pre-Lehman. De hecho, esta contradicción se agudizó con la expansión durante la gestación de la crisis de actividades no reguladas fuera del perímetro regulatorio *(shadow banking),* las mismas que posteriormente se vieron beneficiadas durante la crisis cuando la red de seguridad financiera se desplegó fuera del perímetro.

9 Esta visión parece haber sido la subyacente en el pensamiento de Alan Greenspan, quien argumentaba que la actividad financiera fuera del perímetro, esencialmente en Wall Street, involucraba a profesionales sagaces y que, por tanto, era mejor no aplicar la regulación prudencial y dejar que la disciplina de mercado opere con toda libertad.

La incongruencia entre la incorporación *ex post* pero no *ex ante* de las fallas de acción colectiva obedece a su vez a que el riesgo agregado no fue un elemento fundamental de la política prudencial, la cual se enfocó principalmente en riesgos idiosincráticos. Aunque se reconocía que los intermediarios financieros podían estar expuestos a riesgos correlacionados y a choques agregados (macroeconómicos, de mercado o naturales), estos últimos se percibían como un componente limitado, exógeno e invariante del entorno global de riesgo. En particular, el concepto de riesgo endógeno omnipresente (o sea, de dinámicas financieras en constante interacción con el riesgo agregado) nunca fue debidamente integrado a la visión del mundo plasmada en la regulación microprudencial tipo Basilea I y II.

La percepción de riesgo sistémico tendía así a limitarse a efectos dominó, esto es, a la posibilidad de que el colapso aislado de una institución pudiese llevar al colapso de otras instituciones. Esta visión, sin embargo, sugería que el sistema financiero podía asemejarse a un castillo de naipes, lo cual es difícil de entender en un mundo en donde se consideraba que los choques y los riesgos agregados solo juegan un papel secundario. Dicha visión explicaba a su vez la tendencia de los reguladores a incurrir en una muy nociva falacia de composición, esto es, en la creencia errónea de que si se conseguía asegurar la solvencia de cada institución individual por separado, se podía asegurar *ipso facto* la solvencia del sistema como un todo.

La agenda pos-Lehman tiene por tanto que transitar por la vía del riesgo agregado, que surge como componente preponderante de la política macroprudencial y como línea divisoria entre los mundos pre y pos-Lehman. Hacia este nuevo mundo nos tornamos ahora.

3 El mundo macroprudencial pos-Lehman: fundamentos conceptuales

La volatilidad agregada (ingrediente necesario —más no suficiente— del sustrato de la política macroprudencial) refleja la acción de riesgos correlacionados, choques agregados o factores comunes (*i.e.,* que afectan a todos o a una parte importante de los contratos y de las actividades del mercado financiero). Estos incluyen choques macroeconómicos, tales como un aumento o una disminución duradera de la tasa de interés, o fluctuaciones en el empleo y en la actividad económica propias del ciclo de negocios; choques de mercado, tales como un descenso generalizado del precio de bienes raíces o la aparición de una importante innovación financiera; o choques naturales, tales como una sequía o un terremoto.

Desde el punto de vista de la política macroprudencial, más que los choques agregados por sí mismos, lo que importa es la manera como estos interactúan con la política pública y con las decisiones de los participantes en el mercado financiero. Estos últimos no operan con completa flexibilidad, sino que están sujetos a reglas de juego definidas en parte por la regulación prudencial. Además, su actuación está restringida por una gama de fricciones reales o financieras, e influida por posibles limitaciones cognitivas (por ejemplo, el tipo de sesgos de comportamiento documentados por los experimentos de *behavioral economics).* La constante interacción entre política regulatoria, choques agregados, fricciones financieras y sesgos cognitivos pueden generar, de manera *endógena,* dinámicas financieras caracterizadas por efectos de persistencia y de amplificación —incluyendo burbujas y crisis—. Mediante esta constante y compleja interacción, el riesgo agregado endógeno puede devenir en acumulación de riesgo sistémico, que constituye la preocupación fundamental de la política macroprudencial.

De acuerdo con esta gran línea divisoria, este artículo propone un marco conceptual que incorpora de entrada el riesgo agregado y aclara la contribución específica a las dinámicas financieras de la racionalidad acotada y de dos tipos de fricciones (fricciones de agencia y fricciones de acción colectiva). Esto da lugar a cuatro ámbitos de política macroprudencial,

LAS CUATRO MOTIVACIONES DE LA REGULARIZACIÓN MACROPRUDENCIAL
El riesgo agregado subyace todas las dimensiones

CUADRO 1

	Fricciones de agencia	Fricciones de agencia + fricciones de acción colectiva
Racionalidad	Inconsistencia temporal	Fallas de acción colectiva
	Mitigar el riesgo moral público originado en la expectativa de salvatajes poscrisis	Inducir la internalización de externalidades
Racionalidad + Ingenuidad	Alineamiento dinámico	Fallas de cognición colectiva
	Alinear incentivos de principal-agente en representación de los ingenuos	Mitigar la exuberancia y el pánico irracional

FUENTE: Elaboración propia.

todos ellos con riesgo agregado, que son coherentes con cuatro paradigmas (o marcos conceptuales interpretativos) relativamente independientes y que permiten identificar cuatro fuentes de inestabilidad financiera y acumulación de riesgo sistémico (véase cuadro 1).

La primera columna del cuadro 1 pone el acento en las fricciones de agencia (información asimétrica y limitaciones a la capacidad de hacer cumplir contratos —*enforcement frictions—)*. La segunda columna mantiene las fricciones de agencia y *añade* efectos de primer orden provenientes de fricciones de acción colectiva (en particular, de externalidades no internalizadas). La primera fila supone que la actividad financiera está dominada por jugadores racionales (los sagaces). La segunda fila *añade* jugadores con racionalidad acotada (los ingenuos o menos sagaces) a la mezcla, esto es, reconoce que la racionalidad acotada puede tener efectos de primer orden en las dinámicas financieras. Nótese que las fricciones financieras y las complicaciones cognitivas se van acumulando en la medida en que las dinámicas financieras se mueven hacia abajo y hacia la derecha del cuadro. El cuadrante derecho, por tanto, es el más denso —en él coexisten e interactúan efectos de primer orden de todas las complejidades mencionadas—.

Surgen de esta manera cuatro motivaciones o justificaciones para la política macroprudencial, todas orientadas a reducir la acumulación socialmente ineficiente de riesgo sistémico, pero de distinta naturaleza. Bajo la primera justificación (cuadrante superior izquierdo), la política macroprudencial se torna necesaria para mitigar el riesgo moral público que surge de un problema de inconsistencia temporal. El Estado no puede comprometerse creíblemente a no intervenir con operaciones de salvamento después de que estalle una crisis financiera porque puede ser socialmente eficiente que así lo haga. La segunda justificación (cuadrante superior derecho) de la política macroprudencial está en la necesidad de inducir a los jugadores racionales del mercado a internalizar mejor el interés social, es decir, a internalizar los costos asociados a las consecuencias sistémicas de sus acciones individuales. La tercera justificación (cuadrante inferior izquierdo) surge de la presencia de jugadores ingenuos en el mercado financiero. Una vez que el Estado se ha comprometido a representar y defender a los jugadores menos sagaces, debe calibrar y recalibrar las normas prudenciales en respuesta a choques agregados, a fin de mantener constantemente alineados los incentivos relevantes a la relación agente-principal. La cuarta justificación (cuadrante inferior derecho) nace por la necesidad de evitar que la acción en manada de jugadores menos racionales *(momentum traders)* termine por dominar el estado de ánimo del mercado, dando pie a un exceso socialmente dañino de exuberancia o pánico irracional.

Nótese que las fricciones de agencia están siempre presentes, bien sea en la superficie o bien en el trasfondo, de los cuatro paradigmas. Proveen la textura necesaria para que los

otros tipos de fricciones y fallas de mercado puedan emerger y desenvolverse. Nótese además que las cuatro motivaciones de política macroprudencial responden precisamente a los grandes desafíos planteados en la sección 1; en particular, al desafío de distinguir apropiadamente, en la acumulación del riesgo sistémico, los efectos diferentes de distintas fallas de mercado, así como los efectos de fallas de política y las consecuencias adversas, pero inevitables, de buenas medidas de política.

El resto de esta sección ofrece una discusión más detallada de estos cuatro ámbitos de política macroprudencial. La discusión enfatiza la intuición y los mensajes relevantes para el debate de política regulatoria. De la Torre e Ize (2013a) ofrecen una cuidadosa revisión de la literatura académica que apuntala la lógica de esta discusión.

3.1 CONSISTENCIA TEMPORAL

El abordaje más sencillo al riesgo sistémico y la regulación macroprudencial proviene de la interacción entre volatilidad agregada y fricciones de agencia. En este mundo relativamente simple (un mundo en el que la racionalidad domina el comportamiento del mercado financiero y las externalidades no internalizadas no juegan un papel preponderante), la volatilidad financiera puede volverse importante porque la interacción de choques agregados significativos con fricciones de agencia puede dar lugar a dinámicas endógenas con efectos de persistencia y amplificación no lineal (es decir, grandes fluctuaciones en respuesta a pequeñas perturbaciones). Estas dinámicas pueden terminar causando crisis financieras. Por ejemplo, un choque agregado positivo de oferta (una innovación financiera) puede echar a andar la fase ascendente del ciclo crediticio al aliviar las restricciones de colateral, amplificando así una expansión de crédito apalancado. De manera análoga, un choque negativo de oferta (por ejemplo una recesión económica originada en la caída de los términos de intercambio) puede luego causar la fase descendente del ciclo al destruir el valor del colateral que es necesario para el crédito, echando así a andar una espiral de reducción de crédito con ventas apresuradas de activos *(firesales).*

Sin embargo, en línea con el razonamiento desarrollado en la sección 2.1, en ausencia de externalidades no internalizadas, este tipo de volatilidad podría ser «eficiente dadas las restricciones», ya que el Estado no tiene ventajas comparativas duraderas —ni de información ni de *enforcement*— sobre el sector privado para mejorar la situación a través de la política macroprudencial.

Se podría argumentar que es imposible separar este mundo de inestabilidad financiera eficiente de uno en el que la volatilidad es socialmente ineficiente, por la misma razón por la que es imposible evitar que surjan problemas de externalidades una vez que existen fricciones de agencia. Ciertamente, externalidades no internalizadas de un tipo u otro estarán siempre presentes en el trasfondo como resultado de fricciones de agencia[10]. Sin embargo, distinguir entre estos dos paradigmas (es decir, separar el cuadrante superior izquierdo del superior derecho en el cuadro 1) es importante, inclusive por razones

10 En particular, las externalidades pecuniarias surgirán tan pronto existan fricciones de agencia. En efecto, si un consumidor demanda más manzanas (un ítem comerciable), el incremento resultante en el precio de las manzanas reduce el bienestar de los demás consumidores, pero eleva el de los productores. Como todos tienen la misma utilidad marginal, los efectos se compensan en el agregado. Sin embargo, con restricciones de agencia, este ya no es el caso porque la utilidad marginal de los participantes sujetos a restricciones es más alta que la de los participantes no sujetos a restricción. En el caso del mercado crediticio, la utilidad marginal del crédito para un deudor sujeto a restricciones de agencia —por ejemplo, por escasez de colateral— es mayor que la de un acreedor, o que la de un deudor con abundancia de colateral. De esta forma, el endeudamiento marginal de un deudor puede tener externalidades negativas significativas porque exacerba las restricciones crediticias para los demás deudores, reduciéndose así la utilidad marginal (por tanto, el bienestar) de estos deudores más que lo que se eleva la utilidad marginal de los acreedores.

prácticas y no solo conceptuales. En efecto, choques de tamaño suficiente pueden sobrepasar la capacidad amortiguadora de un sistema financiero y producir una crisis, aun cuando el sistema posea de manera voluntaria colchones prudenciales (capital, provisiones, liquidez) socialmente adecuados, o sea, aun si las externalidades estuvieran plenamente internalizadas. El argumento de fondo es que parte de la volatilidad que afecta a los mercados financieros tiene que ser eficiente porque corresponde a remotos «riesgos de cola,» es decir, a choques muy grandes pero muy infrecuentes (análogos a inundaciones que ocurren solo una vez cada siglo) contra los cuales *no es socialmente deseable protegerse.* Los costos sociales de cubrirse contra los efectos de esos eventos (por ejemplo, construyendo ciudades solo en sitios en donde nunca haya inundaciones) simple y sencillamente rebasan sus beneficios sociales.

Este tipo de reflexiones —que esbozan el espacio para un tipo de inestabilidad financiera que es socialmente eficiente pese a registrar fluctuaciones grandes— ayudan a comprender de mejor manera el primer gran desafío de la política macroprudencial mencionado en la sección 1. En efecto, si las fricciones que están detrás de la volatilidad financiera agregada son principalmente de agencia (es decir, si no hay razones ni evidencia para pensar que hay problemas importantes de externalidades o de exuberancia o de pánico irracional), el regulador debe ser cauteloso y evitar ajustar las tuercas regulatorias, pues ello no ayudaría a mejorar las cosas y más bien tendería a agravarlas.

Sin embargo, el regulador tendrá de todos modos que estar atento a la posibilidad de que un ciclo financiero amplificado se deba, más bien, al riesgo moral público —es decir, a una tendencia generalizada de entrar en apuestas financieras sesgadas *(one-sided bets)* por la expectativa de obtener grandes ganancias si la apuesta sale bien y pasarle la cuenta al seguro de depósitos (en última instancia, al Gobierno) si sale mal. Este fenómeno de riesgo moral público puede surgir porque puede ser que el Gobierno se vea obligado —en aras del bien público— a rescatar al sistema financiero en caso de una crisis. En efecto, aun en ausencia de externalidades no internalizadas, el Estado tiene claras ventajas comparativas sobre los mercados para acelerar la recuperación económica después del estallido de una crisis. Esto es así, en particular, por la capacidad que tiene el Estado de cobrar impuestos, lo cual le permite emitir deuda libre de riesgo y, así, resolver, mediante operaciones de prestamista de última instancia, las escaseces sistémicas de liquidez que los intermediarios financieros afectados por restricciones de capital, colateral o información no pueden hacer a través del mercado. Por la misma razón, el Estado puede también ayudar a recapitalizar a intermediarios financieros vía operaciones de absorción de riesgo de última instancia.

Si todas estas intervenciones poscrisis pudieran enfocarse para apoyar únicamente a las instituciones solventes, se podría quizás evitar introducir distorsiones que promuevan el riesgo moral. Sin embargo, el Estado siempre tendrá dificultades para separar nítidamente los problemas de solvencia de los problemas de liquidez, más aun en medio de una crisis, cuando los problemas de información asimétrica se magnifican. Por estas razones, las intervenciones poscrisis no pueden evitar que haya, de manera sistemática, algún grado de rescate. Sin embargo, estas intervenciones pueden ser óptimas *ex post* (porque reducen el costo social de una crisis y aceleran la recuperación económica y financiera), mas no *ex ante* (porque distorsionan incentivos a la toma de riesgo, elevando así la probabilidad de una crisis y magnificando las expectativas de un subsecuente rescate). De ser así, estas intervenciones crean un problema de inconsistencia temporal. Si el Estado pudiera comprometerse creíblemente a evitar cualquier intervención *ex post,* por costosa que sea la

crisis, podría optar por un sistema sin regulación prudencial *(free banking).* Sin embargo, dado que estas intervenciones pueden tener beneficios sociales que son de primer orden, es imposible que el Estado pueda creíblemente comprometerse a no intervenir.

Por tanto, alguna combinación de intervenciones poscrisis y política macroprudencial precrisis es una alternativa socialmente superior. Ello da pie a una justificación sólida para una política macroprudencial orientada a mitigar el riesgo moral publico asociado a la expectativa de intervenciones poscrisis que bien podrían ser socialmente deseables. Esta primera variante de la política macroprudencial, que se puede definir como de *consistencia temporal,* tiene que actuar en dos frentes. En primer lugar, tiene que mejorar la eficiencia de las intervenciones poscrisis para limitar lo más posible los rescates indebidos y exagerados. En particular, debe mejorar la calidad del marco de resolución de quiebras bancarias, de tal forma que suficiente capital privado adicional pueda ser rápidamente atraído hacia las instituciones que lo necesiten y que se puedan aplicar los recortes correspondientes necesarios *(haircuts)* a accionistas y acreedores. En segundo lugar, este tipo de política macroprudencial debe concentrarse en poner un precio adecuado a la red de seguridad financiera a fin de desanimar el riesgo moral público. Dicho precio puede tomar varias formas, incluyendo requerimientos sistémicos de liquidez que limiten la posibilidad de *free-riding,* o techos al apalancamiento que limiten el beneficio potencial de un rescate.

3.2 ACCIÓN COLECTIVA

Consideremos ahora el entorno más rico en donde los participantes del mercado financiero ya no son capaces de internalizar externalidades negativas (debido a fricciones de acción colectivas), pero siguen siendo perfectamente racionales. Como en las corridas bancarias tipo Diamond-Dybvig, las externalidades no internalizadas pueden llevar a una falla de coordinación y desencadenar dinámicas de grupo tan repentinas como violentas, en las que el interés privado diverge del social. Las fallas de acción colectiva suelen también exacerbar los efectos de amplificación, tanto en las dinámicas precrisis —cuando se acumulan progresivamente las tensiones y el riesgo sistémico por la vía de un apalancamiento creciente— como en las dinámicas poscrisis, cuando se liberan repentinamente estas tensiones vía desapalancamientos dolorosos, ventas apresuradas de activos *(firesales),* ajustes de márgenes *(margin calls),* etc. Se agravan de esta forma los costes sociales de las crisis financieras, los cuales pueden incluir los efectos en cadena de cierres de bancos o fallas en el sistema de pagos. En todos los casos, la falta de internalización de externalidades hace que falle la mano invisible, ya que los participantes no toman en cuenta las consecuencias sistémicas de sus acciones individuales. La volatilidad financiera es, por lo tanto, ahora excesiva o ineficiente desde el punto de vista social.

Es posible identificar al menos cuatro tipos de fallas de acción colectiva (externalidades negativas no internalizadas):

— *Externalidades pecuniarias*: derrames *(spillovers)* de precios («yo hago, tú te perjudicas») que se producen durante épocas de crisis como resultado de ventas apresuradas de activos y restricciones crediticias, cuyo efectos sociales adversos no fueron internalizados durante la fase ascendente del ciclo.

— *Externalidades de comportamiento*: fallas de coordinación («yo hago, tú me sigues») que resultan en corridas letales, que funcionan como profecías autocumplidas, a la Diamond-Dybvig, o en la prolongación de dinámicas socialmente nocivas, a la Chuck Prince, en donde todos los participantes siguen alimentando la burbuja a corto plazo, pese a que saben que es insostenible a largo plazo.

— *Externalidades de información*: efectos de *free riding* («yo hago, tú te beneficias sin pagar ni esforzarte») que conllevan a la subproducción de información y/o a cascadas de información con efectos adversos de derrame (por ejemplo, la adopción generalizada del mismo modelo de evaluación de riesgo; o una corrida contra un banco solvente en respuesta a la información que podría estar sugerida por la quiebra de otro banco, etc.).

— *Externalidades de interconexión*: efectos adversos de red («me muero, te mueres») que no son internalizados por los participantes en la red (quiebras en cadena por interdependencias entre balances, paralización financiera al destruirse algunos nódulos claves de la red, destrucción de información, interrupción de flujos de pagos, etc.).

En todos los casos, las externalidades no internalizadas ponen al descubierto varias falacias de composición, tales como, la falacia de que el sistema financiero como un todo no es nada más que la suma de sus componentes; la falacia de que cada institución financiera puede usar al mismo tiempo una fuente común de liquidez, o la falacia de que la acumulación de seguros individuales fortalece al sistema como un todo. Las externalidades no internalizadas, además, intensifican el riesgo moral público. Al elevarse los beneficios sociales de operaciones de rescate postcrisis, se elevan también los incentivos para tomar más riesgo y pasar la cuenta al Estado. En particular, las externalidades de interconexión incentivan a que los bancos se vuelvan «sistémicamente importantes» o «demasiado grandes o interconectados para quebrar». Además, cuanto más se profundizan los mercados financieros, más aumentan los incentivos de hacer un *free riding* en la liquidez y en información ofrecidas sin costo por los mercados más densos. Esto promueve el sesgo de los inversionistas hacia mantener activos líquidos y salirse de ellos temprana y preventivamente cuando sea necesario, en vez de adquirir activos de más larga duración y apoyarse más bien en un monitoreo más intenso y continuo de la calidad de estos activos, generando así más beneficios sociales.

Al dar lugar a equilibrios y dinámicas socialmente ineficientes, las externalidades negativas no internalizadas justifican un nuevo tipo de política macroprudencial, que definimos como de *acción colectiva.* Esta variante apunta a corregir las fallas de mercado precisamente donde el Estado tiene una clara ventaja comparativa—esto es, en resolver fallas de acción colectiva—. Esta política está por lo tanto orientada más hacia el sistema que a sus partes individuales, y busca coordinar comportamientos en forma socialmente deseable mediante la internalización de externalidades. Al mismo tiempo, ofrece nuevos argumentos para darle un precio socialmente apropiado a la red de seguridad de forma que mitigue el riesgo moral público.

La respuesta de la política macroprudencial no es independiente, sin embargo, del tipo de externalidad. Impuestos pigouvianos y/o normas regulatorias (tales como requerimientos de capital o de liquidez sistémica) que buscan alinear los costos individuales y sociales (penalizando, por ejemplo, una expansión excesiva de crédito financiado por fondeo mayorista de corto plazo) parecen ser los instrumentos más apropiados para lidiar con las externalidades pecuniarias. Medidas de control de muchedumbres, tales como interruptores *(circuit breakers)* que suspenden las transacciones de mercado en circunstancias excepcionales, o normas prudenciales que fortalezcan la creación de colchones sistémicos, parecen ser las más apropiadas para lidiar con las externalidades de comportamiento. En cambio, las externalidades de información justifican que el Estado ofrezca (como un bien publico) información sistémica de manera regular (por ejemplo, mediante los informes de estabilidad financiera que un número creciente de bancos centrales publica), así

como la promulgación de normas de transparencia o la supervisión oficial de agencias privadas de *rating.* Finalmente, las externalidades de interconexión justifican naturalmente políticas macroprudenciales enfocadas a influir en la estructura del sistema financiero, tales como límites al tamaño de las instituciones y/o a su huella sistémica, normas de segmentación de mercados (como la regla propuesta por Volcker, que separa la banca comercial de la banca de inversión), o incentivos para fomentar la diversidad ecológica del sistema financiero (de actores, intermediarios, carteras, etc.).

Es importante notar, sin embargo, que cuanto más se internalicen las externalidades dentro del perímetro regulado, más crecen los incentivos para operar fuera de este perímetro, lo cual erosiona su viabilidad. Si bien los participantes de mercado más sagaces que actúan fuera del perímetro van a disciplinarse unos a otros para resolver fricciones de agencia, no van a internalizar espontáneamente los costos sociales de sus acciones individuales. Lo más sensato es suponer más bien que van a concentrarse en administrar óptimamente sus opciones de riesgo y de retorno desde el punto de vista de sus intereses individuales. La brecha entre el interés privado y el social se vuelve, de esta forma, congruente con una brecha de rentabilidad entre el mundo regulado (dentro del perímetro, en donde de alguna manera las regulaciones prudenciales inducen a los jugadores a «pagar» por el costo social asociado con la creación de riesgo sistémico) y el no regulado (fuera del perímetro, en donde las decisiones individuales pueden originar riesgo sistémico sin pagar por ello), que fomenta el desarrollo de un mundo financiero desregulado paralelo *(shadow banking).* Sin embargo, no obstante propagarse inicialmente en las afueras del perímetro regulatorio, el riesgo sistémico puede eventualmente afectar —por vía de interconexiones de mercado o de balances— no solo a las entidades financieras fuera del perímetro, sino a las que hayan quedado dentro del perímetro[11].

3.3 ALINEACIÓN DINÁMICA

Considérense ahora las consecuencias de introducir jugadores con racionalidad acotada (los ingenuos o menos sagaces) en un mundo dominado por la volatilidad agregada y las fricciones de agencia. Regresamos, por tanto, al mundo en el que no hay fallas de acción colectiva o, si las hubiese, no tienen efectos de primer orden. En contraste con el mundo pre-Lehman de riesgo idiosincrático y depositantes con racionalidad acotada, los choques y la volatilidad agregados hacen ahora surgir un mundo de riesgo sistémico en donde el potencial de abuso de los ingenuos por los sagaces se acrecienta enormemente —potenciando de manera significativa los problemas de «manipulación y engaño» que Akelrof y Shiller (2013) examinan en *Phishing for Phools—.* Incluso en ausencia de externalidades no internalizadas, los choques agregados, al afectar a todos los intermediarios al mismo tiempo, pueden hacer que todos sigan dinámicas semejantes y paralelas que los lleven a quebrar al mismo tiempo.

Bajo estas circunstancias, y en línea con la discusión en la sección 2.1, el Estado debe actuar en representación de los poco sagaces y protegerlos, pero ahora tomando en cuenta los efectos de los choques agregados. Un choque agregado puede desalinear los incentivos de agente-principal en prejuicio de los ingenuos. Mientras que los principales más sagaces harían los ajustes necesarios a las garantías que piden de sus agentes, los principales menos sagaces no lo harían y podrían por tanto volverse víctimas del abuso de agentes más sagaces. La inestabilidad sistémica «excesiva» (desde el punto de vista social) reflejaría, en este caso, no fallas de mercado *per se* sino fallas de política, esto es, el

11 De hecho, es muy difícil entender la rápida expansión del *shadow banking* en el período previo a la gran crisis financiera global que estalló a fines de 2008 sin tomar en serio el problema de las externalidades no internalizadas. Véase al respecto De la Torre e Ize (2010a).

hecho de que el regulador no ajuste la regulación prudencial oportunamente, de forma que mantenga los intereses de los principales menos sagaces continuamente alineados con los intereses de sus agentes.

El hecho de que las fallas de política prudencial puedan ser fuente de inestabilidad financiera socialmente ineficiente puede ilustrarse con varios ejemplos. Primero, considérese el caso de un regulador que no aprieta los requerimientos prudenciales en respuesta a un *boom* crediticio alimentado por el choque de una innovación financiera. Al elevarse el *upside* para el acreedor en relación con los posibles *downsides,* este choque crea condiciones bajo las cuales los bancos tienen, *demasiado que ganar* cuando toman riesgo, lo cual intensifica el *boom* de crédito. Como segunda ilustración, considérese el caso de un regulador que otorga tolerancia *(forbearance)* regulatoria después de un choque agregado que destruye buena parte del capital bancario. Esto puede hacer que los bancos, al *no tener nada que perder,* estén demasiado dispuestos a «apostar por su resurrección» y, por ende, a entrar en operaciones de crédito cada vez más temerarias. Como tercer ejemplo, considérese una recesión que debilite la capacidad de pago de los deudores. Si el regulador no está dispuesto a aceptar, aunque sea transitoriamente, niveles más bajos de capital (para permitir que los colchones de capital funcionen realmente como tales), los bancos podrían tener *demasiado que perder* al prestar, lo cual crearía un *crunch* crediticio socialmente excesivo.

Vale la pena notar que el problema de base en todos los ejemplos mencionados es la incompetencia o la dejadez del regulador prudencial. La falla de política refleja el hecho de que un choque agregado encuentra al regulador prudencial «dormido sobre el timón.» Este paradigma es, por tanto, el que más se presta para responder al segundo gran desafío de la política prudencial mencionado en la sección 1, a saber: la necesidad de distinguir entre la inestabilidad financiera causada principalmente por fallas de mercado y la inestabilidad financiera engendrada por fallas de política. En efecto, una vez que el regulador ha decidido representar a los poco sagaces en un mundo de riesgo puramente idiosincrásico, se vuelve automáticamente responsable por asumir esta función en forma efectiva y proactiva en un mundo de riesgo agregado. El no desempeñar bien sus funciones puede amplificar de una forma socialmente excesiva las fluctuaciones financieras agregadas.

Además, dada la presencia del seguro de depósitos (cuyo objetivo es también proteger a los depositantes poco sagaces), la inacción del regulador frente a un choque agregado puede intensificar el riesgo moral público. Los jugadores sagaces, en vez de retirar sus depósitos tan pronto como un intermediario financiero empiece a tomar demasiado riesgo, pueden más bien decidir quedarse y hacer apuestas asimétricas de riesgo. Mientras las cosas sigan andando bien, se benefician del *upside.* Cuando las cosas empiecen a verse mal, se pueden salir con sus ganancias, dejándole las pérdidas al seguro de depósitos. Esto es posible porque los inversionistas ingenuos, al estar cubiertos por el seguro, no tienen por qué sacar sus depósitos. De esta forma, aunque los grandes (y sagaces) inversionistas no estén formalmente cubiertos por el seguro de depósitos, pueden acabar beneficiándose de él. Un problema de riesgo moral privado —el potencial abuso de los ingenuos por parte de los sagaces— acaba así tornándose en un problema de riesgo moral público en donde todos (incluyendo los intermediarios financieros) se acaban aventajando a costa del erario público.

Esto justifica un tercer paradigma de política macroprudencial, que definimos como de *alineación dinámica.* Para mantener los incentivos de agentes y principales continuamente

alineados en un mundo en constante movimiento, el regulador tiene que calibrar y recalibrar la regulación y/o supervisión prudencial en respuesta a fluctuaciones cíclicas o choques agregados. Como en el caso de la regulación microprudencial, el regulador macroprudencial continua enfocándose en este mundo pos-Lehman en los incentivos de agencia y en los intermediarios individuales más que en las interacciones sistémicas. Sin embargo, esta política puede legítimamente ser definida como macroprudencial porque, a pesar de enfocarse en incentivos (microeconómicos) de agente-principal, responde a choques agregados y a factores macro que pueden, eventualmente, socavar la salud del sistema financiero como un todo.

El conjunto de instrumentos y políticas apropiadas a esta variante de regulación macroprudencial podría, por lo tanto, incluir una mezcla de normas contracíclicas (por ejemplo, normas contracíclicas de provisiones o capital), normas contingentes (por ejemplo, exigencias capital para contingencias o la compra obligatoria de seguros), y ajustes normativos discrecionales (activismo regulatorio). Dado el énfasis sobre los incentivos de agencia, estas normas tendrían que ser respaldadas por una contabilidad *mark-to-market,* requerimientos de provisiones *forward-looking* y sistemas de compensación para gerentes financieros y responsables del manejo de activos orientadas hacia el más largo plazo. Para combatir el riesgo moral público y para alinear los intereses de los agentes más sagaces con los del erario público, el regulador macroprudencial también debería ponerle un precio apropiado al seguro de depósitos, incluso por la vía de requerimientos adicionales de capital. Esta vasta agenda regulatoria constituye la parte medular de Basilea III.

3.4 COGNICIÓN COLECTIVA

Finalmente, consideremos los efectos de añadir problemas de racionalidad acotada a un mundo de volatilidad agregada ya complicado por fricciones tanto de agencia como de acción colectiva. La presencia de racionalidad acotada implica la coexistencia de un grupo de arbitradores racionales y otro de jugadores menos racionales *(momentum traders).* Dadas las fallas de acción colectiva, los *momentum traders* —llevados por sus sesgos cognitivos— pueden acabar socavando el bienestar de los arbitradores racionales (además del suyo propio). La coexistencia de estos dos grupos de jugadores debería en principio promover el arbitraje. Sin embargo, los arbitradores racionales pueden ser incapaces de parar la ola originada por los *momentum traders,* debido a que dichos arbitradores están limitados en su capacidad de movilizar fondos, ya sea debido a fricciones de agencia (por ejemplo, insuficiencia de colateral) o a fricciones de acción colectiva (externalidades no internalizadas, fallas de coordinación, problemas de *free-riding).* De esta forma, los *momentum traders* pueden terminar dominando los mercados financieros, imponiendo una externalidad negativa sobre todos. Pueden generarse así saltos masivos e irracionales en los estados de ánimo del mercado *(animal spirits),* eso es, brotes de exuberancia seguidos por espirales de pánico, sin que los jugadores racionales puedan hacer nada al respeto. La presencia de incertidumbre irreducible (knightiana) complica aún más las cosas en estas circunstancias, exacerbando las oscilaciones en los estados de ánimo del mercado.

En este cuarto paradigma, los equilibrios y las dinámicas de mercados son obviamente ineficientes desde el punto de vista social y justifican, por lo tanto, un cuarto tipo de regulación macroprudencial, que definimos como de *cognición colectiva.* Esta variante está enfocada a moderar los saltos irracionales en los estados de ánimo del mercado y así tratar de mantener congruencia entre las trayectorias y las dinámicas de los mercados financieros y los factores fundamentales. Esta variante de la política macroprudencial se justifica no porque los reguladores sean más racionales que los jugadores del mercado, sino porque pueden resolver problemas de acción colectiva mejor que los arbitradores racionales.

El problema, claro está, es que la racionalidad acotada no se presta fácilmente al modelaje teórico ni responde en forma previsible a medidas políticas. El instrumental de política macroprudencial más apropiado para el caso incluye, por lo tanto, regulaciones sub-óptimas *(second-best)* y discrecionales. Lo que importa en caso de grandes oscilaciones en los estados de ánimo del mercado es que estos instrumentos actúen en forma potente, aunque sea de manera aproximada y con costos de eficiencia. Este instrumental puede incluir requerimientos de encaje o restricciones cuantitativas al crédito. Estás últimas pueden tomar la forma de techos normativos a la ratio de deuda-a-ingreso *(debt-to-income ratio)* o a la ratio de préstamo-a-valor *(loan-to-value ratio).*

Controles sobre la innovación financiera pueden también ser útiles para limitar efectos adversos de cognición colectiva que no puedan ser contenidos mediante normas prudenciales o de protección al consumidor tradicionales. Sin dichos controles, la adquisición de productos financieros radioactivos por parte de inversionistas ingenuos podría dar lugar a una rápida acumulación de riesgo sistémico. Este problema puede surgir tanto dentro como fuera del perímetro regulatorio tradicional. Dado el sesgo de retornos en favor del mundo no regulado, todos los agentes, incluyendo los menos sagaces, tienen incentivos para escaparse del perímetro regulado. Por tanto, el desarrollo efervescente de actividad financiera desregulada *(shadow banking)* puede socavar totalmente la protección tradicional al consumidor enfocada al interior del perímetro regulatorio. Políticas alternativas de aprobación y de control de innovaciones financieras, aplicadas tanto dentro como fuera del perímetro de regulación prudencial, pueden así justificarse para asegurar que los productos financieros al alcance de los inversionistas menos sagaces sean «sanos» y «justos».

4 El mundo macroprudencial pos-Lehman: respuestas de política

La tipología utilizada para construir el cuadro 1 ayuda a entender y a poner en perspectiva las grandes crisis financieras. Por ejemplo, la crisis del sistema de ahorro y crédito (S&Ls) de Estados Unidos en los años ochenta fue un caso claro de riesgo moral y fallas de alineación dinámica. En cambio, los pánicos bancarios del siglo XIX pueden atribuirse principalmente a fallas de acción colectiva, aunque aquí la evidencia sea un poco menos contundente. Por otra parte, es muy difícil entender la reciente crisis financiera global en todas sus aristas y manifestaciones sin recurrir a una mezcla de los cuatro paradigmas macroprudenciales discutidos previamente[12].

Por supuesto, la lección más importante, pero también más desafiante, de la crisis reciente es que el marco regulatorio tendrá en el futuro que integrar en una forma razonablemente equilibrada estas cuatro dimensiones. El riesgo de caer en una arquitectura desequilibrada como la que imperó en la época pre-Lehman es grande. No es sensato, por tanto, escoger el paradigma que más le plazca a uno e ignorar o negar la existencia de los otros tres. De hecho, se han dado pasos importantes para incorporar en la agenda macroprudencial las lecciones de la crisis, de acuerdo a cada uno de los cuatro paradigmas, aunque —como veremos más adelante— el grado de progreso ha sido mayor en unas dimensiones que en otras.

Sin embargo, considerando los desafíos, no conviene sobrestimar el progreso. En particular, la agenda macroprudencial se ve fuertemente complicada porque —como se discutió en la sección 3— distintos tipos de imperfecciones de mercado o falencias de política tienen efectos distintos sobre la acumulación de riesgo sistémico y, por ende, requieren acciones

12 Véase De la Torre e Ize (2010a).

de política macroprudencial diferentes, aunque las fluctuaciones financieras observadas sean parecidas. Se ve complicada, más aún, por tensiones y *trade-offs* que surgen del hecho de que las regulaciones macroprudenciales orientadas a mitigar los problemas asociados con uno de los cuatro paradigmas pueden agravar aquellos asociados con otro paradigma.

Lo que resta de esta sección examina brevemente estas cuestiones en dos acápites. El primero evalúa cualitativamente y de manera muy somera el progreso hecho hasta ahora en el desarrollo de la política macroprudencial. El segundo pasa revista a las principales tensiones y *trade-offs* entre paradigmas.

4.1 LA REFORMA REGULATORIA HASTA AHORA: UNA EVALUACIÓN ABREVIADA

El cuadro 2 presenta una evaluación sintética del progreso regulatorio poscrisis a la luz del marco conceptual presentado en este artículo. Para el efecto, ofrece una lista de acciones de política macroprudencial apropiadas a cada uno de los cuatro paradigmas y les otorga una calificación que va de A (para denotar máximo progreso) a F (para denotar mínimo progreso).

Queda claro que donde ha habido más progreso es en la regulación macroprudencial de *alineamiento dinámico.* En efecto, Basilea III ha hecho importantes contribuciones para reducir la prociclicalidad de las normas prudenciales. También se ha avanzado bastante en la introducción de provisiones prospectivas *(forward-looking),* esto es, enfocadas en las pérdidas esperadas más que en las pasadas. Al mismo tiempo, las autoridades de Estados Unidos han hecho progresos importantes en materia de protección al consumidor, particularmente para evitar el tipo de abusos en el otorgamiento de crédito que llevó a la proliferación de préstamos *sub-prime.* En donde se ha logrado mucho menos hasta ahora es en el diseño de normas sobre la remuneración o compensación salarial, tales que induzcan a gerentes de instituciones financieras y administradores de fondos a tomar en cuenta horizontes más largos, evitando así exacerbar trayectorias financieras insostenibles.

El progreso también ha sido importante, aunque relativamente menor, en cuanto a la política macroprudencial de *acción colectiva.* En particular, Basilea III ha hecho avances en el tema de los requerimientos sistémicos de liquidez y las autoridades norteamericanas han dado pasos importantes en la regulación de las entidades sistémicamente importantes. Mucho (sino todo) queda por hacer, sin embargo, en relación con la definición del perímetro

TARJETA DE PUNTUACIÓN DEL AVANCE DE LA AGENDA MACROPRUDENCIAL

CUADRO 2

	Fricciones de agencia	Fricciones de agencia + fricciones de acción colectiva
	Inconsistencia temporal	Fallas de acción colectiva
Racionalidad	Precio a la red de seguridad financiera F	Impuestos pigouvianos F
	Eficiencia de resolución de quiebras C+	Requisitos de liquidez sistémica B
		Restricciones a la estructura financiera C
		Perímetro regulatorio F
	Alineamiento dinámico	Fallas de cognición colectiva
Racionalidad + Ingenuidad	Normas contracíclicas B	Arreglos institucionales B
	Provisiones *foward-looking* B	Información sobre estabilidad sistémica B
	Remuneración con horizontes largos F	Restricciones cuantitativas al crédito C
	Protección (sistémica) al consumidor B	Controles a la innovación financiera F

FUENTE: Elaboración propia.

regulatorio. El debate sobre el perímetro tiene en la actualidad poca estructura conceptual[13]. Y pese a su popularidad entre académicos, los impuestos pigouvianos constituyen en lo esencial *terra incognita* para los reguladores.

En cuanto a la política macroprudencial de *cognición colectiva,* se puede decir que el progreso más visible ha sido en relación con los nuevos arreglos institucionales y organizativos para la supervisión sistémica, incluyendo la creación de comités para la estabilidad financiera. Si bien estos arreglos son relevantes para las cuatro dimensiones de la política macroprudencial, son especialmente importantes para lidiar con problemas de exuberancia o de pánico irracional pues facilitan y legitiman un estilo de regulación y supervisión sistémica proactiva y discrecional, pero no arbitraria y más bien basada en el buen juicio de las autoridades financieras. Además, se ha verificado mucho progreso en la publicación por parte de un número creciente de bancos centrales de informes de estabilidad financiera. De hecho, esta sana tendencia se materializó incluso antes de la reciente crisis financiera global. Sin embargo, no hay todavía instrumentos robustos y probados para controlar las oscilaciones excesivas en los estados de ánimo del mercado en los sistemas financieros profundos.

Finalmente, en lo que se refiere a la política macroprudencial de *consistencia temporal,* se ha avanzado en el lado *ex post.* Muchos países están embarcados en importantes reformas legales y regulatorias de los marcos de resolución de intermediarios financieros insolventes, que incluyen interesantes innovaciones para asegurar que los accionistas sean los primeros en absorber costos y en reducir el componente de salvamento *(bailout)* a acreedores. Entre estas está la idea de requerir a las instituciones sistémicamente importantes que mantengan en sus balances un mínimo de deuda que pueda someterse a quitas —*bailin-able debt* o *contigent converible bonds*— en caso de quiebra. Sin embargo, nada sustancioso se ha podido hacer hasta ahora del lado *ex ante.* En particular, la crisis global no parece haber movido el debate que ya existió en el tiempo pre-Lehman sobre la aplicación de primas de seguro de depósitos en base al riesgo. Y si bien los nuevos requisitos de capital pueden fungir como parte del precio de acceso al prestamista de última instancia, este tema no se ha puesto visiblemente sobre la mesa del debate actual. Esto es sorpresivo si se toma en cuenta que en los momento más álgidos de la crisis global los bancos centrales de Estados Unidos y de Europa ampliaron agresivamente sus apoyos de liquidez hacia los mercados de capital, esto es, hacia entidades que operaban fuera del perímetro de la regulación prudencial.

4.2 VIENDO HACIA ADELANTE: TENSIONES Y *TRADE-OFFS* REGULATORIOS

Este progreso desigual en la agenda macroprudencial refleja en buena medida el hecho de que en donde se ha avanzado más hasta la fecha es donde había menos desviaciones de fondo con respecto al edificio regulatorio pre-Lehman, como por ejemplo en el caso de la alineación dinámica[14]. Sin embargo, conforme la agenda macroprudencial empiece a tocar temas más novedosos —por ejemplo, la internalización de externalidades vía impuestos pigouvianos—, el ritmo de progreso va, probablemente, a volverse más lento y difícil. Superar los obstáculos va a requerir enfrentar cada una de las tres brechas entre teoría y política mencionadas en la introducción.

En primer lugar, los hacedores de política van a tener que entender mejor cuándo y hasta qué punto la volatilidad financiera es «ineficiente dadas las restricciones» y, por tanto,

13 Véase al respecto De la Torre e Ize (2010b).

14 Además, los sistemas financieros de las economías avanzadas se encuentran aún en una fase de desapalancamiento y en un proceso de reversión de las intervenciones masivas que acontecieron durante la crisis. Esto limita los incentivos para introducir reformas más profundas de las políticas macroprudenciales, ya que estas son preventivas por naturaleza.

justifica las intervenciones macroprudenciales. En segundo lugar, va a ser necesario identificar mejor las fricciones y fallas específicas que están detrás de la acumulación de riesgo sistémico, ya que distintas fallas requieren el uso de distintos instrumentos macroprudenciales. Esta tarea se complica por el hecho de que síntomas observables similares pueden esconder causas muy diferentes y que no son directamente observables. La ayuda de la comunidad académica debería, por lo tanto, ser especialmente valiosa para identificar y cuantificar más sistemáticamente los factores subyacentes a la volatilidad financiera socialmente excesiva. En particular, sería de gran ayuda si las externalidades pudieran ser incorporadas más formal y sistemáticamente en los modelos teóricos, de manera que provean una mejor idea de la importancia de su impacto sobre el bienestar social. En la actualidad sigue siendo demasiado frecuente el caso de modelos de volatilidad financiera que combinan fricciones (o fuentes de volatilidad) de distinta índole y de manera *ad hoc,* sin que esté claro cuál es la contribución relativa de distintas fallas de mercado o de política.

En tercer lugar, los hacedores de política tendrán que encontrar un equilibrio adecuado entre políticas orientadas a resolver diferentes tipos de fallas de mercado. Esto es primordial porque las acciones regulatorias orientadas a mitigar los problemas de agencia y el riesgo moral público, si bien tienden a fortalecer la disciplina de mercado, tienden a su vez a exacerbar los problemas de acción colectiva y de exuberancia o pánico irracional. A manera de ilustración, a continuación se examina brevemente una selección de ejemplos de este tipo de tensiones y *trade-offs.*

— Regulaciones que penalicen el fondeo mayorista de corto plazo pueden ser deseables en la medida en que ayuden a internalizar las externalidades negativas asociadas con corridas sistémicas y riesgos de liquidez, limitando así las fallas de acción colectiva. Sin embargo, esas mismas regulaciones pueden exacerbar las fallas de agencia al erosionar la capacidad que de otro modo tendrían los principales para disciplinar mejor a sus agentes con la amenaza de retirar sus fondos.

— El requisito de contabilizar los activos continuamente a precios de mercado *(mark-to-market accounting)* puede tener impactos similarmente conflictivos. Por una parte, ayudan a los principales a monitorear mejor a sus agentes, fortaleciendo así la disciplina de mercado. Pero, por otra parte, pueden exacerbar el sobreapalancamiento en la fase ascendente del ciclo crediticio y el riesgo de corridas contra el sistema en su parte descendente. Pueden también amplificar los excesos financieros asociados a la exuberancia o al pánico irracional.

— Los controles sobre las instituciones financieras sistémicamente importantes —ya sea porque son «muy grandes para caer» o «muy interconectadas para caer»— son recomendables para limitar el impacto de las externalidades negativas de interconexión. Su contribución potencial a un sistema financiero más robusto, sin embargo, puede ser a expensas de subir los costos y de reducir la eficiencia de los servicios financieros. Además, dichos controles parecerían ser inefectivos para lidiar con vaivenes irracionales en los estados de ánimo de los mercados.

— Impuestos pigouvianos sobre el crédito pueden ciertamente inducir a internalizar las externalidades negativas asociadas a la sobreexpansión del crédito. Pero incluso si reducen el volumen de crédito, pueden aumentar el riesgo. Considérese, por ejemplo, el uso del encaje no remunerado (*i.e.,* un impuesto a la intermediación financiera). Este puede mitigar el apalancamiento de los bancos bien capitalizados, pero puede

TENSIONES ENTRE DIFERENTES DIMENSIONES DE LA POLÍTICA MACROPRUDENCIAL

CUADRO 3

	Objetivos de la política macroprudencial		
Regulaciones	Mitigar el riesgo moral y la distorsión de incentivos agente-principal	Mitigar fallas de acción colectiva	Mitigar exuberancia y pánico irracional
Penalización al fondeo mayorista de corto plazo	No recomendable Erosiona la disciplina de mercado	Recomendable Induce la internalización de externalidades pecuniarias	Recomendable Reduce las oscilaciones de los estados de ánimo
Contabilidad *mark-to-market*	Recomendable Fortalece la disciplina de mercado	No recomendable Promueve contagio y *firesales*	No recomendable Amplifica las oscilaciones de los estados de ánimo
Impuestos pigouvianos sobre el crédito	No recomendable Promueve la toma de riesgo	Recomendable Induce la internacionalización de externalidades pecuniarias	Inefectivo No ayuda a parar la exuberancia o el pánico irracional
Controles a entidades sistémicamente importantes	No recomendable Reducir la eficiencia del mercado	Recomendable Induce la internalización de externalidades de interconexión	Inefectivo No ayuda a mitigar la exuberancia o el pánico irracional
Perímetro de la regulación	Limitado	Amplio	Amplio

FUENTE: Elaboración propia.

incentivar a los bancos descapitalizados a abusar de deudores y de depositantes ingenuos tomando riesgos excesivos y, en caso de salir mal parados, pasarle la cuenta al seguro de depósitos.

— Las fricciones de agencia y de riesgo moral público militan en favor de limitar lo más posible el perímetro de regulación prudencial. Así sería más fácil proteger solo a los ingenuos y/o contener las consecuencias adversas de la red de seguridad financiera. En contraste, los problemas de acción y cognición colectivos militan en favor de un perímetro regulatorio amplio, pues los problemas de externalidades no internalizadas y de exuberancia irracional se extienden a lo largo y ancho de la actividad financiera. De hecho, la propia existencia de un perímetro fomenta la salida de la actividad financiera hacia fuera del perímetro, en respuesta a la constante optimización, desde un punto de vista puramente privado, de la relación riesgo-retorno en las apuestas financieras que hacen los participantes del mercado.

5 Reflexiones finales: el desafío del diseño

Encontrar un equilibrio adecuado entre políticas macroprudenciales resulta aun más difícil debido a que los sistemas financieros en el mundo real pueden comportarse en concordancia con cualquiera de los ámbitos delineados en los cuatro cuadrantes del cuadro 1. Si bien todas las fricciones y fallas son parte de la estructura de la realidad financiera, no todas tienen efectos de primer orden siempre y en todo lugar. Por ejemplo, las fricciones de agencia se vuelven más relevantes durante las fases recesivas del ciclo, cuando el valor del colateral cae. Las fricciones cognitivas se vuelven más relevantes durante épocas de fuertes cambios en los mercados e innovaciones financieras. Las fallas de coordinación se vuelven más importantes durante períodos de crisis, y las externalidades cuando el apalancamiento es elevado. De esta manera, es muy probable que los sistemas financieros sean adaptativos y se muevan de paradigma en paradigma, dependiendo del grado de desarrollo económico y financiero del país, la posición en el ciclo económico y la naturaleza del ciclo, las peculiaridades estructurales e institucionales de la economía, la intensidad de la innovación tecnológica, el tipo de políticas regulatorias e impositivas adoptadas, etc.

Por tanto, no se puede decir que el sistema financiero padece siempre y en todo lugar de todas las posible anomalías congruentes con el cuadrante inferior derecho del cuadro 1. En particular, el sistema financiero puede estar, durante períodos significativos, en una trayectoria estable que no se desvía significativamente de los factores fundamentales y que está, por tanto, dominada por la disciplina de mercado y por los comportamientos racionales. En esas circunstancias «normales» no surgen problemas de apalancamiento excesivo, el sistema financiero es capaz de absorber choques de tamaño moderado y se adapta eficientemente a condiciones cambiantes. Alternativamente, el mismo sistema financiero, quizás inicialmente sacudido por algún choque (positivo o negativo) importante, puede entrar en trayectorias que se deslindan cada vez más de los factores fundamentales, en las que problemas serios de externalidades no internalizadas o de efervescencia irracional impulsan una rápida acumulación de riesgo sistémico. En esas circunstancias «anormales», el sistema financiero puede volverse altamente vulnerable, en el sentido de que pequeñas perturbaciones que ajusten súbitamente las restricciones crediticias (de información, colateral o capital) pueden dar pie a fluctuaciones amplificadas y a reacciones en espiral.

La relevancia variante de distintas fricciones y fallas de mercado y política, junto con las tensiones entre distintos objetivos, sugieren que no hay un sistema perfecto de política macroprudencial. Se trata, más bien, de la constante búsqueda de un equilibrio adecuado a circunstancias cambiantes. Así las cosas, ¿cómo diseñar la política macroprudencial? Dos opciones polares podrían visualizarse frente a esta pregunta.

Una primera opción sería elaborar un marco regulatorio «para todo terreno,» esto es, un sistema que amalgame los elementos clave de los cuatro paradigmas examinados en este artículo y, por ende, pueda aplicarse a una gama amplia de condiciones y dinámicas financieras. La ventaja de este enfoque es que las reglas de juego serían bastante estables. Su problema principal, sin embargo, sería abrir espacio para dos riesgos contrastantes. Por un lado, el riesgo de llegar a un sistema demasiado inflexible y rígido, con inconsistencias entre paradigmas y, por tanto, difícil de adaptar a un terreno cambiante. Por otro lado, el riesgo de llegar a un marco regulatorio muy débil, que resulte poco efectivo para las circunstancias de riesgo sistémico más graves de cualquiera de los paradigmas.

La opción alternativa consistiría en desarrollar un marco regulatorio bimodal, contingente al estado en el cual se encuentra el sistema financiero. En tiempos «normales», este marco se enfocaría en la disciplina de mercado y en las fallas básicas de agencia. Sin embargo, en tiempos extraordinarios de formación o de ruptura de burbujas, se activaría una modalidad más intrusiva de la política macroprudencial, enfocada en contener y reducir el riesgo sistémico y las dinámicas desestabilizantes asociadas a fricciones de acción colectiva o de cognición colectiva. Esta ultima opción presupone, sin embargo, que la regulación para tiempos normales sea lo suficientemente efectiva para detectar posibles fallas geológicas de tensión sistémica antes de que sea tarde. Supone también que el regulador sea suficientemente independiente, objetivo y ágil para activar a tiempo el *switch* del cambio de régimen regulatorio.

BIBLIOGRAFÍA

AKELROF, G. (1970). «The Market for 'Lemons': Quality Uncertainty and the Market Mechanism», *The Quarterly Journal of Economics,* vol. 84, n.º 3, pp. 488-500.

AKERLOF, G., y R. SHILLER (2013). «Phishing for Phools: The Economics of Manipulation and Deception», Power Point Presentation, Princeton University.

ALLEN, F., y D. GALE (2007). *Understanding financial crises,* OUP, Oxford.

BRUNNERMEIER, M. K., T. M. EISENBACH y Y. SANNIKOV (2012). «Macroeconomics with Financial Frictions: A Survey», *National Bureau of Economic Research,* WP, n.º 18102.

DE LA TORRE, A., y A. IZE (2010a). «Regulatory Reform: Integrating Paradigms», *International Finance,* 13 (1), pp. 109-139.
— (2010b). «Containing Systemic Risk: Paradigm-Based Perspectives on Regulatory Reform», *Economia,* Fall, vol. 11, n.º 1.
— (2013a). «The Foundations of Macro-Prudential Regulation: A Conceptual Roadmap», *World Bank Working Paper,* WPS6575.
— (2013b). «The Rhyme and Reason for Macroprudential Policy: Four Guideposts to Find your Bearings», *World Bank Working Paper,* WPS6576.
DEWATRIPONT, M., y J. TIROLE (1994). *The Prudential Regulation of Banks,* MIT Press.
DIAMOND, D. W., y P. H. DYBVIG (1983). «Bank Runs, Deposit Insurance, and Liquidity», *The Journal of Political Economy,* pp. 401-419.

SYSTEMIC RISK, MONETARY AND MACROPRUDENTIAL POLICY

José-Luis Peydró (*)

(*) José-Luis Peydró, professor of Finance and Economics at Universitat Pompeu Fabra.

SYSTEMIC RISK, MONETARY AND MACROPRUDENTIAL POLICY

I analyze the relationship between credit cycles and systemic risk, and their interaction with monetary and macroprudential policy. In particular, I answer the following questions: Are credit cycles one of the main determinants of the likelihood and severity of systemic financial crises? Do macroprudential and monetary policy affect credit supply cycles? The evidence summarized in this article shows that credit cycles are crucial for systemic risk – they are the main *ex-ante* correlate of financial crises, and conditioned on crises, they are associated to worse real effects – and, importantly, monetary and macroprudential policy are key determinants of credit supply cycles and excessive risk-taking.

1 Introduction

In 2008 the economies of the United States and Western Europe, including Spain, were overwhelmed by a banking crisis, which was followed by a severe economic recession, with important costs in terms of aggregate output and employment.[1] These phenomena are not unique: Banking crises are recurrent phenomena, triggering deep and long-lasting recessions [see Kindelberger (1978) and Reinhart and Rogoff (2008) for historical evidence]. The main channel by which banks' balance-sheet weaknesses affect the real economy is via a reduction of the supply of credit, a credit crunch, and also through some compositional changes of credit supply as a significant reduction of appetite for risk. Importantly, banking crises are not random events that come from exogenous risks, but come after periods of very strong private credit growth [Schularick and Taylor (2012)]. Therefore, for systemic risk, it is crucial to understand the determinants and implications of credit in good and bad times – the so-called credit cycles.

Monetary policy, moreover, has been crucial in dealing with the costs associated to the financial crisis after September 2008, both in terms of interest rate policy and in terms of central bank liquidity operations as Long-term Refinancing Operations (LTROs) in the euro area or quantitative easing in US, but also some commentators have argued that low monetary policy rates in the euro area and US during the 2000 expansion were crucial to trigger a credit boom and asset price bubble.

There is more agreement among academics and policymakers that financial regulation needs to acquire a macroprudential dimension that ultimately aims to lessen the potentially damaging negative externalities from the financial to the macroeconomic real sector, as for example in a credit crunch. Importantly, as systemic risk is endogenous with a build-up of financial imbalances over time (for example, credit supply booms in correlated risk exposures as in an asset price bubble, for instance in real estate, financed with foreign short-term wholesale finance), an important mission for macroprudential policy is to curb *ex-ante* (pre-crisis) excessive risk-taking by banks, not just deal with *ex-post* crisis management.

Countercyclical macroprudential policy tools could be used to address these cyclical vulnerabilities in systemic risk, by slowing excessive credit growth in good times and especially by boosting it in bad times. Under the new international regulatory framework for banks – Basel III – regulators agreed to vary minimum capital requirements over the cycle, by instituting countercyclical bank capital buffers *(i.e.,* procyclical capital requirements). As part of the cyclical mandate of macroprudential policy the objective is

1 This article is mainly based on my book with Xavier Freixas and Luc Laeven on systemic risk [Freixas, Laeven and Peydró (forthcoming)], and on my work with Gabriel Jiménez, Steven Ongena and Jesús Saurina [Jiménez *et al.* (2012), Jiménez *et al.* (forthcoming), Jiménez, Ongena, Peydró and Saurina (2013)]. I thank the Editors for helpful comments and suggestions. Email: jose.peydro@gmail.com.

that in booms capital requirements will increase while in busts requirements will decrease, thus increasing the buffers of capital that banks have when a crisis hits.

A key explanation of credit supply cycles is based on an agency view, where this view highlights agency problems at the core of the build-up of systemic risk that have to do with the difficulties of aligning the incentives between the principal (for instance, bank bondholders or the taxpayers) and the agent (bank managers or shareholders). This is the channel we highlight in this article, but another important view is the preference channel, in particular behavioral biases as for example neglecting tail risk in good times or overoptimistic behavior by market participants [see Gennaioli, Shleifer and Vishny (2012); Freixas, Laeven and Peydró (forthcoming)]. Depending on which is the correct view of the determinants of excessive risk-taking (preferences *vs.* agency channel) in financial intermediaries, optimal prudential policy will be different. For example, higher capital requirements would be positive by increasing buffers in a crisis under both channels, but under the agency channel they may also reduce *ex-ante* excessive risk-taking by making the financial intermediaries have more own skin in the game.

This article analyzes the relationship between credit cycles and systemic risk, and the interaction with monetary and macroprudential policy, where systemic risk is defined, based on Freixas, Laeven and Peydró (forthcoming), as "the risk of threats to financial stability that impair the functioning of the financial system as a whole with significant adverse effects on the broader economy." In particular, I analyze the following questions: Are credit cycles one of the main determinants of the likelihood and severity of systemic financial crises? Do macroprudential and monetary policy affect credit cycles? Our emphasis is associated to credit supply cycles, *i.e.* the ones not associated to borrowers' stronger economic fundamentals.

In the rest of this article, first, I define credit supply cycles and excessive risk-taking in credit, and its relationship with systemic risk and financial crises. Second, I analyze the impact of monetary policy on credit supply based on evidence from Spain. Third, I analyze macroprudential policy, in particular the impact on credit supply of countercyclical capital requirements stemming from the Spanish experience with dynamic provisioning. Finally, I offer some concluding remarks.

2 Credit booms, systemic risk and financial crises

The cycles in credit growth consist of periods during which the economy is performing well and credit growth is robust (on average 7%) and periods when the economy is in recession or crisis and credit contracts [on average -2% for a sample of 14 major developed countries over the last 140 years, see Schularick and Taylor (2012) and their following papers with Oscar Jordà)].[2] Credit cycles stem from either: 1) Non-financial borrowers' agency frictions and investment opportunities (credit demand) as in, for example, Bernanke and Gertler (1989), Kiyotaki and Moore (1997), Lorenzoni (2008), and Jeanne and Korinek (2010), where better investment opportunities or better firms' and households' collateral and net worth imply higher credit, or 2) banks' agency frictions (credit supply) as in, for example, Rajan (1994), Holmstrom and Tirole (1997), Diamond and Rajan (2006), Allen and Gale (2007), and Adrian and Shin (2011), where changes in bank capital, liquidity and competition allow changes in credit supply. Maddaloni and Peydró (2011) shows the change in lending conditions associated to credit supply and demand factors for Europe and US.

2 Aggregate granted credit is not as forward looking as change in the supply of committed credit as it is also affected by credit demand, notably drawn down of existing credit lines; instead, change in lending standards from lending surveys from central banks is more forward looking [see Maddaloni and Peydró (2011)].

The main explanation of credit supply cycles in this article is based on an agency view. The agency view highlights agency problems at the core of the build-up of systemic risk that have to do with the difficulties of aligning the incentives between the principal (for instance, bank bondholders or the taxpayers) and the agent (bank managers or shareholders). First, the basic agency problem stems from the fact that most financial intermediaries have limited liability (their losses are limited) and invest money on behalf of others (the final investors). Moreover, they are highly leveraged, notably banks that are funded almost entirely with debt, notably short-term (some banks are funded with 50 units of debt over 1 of equity and many have leverage ratios higher than 30 to 1). These frictions create strong incentives for excessive risk-taking as there is little skin in the game for bank shareholders but high potential upside profits. Second, excessive risk-taking notably increases when there are explicit and implicit guarantees and subsidies from the government (taxpayers) in case of negative *ex-post* aggregate risks (such as a financial crisis). This increases e*x-ante* agency problems of financial intermediaries as financial gains are privatized, but losses are in great part socialized.

For example, the excessive credit boom and lending standards deterioration in the USA and Spain real estate market before the recent crisis has partly been blamed on several factors: i) the financial innovation that fostered in the USA the development of an unregulated shadow banking system to arbitrate (evade) bank capital regulation; ii) in the USA and Spain strong funding liquidity through securitization sold to foreign financial intermediaries due to financial globalization [in Spain more covered bonds than Asset-backed Security (ABS)]; iii) deficient corporate governance and lack of market discipline; iv) very loose monetary policy [in Spain real interest rates were negative as Germany was having low Gross Domestic Product (GDP) growth and the European Central Bank (ECB) had therefore too low monetary rates for countries like Spain and Ireland]; and v) prudential regulation and supervision focused too much on micro, rather on the whole financial system and the real economy – *i.e.,* macroprudential. Moreover, the potential government bailouts imply a lack of market disciplining by bank creditors by not imposing losses on these debt-holders (as in the case of Ireland), which creates *ex-ante* moral hazard and appetite for excessive risk.[3]

The theory suggests that financial intermediaries might take excessive *ex-ante* risks, increasing collectively the systemic risk in the financial system. But what are the specific factors and decisions that will cause excessive risks? The main channel is excessive credit and leverage. In fact, these variables show the strongest *ex-ante* correlate with the incidence of financial crises as shown in the empirical literature analyzing large historical and cross-country episodes of systemic financial crises. Private credit (debt and leverage) acceleration notably increases the likelihood of financial crises, and conditional on a crisis occurring, it increases its systemic nature and the negative effects on the real economy associated with the crisis.

The recent financial crisis has come after a period of significant credit expansion. In order to understand systemic risk, we need to know whether this fact is unique to this crisis or shared among many financial crises. However, financial crises are not frequent events, and hence in order to study the determinants of such crises it is necessary to use long time series for several countries. Schularick and Taylor (2012) analyze the relationship of financial crises with aggregate bank credit growth. They build a 140-year panel data set for fourteen developed countries and construct bank credit and total asset series. Before the Great

3 See Pagano (2012), Stein (2013) and Freixas *et al.* (forthcoming).

Depression, money and credit aggregates have a stable relationship with GDP, increasing before the crisis and decreasing afterwards. After the 1940s, credit itself decoupled from broad money by increasing leverage and funding via nonmonetary liabilities of banks.

Schularick and Taylor (2012) also analyze the likelihood and severity of financial crises and show that changes in bank loans are a strong predictor of financial crises. Furthermore, broad money aggregates do not have the same predictive power, particularly in the post-1940 period. Jordà, Schularick and Taylor (2011) study the role of credit in the whole business cycle, not only around financial crises. They find that financial-crisis recessions are more costly than normal recessions in terms of lost output, and for both types of recessions, they show that the financial imbalances built up in the period preceding the crisis (bank credit) are important drivers of the strong negative real effects to the broad economy during the crisis. Specifically, not only does *ex-ante* credit growth affect the likelihood of a financial crisis, but conditional on a crisis, the real effects are worse when the crisis is preceded by a credit boom. Therefore, this historical analysis shows that *ex-ante* financial imbalances are a first-order determinant of systemic risk.

Their findings suggest that the prior evolution of credit shapes the business cycle. This has important implications for macroeconomic models: if credit were to just follow economic fundamentals and had little impact on the business cycle, then models omitting the frictions in the financial sector might be sufficient. Nevertheless, these findings suggest that more sophisticated macro models featuring financial intermediation are needed.

Using the same dataset, Jordà *et al.* (2011) analyze whether *ex-ante* external imbalances increase the risk of financial crises. In other words, are external imbalances associated with higher costs in the recession, or are credit booms the only important variable? Their overall finding is that *ex-ante* credit growth emerges as the single best predictor of financial instability; however, the correlation between current account imbalances and credit booms has increased significantly in the recent decades, which indicates that financial globalization plays a role as well. In a globalized economy, with free capital mobility, credit cycles and foreign capital flows have the potential to reinforce each other more strongly than otherwise [on this argument, see also Shin (2012)]. Clearly, a strong and sustained credit boom cannot typically be financed with an increase of domestic deposits and wealth (especially if not driven by very strong fundamentals); therefore, foreign liquidity, or liquidity stemming from expansive monetary policy or financial innovation *(e.g.,* securitization), need to be present and interact with credit cycles.[4] Finally, Jordà *et al.* (2013) show that the main determinant is *ex-ante* private (bank) credit rather than public debt.

The historical evidence clearly suggests that high rates of credit growth coupled with widening imbalances pose financial stability risks that policy makers and academics should not ignore. Moreover, in the recent crisis, the credit booms and large current account imbalances in many countries, low levels of short-term (monetary) and long-term rates, and increasing recourse to securitization, all seem to confirm that credit growth and capital inflows and other forms of liquidity nowadays interact in a stronger way. Maddaloni and Peydró (2011) analyze these issues for the recent crisis. Using the survey of lending conditions and standards for the euro area countries and the USA that the national central banks and regional Feds request from banks, they analyze the determinants of lending conditions and standards for the financial crisis that started in 2007. They find that countries with worse economic performance during the crisis are those with *ex-ante* softer lending

4 Of course, some credit booms can be financed by domestic savings as we are seeing recently with China.

conditions. They also find that lower monetary policy rates imply softer lending conditions and standards. However, after controlling for key factors (such as country fixed effects and business cycle conditions), current account deficits or lower long-term interest rates do not correlate with softer lending conditions. Finally, Maddaloni and Peydró (2011) find that lending standards are pro-cyclical (in the upside of the business cycle, lending conditions are softer and banks take on higher risk), a result consistent with Jiménez and Saurina (2006) for Spain.

Credit booms are therefore a crucial *ex-ante* correlate of financial crises. Yet, all of these empirical analyses condition on the occurrence of a crisis and ask what its determinants are. But, do all credit booms end up in a crisis? The International Monetary Found [IMF (2012)] analyzes credit booms for 170 countries over the last 40 years of data. They show three important results: credit booms have become more frequent after the 1980s (a period of significant financial deregulation); most booms happen in relatively underdeveloped financial systems; and only one in three credit booms end up in a financial crisis.

Credit booms, however, may also result from (and promote) sound economic fundamentals (demand-driven credit) and, therefore, could be benign for systemic risk.[5] For example, since 1970s across a broad range of countries, research has shown that two thirds of credit booms did not end up in a financial crisis [IMF (2012)]. Therefore, a key question that we analyze is what are the determinants of the bad credit booms, in particular the ones associated with credit supply *(i.e.,* based on pervasive bank incentives). Credit supply booms that are negative for systemic risk generally stem from correlated risk-exposures by the financial intermediaries that end up developing asset-price bubbles in real estate or in other asset classes. This herding by financial intermediaries may also make small and medium banks become systemic since the government may *ex-post* bailout them, as otherwise there would be *too many to fail.* Deficient corporate governance where bank managers maximize only bank shareholder value (a small part of the bank total assets) with executive compensation based on relative performance with stock options and lack of claw-back options or based on some political objectives as in the Spanish cajas may also encourage this type of excessive risk-taking.

We have seen that credit booms appear to precede financial crises, but only one third end up in a crisis, thus an important part of credit booms are driven by strong economic fundamentals and do not pose a risk for systemic risk. What are the determinants of credit supply booms and other financial imbalances? How can we measure bad credit booms? In the rest of the article, I summarize evidence based on loan level data, including loan applications, where we can isolate credit supply changes associated to low bank capital ratios.

3 Monetary policy and credit supply

To finance a credit supply boom, there is a need for bank liquidity. Liquidity can come from expansive monetary policy, from financial innovation (for example, securitization) or from foreigners (for example, through financial globalization).[6] In this section we analyze the different sources and the implications for financial imbalances stemming from credit supply cycles.

5 This does not mean that all demand-driven credit booms result from fundamentals. For example, they can be driven by collateral values. Although there is an extensive literature focusing on frictions on credit demand, it is not the focus of this article.

6 For financial globalization, see Kalemli-Ozcan, Papaioannou and Peydró (2010 and 2013). For securitization, see Jiménez, Mian, Peydró and Saurina (2013) and Maddaloni and Peydró (2011 and 2013). In Jiménez, Mian *et al.* (2013), we focus on the effects of securitization on lending from Spanish banks, where securitization was done using real-estate loans. We find very interesting results that shed light on how credit booms are characterized. Securitization did not affect firms with already strong access to the banking sector. However, it was the extensive margin *(i.e.,* new borrowers) the ones that were more affected for credit volume supplied. Banks engaged in real estate activities were able, through securitization, to expand their credit to new borrowers, which are usually riskier and, in fact, defaulted more. In Maddaloni and Peydró (2011 and 2013) we find that securitization also implied a softening of lending conditions and standards in Europe and the USA.

A key question in macroeconomics and finance is whether monetary policy, and in general economic conditions, affects bank loan supply [Bernanke and Gertler (1989), Bernanke and Gertler (1995)] and whether credit availability depend on bank balance-sheet strength [Bernanke (2007)]. That is, do agency costs of borrowing between banks and their financiers – proxied by bank capital and liquidity to total assets ratios as in Holmstrom and Tirole (1997) and Diamond and Rajan (2011), for example – make lending significantly more problematic during periods of higher monetary policy rates or lower economic activity? Put differently, is a bank lending channel operational, and, if so, how potent is it?

To convincingly answer these questions two major identification challenges need to be addressed. First, the supply of credit needs to be disentangled from its demand. Tighter monetary conditions and lower economic growth may reduce both loan supply and demand. Supply may contract because – as already indicated – agency costs of banks may increase, but demand may contemporaneously fall because firm net worth and expectations for investment are reduced, and the cost of financing is higher. In addition, firms affected more by monetary and economic conditions may borrow more from affected banks [Gertler and Gilchrist (1994)]. All this implies that any analysis based only on macro data [Bernanke and Blinder (1992)] or bank-level data [Kashyap and Stein (2000)] may suffer from an omitted-variables problem. Second, if country business cycle conditions completely determine short-term interest rate changes, which may be the case in many countries *[e.g.,* through a Taylor (1993) – rule], separating the effects of monetary conditions from those of economic activity is problematic.

Our main contribution to the literature in Jiménez *et al.* (2012) consists in taking crucial steps in addressing both identification challenges. In particular, we analyze the effects of monetary conditions and economic activity on the granting of loans with individual loan application records depending on the strength of bank balance sheets measured by bank capital and liquidity ratios, controlling for time-varying observed and unobserved firm heterogeneity with firm-month fixed effects *(i.e.,* there is a dummy for every firm-year: month combination). The data are from Spain, a country where most firms are bank dependent and where monetary policy has been fairly exogenous.

Unique features of the Credit Register of Spain (CIR), which is collected by the Banco de España acting in its capacity as bank supervisor, help us to attain identification. Since 2012 the CIR recorded all monthly information requests lodged by banks on borrowers. Because banks monthly receive information on all outstanding loans and defaults of their current borrowers from CIR, they lodge information requests only following loan applications from firms that are currently not borrowing from them. Because the CIR database also contains detailed monthly information on all, new and outstanding, loans (over 6,000 euros) to non-financial firms granted by all credit institutions operating in Spain since 1984, we can match the set of corresponding loan applications with the loan that is actually granted by a bank. The loans granted to noncurrent borrowers surely do not involve simply the renewal or evergreening of outstanding loans. Moreover, Banco de España has complete monthly bank balance-sheet information also collected in its role as bank supervisor and has access to key firm characteristics, including identity. We analyze 2,335,321 loan applications in total and in Jiménez *et al.* (2013 and 2014) we also analyze all credit granted, in addition to loan applications.

The unique features of the CIR allow us to address the two major identification challenges. First, to separate bank loan supply from demand we study loan applications and exploit theoretically motivated interactions between economic and monetary conditions on the

one hand and bank balance-sheet strength variables on the other [Bernanke, Gertler and Gilchrist (1996), Kashyap and Stein (2000)]. The definition of the bank capital and liquidity to total assets ratios we employ closely follows the theoretical literature that attributes a prominent role to net worth in reducing the agency costs of borrowing.

To achieve identification we further focus on the set of loan applications made in the same month by the same borrower or for the same loan to different banks of varying balance-sheet strengths (by including in the specifications firm-month or alternatively loan fixed effects). Within this set of loan applications, for which the (observed and unobserved) quality of potential borrowers is constant as in the credit crunch definition by Bernanke and Lown (1991), we study how monetary and economic conditions affect the granting of loans depending on bank capital and liquidity. Moreover, we analyze whether firms that get rejected in their initial loan application can undo the resultant reduction in credit availability by successfully applying to other banks.

Second, to distinguish between the impact of monetary and economic conditions, we rely on the observation that monetary policy in Spain has been fairly exogenous during the sample period. Spain accounts for around 10 percent of the euro area output and as a peripheral country its business cycle did not converge with those of the core countries of the euro area.

Our study yields the following robust results: higher short-term interest rates or lower GDP growth reduce the probability that a loan application is granted. The negative effect of higher short-term interest rate on loan granting is statistically stronger for banks with low capital or liquidity, whereas the negative effect of lower GDP growth is statistically stronger for banks with low capital. The estimated effects are also economically relevant. A 100-basis point increase (decrease) in the interest rate (GDP growth) reduces loan granting by weak banks by 11 (5) percent more than by strong banks *(i.e.,* a weak bank is in the tenth percentile in both bank capital and liquidity; a strong bank is in the ninetieth percentile).

All findings are robust to multiple controls, in particular to the inclusion of firm- month or loan fixed effects, implying that within the set of applications made in the same month or for the same loan by the same firm to different banks, banks with weaker balance sheets grant fewer loan applications when short-term interest rate are higher or when GDP growth is lower. This was the first evidence that clearly identifies that, under tighter monetary or economic conditions, low bank capital or liquidity begets a credit crunch. Finally, we find that- firms that get rejected in their initial loan application cannot undo the resultant reduction in credit availability by applying to other banks, especially in periods of tighter monetary and economic conditions.

3.1 MONETARY POLICY AND RISK-TAKING

But not only too low short term rates can expand credit supply, but also can increase the risk-taking incentives of banks. This is what Adrian and Shin call "the risk-taking channel of monetary policy" in the last Handbook of Monetary Economics [Adrian and Shin (2011)].[7] In Jiménez *et al.* (2014) we study this channel. Since the severe financial crisis of 2007-2009, the question on whether low monetary policy rates cause excessive risk-taking by financial intermediaries has been at the center of an intense academic and policy debate. From the start of the crisis in the summer of 2007, market commentators were swift to argue that during the long period of very low interest rates, stretching from 2002 to 2005, banks had softened their lending standards and taken on excessive risk, whereas others argued that low long-term rates and other factors were the culprit. But, at the same time,

7 See also Borio and Zhu (2012).

market participants continuously clamored for central banks to reduce the monetary policy rate to alleviate their financial predicament.

Recent theoretical work suggests that expansive monetary policy through the increase in funding provided by households and other agents to banks may cause an increase in risk-shifting in lending, as banks face strong moral hazard problems – especially banks with lower capital amounts at stake, who do not fully internalize loan defaults. A low short-term interest rate makes riskless assets less attractive and may lead to a search for yield by financial intermediaries with short-term time horizons. Acute agency problems combined with a strong reliance on short-term funding may thus lead the short-term (monetary) interest rate – more than the long-term interest rate – to spur bank risk-taking.

Monetary policy rate changes may affect the credit quality of the pool of borrowers through the interest rate channel and the firm balance-sheet channel of monetary policy by changing firm investment opportunities, net worth, and collateral [Bernanke and Gertler (1995)]. Moreover, monetary policy, by affecting bank liquidity, may affect the volume of credit supplied through the bank balance-sheet/lending channel of monetary policy [Kashyap and Stein (2000)]. Therefore, the decisive identification challenge we address is to disentangle the impact of changes in the monetary policy rate on the composition of the supply of credit from changes in the volume of the supply and changes in the quality and volume of demand, while accounting for the impact of other aggregate variables, including long-term interest rates. Importantly, while the bank balance-sheet channel yields testable predictions at the bank level, and the firm balance sheet and interest rate channels at the firm level, the bank risk-taking channel involves compositional changes in the supply of credit at the bank-firm level.

The very detailed data on loan applications and outcomes in Spain has allowed us to identify the effect of monetary policy on banks' risk-taking behavior. We separate the changes in the composition of the supply of credit from the concurrent changes in the volume of supply and quality and volume of demand. We employ a two-stage model that analyzes the granting of loan applications in the first stage and loan outcomes for the applications granted in the second stage, and that controls for both observed and unobserved, time-varying, firm and bank heterogeneity through time "firm and time" bank fixed effects.

We find robust evidence that a lower overnight rate induces lowly capitalized banks to grant more loan applications to ex ante risky firms (than highly capitalized banks), where firm risk is measured with the presence of a bad credit history with nonperforming loans. When granting applications to these firms (when the overnight rate is lower), lowly capitalized banks further commit more credit and require less collateral, yet their granted loan applications overall face a higher future likelihood of default.

All findings are statistically significant and economically relevant. A decrease of 1 percentage point in the overnight rate, for example, increases the probability that a loan will be granted by a lowly versus a highly capitalized bank (with a difference of 1 standard deviation between them) to a firm with a bad credit history by 8 percent and the resultant committed amount of credit increases by 18 percent, while the future likelihood of loan default of these loans increases by 5 percent and the required collateral decreases by 7 percent. A lower long-term interest rate and other key aggregate bank and macro variables, such as more securitization or higher current account deficits, have no such effects. Importantly, when the overnight rate is lower, virtually all banks grant more credit to firms with higher risk (by around 19 percent for the average bank).

In sum, our estimates suggest that a lower monetary policy rate spurs bank risk-taking and hence that monetary policy affects the composition of the supply of credit beyond the well documented effects of both the bank and firm balance-sheet channels. Consistent with "excessive" risk-taking are our findings that especially banks with less capital "in the game", that is, those afflicted more by agency problems, grant more loan applications and resultant credit to ex ante risky firms, that these banks require less collateral requirements from these firms, and that these banks face more default on their granted loans in the future – all bank actions that accord with risk-shifting.[8]

4 Macroprudential policy and credit supply

The 2008-09 global economic and financial crises have changed the consensus on how to conduct prudential regulation. Before it was "micro-oriented", focused on ensuring the solvency of individual financial institutions and paying little attention to the financial system as a whole. The consensus was that by ensuring adequate capital ratios at the individual level, the whole system would be solvent. However, after a negative shock, banks may try to increase their capital buffers by decreasing their lending, which can create a credit crunch and fire sales that can in fact worsen the initial shock. In other words, by trying to increase their *individual* solvency, banks may be imposing negative externalities on the rest of the system, thus decreasing the *overall financial stability.* Micro-prudential policy, hence, is not well equipped to deal with systemic risk. Financial regulation is now becoming more macro-focused, focusing on the risks of the financial system as a whole, both the build-up of financial imbalances, and the externalities within the financial sector and from the financial to the real sector. In other words, going forward prudential regulation should also focus on systemic risk (see Freixas *et al.,* forthcoming).

Examples of this type of macroprudential policy approach are the so-called countercyclical capital buffers. This new policy requires banks to hold additional capital when aggregate credit is expanding fast. The intention is twofold: by requiring this additional capital, banks will be more capitalized when a recession comes, thus alleviating the credit crunch problem. On top of that, the additional capital may cool down the credit expansion, thus lowering both the probability of a crisis and the cost of it if it occurs. Dynamic provisioning, a regulation introduced in 2000 in Spain, is also an example of a macroprudential policy on countercyclical capital requirements.

In Jiménez, Ongena *et al.* (2013) we analyze the impact of countercyclical capital buffers held by banks on the supply of credit to firms and their subsequent performance, exploiting the Spanish dynamic provisioning. Spain introduced dynamic provisioning unrelated to specific bank loan losses in 2000 and modified its formula parameters in 2005 and 2008. In each case, individual banks were impacted differently. The resultant bank-specific shocks to capital buffers, coupled with comprehensive bank-, firm-, loan-, and loan application-level data, allow us to identify its impact on the supply of credit and on real activity.

Our estimates show that countercyclical dynamic provisioning smoothes cycles in the supply of credit and in bad times upholds firm financing and performance. The estimates are also economically relevant. Firms borrowing from banks with a 1 percentage point higher dynamic provision funds (over loans) prior to the crisis get a 6 percentage points higher credit growth, a 2.5 percentage points higher asset growth, a 2.7 percentage points higher employment growth, and a 1 percentage point higher likelihood of survival.

8 On-going empirical work documents the robust existence and potency of a bank risk-taking channel of monetary policy across many countries and time periods, for example, for the United States, Austria, Portugal, Colombia, Bolivia, Czech Republic and Sweden.

5 Conclusions

Historical evidence shows that either looking at financial crises in the past or looking at the recent global crisis, high *ex-ante* credit booms is the main *ex-ante* correlate in determining the likelihood of systemic financial crises, and conditioning on the crisis, high *ex-ante* credit booms increase the severity of the financial crisis, with stronger negative real effects. Important channels during the crises are credit crunches and during the *ex-ante* pre-crisis are financial imbalances caused by excessive credit growth.

As empirical evidence by several papers co-authored with Gabriel Jiménez, Steven Ongena and Jesús Saurina show, monetary and macroprudential policies affect credit supply cycles and bank risk-taking. Moreover, the effects differ in good and bad times, with very strong effects in crisis times for an increase of credit supply with expansive monetary policy and countercyclical capital buffers. Both policymakers and academics should pay more attention to credit cycles, notably supply driven, and their relation with monetary and macroprudential policies.

REFERENCES

ADRIAN, T., and H. S. SHIN (2011). "Financial intermediaries and monetary policy", in *Handbook of Monetary Economics*, 3, pp. 601-650.

ALLEN, F., and D. GALE (2007). *Understanding Financial Crises*, Oxford, Oxford University Press.

BERNANKE, B. S. (1983). "Nonmonetary effects of the financial crisis in propagation of the Great Depression", *American Economic Review*, 73, pp. 257-276.

BERNANKE, B. S., and A. S. BLINDER (1988). "Credit, Money, and Aggregate Demand", *American Economic Review,* 78 (2), pp. 435-439.

— (1992) "The Federal Funds Rate and the Channels of Monetary Transmission", *American Economic Review,* 82 (4), pp. 901-921.

BERNANKE, B. S., and M. GERTLER (1989). "Agency costs, net worth, and business fluctuations", *American Economic Review*, 79, pp. 14-31.

— (1995). "Inside the Black Box: The Credit Channel of Monetary Policy Transmission", *Journal of Economic Perspectives,* 9 (4), pp. 27-48.

BERNANKE, B. S., M. GERTLER and S. GILCHRIST (1996). "The Financial accelerator an the Flight to Quality", *The Review of Economics and Statistics,* 78 (1), pp. 1-15.

BERNANKE, B. S., and C. S. LOWN (1991). "The Credit Crunch", *Brookings Papers on Economic Activity* (2), pp. 204-239.

BORIO, C., and H. ZHU (2012). "Capital regulation, risk-taking and monetary policy: A missing link in the transmission mechanism?", *Journal of Financial Stability*, 8, pp. 236-251.

DIAMOND, D., and R. RAJAN (2006). "Money in a theory of banking", *American Economic Review*, 96, pp. 30-53.

— (2011). "Fear of fire sales, illiquidity seeking, and the credit freeze", *Quarterly Journal of Economics*, 126, pp. 557-591.

FREIXAS, X., L. LAEVEN and J. L. PEYDRÓ (forthcoming). *Systemic Risk, Crises and Macroprudential Policy*, MIT Press, forthcoming.

GENNAIOLI, N., A. SHLEIFER and R. VISHNY (2012). "A model of shadow banking", *The Journal of Finance,* forthcoming.

GERTLER, M., and S. GILCHRIST (1994). "Monetary Policy, Business Cycles, and the Behavior of Small Manufacturing Firms", *Quarterly Journal of Economics,* 109 (2), pp. 309-340.

GORTON, G., and A. METRICK (2012). "Getting up to speed on the financial crisis: A one-weekend reader's guide", *Journal of Economic Literature*, 50, pp. 128–150.

HOLMSTROM, B., and J. TIROLE (1997). "Financial intermediation, loanable funds, and the real sector", *Quarterly Journal of Economic*, 112, pp. 663–691.

— (1998). "Private and public supply of liquidity", *Journal of Political Economy*, 106, pp. 1-40.

INTERNATIONAL MONETARY FUND (2012). "Policies for macrofinancial stability: How to deal with credit booms", IMF Staff Discussion Note 12/06.

JEANNE, O., and A. KORINEK (2010). "Managing credit booms and busts: A Pigouvian taxation approach", NBER working paper, 16377.

JIMÉNEZ, G., and J. SAURINA (2006). "Credit cycles, credit risk, and prudential regulation", *International Journal of Central Banking*, 2, pp. 65-98.

JIMÉNEZ, G., S. ONGENA, J. L. PEYDRÓ and J. SAURINA (2012). "Credit supply and monetary policy: Identifying the bank balance-sheet channel with loan applications", *American Economic Review*, 102, pp. 2301–2326.

— (2013). "Macroprudential policy, countercyclical bank capital buffers and credit supply: Evidence from the Spanish dynamic provisioning experiments", working paper.

— (2014). "Hazardous times for monetary policy: What do twenty-three million bank loans say about the effects of monetary policy on credit risk-taking?", *Econometrica*, March.

JIMÉNEZ, G., A. MIAN, J. L. PEYDRÓ and J. SAURINA (2013). "Local versus aggregate lending channels: The effects of securitization on corporate credit supply", working paper.

JORDÀ, O., M. SCHULARICK and A. M. TAYLOR (2011). "Financial crises, credit booms, and external imbalances: 140 years of lessons", *IMF Economic Review*, 59, pp. 340–378.

— (2013). "Sovereigns versus banks: Credit, crises, and consequences", CEPR Discussion Paper, 9678.

— (Forthcoming). "When credit bites back: Leverage, business cycles, and crises", *Journal of Money, Credit and Banking*.

KASHYAP, A. K., and J. C. STEIN (2000). "What Do a Million Observations on Banks Say about the Transmission of Monetary Policy?", *American Economic Review,* 90 (3), pp. 407–28.
KALEMLI-OZCAN, S., E. PAPAIOANNOU and J. L. PEYDRÓ (2010). "What lies beneath the Euro's effect on financial integration? Currency risk, legal harmonization, or trade?", *Journal of International Economics*, 81, pp. 75-88.
— (2013). "Financial regulation, financial globalization, and the synchronization of economic activity", *Journal of Finance*, 68, pp. 1179–1228.
KIYOTAKI, N., and J. MOORE (1997). "Credit cycles", *Journal of Political Economy*, 105, pp. 211-248.
KINDLEBERGER, C. (1978). *Manias, Panics, and Crashes: A History of Financial Crises*, First Edition, New York, Basic Books.
LORENZONI, G. (2008). "Inefficient credit booms", *Review of Economic Studies*, 75, pp. 809-833.
MADDALONI, A., and J. L. PEYDRÓ (2011). "Bank risk-taking, securitization, supervision, and low interest rates: Evidence from the Euro-area and the US lending standards", *Review of Financial Studies*, 24, pp. 2121-2165.
— (2013), "Monetary policy, macroprudential policy, and banking stability: Evidence from the Euro Area", *International Journal of Central Banking*, 9, pp. 121-169.
PAGANO, M. (2012). "Finance: economic toxin or lifeblood?", mimeo.
RAJAN, R. G. (1994). "Why bank credit policies fluctuate: A theory and some evidence", *Quarterly Journal of Economics*, 109, pp. 399-441.
— (2005). "Has financial development made the world riskier?", NBER Working Paper, 11728.
REINHART, C. M., and K. S. ROGOFF (2008). "Is the 2007 US sub-prime financial crisis so different? An international historical comparison", *American Economic Review*, 98, pp. 339-344.
SCHULARICK, M., and A. M. TAYLOR (2012). "Credit booms gone bust: Monetary policy, leverage cycles, and financial crises, 1870-2008", *American Economic Review*, 102, pp. 1029-1061.
SHIN, H. S. (2012). "Global banking glut and loan risk premium", Mundell-Fleming Lecture, *IMF Economic Review*, 60, pp. 155-192.
STEIN, J. C. (2013). "Overheating in credit markets: Origins, measurement, and policy responses", speech delivered at "Restoring household financial stability after the Great Recession: Why household balance sheets matter", symposium sponsored by Federal Reserve Bank of St. Louis.
TAYLOR, J. B. (1993). "Discretion versus Policy Rules in Practice", *Carnegie-Rochester Conference Series on Public Policy,* 39, pp. 195-214.

SEPA 2.0 – AVANZANDO EN LA INTEGRACIÓN EUROPEA: LA ZONA ÚNICA DE PAGOS EN EUROS (SEPA) EN PERSPECTIVA

Sergio Gorjón Rivas y Ana Fernández Bedoya (*)

(*) Sergio Gorjón Rivas y Ana Fernández Bedoya pertenecen a la Dirección General de Operaciones, Mercados y Sistemas de Pago. Los autores agradecen los comentarios recibidos de Jesús López Pedruelo, Jesús Pérez Bonilla, Francisco Linares Moreno y los compañeros de la Unidad de Infraestructuras del Mercado.

SEPA 2.0 – AVANZANDO EN LA INTEGRACIÓN EUROPEA: LA ZONA ÚNICA DE PAGOS EN EUROS (SEPA) EN PERSPECTIVA

El artículo comienza haciendo un recorrido por la evolución del proyecto SEPA *(Single Euro Payments Area),* que se puso en marcha en 2002 con el objetivo de hacer desaparecer las diferencias entre pagos electrónicos nacionales y transfronterizos, completando así el proceso de unión monetaria iniciado con la introducción del euro. Este año se ha alcanzado un hito importante con la adopción plena de los nuevos instrumentos de pago paneuropeos (transferencias y adeudos domiciliados SEPA), pero la culminación del proceso de migración no supone el fin del proyecto.

Como se indica en la segunda parte del artículo, se inicia ahora una nueva etapa, en la que los esfuerzos integradores se centrarán en el ámbito de las tarjetas financieras y en la promoción de soluciones innovadoras. El éxito de estas iniciativas requerirá de una mayor participación de todos los agentes implicados, extendiendo el ámbito más allá de la banca tradicional, y sin olvidar a los propios usuarios de servicios de pago. Los cambios introducidos en la gobernanza del mercado de pagos minoristas son un paso en la dirección correcta y se espera que contribuyan a alcanzar las grandes expectativas que se manejan.

1 Introducción

La construcción de un verdadero mercado único europeo requiere eliminar no solo las fronteras físicas internas, sino también todos aquellos obstáculos que dificultan la libre circulación de mercancías, personas, servicios y capitales. El objetivo final es crear un espacio integrado y abierto que favorezca la movilidad, la competitividad y la innovación, propiciando una economía más dinámica generadora de empleo. Dada su escala y amplitud, este proceso se revela complejo, y precisa la adopción de medidas encaminadas a lograr una efectiva armonización de multitud de aspectos.

En este camino hacia una mayor integración, la introducción del euro supuso un avance claro, aunque evidenció también la necesidad de poner fin a la fragmentación del mercado de pagos minoristas[1], unificando también los servicios de pago electrónicos.

La creación de una Zona Única de Pagos en Euros o SEPA a partir del año 2002 es, por tanto, la consecuencia natural de las inquietudes anteriores, y ha supuesto un importante esfuerzo durante más de una década, que, por fin, se ha visto recompensado en 2014 con la adopción plena de los nuevos instrumentos de pago paneuropeos (transferencias y adeudos domiciliados SEPA). Sin embargo, a pesar de la significación de este hito, el proyecto continúa dando paso a una nueva etapa en la que la promoción de las soluciones más innovadoras constituirá el principal hilo conductor.

En las próximas secciones se realizará un recorrido por el proyecto SEPA, desde sus orígenes hasta la culminación del proceso de migración, prestando especial atención a la experiencia española. La última parte del artículo está dedicada a analizar el estado de avance de los asuntos sobre los que se centrarán los esfuerzos integradores en el futuro inmediato, describiendo las novedades regulatorias que se avecinan, los cambios en la gobernanza del mercado de pagos minoristas en euros y las distintas iniciativas en marcha en el ámbito de la estandarización y la innovación.

1 Dicha fragmentación impedía que los ciudadanos europeos disfrutaran de las mismas condiciones en sus pagos electrónicos (tales como transferencias, domiciliaciones o pagos con tarjetas financieras) nacionales y transfronterizos.

2 Un primer hito en la integración

2.1 GÉNESIS Y PRINCIPALES OBJETIVOS DEL PROYECTO SEPA

La puesta en circulación del euro en 2002 permitió que ciudadanos, empresas y demás agentes económicos pudieran realizar sus pagos en efectivo en toda el área monetaria, con la misma facilidad que si se estuvieran llevando a cabo en sus respectivos países. Sin embargo, esta misma realidad no se hizo extensiva a las transacciones electrónicas no interbancarias, lo que, *de facto,* supuso perpetuar la situación de fragmentación previa[2]. Este escenario dificulta la consecución de una unión monetaria plena, por lo que pronto despertó el interés de las autoridades europeas, quienes trataron de instar a la industria bancaria para que asumiera el liderazgo de un proceso de integración de estos pagos.

La ausencia, sin embargo, de un esfuerzo coordinado en el sector movió a estas mismas autoridades a emprender una serie de acciones más expeditivas, que comenzaron con la promulgación de un reglamento[3] por el que se imponía la equiparación de comisiones entre operaciones nacionales y transfronterizas equivalentes. De esta manera se obligaba a las entidades a realizar un significativo ajuste en los precios aplicados hasta entonces a la operativa transfronteriza, sin que apenas les quedara margen para completar las adaptaciones necesarias para minimizar su impacto sobre la cuenta de resultados.

En esta coyuntura, la comunidad bancaria europea reaccionó con diligencia poniendo en pie una estructura de representación sectorial, el Consejo Europeo de Pagos *(European Payments Council,* EPC), con capacidad suficiente para tratar de hacer frente al proyecto de construcción de una Zona Única de Pagos en Euros o SEPA[4].

2 Las operaciones transfronterizas con tarjetas de crédito presentaban menos problemas, ya que, en buena medida, se trataba de productos amparados bajo una marca internacional y, como tales, basados en un modelo comercial y técnico de alcance universal.

3 Reglamento CE 2560/2001, del Parlamento Europeo y del Consejo, de 19 de diciembre de 2001, sobre los pagos transfronterizos en euros.

4 El hecho de que fuera la industria la que liderara el proyecto de integración no era óbice para que las autoridades europeas desempeñaran un papel activo en su despliegue. Desde el principio, tanto la Comisión Europea (CE) como el Eurosistema han seguido de cerca su evolución, ofreciendo orientación y promoviendo los cambios.

PRINCIPALES BENEFICIOS DE LA SEPA PARA LOS USUARIOS DE SERVICIOS DE PAGO — CUADRO 1

Consumidores	Empresas
— Posibilidad de realizar pagos en euros por toda la zona desde una única cuenta o con una única tarjeta y con la misma facilidad que las operaciones nacionales. — Acceso a una oferta de servicios de pago más amplia, al ser posible la apertura de cuentas en cualquier país de la zona. — Disminución de los precios de los servicios a consecuencia de una mayor competencia. — Mayor seguridad de las operaciones.	— Mayor facilidad para internacionalizar su actividad. — Gestión de pagos simplificada, al utilizar los mismos instrumentos y estándares para operaciones nacionales y transfronterizas, dentro de la zona. — Mejor gestión de la tesorería, al poder centralizar la liquidez en una única cuenta y gozar de menores plazos de ejecución. — Reducción de los costes administrativos, al disponer de una oferta de servicios más amplia y competitiva y poder centralizar la gestión de los pagos.
Comerciantes	**Administraciones Públicas**
— Acceso a una oferta más amplia de servicios de adquisición, al ser posible elegir cualquier entidad adquirente dentro de la zona. — Reducción de costes, al disminuir los precios de los servicios a consecuencia de una mayor competencia y ser posible aceptar una mayor gama de tarjetas con un solo terminal. — Acceso a un mayor número de consumidores, al facilitar el comercio electrónico transfronterizo. — Mayor seguridad, con la consiguiente reducción del fraude.	— Modernización, al favorecer la eliminación de soportes físicos. — Menores costes de mantenimiento de los sistemas informáticos. — Apertura del mercado de la contratación pública a la Unión Europea. — Facilidad para efectuar pagos a pensionistas, estudiantes y trabajadores que residen y mantienen su cuenta bancaria en otro país.

FUENTE: Banco de España.

Al ser esta una consecuencia natural de la introducción de la moneda única, la SEPA ha estado inicialmente centrada en la zona del euro. No obstante, su implantación produce también efectos sobre otros países europeos, contribuyendo, en última instancia, a la mejora general del mercado interior europeo (véase cuadro 1). Así, en términos geográficos, la SEPA comprende al conjunto de los países de la Unión Europea, más Suiza, Liechtenstein, Islandia, Mónaco, Noruega y, desde febrero de 2014, también San Marino.

2.2 LOGROS MÁS DESTACADOS

La ejecución práctica de la SEPA se ha asentado, desde un principio, sobre los tres elementos básicos que precisa cualquier operación electrónica de movimiento de fondos: instrumentos, infraestructuras y estándares. Su despliegue obligaba, en primer lugar, a disponer de un conjunto de instrumentos armonizados en cuanto a sus características esenciales que, además, estuvieran basados en unos estándares comunes. Solo así se podía garantizar su tratamiento automatizado de principio a fin y, por ende, la mejora de la eficiencia de los pagos transfronterizos. Asimismo, se hacía necesario contar con una serie de infraestructuras interoperables entre sí, capaces de procesar los nuevos formatos y de establecer un diálogo recíproco con el que poder llegar a cualquier contrapartida del área SEPA, ya fuera de manera directa o indirecta.

Atendiendo a estas líneas maestras, el EPC centró sus esfuerzos en los tres instrumentos de pago electrónicos más utilizados en Europa: las transferencias, las domiciliaciones bancarias (llamadas «adeudos directos») y las tarjetas de pago. En los dos primeros casos, el EPC optó por crear unos «esquemas de pago» nuevos, lo que supuso la definición de un conjunto de normas, prácticas y estándares que deberían seguir los proveedores de servicios de pago en Europa. Con ello nacieron los dos primeros productos de alcance realmente europeo: las *SEPA Credit Transfers* (SCT) y los *SEPA Direct Debits* (SDD)[5], existiendo en el segundo caso dos versiones, una básica *(Core)* y otra para adeudos entre empresas (B2B).

De estas dos iniciativas, el esquema de adeudos directos SEPA resultaba la más ambiciosa, ya que antes de su aparición no existía la posibilidad de domiciliar recibos en cuentas localizadas en otros países. Además, en comparación con las transferencias, los adeudos directos SEPA implicaban cambios de mayor calado. En el cuadro 2 se ofrece una visión resumida de las características principales de ambos productos.

En el caso de las tarjetas, dadas sus peculiaridades y complejidad, se optó por adoptar un enfoque diferente, que consistió en buscar compatibilizar los modelos preexistentes en lugar de su completa sustitución. Para ello, el EPC definió un marco *(SEPA Cards Framework)* con el conjunto de principios y reglas de alto nivel a los que las entidades emisoras y adquirentes, así como las redes de tarjetas y los procesadores, deberían adaptarse. Sin embargo, dada su generalidad, en noviembre de 2006 se publicó una nota interpretativa del Eurosistema que pretendió evitar la proliferación de interpretaciones divergentes[6].

El marco de tarjetas ha desempeñado un papel fundamental para propiciar la interoperabilidad dentro de la SEPA, ayudando a la definición de estándares de alto nivel. No obstante, como se verá más adelante, el trabajo en el campo de la estandarización no se ha dado aún por finalizado.

5 Transferencias y domiciliaciones (o adeudos directos), respectivamente.

6 El Eurosistema solo considera conformes a la SEPA aquellos esquemas que satisfacen tanto los principios del marco de tarjetas del EPC como los criterios del Banco Central Europeo (BCE) de noviembre de 2006. En 2009 se invitó a los esquemas a que llevaran a cabo autoevaluaciones de su grado de cumplimiento, de acuerdo con unos términos de referencia elaborados por el BCE.

PRINCIPALES CARACTERÍSTICAS DE LOS INSTRUMENTOS SEPA — CUADRO 2

Transferencias SEPA	Adeudos directos SEPA (versión básica)
— Operaciones en euros. — Código IBAN como identificador de la cuenta de beneficiario. — El BIC identifica la entidad financiera del beneficiario. — Precisa un formato específico: ISO 20022 XML para la transmisión de órdenes en fichero a la entidad. — Información adicional sobre el pago: hasta 140 caracteres. — El beneficiario recibirá el importe de la transferencia, como máximo, el siguiente día hábil a la fecha de emisión por parte de la entidad ordenante.	— Operaciones en euros. — Código IBAN como identificador de la cuenta de deudor. — El BIC identifica la entidad financiera del deudor. — Precisa un formato específico: ISO 20022 XML para la transmisión de órdenes en fichero a la entidad. — Información adicional sobre el pago: hasta 140 caracteres. — Con carácter general, se deberán presentar al banco emisor con una antelación respecto a la fecha de cobro de: — Siete días hábiles para primeras operaciones o únicas, y — Cuatro días hábiles para operaciones recurrentes o últimas. — Desde junio de 2013 se ofrece, además, la posibilidad de unificar los plazos y acortar el plazo de anticipación de las presentaciones, en línea con lo que venía siendo la práctica en España. — Plazos de devolución: — Hasta ocho semanas a instancias del cliente deudor por cualquier motivo. — Más de ocho semanas y hasta 13 meses para pagos no autorizados (por orden del cliente). En este caso, el acreedor podrá oponerse a una devolución aportando copia del mandato vigente. — Mandato: el deudor titular de la cuenta de cargo debe firmar la orden de domiciliación o mandato, que el acreedor deberá custodiar. — Identificador único del acreedor y referencia del mandato son obligatorios e identifican al acreedor y los adeudos que esta emita. Para cobros recurrentes deben permanecer inalterables.

FUENTE: Comisión de Seguimiento de la Migración a la SEPA (2013).

La normalización ha sido también necesaria en el ámbito de las transferencias y los adeudos directos. Por una parte, se ha unificado el formato de la mensajería financiera, habiéndose convenido emplear el estándar ISO 20022 y un lenguaje basado en XML para las relaciones entre los proveedores de servicios de pago. Este mismo lenguaje se ha recomendado en las relaciones cliente-entidad. Por otro lado, se ha promovido el uso de los códigos IBAN *(International Bank Account Number)* y BIC *(Business Identifier Code)* como vehículo para la identificación de la cuenta y de la entidad, respectivamente.

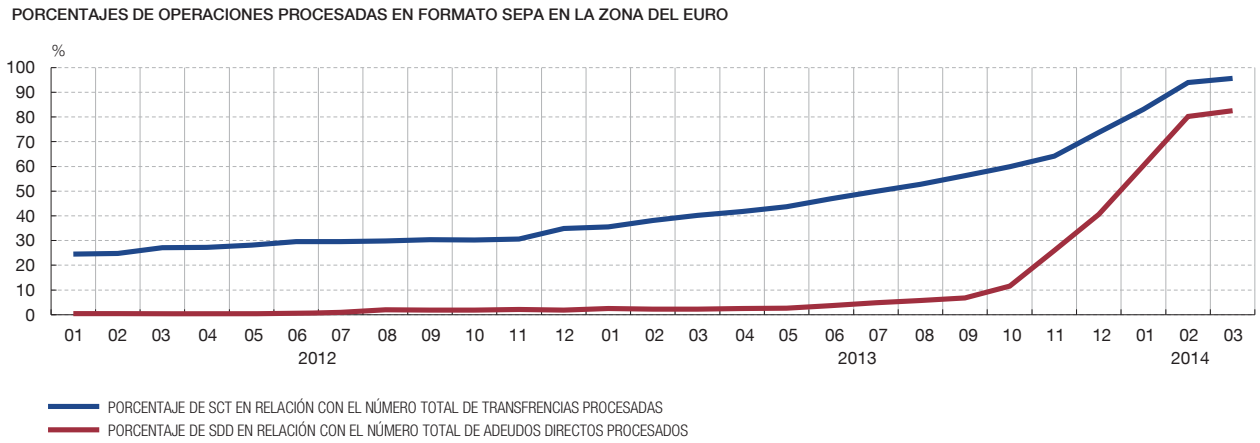
El tercer pilar de la SEPA, junto con estándares e instrumentos, han sido las infraestructuras, para las que el EPC diseñó un marco de principios básicos a los que estas deberían adaptarse. Se intentaba así garantizar la accesibilidad de los participantes[7], la interoperabilidad de las infraestructuras y la competencia entre ellas[8]. Para lograr esto último se exigió separar las funciones relativas al diseño y a la gestión de los esquemas de pago de las correspondientes al procesamiento de las operaciones. Este mismo requisito se hizo extensivo a las infraestructuras por las que se canaliza el tráfico procedente de la operativa con tarjetas de pago.

En cuanto a la accesibilidad de los participantes, la SEPA ha apostado por contar con una tipología de infraestructuras que permita llegar a cualquier punto de la geografía, ya sea de manera directa, a través de la creación de una cámara paneuropea de compensación

7 Es decir, que los participantes de una infraestructura puedan enviar/recibir órdenes de pago, directa o indirectamente, a/de cualquier entidad del área.

8 Por otra parte, el Eurosistema estableció en 2007 cuatro criterios que consideraba que las infraestructuras debían cumplir para ser conformes con la SEPA, y les instó a llevar a cabo una autoevaluación de acuerdo con unos términos de referencia publicados por el BCE en abril de 2008.

PORCENTAJES DE MIGRACIÓN A LOS FORMATOS SEPA EN LA ZONA DEL EURO GRÁFICO 1



FUENTE: Banco Central Europeo (2014).

(Pan-European Automated Clearing House, PEACH) o mediante la consecución de acuerdos de interoperabilidad entre diferentes cámaras nacionales. Por un lado, la Asociación Bancaria del Euro (EBA, por sus siglas en inglés) creó en 2003 el sistema STEP2 de pagos minoristas en euros, génesis de la primera PEACH europea. Por otra parte, la Asociación Europea de Cámaras de Compensación (EACHA, por sus siglas en inglés) elaboró un marco de interoperabilidad basado en enlaces directos entre las cámaras que ha dado lugar a una creciente proliferación de vínculos basados en dicho estándar.

Una vez finalizado el diseño de los esquemas de transferencias y adeudos, así como los marcos de tarjetas e infraestructuras, comenzó la fase de implantación de la SEPA. En esta etapa se desarrollaron y probaron los nuevos instrumentos y, en paralelo, se trabajó en la armonización del marco jurídico.

Terminada la fase de implantación, en enero de 2008 se lanzó la transferencia SEPA, lo que supuso el inicio del período de migración. El esquema de adeudo directo, tanto en la versión básica como en la B2B, comenzó a funcionar en noviembre de 2009. Se aspiraba a conseguir que una masa crítica de pagos hubiera migrado a los instrumentos SEPA a finales de 2010, pero el proceso se caracterizó en su fase inicial por una considerable falta de impulso, de modo que a finales de 2010 apenas el 15 % de las transferencias de la zona del euro se hacía en formato SEPA. En el caso de los adeudos, dicha cifra no llegaba al 1 %.

El lento avance de la migración se atribuyó, en parte, a la falta de un gobierno efectivo del proyecto que involucrara adecuadamente a todos los agentes interesados, más allá de los foros nacionales que se habían constituido en los distintos países[9]. Por esta razón, se buscó reforzar el modelo de gobernanza mediante la creación de un órgano a escala europea con mayor participación, en el que los representantes del lado de la demanda y de la oferta pudieran debatir abiertamente sobre la SEPA y contaran con el apoyo de las autoridades. Bajo estas premisas, y copresidido por el BCE y la CE, en marzo de 2010 se constituyó el Consejo de la SEPA, con los objetivos fundamentales de fomentar la consolidación de la SEPA, su desarrollo futuro y hacer un seguimiento del proceso de migración.

9 Dichos comités han tenido como objetivo fundamentalmente desarrollar la estrategia de migración a escala nacional, así como servir de plataforma de intercambio de información con los usuarios.

Al mismo tiempo, los tímidos niveles de migración alcanzados pusieron de manifiesto la necesidad de fijar una fecha límite que impulsara la consecución de los objetivos de la SEPA. En diciembre de 2010 la CE presentó una propuesta para fijar una fecha final de migración por ley, planteamiento que fue adoptado por el Parlamento Europeo y por el Consejo en marzo de 2012 en forma del Reglamento 260/2012, que establecía el 1 de febrero de 2014 como la fecha límite para que los países de la zona del euro se adaptasen a los nuevos formatos, con la consiguiente desaparición de los esquemas nacionales tradicionales[10]. Desde entonces, y gracias también a la intensificación de los esfuerzos de comunicación, tanto por el lado de las entidades como a escala institucional, los niveles de migración registraron crecimientos visibles en Europa (véase gráfico 1).

2.3 LA EXPERIENCIA DE LA MIGRACIÓN EN ESPAÑA

Pese a que el objetivo de la SEPA es común a todos los países, las diferentes situaciones de partida y las peculiaridades de cada mercado nacional requerían que los planes y tareas necesarios para acometer la migración fueran consensuados y llevados a cabo de manera independiente por cada comunidad nacional.

En el caso español, se crearon dos foros para coordinar el proyecto: el Observatorio para la Migración a la SEPA y la Comisión de Seguimiento de la Migración a la SEPA[11]. El primero de ellos, compuesto por representantes de todos los agentes involucrados en la iniciativa (asociaciones bancarias, Iberpay[12], redes de tarjetas y usuarios finales, incluyendo Administraciones Públicas) y presidido por el Banco de España, fue concebido como una plataforma para el intercambio de información entre todos los colectivos. Por otra parte, a la Comisión de Seguimiento, en la que no participan representantes de la demanda[13], se le asignó la misión de diseñar el plan de migración y hacer su seguimiento. En 2007 la Comisión aprobó dicho plan de migración, fijando los principales hitos que se debían alcanzar para lograr una transición ordenada a la SEPA en las fechas previstas.

En el ámbito de las tarjetas, la comunidad bancaria se centró en la migración al estándar EMV[14], dado que la interoperabilidad de las tarjetas españolas estaba ya asegurada gracias a los acuerdos de *cobranding* que, desde hacía tiempo, existían con las marcas internacionales Visa y MasterCard. Al ser España un país receptor neto de transacciones transfronterizas, y considerando que las mayores tasas de fraude se daban en este tipo de operativa, se dio prioridad a la migración de cajeros y terminales de punto de venta. En 2008, una vez migrado más del 75 % de los terminales, se empezó a observar un leve aumento en el número de tarjetas con chip, que se intensificó en 2010, de modo que a finales de 2013 había finalizado prácticamente el proceso de adaptación al EMV (véase gráfico 2).

Por otra parte, dos de las tres redes de tarjetas españolas[15] se vieron ante la tesitura de tener que hacer frente también al requisito de separación entre la gestión del esquema y la actividad de procesamiento de las operaciones. Esta tarea se completó en 2008, resultando

10 Ante la posibilidad de no lograr finalizar la migración para dicha fecha y el temor a que se produjera un colapso en los pagos, el Parlamento Europeo y el Consejo aprobaron, a propuesta de la CE, un período transitorio adicional de seis meses (hasta el 1 de agosto de 2014), durante el cual los proveedores de servicios de pago podrán aceptar operaciones en los formatos nacionales.

11 Ambas estructuras, en conjunto, constituyen lo que genéricamente se conoce como «foros SEPA nacionales».

12 Entidad gestora del Sistema Nacional de Compensación Electrónica (SNCE), la cámara de compensación española.

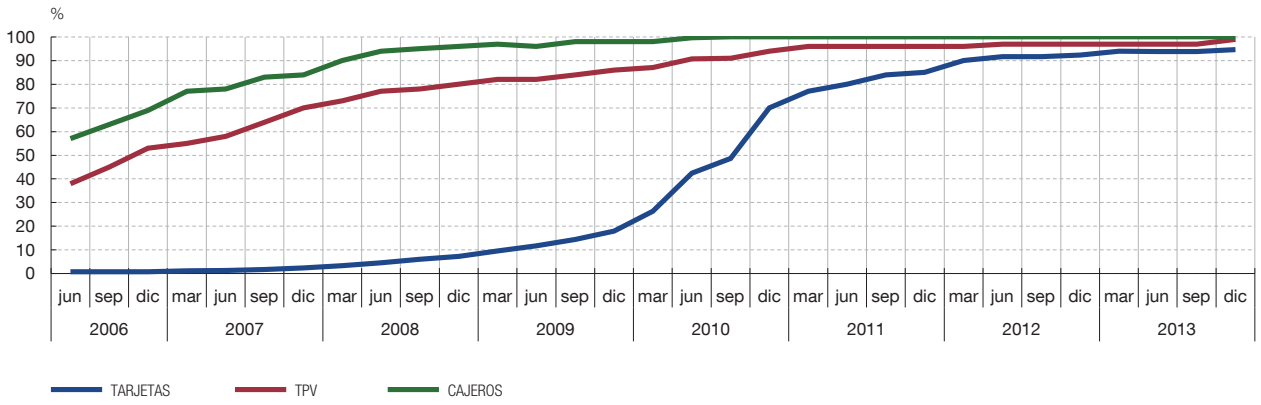
13 Formada por las asociaciones bancarias (incluyendo un número limitado de asociados), Iberpay y las redes de tarjetas, y copresidida por un representante de la comunidad bancaria española en el plenario del EPC y por el Banco de España.

14 Estándar basado en el uso de chip.

15 No fue necesario que el tercer esquema —Euro6000— acometiera esta tarea, dado que, desde el principio, su procesador era una entidad independiente (CECA).

PORCENTAJES DE MIGRACIÓN AL EMV EN ESPAÑA GRÁFICO 2

EVOLUCIÓN DE LA MIGRACIÓN A EMV EN ESPAÑA



FUENTE: Redes españolas de tarjetas (2014).

en el establecimiento de dos nuevas entidades procesadoras legalmente independientes (Redes y Procesos y Sermepa[16]), que se unieron así a la CECA. Finalmente, cabe mencionar que en 2009, en línea con las indicaciones del BCE, los tres esquemas españoles llevaron a cabo autoevaluaciones con respecto a los términos de referencia del Eurosistema, en las que declaraban cumplir con los requisitos de la SEPA.

En lo que respecta a los nuevos instrumentos paneuropeos, se planteó una migración progresiva de las distintas tipologías de operaciones de transferencia y adeudo. Además de las propias entidades bancarias, fue necesaria la adaptación del SNCE en su condición de mecanismo de compensación y liquidación encargado de procesar buena parte de las operaciones de transferencia y adeudo domiciliado realizadas en España. Iberpay desarrolló un plan de migración específico, que implicó la creación de dos subsistemas para el procesamiento de los nuevos instrumentos SEPA, así como la ampliación de su ámbito geográfico de actuación[17]. Estas medidas aseguraron, además, el cumplimiento de los criterios para infraestructuras del Eurosistema, según quedó reflejado en la autoevaluación publicada por Iberpay en septiembre de 2008.

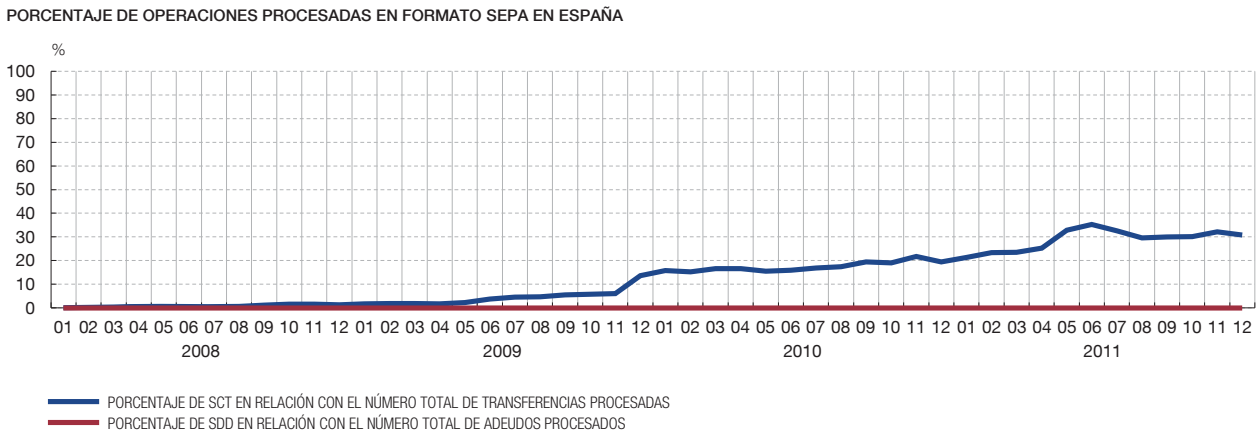
A pesar del grado de preparación de la comunidad española para llevar a cabo la migración conforme al calendario establecido, al igual que en otros países el ritmo de la transición resultó estar por debajo de lo esperado (véase gráfico 3). De ahí la importancia del reglamento de fecha final. Con la publicación de dicho reglamento, la comunidad bancaria española elaboró un nuevo plan de acción en diciembre de 2012, encaminado a fomentar la adopción de las transferencias y adeudos directos SEPA. Se fijó así un calendario de hitos para ir escalonándolos y se instó a los usuarios de servicios de pago a adoptar los instrumentos SEPA cuanto antes. Además, se acordó intensificar las acciones de comunicación, mediante la celebración de jornadas informativas por todo el territorio nacional, dirigidas fundamentalmente a las pymes y a las Administraciones Públicas locales.

Por otra parte, el reglamento facultó a los Estados miembros a eximir a entidades y usuarios del cumplimiento de ciertos requisitos durante un período de dos años, posibilidad que se

16 Posteriormente se fusionaron, resultando en Redsys, por lo que en la actualidad existen tres esquemas de tarjetas y dos procesadores.

17 Para ello se establecieron enlaces con otras cámaras de compensación europeas (holandesa, alemana y polaca) siguiendo el modelo de la EACHA y se puso en marcha una pasarela técnica con el sistema STEP2 de la EBA.

PORCENTAJES DE MIGRACIÓN A LOS FORMATOS SEPA EN ESPAÑA (2008-2011) GRÁFICO 3



FUENTE: Banco de España.

concretó en España[18] para: a) dar continuidad a una serie de productos clave para la financiación de las empresas[19]; b) permitir a los consumidores beneficiarse de los servicios de conversión gratuitos del número de cuenta antiguo (CCC) al IBAN, siempre que sus entidades los ofreciesen, y c) facilitar la adaptación de las empresas y otros agentes económicos, permitiéndoles aplazar el uso de la norma ISO 20022 en el intercambio de ficheros de transferencias y adeudos domiciliados con sus proveedores de servicios de pago.

Las transferencias SEPA evolucionaron notablemente en 2013, pero no así la operativa con adeudos SEPA, ya fuese por la decisión de los grandes emisores de aplazar la migración hasta el último momento, o por el desconocimiento del resto de emisores acerca de sus implicaciones prácticas. Esta situación llevó a incrementar las labores de comunicación, tanto de las entidades hacia sus clientes como del propio Banco de España, el cual lanzó una campaña informativa en diciembre de 2013 con anuncios en prensa, radio e Internet.

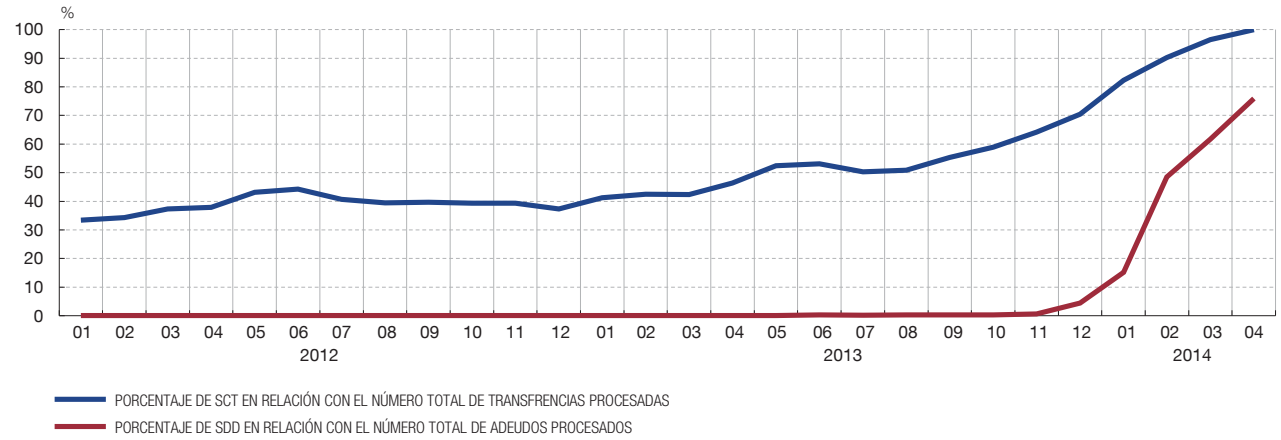
Al cierre del ejercicio se registró, por primera vez, un tímido repunte del número de adeudos SEPA, que, conforme a las estimaciones realizadas por los distintos agentes, se intensificaría en enero, hasta alcanzar el 100 % de las operaciones al mes siguiente. Sin embargo, la propuesta presentada el 9 de enero por la CE para conceder un período transitorio adicional de seis meses tuvo como consecuencia una ralentización del ritmo de migración, que, sobre todo, se hizo notar por el lado de los adeudos directos (véase gráfico 4).

A fin de evitar que la migración se extendiera hasta el 1 de agosto de 2014, Iberpay, por sugerencia de la Comisión de Seguimiento, acordó interrumpir el procesamiento de transferencias y adeudos tradicionales con anterioridad a dicha fecha. Dados los altos porcentajes de migración de aquellas, muy próximos ya al 100 %, se decidió que la cámara dejara de procesar transferencias nacionales tradicionales el 18 de marzo de 2014. En el caso de los adeudos, se optó por mantener abierto hasta el 10 de junio de 2014 el canal por el que estos se gestionan. Dado que Iberpay procesa una parte sustancial de los pagos minoristas que realizan las entidades españolas, esta medida constituye un incentivo importante para lograr la migración total de los adeudos antes de la finalización del plazo adicional fijado por órganos legislativos europeos.

18 Según queda recogido en la Orden ECC/243/2014.
19 En concreto, recibos utilizados en el tráfico mercantil y anticipos de crédito.

PORCENTAJES DE MIGRACIÓN A LOS FORMATOS SEPA EN ESPAÑA (2012-2014) GRÁFICO 4

PORCENTAJE DE OPERACIONES PROCESADAS EN FORMATO SEPA EN ESPAÑA



FUENTE: Banco de España.

3 Un mercado en transformación

La sustitución de las transferencias y de los adeudos directos nacionales por otros de alcance paneuropeo, lejos de suponer la estación de término en el proyecto SEPA, ha de interpretarse como un hito de suma importancia dentro de una iniciativa de largo recorrido que, a partir de ahora, comenzará a abrirse a nuevos desafíos.

En los próximos años, la SEPA buscará seguir avanzando en el proceso de integración de la UE con el fin de dinamizar más aún sus efectos positivos sobre el crecimiento económico y creando nuevas oportunidades para la mejora de los mercados de pagos de la región. Los siguientes apartados se dedican a analizar estos últimos aspectos.

3.1 PRÓXIMAS INTERVENCIONES REGULATORIAS

En línea con la historia reciente, la mejora del marco jurídico aplicable al tráfico de pagos minorista seguirá acaparando la atención del regulador europeo en los próximos años. Dejando a un lado la inminente adopción de la directiva sobre la transparencia y comparabilidad de las comisiones de las cuentas de pago, el cambio de cuenta de pago y el acceso a una cuenta de pago básica, los dos proyectos clave serán tanto la nueva directiva de servicios de pago en el mercado interior (PSD2) como el reglamento sobre tasas de intercambio para operaciones de pago basadas en tarjetas (RMIF)[20] (véase un resumen en el cuadro 3).

Ambas iniciativas parten de la existencia de lagunas y carencias en el cuerpo legislativo actual, así como de la constatación de que ciertos sectores (como los relacionados con el pago con tarjeta, por Internet o a través de comunicaciones móviles) siguen sin operar de manera óptima[21]. En consecuencia, todas las futuras acciones regulatorias estarán dirigidas a corregir asimetrías y deficiencias en los niveles de competencia del mercado de pagos, evitando así incoherencias impropias de un mercado cohesionado.

En esta coyuntura, la nueva directiva de servicios de pago perseguirá facilitar el correcto funcionamiento del mercado de pagos europeo, en consonancia con los objetivos de la

20 Ambas iniciativas tratan de dar respuesta a algunas de las preocupaciones e inquietudes manifestadas en la consulta pública de la CE a propósito del libro verde titulado *Hacia un mercado europeo integrado de pagos mediante tarjeta, pagos por Internet o pagos móviles* (2012).

21 La falta de innovación, las barreras de entrada y, en general, la ausencia de un mayor comercio en línea transnacional llevan aparejados costes importantes para la economía de la UE, que se estiman alrededor del 1 % del PIB de la UE o, lo que es lo mismo, unos 130.000 millones de euros al año.

Estrategia Europa 2020 y con los de la Agenda Digital Europea[22]. Para ello se revisarán los contenidos anteriores y se incorporarán disposiciones nuevas allí donde la realidad del mercado lo demande. Así, entre otros temas, el texto actualmente en discusión prevé abordar los siguientes aspectos:

— Poner fin al vacío legal existente y posibilitar el uso de servicios de pago por Internet de bajo coste, que se perfilen como alternativa al empleo de tarjetas de pago para la adquisición de bienes o servicios a distancia. A tal efecto, se somete a los proveedores terceros (TPP)[23] de estos servicios a niveles de regulación y supervisión equiparables a los de las demás entidades de pago.

— Promover una mejora general de las condiciones de seguridad de las transacciones en línea exigiendo la autenticación fuerte[24] de los clientes. Contribuir, a su vez, a la efectiva prevención y lucha contra el fraude imponiendo a los proveedores de servicios de pago[25] un conjunto de requisitos mínimos de gestión del riesgo y notificación de incidentes de conformidad con las directrices que fijen la Autoridad Bancaria Europea y el Banco Central Europeo.

— Reforzar los niveles actuales de protección de los consumidores ante fraudes, posibles abusos e incidencias en el tráfico de pago (por ejemplo, en caso de impugnación o ejecución incorrecta de las operaciones), acotando aún más las pérdidas patrimoniales potenciales.

— Redefinir el ámbito de aplicación de la norma en aras de mejorar la coherencia interna del marco legislativo.

— Clarificar el régimen de acceso a los sistemas de pago designados con arreglo a la Directiva 98/26/CE[26], posibilitando así el acceso indirecto de las entidades de pago en igualdad de condiciones que el resto de entidades de crédito (es decir, cumpliendo de forma efectiva con los requisitos que garanticen la integridad y la estabilidad de estos sistemas de pago).

— Alinear las normas de devolución con las buenas prácticas de la industria bancaria europea en la SEPA (derecho incondicional de reembolso durante un plazo de ocho semanas desde la fecha del adeudo en cuenta). No obstante, se contemplan una serie de situaciones en las que el ejercicio de este derecho podría restringirse.

---

22 La PSD2 contribuye a promover un empleo más eficaz de los recursos escasos de la economía, liberándolos para otros usos productivos generadores de empleo y crecimiento. Asimismo, actúa de respaldo de la propuesta de marco jurídico relativo a la identificación electrónica y los servicios de confianza para las transacciones electrónicas. También resulta coherente con las medidas destinadas a garantizar un alto nivel de seguridad de las redes y la información en el seno de la Unión. Del mismo modo, la PSD2 refleja las prioridades de la comunicación sobre el comercio electrónico y los servicios en línea, destinadas a lograr un mercado único digital.

23 Los proveedores terceros actúan de puente entre el sitio web del comerciante y la plataforma bancaria del consumidor. Se les conoce, genéricamente, como *Third-Party Providers* o TPP.

24 Se entiende por tal la que combina dos o más de los siguientes elementos: algo que el cliente conoce *(v. g.,* contraseña), algo que el cliente tiene *(v. g.,* teléfono, *token,* tarjeta de coordenadas) o algo que el cliente es *(v. g.,* rasgo biométrico como la huella digital o la huella vocálica). Los elementos deben ser mutuamente independientes y al menos uno de ellos debería ser no reusable, no replicable y no susceptible de ser robado vía Internet (por ejemplo, una contraseña de un solo uso específica para un pago y generada por un *software* generador de *tokens).*

25 Tanto en relación con las autoridades competentes como con los usuarios finales, según las circunstancias.

26 Directiva 98/26/CE, del Parlamento Europeo y del Consejo, de 19 de mayo de 1998, sobre la firmeza de la liquidación en los sistemas de pagos y de liquidación de valores.

CONTENIDOS DESTACADOS DE LAS PROPUESTAS DE PSD2 Y DEL RMIF — CUADRO 3

Directiva de servicios de pago	Reglamento de tasas de intercambio
— Amplía su ámbito de aplicación geográfico y en divisas. — Reduce las exenciones y opciones a disposición de los Estados miembros. — Califica de actividad reservada la operativa de los TPP y la equipara con la de las entidades de pago. — Aplica a los sistemas designados bajo la Ley de Firmeza un régimen de participación indirecta extenso. — Reconoce el derecho de devolución incondicional en los adeudos por defecto. — Refuerza los requisitos de seguridad y autenticación de las partes intervinientes en una operación. — Atribuye un mayor protagonismo a la Autoridad Bancaria Europea (portal web, emisión de directrices sobre pasaporte y cuestiones técnicas).	— Tasas máximas del 0,2 % en débito y del 0,3 % en crédito. — Dos meses de carencia para la operativa transfronteriza. — Dos años de carencia para la operativa nacional. — Válido para operaciones presenciales y a distancia. — No aplicable a las tarjetas comerciales ni a los esquemas tripartitos, salvo cuando actúen a través de licenciatarios. — Separación del esquema y procesamiento. — Plena interoperabilidad técnica entre procesadores. — Marca compartida obligatoria a petición del titular. — Mayor detalle y frecuencia de información sobre comisiones. — No restricción geográfica a la adquisición y/o emisión.

FUENTE: Banco de España.

Por su parte, el reglamento presenta dos grandes líneas de actuación en relación con las tarjetas de pago: a) corregir las distorsiones que, sobre el coste de estos servicios, parecen estar ocasionando las tasas de intercambio, y b) uniformizar reglas y prácticas comerciales divergentes que dificultan la toma de decisiones informadas e introducen ineficiencias adicionales.

La primera de estas dimensiones se traduce en la fijación de una serie de techos a las tasas de intercambio aplicables a dichos instrumentos, lo que en la práctica supone limitarlas a un 0,2 % (débito) y a un 0,3 % (crédito) del valor de la operación, independientemente de su naturaleza nacional o transfronteriza. Con ello se consigue, además, aportar la necesaria claridad jurídica acerca del modelo de negocio que resulta admisible en Europa, sin perjuicio de que dichas tasas puedan acabar desapareciendo en el medio plazo.

El reglamento propicia la armonización de otros estándares y prácticas de negocio locales con la intención de: a) incidir sobre la transparencia del instrumento, al dar mayor publicidad a las distintas comisiones[27]; b) aumentar la capacidad de elección de usuarios y entidades[28], y c) permitir la aplicación de recargos que dirijan al cliente hacia los medios de pago más eficientes.

Ambas disposiciones se están discutiendo conjuntamente, siendo los puntos más polémicos los relativos a: a) la ausencia de referencias a un marco contractual por el que se gobiernen los detalles de la seguridad, la protección de los datos y el reparto de responsabilidades entre las entidades gestoras de las cuentas y los proveedores terceros de servicios de acceso a las cuentas; b) el reducido número de exenciones permitidas; c) la definición, el importe y los plazos de aplicación de las tasas de intercambio[29], y d) las condiciones precisas en las que haya de producirse la separación entre el esquema y las actividades de procesamiento.

27 La propuesta prohíbe, por ejemplo, los acuerdos contractuales que impidan a los comerciantes revelar a sus clientes las tasas que pagan. Se obliga también a los proveedores de los servicios de pago a tener que facilitar a sus clientes un mayor detalle (y con mayor frecuencia) de las comisiones que les hayan girado. Por último, se exige que cada servicio se tarifique por separado, aunque podría acordarse su empaquetamiento.

28 Así, por ejemplo, se propone dejar a la elección del cliente qué aplicación de pago emplear en cada momento.

29 Entre otros, en España, donde las tasas propuestas supondrían un descenso promedio de unos 30 puntos básicos en las operaciones a crédito y de 35 puntos básicos en lo relativo al débito respecto de la situación actual.

3.2 HACIA UNA GOBERNANZA EFECTIVA

Por su trascendencia para el interés general, la participación de los usuarios en la definición y evolución de las características operativas de los instrumentos SEPA ha sido un foco permanente de controversia con las entidades proveedoras de estos, razón por la que en 2010 se constituyó el ya mencionado Consejo de la SEPA.

No obstante, más que un foro para facilitar un diálogo social amplio, plural y abierto sobre la configuración futura del mercado de pagos minorista, estos años de atrás el Consejo de la SEPA se ha venido dedicando principalmente a favorecer el proceso de transición al nuevo escenario, siendo precisamente con la finalización de esta cuando resulta pertinente reconducir sus actuaciones.

La redefinición de su naturaleza y de su propósito fundamental deberá ayudar a situar en un primer plano la vertiente más estratégica de la plataforma, haciendo que la gestión de la SEPA se convierta en un auténtico «proyecto de demanda» que reste protagonismo a la oferta y al regulador, y permita abordar los retos futuros desde una perspectiva integral.

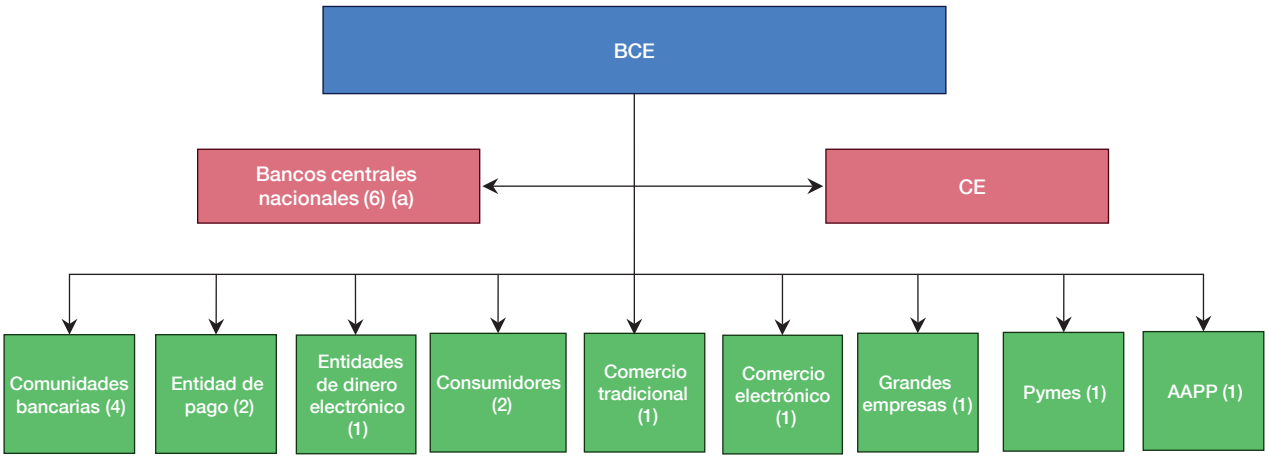
En su configuración renovada, este órgano de dirección de alto nivel está llamado a responder, como mínimo, a dos cuestiones clave. Por un lado, deberá ser capaz de introducir mejoras sustanciales en lo que atañe a su representatividad y, por otro, habrá de conseguir extender su actual ámbito de actuación a otros terrenos de relevancia para la SEPA. Adicionalmente, la nueva arquitectura no podrá perder de vista la importancia de cultivar y mantener enlaces permanentes y fluidos con cada uno de los comités SEPA nacionales.

Bajo estas premisas, en diciembre de 2013 se anunció la refundación del Consejo de la SEPA, dando paso a un foro de cooperación multilateral rebautizado como *Euro Retail Payments Board* (ERPB) (véase esquema 1). Al igual que su antecesor, el ERPB estará formado por representantes tanto de la oferta como de la demanda, a los que se sumarán expertos de los bancos centrales nacionales. Sin embargo, en comparación con la situación precedente habrá algunos cambios significativos tanto en lo que respecta a su número y procedencia como en relación con el papel que se espera que estos desempeñen.

En concreto, el total de asientos asignado a los proveedores de servicios de pago y a los usuarios se elevará a siete, frente a los cinco anteriores, lo que dotará a la estructura de

COMPOSICIÓN DEL ERPB

ESQUEMA 1



FUENTE: Banco de España.

a Por rotación, cinco bancos centrales pertenecientes a la zona del euro y uno de fuera de esta.

una mayor cohesión, al integrar nuevas categorías de participantes[30]. Por otro lado, se intensificará la presencia de los bancos centrales del Eurosistema, aunque pasarán a ostentar la condición de observadores, con el fin de evitar que sus opiniones puedan condicionar el debate entre los restantes agentes económicos. Está previsto que la CE actúe bajo este mismo régimen.

Para facilitar la ejecución de las tareas más técnicas y poder beneficiarse, además, de la experiencia práctica de especialistas en diferentes campos, se podrán crear subestructuras de carácter *ad hoc* y duración limitada. No hará falta ser miembro del ERPB para participar en las discusiones, sino que primará la capacitación particular de los candidatos. Además, la agenda de trabajo de estos grupos estará marcada por un mandato o términos de referencia aprobados por el ERPB y sus entregables serán objeto de evaluación en una fase posterior.

En todo caso, el ERPB carecerá de facultades para poder imponer sus resoluciones sobre los miembros. Asimismo, sus deliberaciones y orientaciones habrán de entenderse sin perjuicio de la aplicación de las normas de competencia y de la autonomía de actuación de las autoridades nacionales y comunitarias en los terrenos que les sean propios. En consecuencia, la efectividad del ERPB dependerá, en buena medida, de la correcta selección de los interlocutores y de su grado de compromiso con la iniciativa. De ahí que se espere que los usuarios sean mucho más activos que en el pasado y que se cuente con la favorable disposición del EPC para seguir compartiendo su experiencia y ejercer el liderazgo en los trabajos más técnicos[31].

Por otra parte, será necesario que la coordinación y el diálogo entre las asociaciones sectoriales europeas representadas en el ERPB y sus respectivos miembros nacionales mejoren sustancialmente. En caso contrario, no se logrará la implicación plena de todas las partes interesadas en el desarrollo de la agenda estratégica. Finalmente, el posicionamiento de la CE en su nuevo papel como observador habrá de concretarse demostrando que esta nueva circunstancia no acaba siendo un lastre para las elevadas ambiciones del ERPB.

En lo tocante a nuestro país, la creación del ERPB y la finalización de la migración aconsejan, igualmente, emprender una revisión pormenorizada del funcionamiento de las estructuras que han venido sirviendo para impulsar la migración a la SEPA, con objeto de adecuarlas al nuevo entorno.

3.3 EL FUTURO DE LAS TARJETAS

Además de las transferencias y las domiciliaciones, las tarjetas surgen como el tercero de los grandes pilares del proyecto SEPA. Sin embargo, a pesar de las transformaciones sufridas hasta el momento[32], todavía queda por recorrer un camino largo que permita hacer de la interoperabilidad de los diferentes productos y soluciones una realidad en toda Europa.

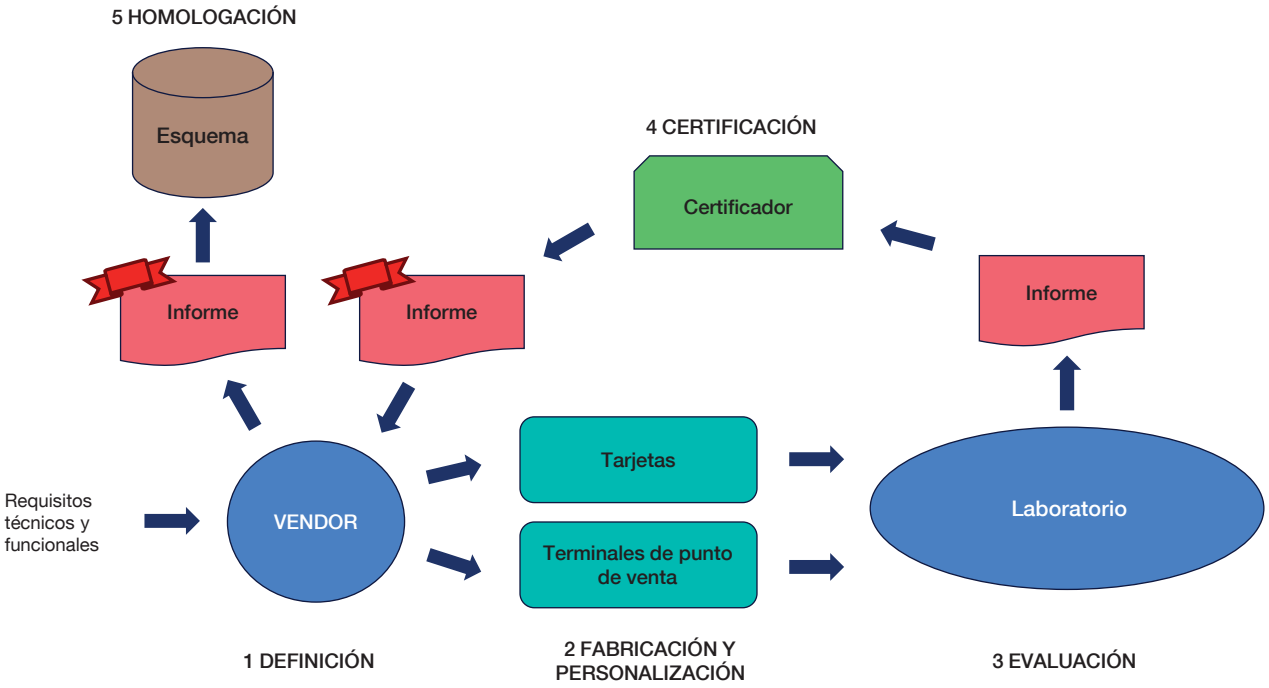
Junto con las tasas de intercambio, otras dimensiones de carácter técnico y operativo reclaman una atención inmediata. Así, la identificación de estándares comunes y buenas prácticas en el cumplimiento de estos se erige en una prioridad, sobre todo en lo que respecta a la mejora general de la transparencia acerca de las múltiples iniciativas en coexistencia.

30 Por ejemplo, las entidades de pago, las de dinero electrónico o los comercios que operan exclusivamente en Internet.

31 Ello con independencia de que siga ocupándose de la gestión y del mantenimiento de los esquemas SEPA.

32 Como, por ejemplo, la adaptación completa del parque de dispositivos y tarjetas a la operativa EMV o los procesos de reestructuración del sector necesarios para completar la separación entre las actividades de procesamiento de transacciones de medios de pago y la gestión del esquema.

ELEMENTOS Y COMPONENTES BÁSICOS DEL PROCESO DE CERTIFICACIÓN ESQUEMA 2



FUENTE: PayCert (2014).

Resulta, pues, imprescindible contar con un procedimiento de «homologación» *(labelling)* que permita acreditar la coherencia entre las implementaciones particulares y las directrices de estandarización acordadas, y hacer que, en la medida de lo posible, este procedimiento adquiera un tono formal en lugar de ser una simple autocertificación.

Una normalización eficaz requiere, además, que se produzcan avances significativos en el despliegue de un proceso de evaluación y certificación más homogéneo e, idealmente, único en Europa. Esto permitiría el abaratamiento de los costes en que incurren los fabricantes de terminales y plásticos, facilitándoles, además, el acceso a todo el mercado europeo.

En este sentido, resulta particularmente valiosa la experiencia acumulada en los programas piloto que, sobre esta materia, se han venido acometiendo. Sus resultados permiten albergar esperanzas sobre la viabilidad de una convergencia de las metodologías de evaluación en el medio plazo. No obstante, lograr consolidar la estructura de gobernanza permanente del marco de certificación europeo ofrece mayores resistencias, dado lo dispar de los intereses de las distintas partes involucradas.

Entre las demás consideraciones de carácter técnico, sobresale la fijación de un posible calendario para la adopción del estándar ISO 20022 XML que posibilite, además, la integración en una misma infraestructura del procesamiento de las tarjetas y el de otros instrumentos SEPA. Estas actuaciones ofrecerían un potencial para obtener eficiencias adicionales, siempre que no supongan el menoscabo de la interoperabilidad actualmente existente a escala global. En consecuencia, cualquier paso que se quiera dar en este terreno exigirá una planificación cuidadosa y cooperativa.

En lo tocante a las reglas de negocio, una buena parte de las transformaciones futuras va a venir determinada por las exigencias que se derivan de la propuesta de reglamento sobre tasas de intercambio. Por un lado, está previsto dar un fuerte impulso a la actividad de emisión y/o adquisición transfronteriza mediante la desaparición de todas aquellas

restricciones territoriales que pudieran estar obstaculizando dichas prácticas a día de hoy. Esta medida, combinada con la homogeneización de estándares, no solo debería abrir el mercado a nuevos operadores procedentes del exterior, sino que hará posible también que estos discriminen en precios, al no tener que seguir aplicando las tasas de intercambio vigentes en el país en el que presten sus servicios.

Del mismo modo, será nula toda aquella cláusula contractual que obligue a aceptar todas las tarjetas de una misma marca, lo que posibilitará una negociación más equilibrada entre comerciantes y proveedores de servicios de pago. No obstante, esta medida podría generar cierta incertidumbre acerca del nivel de aceptación de cada producto concreto.

A modo de cierre, el reglamento sugiere asimismo abrir la puerta a la posibilidad de simultanear varias marcas competidoras en una misma tarjeta, siempre que así lo solicite su legítimo titular. De prosperar, esta iniciativa supondrá un cambio radical con respecto a las reglas de juego imperantes hasta la fecha, y planteará retos importantes desde el punto de vista comercial, técnico y de la seguridad.

3.4 POTENCIANDO EL COMERCIO ELECTRÓNICO

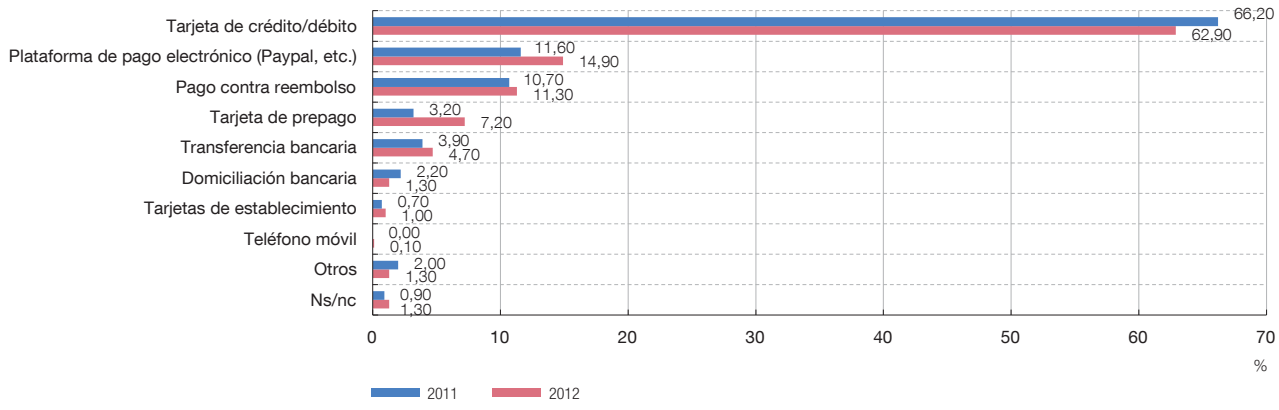
La creciente importancia que está adquiriendo el comercio electrónico en Europa contrasta con lo limitado y dispar, en términos de coste y seguridad, de las alternativas de pago específicamente adaptadas a este nuevo entorno transaccional. De ahí su —todavía— escaso nivel de penetración en comparación con otras regiones[33] y la necesidad de emprender actuaciones que permitan explotar todo su recorrido potencial.

Por su papel integrador, los instrumentos SEPA podrían ser la piedra angular en el desarrollo de nuevos servicios de pago electrónico de segunda generación que ayuden a impulsar este ámbito de actividad. Sin embargo, el éxito de estos nuevos productos vendrá condicionado por su capacidad para dar cumplida respuesta a exigencias como las siguientes: a) la mejora de la seguridad; b) la mayor comodidad de las nuevas soluciones; c) el grado real de empleabilidad transfronteriza; d) la salvaguarda de los datos sensibles y de la confidencialidad de las comunicaciones, y e) la transparencia y equidad en lo que se refiere a su política tarifaria.

Lo anterior supondrá, entre otras cuestiones, apostar firmemente por el uso de estándares abiertos que fomenten la interoperabilidad paneuropea y que permitan materializar los

33 Alrededor del 3,2 % del PIB de la UE en 2013.

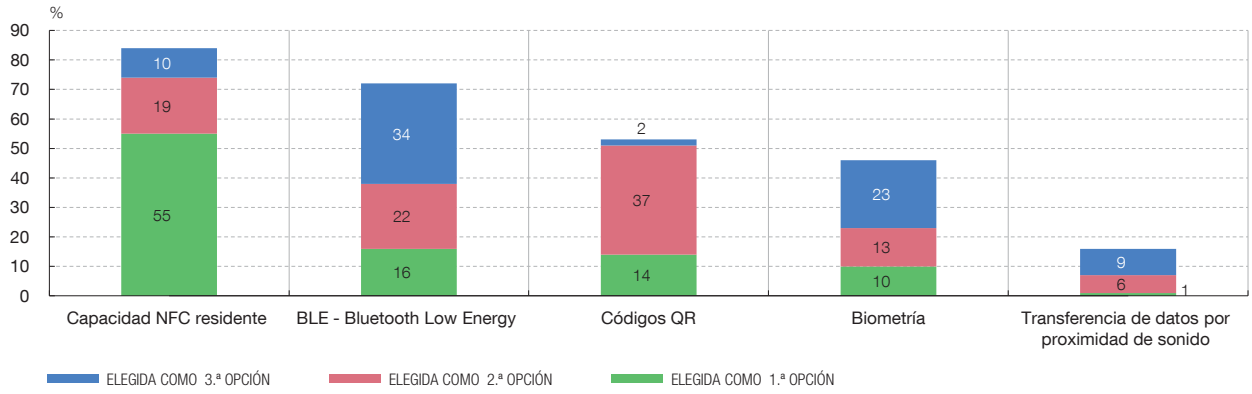
FORMAS DE PAGO UTILIZADAS POR LOS INTERNAUTAS ESPAÑOLES PARA COMPRAR EN INTERNET (%) GRÁFICO 5



FUENTE: Observatorio Nacional de las Telecomunicaciones y de la Sociedad de la Información (2013).

TECNOLOGÍAS MÁS DESTACADAS QUE PODRÍAN IMPULSAR EL PAGO POR MÓVIL EN LOS COMERCIOS DE PROXIMIDAD

GRÁFICO 6



FUENTE: Advanced Payments Survey Edgard, Dunn & Company (2014).

efectos de escala latentes. Con ello se estará dando entrada a nuevos operadores con propuestas de valor atractivas, como de hecho ya está ocurriendo con los proveedores terceros de servicios de acceso a las cuentas bancarias. Este escenario anuncia cambios sustanciales en las clásicas reglas de juego y permite anticipar comportamientos reactivos de los actores tradicionales, que previsiblemente estimularán la innovación bancaria en clave cooperativa.

Otro acicate para el comercio electrónico podría encontrarse en el desarrollo de herramientas armonizadas para la emisión y gestión electrónica de los mandatos SEPA, siendo particularmente determinante la apuesta por soluciones sencillas, ágiles y, ante todo, válidas en toda Europa. Sus potenciales sinergias con otras iniciativas en el ámbito de la identificación y autenticación electrónica resultarán igualmente cruciales.

La mejora de la seguridad constituirá el tercero de los pilares en la expansión del comercio no presencial e implicará la adopción de medidas, de carácter urgente, tanto por el lado de los proveedores de servicios de pago como por el de los propios usuarios. En este sentido, el trabajo del Foro Europeo para la Seguridad en los Pagos Minoristas *(SecuRe Pay)* en el ámbito de la seguridad de los pagos por Internet es un referente ineludible que, a buen seguro, condicionará la agenda de actuaciones futura.

Marcándose como horizonte de cumplimiento febrero de 2015, *SecuRe Pay* ha elaborado un marco específico de recomendaciones que proporciona, al mercado en su conjunto, una serie de orientaciones sobre cuáles son las condiciones mínimas de seguridad que, en opinión de las autoridades, habrán de satisfacerse en la prestación y uso de servicios de pago en Internet.

Como principio fundamental, *SecuRe Pay* aboga por el uso generalizado de mecanismos de autenticación fuerte, tanto a la hora de ordenar pagos como cuando se esté accediendo a datos sensibles. Adicionalmente, se sugieren otras líneas de acción destacadas.

SecuRe Pay pone, por ejemplo, especial énfasis en el despliegue de medidas generales de control basadas en políticas de riesgo robustas, eficaces y en permanente evolución. Propone, además, que estas se acompañen de procedimientos que permitan una estrecha monitorización de la actividad y que eviten, así, la aparición y el escalado de posibles incidentes.

Asimismo, *SecuRe Pay* subraya la importancia de informar, educar y prestar una asistencia continua a los clientes finales. Se pretende así fomentar una concienciación creciente sobre los comportamientos más adecuados en sus relaciones frente a terceros y frente a la propia entidad, favorecer la comunicación temprana de anomalías y contribuir a precisar las responsabilidades que estos asumen por utilizar el servicio[34]. A estas recomendaciones hay que sumar la reciente publicación de otras dirigidas específicamente a reforzar la seguridad de los servicios de acceso a las cuentas de pago y de los pagos por móvil.

Los pagos por móvil conforman precisamente otra de las prioridades más inmediatas de la SEPA, siendo este un campo que experimenta una rápida expansión gracias a la proliferación de los dispositivos inteligentes y a la imparable demanda de nuevas aplicaciones de pago.

La falta de una normalización técnica adecuada[35] es, una vez más, el origen de los problemas, correspondiendo a la industria hallar las mejores fórmulas de cooperación con los restantes operadores. Solo así será posible lograr la convergencia de estándares y soluciones que permita, por ende, articular una oferta globalmente consistente de servicios interoperables, atrayendo hacia sí a una masa crítica de comercios y usuarios.

3.5 OTROS AVANCES POTENCIALES

De las iniciativas que actualmente se están debatiendo, una de las más sobresalientes podría ser la relativa a la creación de un esquema de adeudo directo de uso general[36] en el que se prescinda del derecho a solicitar la devolución. Se trata de un producto ampliamente demandado desde algunas jurisdicciones que, de implantarse definitivamente, podría resolver los problemas de aquellas comunidades que, con la SEPA, han visto desaparecer productos nacionales equivalentes.

En nuestro país, además de en el sector asegurador, ha sido precisamente en relación con el cumplimiento de las obligaciones tributarias y de otro tipo con la Administración donde más claramente se ha hecho patente esta necesidad, sin perjuicio del interés que además pudiera estar despertando en otros contextos, como, por ejemplo, la canalización de aportaciones a ONG o la compra de loterías.

Si bien todavía se trata de un proyecto en estudio, existe un cierto consenso en que este tipo de adeudos no tenga un carácter generalista, sino que, más bien, se limite a una lista cerrada de bienes o servicios que hayan sido identificados previamente de manera inequívoca. Para dotar al instrumento de todas las garantías posibles, en los casos en que los cargos en cuenta no se ajustasen a los términos precisos de la autorización, estos podrían impugnarse dentro del plazo extendido general (13 meses) por su condición de no autorizados. En todo caso, la viabilidad de esta propuesta estará supeditada a las posibilidades que, en su caso, abra la nueva directiva de servicios de pago.

Por otro lado, dentro de los planes para modernizar la infraestructura interbancaria en la SEPA, proliferan los proyectos dirigidos a posibilitar la realización de pagos minoristas con carácter urgente. Uno de los países pioneros en este campo ha sido Reino Unido, cuyo servicio de *Faster Payments* se ha revelado como uno de los principales soportes del gran crecimiento experimentado por su tráfico de pagos de pequeño importe en el ejercicio 2013.

34 Por ejemplo, la obligación de proteger sus credenciales de acceso y autorización de operaciones.
35 Protocolos, interfaces, aplicaciones, servicios, etc.
36 Es decir, no restringido en exclusiva al tráfico entre empresas (B2B).

SERVICIOS MINORISTAS ACTUALMENTE OPERATIVOS EN EUROPA, PARA EL PROCESAMIENTO DE PAGOS URGENTES (a)

CUADRO 4

País	Transferencias mismo día	Transferencias en tiempo real	Transferencias 24/7/365	Observaciones
Dinamarca	Disponible desde 2013. Cinco ciclos de liquidación.	Disponible a partir de 2014.	Disponible a partir de 2014.	Se emplea un sistema de pagos específico. Hasta DKK500.000. Basados en estándares ISO 20022 XML.
Suecia		Disponible desde 2012.	Disponible desde 2012.	Se emplea un sistema de pagos específico. Los clientes finales pueden iniciar pagos por medio de una aplicación móvil. Basados en estándares ISO 20022 XML.
Polonia (b)	Disponible desde 1994.	Disponible desde 2012.	Disponible desde 2012.	Se emplea un sistema de pagos específico. Hasta PLN100.000 (±EUR 24.000). Basados en estándares ISO 20022 XML.
Reino Unido		Disponible desde 2008.	Disponible desde 2008. Solo para pagos en lotes (empresas) y pagos iniciados por teléfono o banca electrónica.	Se emplea un sistema de pagos específico. Hasta GBP100.000 (c). Basados en estándares ISO 20022 XML & ISO 8583. Existen límites a la posición neta deudora. Acuerdos de reparto de pérdidas.

FUENTE: Banco de España.

a Se excluyen las operaciones que se canalizan directamente a través de TARGET2.
b En Polonia existen, al menos, otras dos infraestructuras de alcance limitado que ofrecen este tipo de servicios.
c En atención al riesgo de los clientes, algunas entidades establecen umbrales más bajos.

Con sus diferencias, la mayor parte de las propuestas en liza se caracterizan por ofrecer a Gobiernos, empresas y consumidores la posibilidad de iniciar y recibir fondos (por importes bajos) entre cuentas situadas en entidades distintas, de manera prácticamente instantánea y, en ocasiones, incluso sin restricciones horarias. Se trata de una tendencia en alza dentro y fuera de las fronteras de la UE[37], motivada por el alto nivel de conectividad y ubicuidad alcanzado por las sociedades modernas.

Sin embargo, a pesar del enorme interés que está despertando, la generalización de este tipo de servicios deberá sortear antes importantes obstáculos de carácter técnico[38], y demostrarse capaz de encontrar soluciones económicamente viables que, por un lado, faciliten la integración con los canales de relación y sistemas de *back-office* que emplean las entidades y, por otro, permitan reducir o minimizar los riesgos financieros[39] en que incurren al adelantar la disponibilidad de los fondos.

A medida que los procesos de concentración de operaciones[40], tanto por el lado de las empresas como por el de las entidades, vayan afianzándose en la SEPA, mayor será el peso de los flujos transfronterizos en los que ordenantes y beneficiarios formen parte de una misma jurisdicción. En esta coyuntura, los enlaces entre las cámaras de compensación

37 Particularmente, en la región de Asia-Pacífico y, más recientemente, en Norteamérica.

38 Entre otras cuestiones, hay que llegar a acuerdos sobre la frecuencia de los ciclos de intercambio y liquidación, sobre la posibilidad de ampliar horarios operativos y sobre cómo conciliar estos con los necesarios períodos de inactividad en el sistema para poder llevar a cabo las tareas de mantenimiento.

39 Algunas de las fórmulas elegidas para contener estos riesgos financieros consisten en el establecimiento de límites a los importes de las operaciones que pueden mandar los clientes o a las posiciones deudoras máximas que un participante puede tener entre cada ciclo de liquidación. Hay casos en que la participación en el sistema solo es posible si cada operador mantiene un conjunto permanente de garantías a su favor. También se aplican, ocasionalmente, los acuerdos de reparto de pérdidas.

40 Según un estudio reciente de la consultora PwC, la reducción del número de cuentas bancarias para el conjunto de la UE se cifra en 9 millones, lo que redundaría en un ahorro potencial cercano a los 13.000 millones de euros.

europeas comenzarán a adquirir un protagonismo inusitado, forzando así una revisión profunda de su marco de actuación.

La mejora de la interoperabilidad entre infraestructuras y la eliminación de los obstáculos que todavía persisten serán los ejes directores de una estrategia caracterizada por una redefinición de las actuales condiciones, técnicas y de negocio, hasta lograr la obtención de visibles eficiencias en coste y facilitar aún más los intercambios.

En definitiva, las energías estarán completamente volcadas en hacer posible la creciente sincronización de los horarios y en multiplicar el número de conexiones bilaterales, así como en conseguir modernizar los mecanismos por los que, a día de hoy, se rigen las liquidaciones intersistemas.

El proceso de consolidación, que apenas parece haber comenzado, se irá acentuando con toda probabilidad en los próximos años, dando paso así a una creciente disputa por la captación y retención de los clientes sobre la base de expandir tanto el rango de los servicios que se ofrecen como el colectivo al que estos van destinados[41]. El éxito o el fracaso de estos programas de diferenciación competitiva macarán el panorama de los servicios de procesamiento de pagos minoristas de aquí a un lustro[42].

4 Conclusiones

La puesta en marcha de la Zona Única de Pagos en Euros es un proyecto de escala y complejidad solo equiparables a la introducción de la moneda común. Su implantación se ha dilatado por más de una década, exigiendo inversiones significativas, la creación de nuevas estructuras de alcance paneuropeo, intervenciones regulatorias de amplio calado y, en definitiva, imponiendo al conjunto de la sociedad europea un esfuerzo considerable en aras de un bien superior. A pesar de todo lo anterior, a día de hoy, posiblemente esté aún lejos de haber hecho realidad todo lo que prometía.

Aun así, la SEPA, según la conocemos, arroja un balance positivo. Gracias a la introducción de los nuevos instrumentos paneuropeos de transferencia y adeudo, así como al desarrollo de un marco legal homogéneo, se ha logrado mejorar sustancialmente la eficiencia de la operativa transfronteriza, consiguiendo que la experiencia del cliente bancario sea la misma, con independencia de que la transacción lleve o no asociados procesos transfronterizos. Especialmente destacable es el caso del adeudo directo SEPA, que permite, por primera vez, domiciliar recibos en una cuenta extranjera. En el ámbito de las tarjetas, si bien es cierto que los avances han sido por el momento más limitados, se ha realizado con éxito la implantación del estándar EMV, lo que ha redundado en una disminución del fraude.

En cuanto al futuro, a diferencia de lo que ha venido siendo la iniciativa hasta ahora, la SEPA 2.0 supone encarar una nueva etapa, caracterizada por la mayor presencia de la innovación. Como tal, las fronteras dejarán de estar bien delimitadas, lo que añadirá un factor de complejidad creciente a la gestión del proyecto y planteará retos ambiciosos, desconocidos hasta el momento.

---

41 En España, por ejemplo, Iberpay ha pasado de orientar sus servicios casi en exclusiva a las entidades participantes de los sistemas que gestiona a ofrecer, puntualmente, soluciones dirigidas a los clientes finales. Uno de los casos más recientes es el de la herramienta de conversión de los ficheros planos que utilizan los clientes para remitir a sus entidades las remesas de transferencias y adeudos tradicionales en los ficheros SEPA equivalentes en XML ISO 20022.

42 No obstante, la reducción del número de infraestructuras de compensación y liquidación en Europa no va a producirse de manera inmediata. En el medio plazo, factores como la existencia de productos nicho (y otros instrumentos locales no sujetos a la migración) o la necesidad de contar con canales de respaldo solventes que permitan seguir garantizando el tráfico de pagos ante eventuales incidentes podrían determinar que las entidades sigan participando de forma simultánea en varias cámaras europeas.

La banca tradicional seguirá estando llamada a desempeñar un papel muy relevante, especialmente llegado el momento de trasladar las necesidades que se vayan identificando a productos y servicios concretos. Sin embargo, en el nuevo escenario, el éxito de sus contribuciones dependerá también de las aportaciones de otros grupos de agentes, procedentes de distintos sectores, y cuya función en el ecosistema será equiparable al de las entidades.

La importancia de los conocimientos técnicos devendrá clave para el buen fin de las tareas que se emprendan, obligando a mantener en todo momento una actitud flexible, que permita acomodarse a las circunstancias cambiantes y garantice el aprovisionamiento, en cada caso, del talento más conveniente.

La refundación del Consejo de la SEPA y el enfoque ampliado que se le ha dado al ERPB suponen un paso en la dirección correcta y abren la puerta a la definición de un nuevo paradigma en el que la importancia de la cooperación y el reconocimiento del valor de la diversidad resultarán cruciales para obtener resultados tangibles.

No obstante, para que este renovado marco de relaciones resulte efectivo se hace necesario un mayor compromiso por parte de todos los actores, y en particular por el lado de los usuarios. Nunca antes se les había dado la oportunidad de participar tan activamente en el diseño de los instrumentos de pago que vayan a utilizar. En consecuencia, es lógico esperar que sepan dedicar el tiempo y los recursos necesarios para consensuar y llevar a la práctica la mejor de las agendas estratégicas posible. Solo así se podrán cumplir las grandes expectativas que se manejan.

BIBLIOGRAFÍA

BANCO CENTRAL EUROPEO (2014). *Mandate of the Euro Retail Payments Board.*

— (2013a). *Second SEPA Migration Report.*

— (2013b). *The Single Euro Payments Area (SEPA) - An Integrated Retail Payments Market.*

— (2013c). *Recommendations for the Security of Mobile Payments.*

— (2013d). *Recommendations for the Security of Internet Payments.*

— (2013e). *Recommendations for «Payment Account Access» Services.*

— (2010). *7th SEPA Progress Report: Migration continues but requires realistic but ambitious regulatory end dates.*

— (2007). *5th SEPA Progress Report: From Concept to Reality.*

BANK FOR INTERNATIONAL SETTLEMENTS (2012). *Innovations in retail payments,* Report of the Working Group on Innovations in Retail Payments.

BOUNI, D., y P. GAZÉ (2009). «How does Internet payment challenge the retail payments industry?», en L. Anderloni, D. T. Llewellyn y R. H. Schmidt (eds.), *Financial Innovation in Retail and Corporate Banking,* pp. 146-169, Edward Edgar Publishing Limited.

COMISIÓN EUROPEA (2013a). *Propuesta de reglamento del Parlamento Europeo y del Consejo sobre las tasas de intercambio para operaciones de pago basadas en una tarjeta,* Commission Staff Working Document.

— (2013b). *Propuesta de directiva del Parlamento Europeo y del Consejo sobre servicios de pago en el mercado interior y por la que se modifican las directivas 2002/65/CE, 2013/36/UE y 2009//110/CE, y se deroga la directiva 2007/64/CE,* Commission Staff Working Document.

— (2013c). *Propuesta de directiva del Parlamento Europeo y del Consejo sobre la transparencia y comparabilidad de las comisiones de las cuentas de pago, el cambio de cuenta de pago y el acceso a una cuenta de pago básica,* Commission Staff Working Document.

— (2013d). *Europe's Digital Challenge.*

— (2012a). *Bringing e-commerce benefits to consumers,* Commission Staff Working Document.

— (2012b). *Online services, including e-commerce, in the Single Market,* Commission Staff Working Document.

— (2012c). *Hacia un mercado europeo integrado de pagos mediante tarjeta, pagos por Internet o pagos móviles,* libro verde.

— (2010). *EUROPA 2020. Una estrategia para un crecimiento inteligente, sostenible e integrador*.

COMISIÓN DE SEGUIMIENTO DE LA MIGRACIÓN A LA SEPA (2013). *Addendum al Plan de Acción para la Migración a los Adeudos Directos y las Transferencias SEPA en España.*

— (2012). *Plan de Acción para la Migración a los Adeudos Directos y las Transferencias SEPA en España.*

— (2009). *La SEPA en España. 1.er Informe de Situación.*

— (2008). *Plan de Acción para la SEPA de la Comunidad Bancaria Española.*

— (2007a). *Addendum al Plan Español de Migración a la SEPA.*

— (2007b). *Plan Español de Migración a la SEPA.*

CONSEJO EUROPEO DE PAGOS (2014). *White Paper on Mobile Wallet Services,* EPC163-13 v2.
— (2013). *SEPA Cards Standardisation (SCS) Volume - Payments and Cash withdrawals with Cards in SEPA Applicable Standards and Conformance Processes,* EPC EPC020-08.
— (2010). *Fixed-Amount Direct Debit Rule Book for Public Consultation,* EPC003-10 v0.8.
— (2002). *Euroland: Our Single Payment Area!*
DEUTSCHE BUNDESBANK (2012). «Der europäische Binnenmarkt im Zahlungsverkehr vor der Vollendung», *Informe Mensual,* vol. 64, n.º 1.
EQUENS (2009). *European Trend Survey Banks & Future - Focus on increased productivity and a smooth transition to SEPA.*
EUROPEAN SAVINGS BANKS GROUP (2012). *The governance for SEPA Phase 2,* Position Paper Doc 0343/12.
— (2011). *SEPA or payments innovation: a policy and business dilemma,* Working Paper Doc 0605/11.
— (2010). *The SEPA ePayments Framework in the context of the greater ePayments landscape,* Position Paper Doc 0302/2010.
FUNDTECH (2013). *Immediate Payments - Innovation is Knocking,* White Paper.
HASAN, I., T. DE RENZIS y H. SCHMIEDEL (2013). *Retail Payments and the Real Economy,* Working Paper Series n.º 1572.
HUNT, R., S. SIMOJOKI y T. TAKALO (20). «Intellectual property rights and standard setting in financial services: the case of the Single European Payments Area», en L. Anderloni, D. T. Llewellyn y R. H. Schmidt (eds.), *Financial Innovation in Retail and Corporate Banking,* pp. 170-198, Edward Edgar Publishing Limited.
JONES, P. (2004). «The Future of EU Card Processing», *Payment Systems Europe Limited.*
MARTIKAINEN, E., H. SCHMIEDEL y T. TAKALO (2013). *Convergence in European Retail Payments,* Occasional Paper Series n.º 147.
PRICEWATERHOUSECOOPERS (2014). *Economic analysis of SEPA: Benefits and opportunities to be unlocked by stakeholders.*
UEAPME (2011). *SEPA Governance - Position Paper of the SEPA End-Users Committee.*
UREÑA, A., P. ANTÓN, M. P. BALLESTERO, S. CADENAS, R. CASTRO y E. VALDECASA (2013). *Estudio sobre Comercio Electrónico B2C 2012,* Observatorio Nacional de las Telecomunicaciones y de la Sociedad de la Información.

SOVEREIGN RISK AND FINANCIAL STABILITY

Christian Castro and Javier Mencía (*)

(*) Chistian Castro and Javier Mencía, of the Directorate General Banking Regulation and Financial Stability, Banco de España. The authors are very grateful to Daniel Pérez, Jesús Saurina and Carlos Trucharte for their inputs and discussions. They would also like to thank Rafael Repullo and an anonymous referee for their valuable comments and suggestions.

SOVEREIGN RISK AND FINANCIAL STABILITY

The sovereign crisis in the Euro Area (EA) has prompted a debate about how sovereign debt should be treated in banking regulation. Against this background, we review the role of sovereign debt in advanced economies and its current regulatory treatment. We then assess the empirical support for two competing hypotheses explaining the evolution of banks' holdings of domestic sovereign debt during the recent crisis: i) macroeconomic factors; and ii) the commonly known "carry-trade hypothesis". We find that macroeconomic conditions play a more relevant role than "carry-trade" incentives to explain the increase in banks' holdings of domestic sovereign debt in times of stress. Founded on this evidence and considering a set of distinctive characteristics of sovereign risk in the EA we assess different policy options. We argue that correcting fiscal imbalances and ensuring sound inter-temporal fiscal policy both at the country and EA level is a key precondition to financial stability and thus, a route to consider first. Addressing some of the sovereign risk manifestations is a second route. We identify three key building blocks to guide the design of possible regulatory measures on this area. We suggest that a macroprudential Pillar 2 approach would be the best suited to manage this special risk.

1 Introduction

The 2008 financial crisis evolved as a sovereign crisis in the EA in 2010, raising concerns about the fiscal sustainability of the European Union (EU). As financial tensions in the EA heightened, doubts over sovereign debt markets were not only confined to relatively small economies, but quickly spread to other EA long-term sovereign debt, most intensely to Spain and Italy [see *e.g*. Lane (2012)]. All of this was reflected in rapid increases and sudden swings in euro-area sovereign spreads relative to the German bond. The unfolding strains in the EA debt markets, in turn, took a toll on the still fragile financial systems. Access to funding deteriorated even further for banks in countries under stress and the effects of adverse macroeconomic conditions continued eroding the ability by banks to sustain credit. All these factors reinforced the original weaknesses in bank balance sheets which had been revealed in the early stages of the banking crisis. And all this happened in the midst of "safety races" [Haldane (2012)], "bad deleveraging" strategies [Feyen and González del Mazo (2013)] and growing insolvent demand [Ayuso (2013)].

The sovereign crisis in the EA has also prompted a debate about how sovereign debt should generally be treated in prudential regulation, and more specifically on the special features of sovereign risk within a monetary union. Within this debate, three main arguments have been used to motivate a change to the current prudential treatment of sovereign exposures in the EU: a) that the current regulatory treatment of sovereign debt biases the banks' decisions towards sovereign debt; b) that the current treatment was not reflecting risks from banks' sovereign debt; and c) that the current regulatory treatment of sovereign debt generates incentives to pursue "carry trade" strategies. To decide on the more appropriate approach for the prudential treatment of sovereign debt in the EU, it is crucial to assess these arguments. This implies, first, giving detailed attention to the special characteristics of sovereign risk. And second, assessing whether "carry trade" opportunities are indeed generating inaccurate incentives, or whether other alternative explanations are more relevant.

The current literature has failed to appropriately account for the role that macroeconomic factors and fiscal stabilisation policies play during a banking-led sovereign crisis as the ones experienced in many EU countries recently. To fill this gap, we test two competing

hypotheses to explain the changes of banks' sovereign debt holdings: i) the commonly known "carry-trade hypothesis"; and ii) macroeconomic factors, which capture the potential alternative investment opportunities. We find that macroeconomic conditions play a more relevant role than "carry-trade" incentives to increase banks' sovereign debt holdings. We argue that real economy deterioration in a systemic banking crisis leading to a situation of stress in sovereign markets affects the whole balance sheet structure of domestic banks.

Sovereign risk is systemic in nature. Its connections with the financial system are deep and multiple, possibly going above and beyond the effects from direct sovereign debt holdings. The associated deterioration in macroeconomic conditions in times of stress constrains the range of attainable investment options for domestic banks and contributes to a notable increase in their funding costs, at least in the short run. These macroeconomic effects are some of the factors which help to explain why, in some cases, domestic banks would still be investing in domestic sovereign debt – even when foreign investors may be retreating –.

We also highlight the connection between sovereign debt and fiscal policy as a stabilisation instrument in times of stress, and ultimately, as a backstop to mitigate the effects of financial crises – *e.g.* large contractions in output –. The stabilisation role of fiscal policy was particularly relevant in the EU during the recent financial crisis, given the absence of a fully-fledged European resolution mechanism with appropriate funding.

The flip side of the fiscal policy stabilisation role is that, to be effective, individual governments should ensure that their debt is sustainable. This means that stringent conditions need to be met in order to afford policy flexibility in times of stress, *e.g.* maintaining low debt levels in normal times [Cavallo and Izquierdo (2009); Breton, Pinto and Weber (2012)]. Along with this, when navigating through the crisis, governments should make a decided and credible effort to ensure that their public debt dynamics remain on the stable path. Otherwise, the peril is that destabilising dynamics on the fiscal side exacerbate instability in the financial sector and they are mutually reinforced in a "vicious cycle" [see Reinhart and Rogoff (2009a, 2011); Acharya *et al.* (2011); Merler and Pisani-Ferry (2012)].

But sovereign debt is not only intrinsically linked to fiscal policy. Sovereign debt in advanced economies often plays a similar role to that of fiat money, by providing a source of stable collateral for financial markets and the economy. We thus describe a set of distinctive characteristics of sovereign debt in advanced economies – *e.g.* its role as a "risk-free" or "reference" asset – calling for a need to re-establish fiscal equilibrium in individual countries and in the EA as a whole with the final aim of bringing its sovereign debt closer again to the ideal of a risk-free asset.

Given the opportunities and challenges in the use of fiscal policy in times of stress and the distinctive characteristics of sovereign debt in advanced economies, we argue that the first route to effectively solving the problem of sovereign risk in the EA is tackling the root sources of the problem. This means addressing the existent fiscal imbalances and ensuring sound inter-temporal fiscal policy both at the country and EA levels.

A second route is to address some of the sovereign risk manifestations by means of regulatory policy. Drawing on our empirical findings and a set of distinctive characteristics of sovereign risk in advanced economies, we identify three building blocks to guide the design of policy measures in this area. Based on this framework, we suggest that a "macroprudential Pillar 2 approach" would be the best suited to manage sovereign risk in the EA.

The rest of the paper is organised as follows. In Section 2 we review recent literature and explain the main streams of the on-going debate on the treatment of sovereign risk in the EU. We then in Section 3 discuss the key role that sovereign debt plays in advanced economies, we summarise the current prudential treatment of sovereign risk in the EU, and we pose two potential routes for a regulatory reform in this area. In Section 4, we empirically explore the determinants of banks' sovereign debt holdings. In Section 5, founded on the collected empirical evidence and considering the distinctive characteristics of sovereign risk in the EA, we present a framework of three building blocks to guide policy measures on this area. Finally, we conclude in Section 6.

2 Recent literature and on-going debate

Whilst not new, sovereign risk has not been not an issue in many advanced economies which have "graduated" from a history of serial defaults on their sovereign debt [Reinhart and Rogoff (2009b)]. Yet, the chain of events just described re-ignited a debate among academics and policy-makers over the "risk-free status" of sovereign debt, the relationship between sovereign risk and banking crises, and the regulatory treatment of banks' sovereign exposures in the EU. As result of this debate, a range of alternative policies has been proposed.

Hannoun (2011) was one of the first voices to speak about the regulatory treatment of sovereign risk. He argues that whilst highly rated sovereign assets are still low-risk assets, they are no longer perceived as risk-free assets. As a consequence, they are not zero credit risk assets and should no longer receive a zero risk weight in regulation, but should be differentiated according to their different credit qualities. Hannoun also argues that the key problem in the treatment of sovereigns in the EU lies in the EU implementation of the Basel standards *(i.e.* through the Capital Requirements Directive and Regulation, CRD4/CRR) which "generalises" the 0% risk weight option from the Basel standards, rather than in the standards themselves. As a possible way forward, he calls for a more active role of supervision prompting recognition of sovereign risk – giving as an example the European Banking Authority (EBA) initiatives on stress-tests –. As well, he emphasises the need of a consistent implementation of Basel standards across jurisdictions.

The need of differentiating risk among EU sovereign debt was also suggested by Praet (2013) on the grounds that treating banks' holdings of sovereign debt according to the risk they pose to banks' capital will prevent banks from using central bank liquidity to excessively increase their exposures to sovereign debt. Weidmann (2013) also advocates against the "preferential treatment" of sovereign exposures in banking regulation as this would be incompatible with the principle of "individual responsibility" whereby markets interest rates reflect the riskiness of the investment. Weidman argues that besides undermining proper market discipline, the preferential treatment of sovereign debt also crowds out lending to private sector. As a policy recommendation, he proposes introducing – over an adequate transition period – large exposure limits on banks' sovereign debt holdings, since this would be more effective than requiring extra capital to cover sovereign exposures. On the other hand, Nouy (2012), after discussing in detail the prudential treatment of sovereign risk in the EU, considers using a Pillar II approach to extend sovereign risk monitoring and asses its impact on banks' risk profile.

On the incentives created by the preferential treatment of sovereign exposures, Acharya and Steffen (2013) criticise the current approach in EU prudential regulation arguing that it has fostered bank exploitation of "carry trade" opportunities by obtaining cheap funding from the ECB and investing in peripheral sovereign debt without being subject to a regulatory penalty for doing so, for example in terms of higher capital requirements. Similarly, Battistini *et al.* (2013) conclude that the current regulatory approach to sovereign

risk generates distorted incentives for banks to increase their home bias in systemic crises. In contrast, Angeloni and Wolff (2012) find a reduction of sovereign exposure in peripheral countries when measured as a percentage of Core Tier 1 capital. This may be giving some evidence that banks in those jurisdictions were also gradually strengthening their balance sheets in terms of capital, despite the potentially distorted incentives argued above. Similarly, Angelini *et al.* (2014) find that the sovereign-bank link is not stronger than the link between sovereign and domestic non-financial corporations. In this sense, they point out that a sovereign default affects the whole national economy, not just banks. Based on this evidence, they interpret the increases in banks' domestic sovereign debt holdings as part of the re-nationalisation/fragmentation process in EA financial markets which have started with the recent sovereign crisis.

These measures proposed – *e.g.* higher capital requirements or limits to large exposures –, however, aim to tackle some sovereign risk manifestations. As such they do no not address the underlying factors explaining these manifestations observed in the EU. From this perspective, Blundell-Wignall (2012) examines a series of fiscal and structural policy measures being followed in the EU and aimed to tackle the underlying problems that triggered the financial and sovereign debt crisis in first instance, and which have also contributed to their mutually reinforcing effects. Examples of these measures include governments' efforts on fiscal consolidation, the ECB role as liquidity provider of last resort, the role of the European Financial Stability Facility (EFSF) and the European Financial Stabilisation Mechanism (EFSM) to address asymmetric shocks in the EU, structural policies targeting the real economy – *e.g.* growth measures on labour and product markets – and finally, measures to address structural weaknesses in the financial sector – *e.g.* separation of retail and investment activities –. In the same vein, Bi (2012) finds in a theoretical model that short term austerity measures fail to contain the default risk premium, whereas a credible long term plan for fiscal reform does alleviate the cost of sovereign funding.

3 Addressing sovereign risk

3.1. THE ROLE OF SOVEREIGN DEBT IN ADVANCED ECONOMIES

Financial markets cannot work well both in normal times and under stress without risk free sovereigns [Nakaso (2013)]. Sovereign bonds are commonly used as a benchmark for pricing other assets, performing a "price discovery" function [see for example Dunne *et al.* (2007)] and serve as a reference rate for the economy [Nakaso (2013)]. More generally, risk-free sovereign debt helps to economise financial transactions costs [Giovannini (2013)] as they serve as a safe and stable source of collateral in financial transactions, attracting lower haircuts and margin requirements – *e.g.* in standardised contracts such as plain vanilla repo transactions [IMF (2012)] –.

As a result, sovereign debt plays a similar role to that of fiat money in economies – *i.e.* it is "cash equivalent" [Singh (2013)]. Indeed, the re-use of sovereign debt collateral in other collateralised transactions creates an effect which is similar to the monetary multiplier effect [Singh (2011); and Claessens *et al.* (2012)]. The transmission mechanism of monetary policy can therefore be affected by the workings of sovereign debt repo markets. This role of sovereign debt as money substantiate central banks' efforts to prevent that excessive fluctuations in the stock of sovereign debt collateral grow into distortions to the aggregate economy.

But sovereign debt is also intrinsically linked to fiscal policy. Since the seminal work of Barro (1979) on the "tax-smoothing" hypothesis, it is generally agreed that tax rates should remain stable over the business cycle. There is less agreement though on the net benefits of more aggressive stabilisation policies. The "tax-smoothing" hypothesis implies that

deficits are expected to accumulate during recessions, when tax revenues fall, to be compensated by higher revenues during expansions [Alesina and Giavazzi (2013)]. These dynamics tend to create a countercyclical pattern in fiscal deficits. The current crisis has not been an exception, albeit with differing paths across countries. Stimulus measures in the G-20 countries averaged about 2% of GDP both in 2009 and in 2010 [Banca d'Italia (2010)]. But, while the US swiftly approved massive increases in government expenditures, European governments adopted comparatively more prudent measures that relied on automatic stabilisers.

On this connection between sovereign debt and the implementation of inter-temporal – and stabilising – fiscal policies, some lessons can be drawn from experiences in emerging markets [see for example Cavallo and Izquierdo (2009)]. If good preconditions are met – *e.g.* low levels of public debt over GDP – governments can afford fiscal flexibility to smooth economic cycles and to mitigate the negative effects of economic crises. Of course, the extent and duration of these stabilising policies have their own limits. But this is a key resource that governments with sound inter-temporal fiscal behaviour can use when needed.

Finally, and as expected given its key role in the work of financial markets, safe assets are also integral to prudential regulation [IMF (2012)]. Prudential requirements use safe assets in order to limit or prevent excessive risk taking in normal times *(e.g.* to limit maturity mismatches) and safe assets also provide a means of protection in bad times *(e.g.* safe assets can be exchanged for riskier assets thus raising capital ratios).[1] Safe assets are also used as back-stops, benchmarks and as a first line of defence to shocks. These multiple functions of safe assets in prudential regulation provide some background to the distinctive treatment sovereign bonds receive in comparison to other assets.

Yet, despite the pivotal role of safe assets in advanced economies, it can be argued that no asset is absolutely risk free in practice. And as a consequence, no sovereign bond is absolutely risk free either. Even the safest assets – or the safest sovereign bonds in the world – are subject to risks under certain states of the nature. And while governments have taxation powers to raise resources to repay its debt, there are limits to this policy instrument. No economy can produce infinite resources and therefore governments are subject to an inter-temporal budget constraint. When the fiscal limits are met, central banks are still able to provide funding to the government, issuing new money and monetising debt. But this action also has its own limits. High inflation creates adverse effects on the real value of tax revenues *(i.e.* the Olivera-Tanzi effect) and can prompt destabilising spirals between fiscal deficit and money growth.

Taking all of the above into account, the term "risk free" may be better seen as a relative concept [Fisher (2013); and Giovannini (2013)] rather than as an absolute one. Sovereign bonds from advanced economies tend to show lower credit risk in comparison with other assets in a given economy or currency. This does not imply, however, that under certain realisations of nature, sovereign bonds cannot eventually be defaulted. Unfortunately, when these bad realisations of nature occur, financial markets cannot work well, monetary and fiscal policies are seriously impaired and the entire real economy is damaged.

In sum, both the financial system and the economy cannot work without risk-free assets, even when they may not exist in strict sense. As a corollary, the closer sovereign debt gets

1 The April 2012 IMF *Global Financial Stability Report* examines the various roles of safe assets also including their use in prudential regulations.

to the ideal of a risk free asset, the better the financial system and the economy will work. In this sense, sovereign bonds in the EA have consistently remained among the least risky assets in a long period of time, with only one default episode since the Second World War, and were thus close to the concept of risk-free assets. There is a need to re-establish fiscal equilibrium in individual countries and in the EA as a whole with the intention of getting sovereign debt closer again to the ideal of a risk-free asset.

3.2 THE PRUDENTIAL TREATMENT OF SOVEREIGN DEBT

Microprudential standards are principally focused on preventing and mitigating risks in individual banks' balance sheets. In this section we summarise the microprudential treatment of sovereign exposures in Basel and EU regulation in the following areas: solvency (credit and market risks), liquidity and concentration (i.e. large exposures).[2]

The current approach for calculating capital requirements for credit risk to sovereign exposures maintains the overall structure of Pillar 1 requirements in Basel regulation. That is, banks are offered a choice between a simple Standardised approach (SA) which is heavily reliant on Credit Rating Agencies (CRA) ratings, and a more advanced approach which is based on banks' internal credit ratings, the Internal Ratings Based approach (IRB). Both approaches have their advantages and disadvantages.[3] Pillar 1 requirements are then complemented with supervisory review (Pillar 2) and banks' disclosures requirements (Pillar 3).

Under the SA sovereign debt exposures are risk weighted according to their external rating following a "look-up" table of five buckets for rated exposures.[4] The current approach, however, introduces an option *(i.e.* the "domestic sovereign carve-out") under which supervisors, subject to national discretion, may apply a lower risk weight to banks' exposures to their own sovereign (or central bank) of incorporation denominated in domestic currency and funded in that currency. Where this discretion is exercised, other national supervisory authorities may also permit their banks to apply the same risk weight to domestic currency exposures to this sovereign (or central bank) funded in that currency.[5] In the EU a uniform 0% risk weight is assigned under the SA to "exposures to member states" central governments, and central banks denominated and funded in the domestic currency of that central government and central bank'.[6]

Additionally, a "partial use" of the standardised approach is allowed in the EU for exposures to central governments and member states central banks subject to certain conditions and prior permission of the competent authority.[7] This means that a bank using the IRB approach *(i.e.* an "IRB bank") can use instead the SA for the calculation of risk-weights for its sovereign portfolio, applying then a 0% RW for exposures within the EU, and internal estimates for the rest of exposures. As Nouy (2012) points out, the rationale behind the "partial use" is that internal credit risk inputs *(e.g.* PDs and LGDs) are difficult to calculate for sovereign portfolios from advanced economies. Sovereign defaults in advanced economies are very rare events, with a high and widespread impact. This and the small number of high-quality sovereign bonds seriously limit the size and quality of the sample for statistical inference purposes.

2 Nouy (2012) provides some further details than here on the treatment of sovereign exposures in current and upcoming banking regulation, also considering regulatory changes in the insurance sector (Solvency II).
3 See for example, Kupiec (2006), Jarrow (2007) and Tarullo (2008).
4 The corresponding risk weights when a CRA rating is available are 0% (AAA to AA–), 20% (A+ to A–), 50% (BBB+ to BBB–), 100% (BB+ to B–) and 150% (below B-). Unrated exposures receives a 100% risk weight.
5 Art. 54, Basel Committee (2006).
6 Art. 114 of CRR.
7 Art. 150 of CRR.

In fact, whilst IRB models can produce some risk differentiation by assessing individual sovereign exposures and getting more granular estimates *(e.g.* more granular PDs), internal estimations tend to produce very low capital charges for advanced economies sovereign portfolios, which render such a differentiation quite immaterial in practice. This being the consequence of the very low default frequency observed in advanced economies and limitations in the risk-weighting mechanism.[8] As a result, IRB estimates are not so different from the SA approach in practice. IRB estimates for sovereign debt from advanced economies tend to attract capital charges not materially different than zero and tend to rely heavily on external ratings as a reference point. The statistical issues in sovereign risk portfolios not only affect the accuracy in banks' internal estimates, but also make their back-testing and validation challenging. Given this and other special characteristics of sovereign risk qualitative analysis is generally needed.

As a backstop to the risk-weighted minimum capital requirements, the Basel Committee has introduced a non-risk sensitive measure: the leverage ratio. Banks under the leverage ratio regime should hold a minimum of eligible capital of their stock of non-risk-weighted assets.[9] Since sovereign debt is fully included in that measure, the leverage ratio has the potential to act as a quantity-based constraint to the amount of sovereign debt banks hold. The CRD4/CRR in the EU follows the same provisions than in Basel. It introduces a reporting requirement to supervisory authorities for the leverage ratio starting in 2014 with the idea of migrating to a binding harmonised requirement in 2018.

Similarly to the credit risk treatment, the Basel market risk framework also comprises two choices for measuring market risks in trading book exposures: a standardised calculation (the "Standardised measurement method") and a model-based option (the "Internal Models approach"). The standardised method includes the option for national supervisors to apply a lower specific risk charge to sovereign debt denominated in the domestic currency and funded by the bank in the same currency [Basel Committee (2006)]. In contrast, the model-based option does not include this possibility. As result of the weaknesses revealed by the recent financial crisis, the Basel market risk framework was subject to substantial changes. Some of these changes were already introduced in the revised requirements also known as Basel II.5 [Basel Committee (2009)]. And a deeper redefinition of the entire framework is being envisaged in the "Fundamental review" of the trading book framework [Basel Committee (2014)].

Basel II.5 includes sovereigns in the VaR and Stressed-VaR calculations under the Internal Models Approach. Additionally, Basel II.5 introduces an incremental risk capital charge (IRC) for unsecuritised credit products which now is capturing not only default risk but also migration risk. This was done in response to the increasing amount of exposure in banks' trading books to credit-risk related and often illiquid products whose risk was not well reflected in value-at-risk measures [Basel Committee (2009)]. Sovereign exposures are included in the IRC.

The fundamental review to the trading book, in turn, moves from VaR to Expected Shortfall (ES) calculations and applies a separate Incremental Default Risk (IDR) charge. The separate IDR recognises the practical challenges to achieving a joint modelling of the discrete (default risk) and continuous (spread risk) components of credit risk.[10] This means

8 We discuss further on this in Section 5.

9 As an indicative starting point, a 3% minimum requirement is being assessed during a "parallel run" period from 2013 and 2017 with a view to implementing the final rules in 2018. In the meantime, public disclosure requirements will start in 2015.

10 Where spread risk is also covering migration risk.

that default risk – captured by the IDR – is detached from general interest and spread risks – captured by the ES calculations –. Further to the inclusion of sovereign debt in the ES calculations, the BCBS 2014 Consultative Document indicates that sovereign risk will also be included in the scope of the IDR in the models-based framework, and that general partial use of the standardised approach for sovereign debt will not be granted.

On the liquidity side, the recently introduced Liquidity Coverage Ratio (LCR) requires banks to maintain a minimum buffer of unencumbered high-quality liquidity assets (HQLA, the numerator) against their stress net cash outflows (denominator) over a 30 days' time window.[11] The aim of the standard is to ensure that banks can withstand in the short-term a scenario of severe liquidity stress. The composition of the liquidity buffer is divided in two Levels (ie: tiers or buckets). The Level 1 comprises those assets of highest quality in the pool of eligible assets, basically cash, central bank reserves, and highly rated sovereign debt (AAA-AA).[12] Level 1 assets can be included without limits in the total stock of HQLA *(i.e.* no cap applies), are held at market value and – depending on supervisory discretion – are not subject to a haircut.

The LCR also includes a "carve-out" for domestic sovereigns whereby sovereign bonds that are rated below the AA- threshold are still eligible as Level 1 for domestic banks or foreign banks taking liquidity risk in the country of issuance of the sovereign debt. This may be reflecting the observation that high quality sovereign bonds – even in times of stress – tend to remain as the most liquid asset class when compared with the rest of possible asset classes within a given economy *(e.g.* corporates and securitisations).[13] Subject to approval from the EU Commission, the EU is planning to introduce in 2015 a "liquidity coverage requirement" following the same structure than the LCR. Some of the details of the calibration of the new liquidity requirements are still pending – including the exact definition of highly liquid assets; yet sovereign bonds are allocated at the top tier of liquidity –.

Basel III also introduces a second liquidity requirement, the Net Stable Funding Ratio (NSFR). Although the NSFR is not fully completed yet, sovereign debt is also categorised at the top of the liquidity scale. The NSFR is a medium-term (1 year) structural liquidity measure aimed to ensure that there is a minimum amount of stable funding (numerator) available in relation to the liquidity characteristics of banks' assets (denominator). The NSFR is not a binding requirement in the EU yet. But the CRD4/CRR provides for a reporting obligation to national supervisory authorities. And national authorities are also given discretion to apply provisions in the area of stable funding requirements before a binding NSFR is specified.

Regarding diversification requirements *(i.e.* concentration risks), the BCBS is working on setting a regime of limits to large exposures. Under the envisaged regime banks' exposures exceeding 10% of their eligible capital base will be subject to a mandatory reporting requirement to national supervisors. And a large exposure limit is defined for exposures exceeding 25% of their eligible capital. Sovereign exposures have been excluded from the scope of the proposed framework as the view of the BCBS is that the appropriate treatment

11 See Basel (2013).

12 Level 2 assets includes highly rated corporate and covered bonds, and national supervisors can also choose to include a sub-level of assets (Level 2B) comprising lower rated corporate bonds, RMBS and common equity, both under certain conditions. There is a cap of 40% of total HQLA on Level 2 assets, and 15% on Level 2B assets.

13 Even when some other particular securities within other asset classes *(e.g.* corporates) may remain as liquid as sovereign bonds (or perhaps even more) in time of stress, it is very difficult to anticipate ex ante which specific security within the pool will do so.

of concentrated sovereign exposures will need to be addressed as part of a broader review of the treatment of sovereign risk within the regulatory Basel framework. In the EU, the CRD4/CRR set a 25% limit to large exposures. Members' sovereign debt subject to a 0% RW are exempted from the regime.

3.3 ALTERNATIVES FOR A POTENTIAL REGULATORY REFORM

Broadly speaking, there are two main routes to prevent and mitigate risks on financial stability stemming from sovereign risk in the EA. The first route is going straight into the source of the problem, fixing the underlying weaknesses and vulnerabilities in the EA. The second route is addressing some of the sovereign risk manifestations.

Tackling the root sources of the sovereign risk in the EA implies solving the existent fiscal imbalances and ensuring sound inter-temporal fiscal policy both at the country and EA level. Individual governments should commit to create enough fiscal space in normal times to allow them room to manoeuvre in stress times. And when using fiscal policy to mitigate some of the unintended consequences of financial crises they should do a decided and credible effort to maintain their public finances within adequate tolerance levels. In addition, tackling the root problems also implies fixing the faulty lines in the fiscal architecture of the EA and boosting coordination among countries in crises management.

At the end of the road, going in this direction should converge towards a consolidation of a fully-fledged fiscal and banking union [see Van Rompuy (2012) and Coeuré (2012)].

To solve the underlying weaknesses and vulnerabilities in individual countries and in the EA as a whole is also a necessary condition to get its sovereign debt closer to the risk-free status it had in the past. As risk-free assets are necessary for the proper work of financial systems, this is also a necessary condition to ensure financial stability, and to break the vicious cycle between banks and sovereigns at its source. For sovereigns in the EA this means adopting fundamental policies to ensure that sustainable fiscal policies are applied, and profound coordination among member states to prevent and mitigate the effects of asymmetric shocks. The EU is making progress to address these issues.

On the fiscal side, EU leaders have agreed on a series of reforms to improve fiscal governance in the EU and to strengthen its budgetary framework. These include two reform packages known as the Six Pack and the Two Pack, in 2011 and 2013 respectively. These reforms are concrete steps towards the consolidation of a fiscal union along the lines expressed in the EU Commission Blueprint's Roadmap towards a deep and genuine EMU.[14]

In addition, two temporary financial assistance facilities were established in 2010: The European Financial Stability Facility (EFSF) and the European Financial Stabilisation Mechanism (EFSM). The measures look to address the effects of asymmetric shocks in the EA and promptly correct growing fiscal imbalances, thereby ensuring the implementation of sound inter-temporal fiscal policies in the EU.

On the banking side, the creation of the Single Supervisory Mechanism (SSM) under the responsibility of the European Central Bank (ECB) constitutes a milestone towards the consolidation of a banking union in the EU. If successfully implemented, the SSM will be helpful to avoid the perceived sluggishness when working on coordinated solutions at the onset of the recent banking crisis. These issues may have contributed at least partially to the increasing fragmentation observed in the EA in the near past.

14 See European Commission (2012, 2013).

The second route aims to address some of the sovereign risk manifestations, such as credit or interest rate risk stemming from sovereign debt holdings [*e.g.* Weidmann (2013)]. On this, three main arguments have been used to propose a change to the current prudential treatment of sovereign exposures in the EU: a) that the current regulatory treatment of sovereign debt biases the banks' decisions towards sovereign debt; b) that the current treatment was not reflecting risks from banks' sovereign debt; and c) that the current regulatory treatment of sovereign debt generates incentives to pursue "carry trade" strategies.

We assess the third of the arguments above in the following section. The key messages from the empirical analysis will then be useful to develop on the other two arguments and to derive policy recommendations in Section 5.

4 Empirical analysis: the determinants of banks' sovereign debt holdings

In this section, we exploit the empirical evidence on the determinants of banks' sovereign debt holdings that has accumulated during the recent crisis. The third of the three arguments used to motivate a change to the current treatment of sovereign risk in the EU was that the current treatment creates incentives in banks to engage in "carry-trade" investment strategies. In other words, this means that the current treatment would be incentivising banks to invest in high yield sovereign debt with the liquidity they borrow from the ECB, instead of lending to the real economy. However, the incentives for "carry trade" will only be effective if this strategy becomes relatively more attractive than the range of alternative investments available for banks. In this sense, the alternative hypothesis that we consider is that banks may in fact be facing a period of lack of lending opportunities that are able to match their higher funding costs in stress times. Unfortunately, it is not possible to directly test the two hypotheses, because we do not have information of the alternative investment opportunities, if any, which banks rejected. Our identification strategy assumes that, if carry trade is taking place, it should be stronger when the returns it yields are larger, conditioning on alternative investment opportunities. We capture the alternative opportunities with macroeconomic variables that reflect the situation of the economy. Specifically, we analyse which of the following related effects is more important:

1 If the "carry trade" hypothesis prevails, then banks would increase their holdings of sovereign debt when sovereign yields rise.

2 Under the alternative macroeconomic explanation, banks' sovereign debt holdings would respond counter-cyclically to macroeconomic cycles. Banks would increase their holdings of sovereign debt during recessions, when lending opportunities to the private sector are scarcer, as a way to preserve value and liquidity. And, by contrast, they would reduce these exposures during expansions, when lending to the private sector is safer and more profitable in risk-adjusted terms.

Acharya and Steffen (2013) and Battistini *et al.* (2013) empirically study the first effect and conclude that "carry trade" strategies are prevalent. In contrast, we argue that it is crucial to control for the macroeconomic situation, which captures the presence or absence of attractive alternative investment opportunities.

4.1 DATABASE, RECENT DEVELOPMENTS AND THE CRISIS

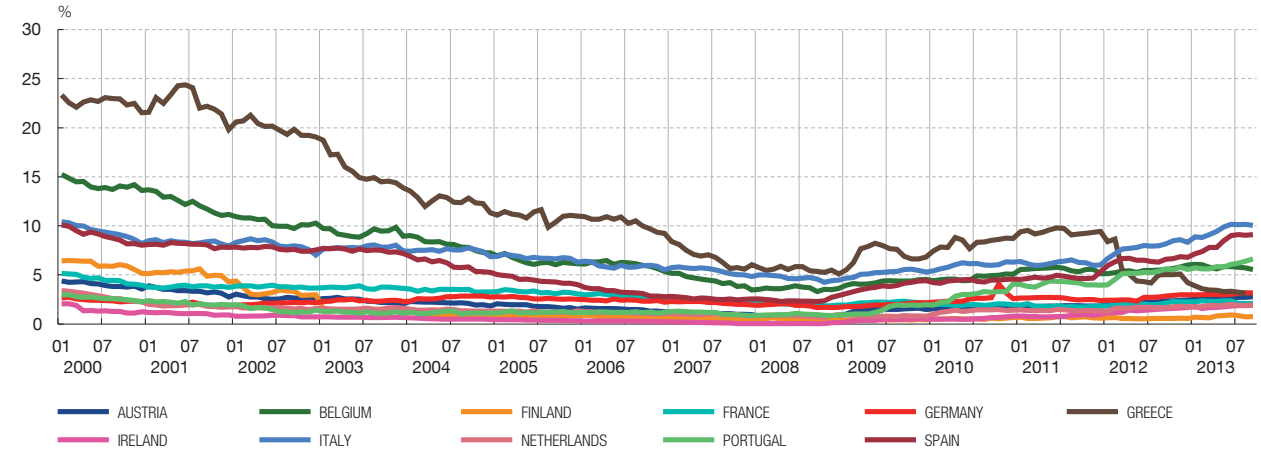
We use monthly data from January 2000 until September 2013 of the banks' sovereign domestic debt holdings to total assets ratio aggregated by country.[15] We focus on domestic exposures to explicitly address the link between banks and the sovereign risk of the

15 We obtained this data from the ECB Statistical Data Warehouse (SDW), which is publicly available at http://sdw.ecb.europa.eu/.

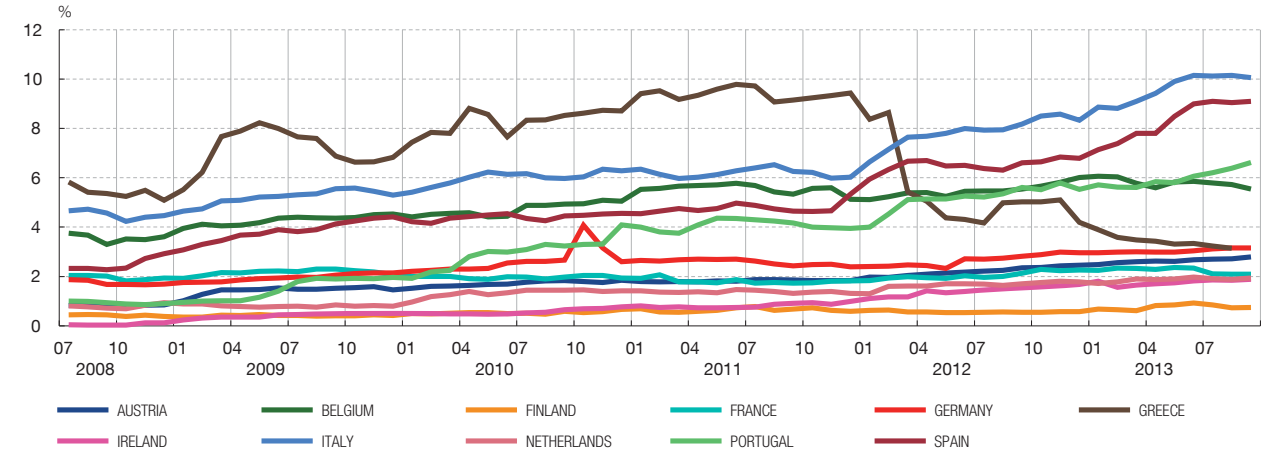
HISTORICAL EVOLUTION OF DOMESTIC SOVEREIGN DEBT HOLDINGS IN EURO AREA COUNTRIES, AS A PROPORTION OF BANKS' TOTAL ASSETS

CHART 1

A. JANUARY 2000 – SEPTEMBER 2013



B. JULY 2008 – SEPTEMBER 2013



FUENTE: ECB Statistical Data Warehouse.

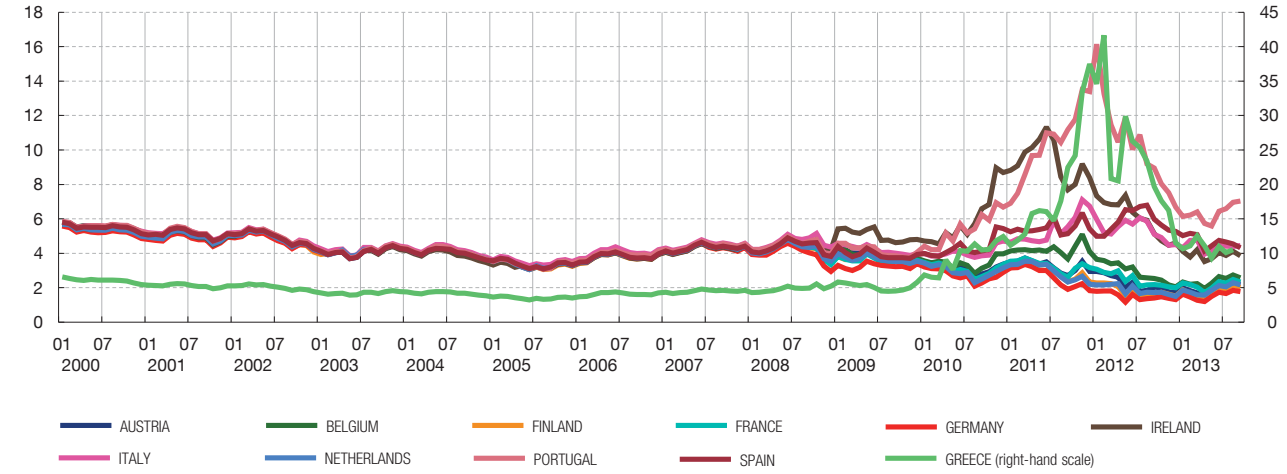
country in which they are headquartered. We study the "carry trade" hypothesis by considering end-of-month yields on 10-year sovereign bonds. Analogously, we capture the macroeconomic situation with industrial production, as a proxy of GDP available at the monthly frequency, and the unemployment rate.[16] In addition, changes in industrial production can also be capturing effects on governments' revenues due to a slowdown in the economy, while increases in the unemployment rate can also be reflecting rises in Government expenditures due to the real economy deterioration.

Chart 1.A shows the historical evolution of sovereign exposures in EA countries as a proportion of banks' total assets. We observe that sovereign exposures were relatively high at the beginning of the sample in early 2000s. They steadily decreased over the following boom years until the beginning of the 2008 financial crisis. Chart 1.B, in turn, shows in more detail that sovereign exposures in core EA countries have remained

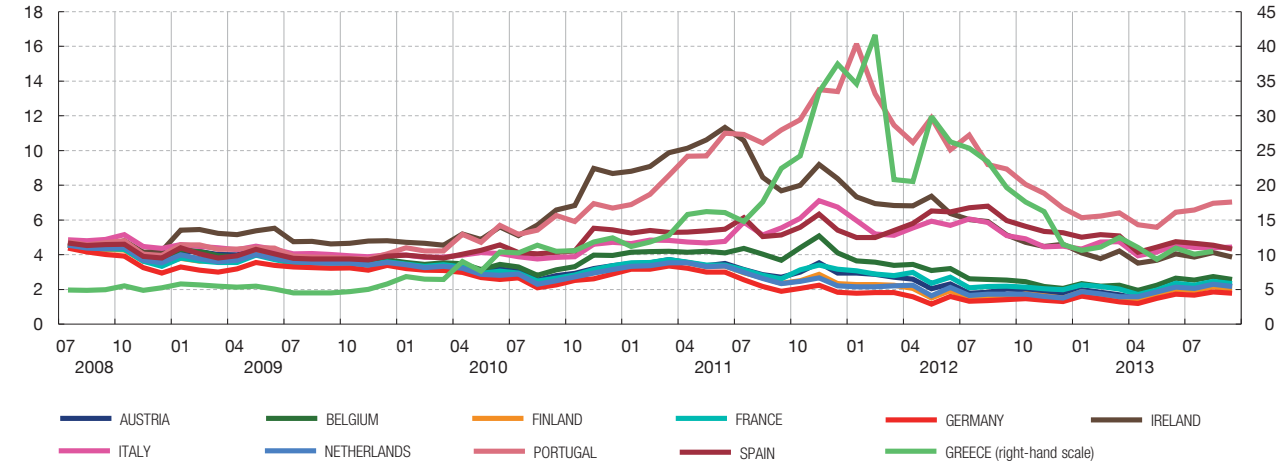
16 We use industrial production as a proxy of GDP growth, which is not available at the monthly frequency. We have obtained the data on industrial production and unemployment from Eurostat, and the sovereign yield data from Datastream.

HISTORICAL EVOLUTION OF THE YIELDS OF 10-YEAR SOVEREIGN BONDS CHART 2

A. JANUARY 2000 – SEPTEMBER 2013



B. JULY 2008– SEPTEMBER 2013



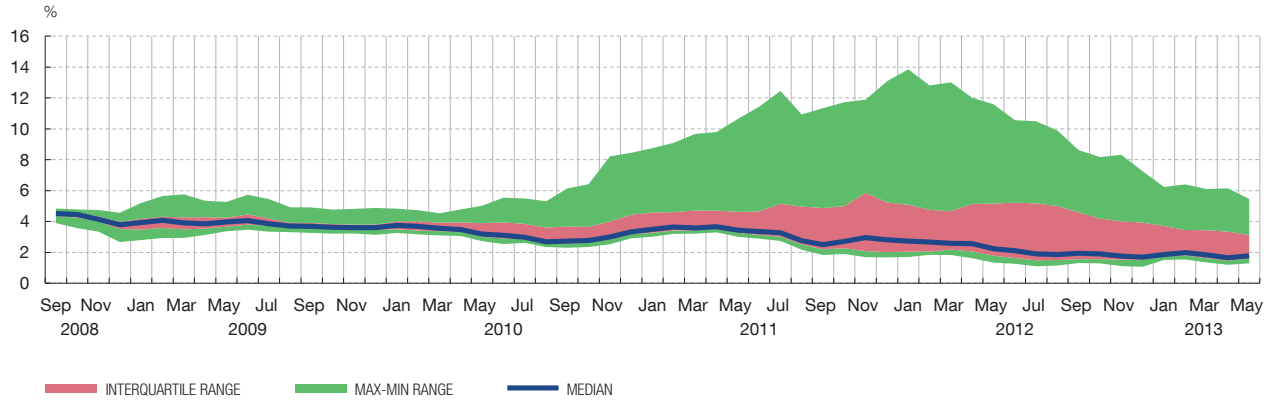
SOURCE: Datastream.

relatively flat or with moderate growth since the onset of the crisis, whereas the exposures of the so-called peripheral countries *(i.e.* Greece, Ireland, Italy, Portugal and Spain) have grown at a much faster rate. It is worth noting that domestic sovereign debt holdings in Greece plunged after the Greek debt restructuring. To avoid that this event affects our conclusions, we will only consider Greek data until 2010.

Chart 2 shows that EA sovereign yields moved almost in unison until the end of 2008. Hence, during the years where most EA banks were reducing their domestic sovereign debt holdings, sovereign bonds from different EA countries were perceived as having a similar risk. Yet, already in 2009 Greece and Ireland began to pay higher prices for their sovereign debt. These countries were followed by Portugal, Spain and Italy in 2010, and to a minor extent by Belgium. Meanwhile, core EA countries even benefited from lower sovereign yields albeit with a higher dispersion than during the boom years. Since mid 2012, nonetheless, spreads in countries under stress have fallen. Whilst the timing and magnitude of rises in spreads were not the same for all countries, the sharp decline and re-convergence of spreads since mid 2012 is being evidenced all across the board. This can be seen in the contraction of inter-quartile spreads, particularly in the upper quartiles (see Chart 3).

DISTRIBUTION OF LONG-RUN INTEREST RATES ON SOVEREIGN DEBT (a)

CHART 3



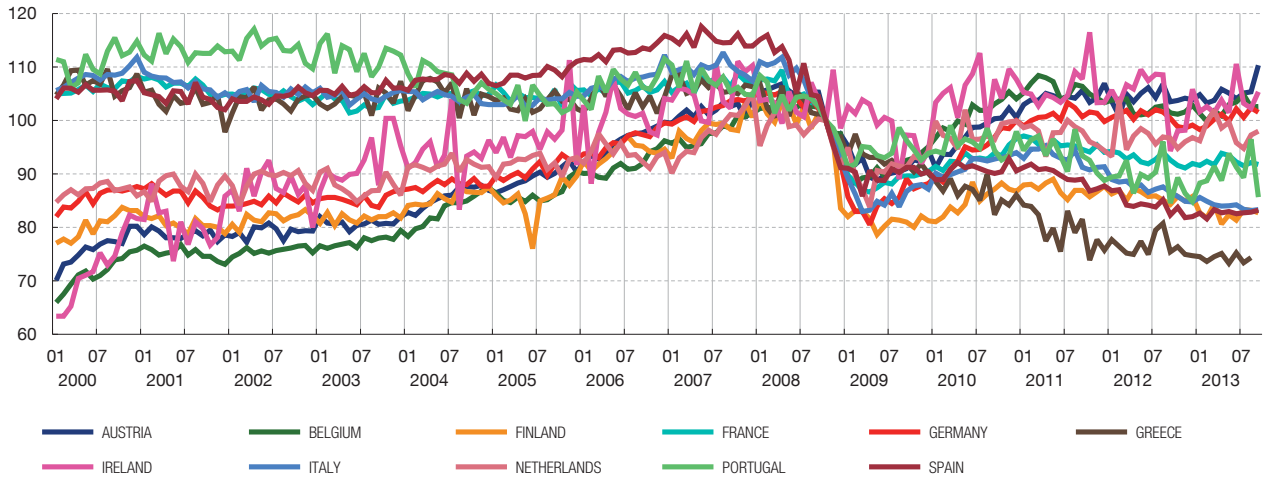
SOURCE: Banco de España - *Boletín Estadístico*.

a Greece is excluded from the sample.

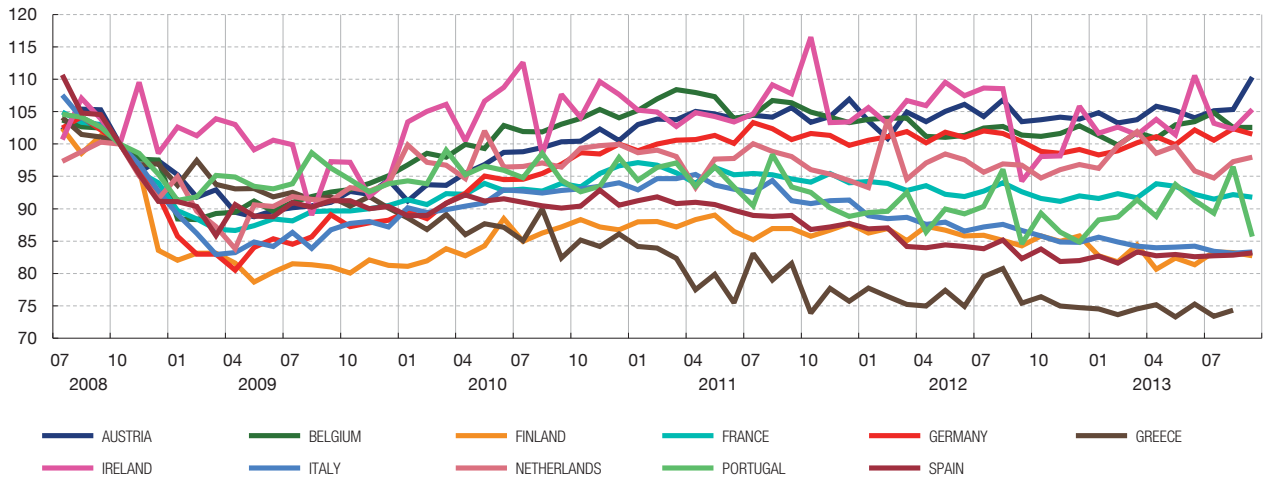
HISTORICAL EVOLUTION OF INDUSTRIAL PRODUCTION IN EURO AREA COUNTRIES (Normalised to 100 in October 2008)

CHART 4

A. JANUARY 2000 – SEPTEMBER 2013



B. JULY 2008 = SEPTEMBER 2013

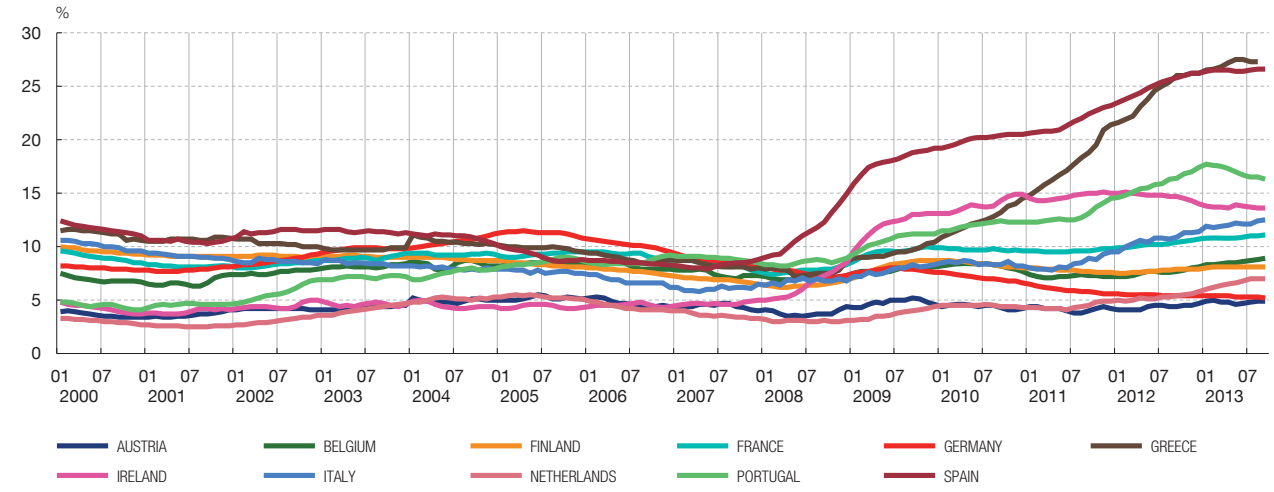


SOURCE: Eurostat.

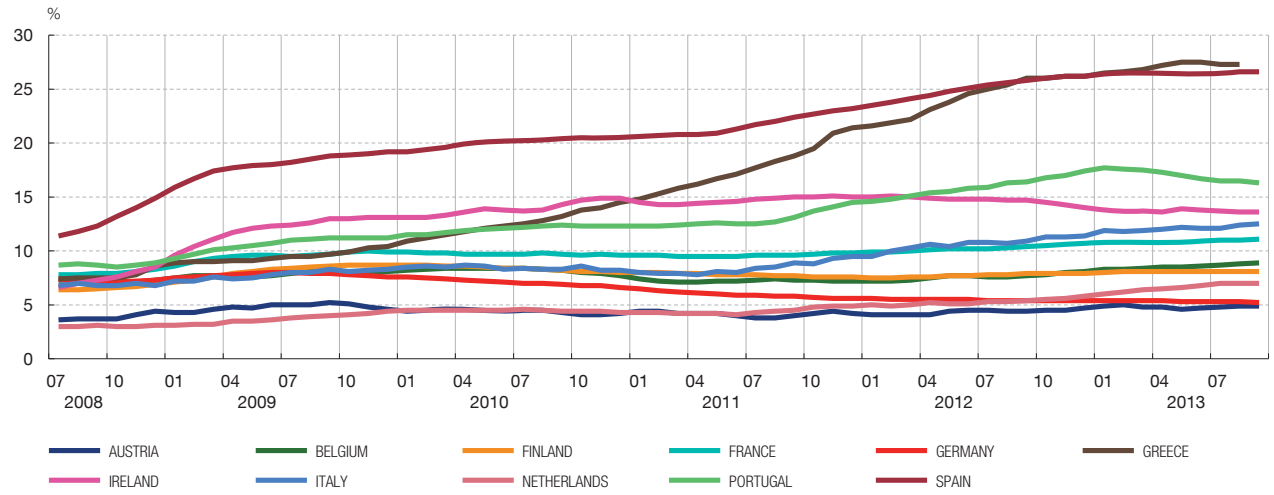
HISTORICAL EVOLUTION OF THE UNEMPLOYMENT RATE IN EURO AREA COUNTRIES

CHART 5

A. JANUARY 2000 – SEPTEMBER 2013



B. JULY 2008 – SEPTEMBER 2013



SOURCE: Eurostat.

In terms of industrial production, we observe in Chart 4 that core EA countries experienced large growth levels during the first half of the previous decade. In contrast, Spain experienced a milder growth in industrial production until 2008, while the other peripheral countries had roughly constant industrial production levels. In contrast, all EA countries suffered substantial falls in industrial production at the beginning of the crisis. But core EA countries quickly recovered their pre-crisis levels, while peripheral countries suffered a double dip shock. On this, Chart 5 shows consistently higher unemployment levels in peripheral countries than in core countries all across the sample. This situation has worsened during the crisis. At the end of the sample, more than one quarter of the active population in Spain and Greece was unemployed.

4.2 ANALYSIS OF STATIONARITY AND COINTEGRATION

The previous charts showed the high heterogeneity in the macroeconomic evolution and financial shocks that different EA countries experienced during the recent crisis. We believe, in this sense, that it is crucial to incorporate this information to explain the determinants of domestic sovereign debt holdings by EA banks. More specifically, we seek to study the link between sovereign yields and banks' sovereign debt holdings controlling for the macroeconomic situation in each country. As there might be feedback effects between

sovereign yields, debt holdings and the macroeconomic factors, we consider a vector autoregressive (VAR) model to incorporate these features.

Given the high persistence in the time series observed in Charts 1 to 5, and as it is common practice in the literature, we need to study their stationarity in order to apply an adequate statistical treatment. In addition to the variables already discussed, we define the sovereign spread as the difference between the sovereign yields of EA countries and the German yield. Using the whole sample, we cannot reject the presence of unit roots in the sovereign yields, the spread, industrial production and unemployment. We present detailed results of the unit roots analysis performed in the Appendix.

Further to the stationarity analysis, the possible presence of cointegration between series is also an issue to consider. Related to our work, Battistini *et al.* (2013) argue in favour of considering the presence of cointegration between the home country sovereign yield, the German yield and domestic sovereign holdings. This assumption is not innocuous, since cointegration turns out to be a key element to support the carry trade hypothesis under a vector correction model (VEC). However, we find that the evidence in favour of cointegration is fairly weak (detailed results can be found in the Appendix). Cointegration is a long term phenomenon, but unfortunately the sample length in the data is too short to determine its presence or absence in sufficiently precise statistical terms. Yet, it is still possible to make a well founded modelling decision by turning to the model's economic features. We will now discuss the economic implications of cointegration to justify why we do not think it is a reasonable assumption in this setting.

A cointegration relationship between the domestic yield, the German yield and domestic sovereign holdings would imply a long term equilibrium relationship between their levels. Hence, a different level of domestic debt holdings would be related in equilibrium to different levels of sovereign yields, although the variables may temporarily deviate from the long term relationship due to short term shocks. Alternatively, the absence of cointegration would imply that there is not a long term equilibrium relationship between sovereign yields and banks' sovereign debt holdings. This does not mean, however, that – under absence of cointegration – these variables are not related. That is, a shock to sovereign yields might actually induce a change in the holdings of sovereign debt – and the other way round – but there would not be an intertemporal relationship between the levels to which they revert. For instance, cointegration between these variables would imply that if sovereign yields doubled then banks' debt holdings should double as well in the long run, whereas absence of cointegration does not introduce such kind of restrictions. In addition, a cointegration relationship between sovereign yields and debt holdings would pose a technical problem in the long run, since this latter variable only has support between 0 and 1 – being expressed as a proportion of total assets – whereas yields can take values in [0, ∞). For all these reasons, we think that a VAR framework is more suitable than an error correction model (a VEC model).

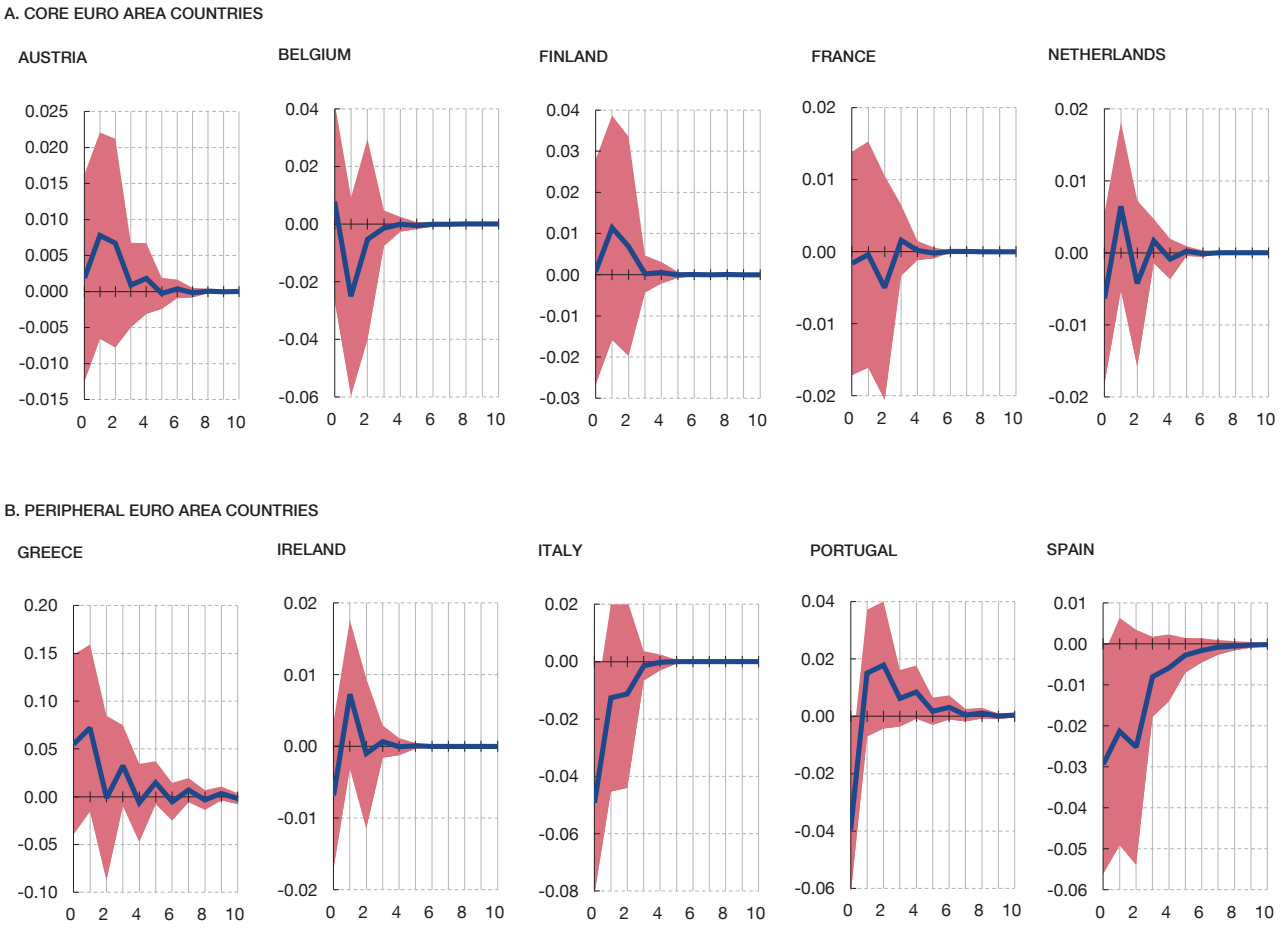
4.3 REGRESSION ANALYSIS

We first consider a VAR(2) model with only two endogenous variables: the monthly change of the ratio of domestic debt holdings over total assets ($\Delta ddebt_t$ for short) and the monthly change of the sovereign spread ($\Delta spread_t$), computed as the difference between the domestic sovereign yield and the German bond yield. Both variables are computed for each EA country. Specifically, our model can formally be expressed as

$$\begin{bmatrix} \Delta ddebt_t \\ \Delta spread_t \end{bmatrix} = A_0 + A_1 \begin{bmatrix} \Delta ddebt_{t-1} \\ \Delta spread_{t-1} \end{bmatrix} + A_2 \begin{bmatrix} \Delta ddebt_{t-2} \\ \Delta spread_{t-2} \end{bmatrix} + \varepsilon_t, \qquad [1]$$

ORTHOGONALISED IMPULSE RESPONSE FUNCTION OF DOMESTIC DEBT TO A SHOCK OF THE SPREAD. VAR(2) BIVARIATE MODEL OF SPREADS AND DOMESTIC DEBT

CHART 6



SOURCE: Authors´elaboration.
NOTE: Variables in first differences. The orthogonalisation is based on the Choleski factorisation, where the variables are ordered as follows: (i) spread, (ii) domestic debt.

where A_0 is a 2x1 vector of coefficients, $A_1$and A_2 are 2x2 matrices of free parameters, and the vector of residuals ε_t is iid bivariate normal with zero means.

We estimate equation [1] separately for each country in our sample.[17] Chart 6 shows the orthogonalised impulse response function of domestic debt to a shock to the spread.[18] We obtain no significant change in any of the core EA countries. In contrast, we find a significant impact on three peripheral EA countries, but this effect goes in the opposite direction to the carry trade hypothesis. In particular, Italy, Portugal and Spain, which are three of the countries for which it has been extensively argued that their banks were engaging in carry trades, the impact of an increase in the sovereign spread generates a reduction of the domestic debt held by their national banks.

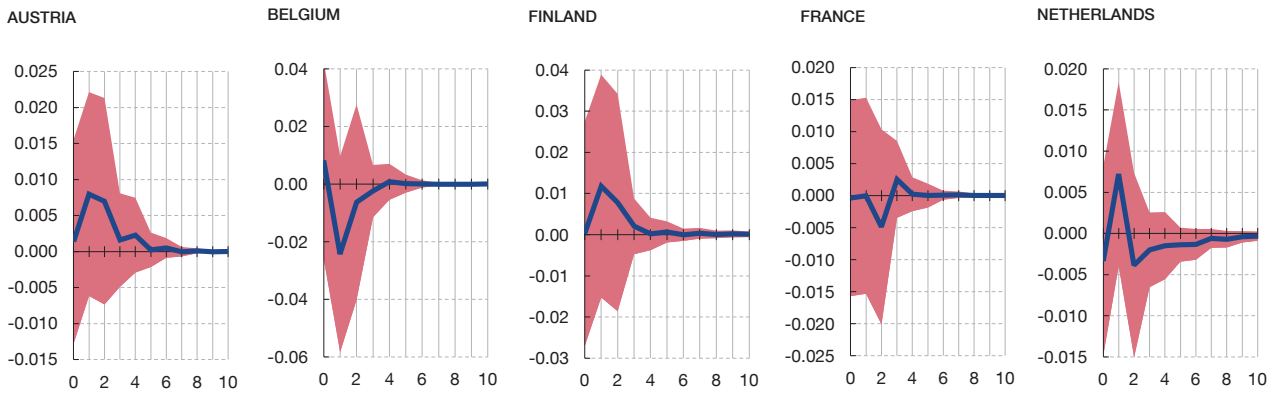
The results from the bivariate model may be affected by the fact that we do not control for alternative investment opportunities. We investigate this issue by proxying the alternative opportunities with industrial production and the unemployment rate. Thus, we now consider the extended VAR(2) model:

17 We consider the same VAR(2) structure for all countries for the sake of consistency.
18 We consider the usual Cholesky factorization. We place the stressed variable in the first place, so that the shock at the initial period only enters through the stressed variable.

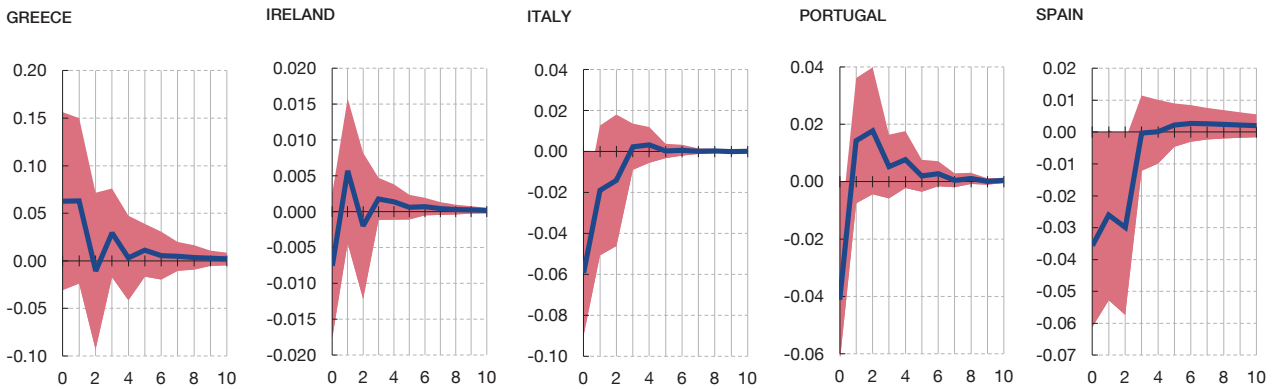
ORTHOGONALISED IMPULSE RESPONSE FUNCTION OF DOMESTIC DEBT TO A SHOCK OF THE SPREAD. VAR(2) MODEL OF SPREADS, DOMESTIC DEBT, INDUSTRIAL PRODUCTION AND UNEMPLOYMENT

CHART 7

A. CORE EURO AREA COUNTRIES



B. PERIPHERAL EURO AREA COUNTRIES



SOURCE: Authors´ elaboration.
NOTE: Variables in first differences. The orthogonalisation is based on the Choleski factorisation, where the variables are ordered as follows: (i) spread, (ii) domestic debt, (iii) industrial production, (iv) unemployment.

$$\begin{bmatrix} \Delta ddebt_t \\ \Delta spread_t \\ \Delta IP_t \\ \Delta UP_t \end{bmatrix} = B_0 + B_1 \begin{bmatrix} \Delta ddebt_{t-1} \\ \Delta spread_{t-1} \\ \Delta IP_{t-1} \\ \Delta UP_{t-1} \end{bmatrix} + B_2 \begin{bmatrix} \Delta ddebt_{t-2} \\ \Delta spread_{t-2} \\ \Delta IP_{t-2} \\ \Delta UP_{t-2} \end{bmatrix} + \varepsilon_t,$$

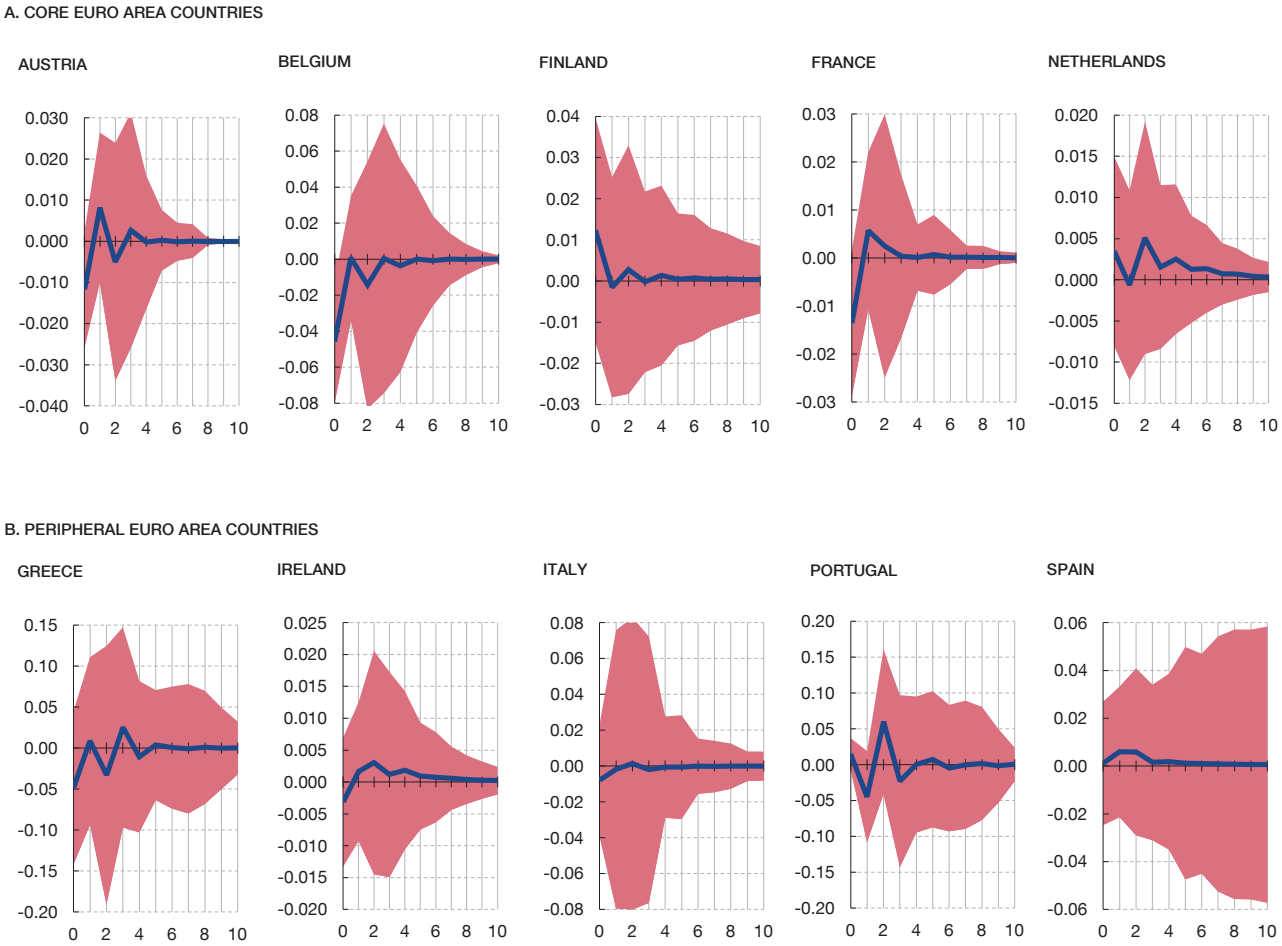
where ΔIP_t and ΔUP_t denote the monthly rate of change of industrial production and the monthly change of the unemployment rate, respectively. Now B_0 is a 4x1 vector of coefficients, B_1 and B_2 are 4x4 matrices of free parameters, and the residual ε_t is an iid normal 4x1 random vector with zero means.

We plot the orthogonalised impulse response functions of domestic debt to shocks of all the other variables in Charts 7 to 9.[19] Chart 7 shows that the shock to the spread essentially has the same effect as in the bivariate model. In turn, the only significant impact of the

19 We consider the usual Cholesky factorization. We place the stressed variable in the first place, so that the shock at the initial period only enters through the stressed variable. Domestic debt is always in the second position. We have checked the impact of placing domestic debt in the third or fourth position. When domestic debt is placed in the third position, the results are quite similar. When it is placed in the fourth position the impulse responses to a spread shock are qualitatively similar, but the impulse responses to the macroeconomic variables follow different patterns.

ORTHOGONALISED IMPULSE RESPONSE FUNCTION OF DOMESTIC DEBT TO A SHOCK OF THE INDUSTRIAL PRODUCTION. VAR(2) MODEL OF SPREADS, DOMESTIC DEBT, INDUSTRIAL PRODUCTION AND UNEMPLOYMENT

CHART 8



SOURCE: Authors´ elaboration.
NOTE: Variables in first differences. The orthogonalisation is based on the Choleski factorisation, where the variables are ordered as follows: (i) industrial production, (ii) domestic debt, (iii) unemployment, (iv) spread.

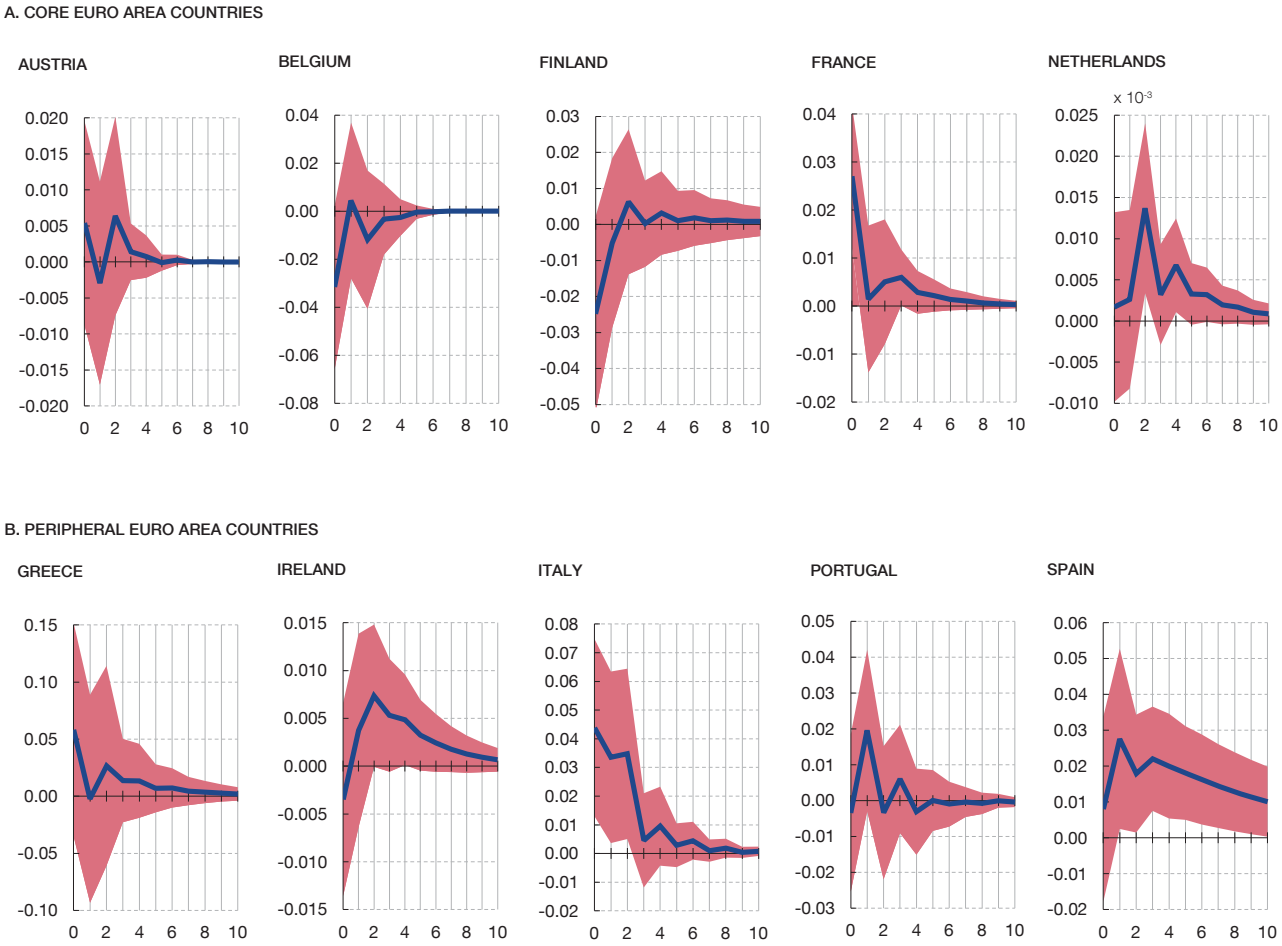
shock to industrial production is a fall in domestic sovereign debt holdings in Belgium (Chart 8). Lastly, the shock to the unemployment rate has a much wider impact, producing significant rises in holdings of sovereign debt in France, Italy, Spain, and to a smaller extent Ireland. This result shows that the real economy situation is a key explanatory factor to understand the evolution of sovereign debt holdings. It is worth noting that, since the variables are modelled in first differences, the transitory changes observed translate into permanent shifts in levels for the same variables.[20]

On the robustness of these results, it might be argued that the crisis involved a structural break changing banks' behaviour. If this were the case, the data prior to the crisis might not be informative of banks' behaviour towards carry trade opportunities. This does not seem to be the case however. The evolution of banks' sovereign debt holdings does not seem to be affected by a shift during the crisis that can be regarded as a structural break. We have re-estimated our bivariate VAR(2) model with data from 2007 to the end of the sample. The resulting orthogonalised impulse response functions of sovereign debt holdings to a

20 This can be illustrated with the following example. Consider the following path for a variable in first differences: $\Delta x(t+1)=c$, $\Delta x(t+2)=0$, $\Delta x(t+3)=0$, … Then, the path followed by the variable in levels will be $x(t+1)=x(t)+c$, $x(t+2)=x(t)+c$, … That is, a transitory shift of c units for the variable in first differences becomes a permanent shift in levels.

ORTHOGONALISED IMPULSE RESPONSE FUNCTION OF DOMESTIC DEBT TO A SHOCK OF THE UNEMPLOYMENT RATE. VAR(2) MODEL OF SPREADS, DOMESTIC DEBT, INDUSTRIAL PRODUCTION AND UNEMPLOYMENT

CHART 9



SOURCE: Authors´ elaboration.
NOTE: Variables in first differences. The orthogonalisation is based on the Choleski factorisation, where the variables are ordered as follows: (i) unemployment, (ii) domestic debt, (iii) industrial production, (iv) spread.

shock of the spreads turns out to be quite similar to the values displayed in Chart 6, both qualitatively as well as in terms of statistical significance.[21] In view of this, our results appear to be adequately capturing banks' behaviour to the incentives posed by sovereign spreads.

4.4 SUMMARY OF MAIN RESULTS

The first relevant result is that we do not find empirical evidence that higher sovereign yields have induced banks to increase domestic sovereign debt holdings in our sample. In this sense, our results do not support the "carry trade" hypothesis for domestic exposures. In contrast, we find that macroeconomic conditions turn out to be a key determinant of sovereign debt holdings as banks tend to increase their exposure to sovereign debt when macroeconomic conditions deteriorate.[22] Our results go in the same direction than Angeloni and Wolff (2012) suggesting a central role for economic factors in explaining the link between sovereign debt and banks, particularly in times of stress.

21 These results are available upon request to the authors.

22 Unfortunately, information on non-domestic high yield banks' sovereign exposures was not available to us. Thus we are not able to test the effects of yields and macroeconomic variables in this case. Yet, "carry-trade" incentives may be stronger in this case, since some of the factors we have described may not apply. In addition, the incentives to engage in "carry-trades" strategies, might become stronger after the sovereign crisis has stabilised, since some sovereign spreads may remain relatively high but the perception of underlying risks may have receded to some extent.

Changes in macroeconomic conditions affect banks' balance sheets through a number of channels. On the assets side, the deterioration of the economic conditions reduces the number of profitable lending opportunities in traditional banking sectors. On the funding side, the sharp increases in funding costs for banks in countries under stress narrowed down the range of feasible investment options in the short-run. The virtually negative real interest rates offered by some European bonds did not offer a return able to match their now much higher funding costs. This made high-yield sovereign bonds one of the few attainable options when the crisis was acutely severe and uncertainty widespread. As a result, there was a natural tendency to observe an increase in banks' holdings of sovereign debt coinciding with the period of fragile private funding markets and shocks to the real economy.

Also relevant, and as reflected in the hierarchy of liquid assets in the Basel III liquidity standards, sovereign debt – even if impaired – tends to remain among the most liquid assets when compared to other assets in the economy in times of stress. Sovereign debt holdings thus allow domestic banks to maintain a buffer of liquid assets at their disposal. This, and a common tendency in the market to front-run the agreed time-lines for the implementation of new regulatory standards, can also form part of the explanation for the observed gradual accumulation of sovereign debt holdings in the last few years.

As a possible side-effect, banks' holdings of domestic debt may also be contributing to preserve value in the context of persistent illiquidity and high volatility in markets. Provided that long-term economic fundamentals remain sound and public debt does not deviate significantly from the stable path, helping to stabilise market conditions and to maintain a source of stable funding and pricing to the economy can contribute to mitigate some of the negative effects that the stress in the sovereign has on banks' own balance sheets. For example, the common view of the sovereign as a "floor" to other risks in the economy, can significantly affect refinancing costs not only for banks but also for companies and households in the country under stress. Assessing the net effects of these dynamics and the effects from other possible explanatory factors is something we leave for the future.

5 Building blocks for the prudential treatment of sovereign exposures

We have described in previous sections the current prudential treatment of banks' sovereign exposures and we have shown that one of the arguments motivating a change to the current treatment of sovereign exposures – *i.e.* the "carry-trade" incentives – is not well supported by empirical evidence for the case of domestic sovereign debt holdings. We have also argued that the first route to tackle the problem of sovereign risk in the EA is addressing the underlying weaknesses and vulnerabilities in individual countries and in the EA as a whole – *i.e.* adopting fundamental policies to ensure sound inter-temporal fiscal policy and coordination among euro countries –.

Yet, there are broader arguments suggesting the need of changing the current approach to sovereign exposures. Informally, these arguments can be summarised by the following general principle: "if an asset is risky, regulation should do something about it". This means that if sovereign exposures are risky, prudential regulation should provide the right incentives to avoid an excessive accumulation of sovereign debt. And, in consequence, that the prudential treatment of sovereign exposures should not bias banks' decisions towards sovereign debt (first argument in page 15). In addition, the same general principle also implies that prudential regulation should ensure that the banks have enough loss absorbency capacity to face potential losses from sovereign risk (second argument in page 15).

The rationale is that acting in this way prudential regulation would be contributing to increase banks' *ex ante* resilience – *i.e.* when risks accumulate but have yet not materialised

BUILDING BLOCKS OF A PRUDENCIAL APPROACH TO SOVEREIGN RISK TABLE 1

Building blocks	Special features of sovereign risk	Suggestions for policy
Block 1: Holistic approach	Covers a wide range of regulatory areas, not only in banking but also in insurance and market regulation. Intrinsically linked to monetary *(e.g.* transmission mechanism) and fiscal policy *(e.g.* stabilising fiscal policies). Subject to structural differences in financial systems.	Introduce a comprehensive and long-term perspective to the assessment of sovereign risk in regulation. Consider structural characteristics of different financial systems. Apply a macroprudential approach to allow for a wide but integrated view of the issue.
Block 2: Flexible and adaptable tools	Banks' actual exposure to a sovereign default goes well beyond their holdings of sovereign debt. Portfolios of 'high quality sovereign debt' are typically highly concentrated, subject to infrequent default episodes and with broad effects in case stress. Common mechanistic rules such as risk weighting and large exposure limits have important limitations when applied to sovereign exposures.	Apply a Pillar 2 approach to the treatment of sovereign exposures. Enhance current Pillar 2 by using quantitative techniques – *e.g.* stress-tests techniques to guide supervisory decisions; and a diversified set of risk metrics (block 3).
Block 3: Diversity of risk metrics and more and better information	Strong reliance on external credit ratings in the prudential treatment of sovereign risk. Current prudential treatment prone to procyclicality, cliff-edge effects and with low incentives for a diversity of risk metrics.	Reduce reliance on external credit ratings by improving the range of risk metrics used to guide supervisory decisions - *e.g.* drawing on debt sustainability analysis techniques. Improve sovereign risk disclosures to facilitate effective market discipline, e.g. using mandatory templates for banks' disclosures.

SOURCE: Authors´ elaboration.

(first argument) –, as well as their *ex post* resilience – *i.e.* when accumulated risks materialise (second argument) –.

Whilst we agree that the general principle and its implications hold for a variety of assets, we argue that sovereign risk exposures deserve a special consideration. Sovereign risk is, indeed, "special" in our view. We describe in this section the key characteristics that make sovereign risk special. Linked to each of these special characteristics we make a number of proposals to improve the design of prudential policy, provided that the root causes of sovereign risk in the EU are not well addressed in first instance. Many of these topics have already been debated at different fora, especially at the EU level, but we develop a joint framework in the form of high level building blocks and shed new light on the basis of our findings from the previous two sections. Table 1 summarises the framework of three building-blocks.

5.1 BLOCK 1: HOLISTIC APPROACH

The prudential treatment of sovereign exposures covers a wide range of issues, including banking, insurance and capital markets regulations. In addition, within each regulatory framework, sovereign bonds are involved in a number of areas, as for example risk-weights in credit risk capital requirements, in the composition of the mandatory liquidity buffers in liquidity risk regulation, and in the minimum haircuts applied in market operations and counterparty credit risk, among others. As it was discussed, sovereign debt also plays a central role in the transmission of monetary policy. And it is intrinsically linked to governments' stabilising fiscal policies, including the role of the government budget as a backstop to help to sustain the economy during systemic banking crises.

Also, as explained in Section 3.1, sovereign debt in advanced economies plays a key role in all financial systems as "risk-free" or "reference" assets. Yet, not all financial systems are the same. Some financial systems, for instance, are mostly dominated by banks, while others have a broader number of institutional investors and market makers, such as pension funds, insurance companies and mutual funds. This structural heterogeneity is also

suggesting a need for a broad view of the issue. The same prudential treatment is likely to have quite a different impact on financial stability when applied in different contexts.

More fundamentally, the sovereign crisis in the EA is not just "one other" simple example of a sovereign crisis. Being a monetary union, the economic effects and political implications of the European sovereign crisis are more extensive than some of the separated sovereign risk manifestations. In this sense, the prudential treatment of sovereign risk in the EA should be consistent with the overarching economic and political goals of the union, as well as with the on-going measures to correct the underlying structural weaknesses and vulnerabilities in the EU. As discussed previously, these include initiatives to improve fiscal governance in individual members and in the EA as a whole, and to advance towards the consolidation of a banking union. Any change to the current prudential treatment of sovereign risk in the EU should be sure to not hinder nor interfere with this process.

5.1.1 A possible way forward

All in all, there is a need to consider sovereign risk from a comprehensive and long-term perspective. But whilst a wide view is needed, the analysis should also be able to integrate the different areas involving the treatment of sovereign exposures. From this angle, a macroprudential approach to sovereign exposures appears as the most suitable way to address some of the sovereign risk manifestations in the EU and to guide supervisory decisions on the matter.

We suggest, in particular, giving proper consideration to the interactions and expected outcomes of the different regulatory reforms in train, to the on-going policy measures to address the root sources of the sovereign risk problem in the EA, and to consider structural differences between financial systems. This would help to avoid redundant or ineffective measures and to prevent unintended consequences.

Any assessment of possible policy measures cannot ignore the ongoing initiatives in the EA to progress towards the consolidation of a fiscal and banking union. From this perspective, it would not be fully appropriate to take the current situation as the benchmark situation in order to assess possible changes to the treatment of sovereign risk in the EU. The EU has already embarked in a series of reforms whose effects should not be front-run nor ignored.

5.2 BLOCK 2: FLEXIBLE AND ADAPTABLE TOOLS

It is very difficult for a single and uniform formula or model to handle sovereign risk. As the empirical evidence in Section 4 suggests, economic factors are central to explain the evolution of banks' holdings of domestic sovereign debt. From this perspective, banks' actual exposure to sovereign risk goes well beyond their direct holdings of sovereign debt. Sovereign risk affects the whole structure of banks' balance sheet through the "real economy" channel and it is generally perceived – and commonly used – as a reference "risk floor" to other risks in a given economy.[23]

For example, according to Eurostat, government spending represents more than 40% of GDP on average in the EA. As a consequence problems in governments' finances spread quickly to the whole economy. On the other side, the common perception of the sovereign

23 On the links between sovereign and banks risks, Wolff (2011) finds that banks' market valuations from July-October 2011 were not affected by their holdings of government debt of Italy, Spain, Portugal and Ireland. And Angeloni and Wolff (2012) do not find a very strong relationship between banks' sovereign holdings and their market valuation. In contrast, they find that the location of banks mattered for their market value. In line with our empirical findings, the authors also show that stock market performance varies significantly across countries, concluding that the sovereign-banking link appears to be less related to banks' holdings of sovereign debt and more to economic and country specific variables.

as a "risk floor" is often reflected in market practices, as for instance in investment policies limiting or completely banning investments in non-AAA countries [FSB (2010)]. Automatic "rating triggers" in investors' strategies can ignite fire-sales in domestic assets, by prompting sudden adjustments on investment portfolios following a downgrade in the sovereign.

As a result of the strong links between sovereign and financial stability, even a bank with absolutely no holdings of domestic sovereign debt is likely to see most of its balance sheet affected in times of stress in the domestic sovereign. Related to the discussion on the multiple risk transmission channels from sovereign to banks, De Paoli *et al.* (2009) find that two thirds of sovereign crises in their sample overlap with banking crises with most of the banking crises starting after the sovereign crises.

But besides the broad and profound links between sovereign risk and banks' balance sheets, there are specific characteristics of sovereign exposures which limit the effectiveness of mechanistic rules for the prudential treatment of sovereign risk as for example standard price-based *(e.g.* risk weights) and quantity-based *(e.g.* limits to large exposures) microprudential tools.

5.2.1 Price-based microprudential tools: risk-weights

There are important limitations in the current risk weighting mechanism embedded in Basel regulation when applied to portfolios of "high quality sovereign debt" – as for instance, sovereign debt portfolios from advanced economies –. These portfolios are typically highly concentrated, with very low-default frequency, and very high-impact. As with the risk inputs estimations for sovereign risk exposures *(e.g.* PDs), these characteristics raise difficult challenges for a proper risk weights calibration. For example, risk-weights are normally calibrated for relatively well diversified portfolios – as for example, corporates or retail exposures – with much higher default frequencies and lower impact than sovereign debt from advanced economies. Further to this, the inherited concentration in high quality sovereign debt portfolios together with potential contagion effects as the ones already seen in the EU cast doubts on the possibility of calibrating realistic shock-absorbing capital charges.

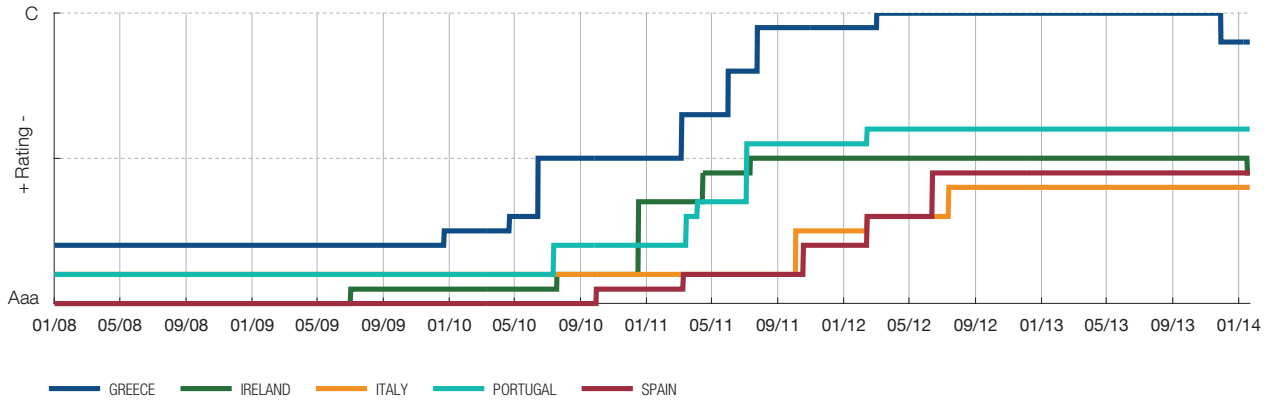
But capital charges for sovereign exposures may still be useful from an ex-ante perspective. That is, capital charges can help to curb banks' incentives to accumulate sovereign debt by introducing an extra cost on banks' holdings, thus acting as a penalisation device. Although this may help in some particular circumstances, this is not generally the case for sovereign exposures, especially for banks' holdings of domestic debt in advanced economies. Public sector debt tends to be counter-cyclical [see for example, Drehmann, Borio and Tsatsaronis (2011), p. 8]. As seen in the recent financial crisis, banks' sovereign debt holdings gradually decreased in the run up period, and then increased rapidly once the crisis unfolded (Chart 1).

This can be explained because in normal or boom times banks' incentives to hold assets with meagre returns – such as sovereign bonds from advanced economies – tend to be very low in profitability terms. Contrary to other asset classes, as for example real estate exposures, there are not many incentives to curb in this case. It is in adverse times when a gradual accumulation of public debt has been observed. As discussed, this can be explained by a number of factors in play as for example widespread uncertainty, "flight to safety", macroeconomic deterioration and cross-country effects. Mechanistic increases in capital requirements in this context, without assessing changes to economic fundamentals, the lack of profitable investment opportunities in a situation of high funding costs and fragmentation, or which carefully judge the timing for supervisory reactions could amplify shocks to the economy and increase tensions in debt markets.

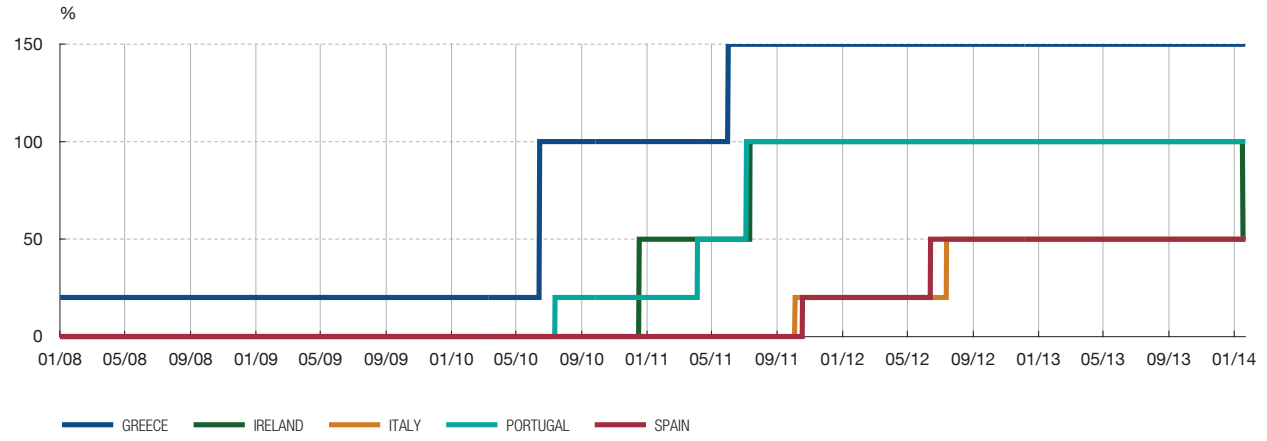
PROCYCLICALITY IN CAPITAL CHARGES

CHART 10

A. MOODY'S RATINGS OF LONG TERM SOVEREIGN DEBT IN DOMESTIC CURRENCY FOR SELECTED EURO AREA COUNTRIES



B. IMPLIED RISK WEIGHTS FOR SOME EURO AREA SOVEREIGNS IN THE STANDARDISED APPROACH



SOURCE: Moody´s and Authors´ elaboration.
NOTE: The risk weights have been computed using the standardized approach as stated in Paragraph 53 of Basel Committee (2006).

From this perspective, a mechanistic allocation of capital for sovereign risk can be very procyclical, especially when applied in the case of banking-led sovereign crises. An increase in capital requirements in this scenario would create a need for extra capital at the worse possible moment. That is, when banks' positions have been significantly weakened by the effects of the preceding banking crisis. Chart 10 illustrates this potential procyclical effects by simulating the effects of removing the carve-out on domestic sovereign debt.[24] The graphs show that had the carve-out been not applied, the larger increases in risk-weights and consequently in capital requirements following ratings downgrades would have happened mostly by the second half of 2011 and during 2012. This is very procyclical. This would be raising capital requirements in a moment when banks are experiencing greater difficulties in raising new capital as the effects of the global financial crisis feel more severely. Banks' expected reaction in this scenario is usually cutting further back on their credit provision, thereby amplifying the deterioration in the real economy [Kashyap and Stein (2004); Repullo and Suárez (2013)].

24 Cliff effects from the "hard wiring" of CRA ratings thresholds intro regulatory regimes can amplify procyclicality [FSB (2010)]. Problems from over reliance on a single risk metric – as for example CRA ratings – are however discussed in Section 5.3.

5.2.2 Quantity-based microprudential tools: concentration limits

Quantity-based rules – as for example limits to large exposures –, can also be problematic when applied mechanistically to sovereign exposures. This happens for three reasons. First, the large exposures limits can be at odds with different parts of the regulatory standards, as for example the new Basel liquidity standards. In the Liquidity Coverage Ratio (LCR), sovereign bonds are at the top notch of the ranking of eligible liquid assets and there are no limits to the amount of domestic sovereign debt that banks can hold in their liquidity buffers. Second, hard limits to banks' holdings of domestic sovereign debt are also prone to procyclicality. Banks do not have incentives to hold sovereign debt in normal times in first place. And in crisis times, there are scarce safe assets or investment opportunities able to match banks' higher funding costs. Third, in a context of widespread market illiquidity, increased market volatility not explained by fundamentals, or short speculative attacks in sovereign debt markets, it would be in banks own interest to help to sustain a stable source of funding and pricing for the economy thereby mitigating the negative spillovers effects on their balance sheets. Since sovereign crises are systemic in nature, these effects can prevail over the direct effects from banks' holdings of domestic debt. On this, Angeloni and Wolff (2012) find a relatively weak relationship between banks' holdings of sovereign debt and banks' market valuations. They find instead that economic factors play a more prominent role.

More generally, imposing diversification constraints to inherently concentrated assets such as high-quality sovereign debt can result in rules that may not be achievable in practice. After all, there are not so many "high-quality" sovereign bonds in the world. Just as an illustration, let's assume that a benchmark portfolio of high-quality sovereign bonds can only include sovereign debt from advanced economies. The IMF in its *World Economic Outlook* of April 2013 classifies 34 countries (excluding San Marino) as advanced economies. If we consider that 17 of these countries belong to the euro-zone and thus they are euro-denominated debt, we get a list of 18 advanced economies or jurisdictions issuing sovereign debt in different currencies. The inherent concentration of this portfolio becomes evident when compared with corporate or retail portfolios which are typically comprised by thousands of exposures from different counterparties.

All this is in addition to banks' efforts to match FX positions in their portfolios – including when sovereign debt holdings are used as reserves or as liquidity buffers –. For example, following the Basel provisions on the composition of high-quality liquidity buffers in different currencies, banks are expected to adjust their portfolios of sovereign debt to make them consistent with the distribution of their sources of funding by currency. These factors create serious challenges for the operationalisation of effective diversification rules in practice.

In conclusion, as a result of the multiple interconnections between sovereign risk and banks' stability – and with fiscal and monetary policy – the distinctive characteristics of "high quality" sovereign portfolios, and the different types of sovereign crises – *e.g.* "bank-led' or "pure" sovereign crises –, more flexible and adaptable approaches would be necessary to manage sovereign risk.

5.2.3 A possible way forward

We believe that Pillar 2 approaches to banking regulation are better equipped to manage the very special case of sovereign risk. Supervisory measures via Pillar 2 can consider aspects which can hardly be encapsulated in a formula or model. And they can also better fine-tune the timing of the supervisory responses to avoid exacerbating instability. Supervisory actions can also be usefully informed and guided by quantitative techniques as for example macro stress-tests [Nouy (2012)].

For the "Pillar 2" measures to work effectively, coordination among EU supervisors and well established procedures should be in place. This will help to get round "inaction" and "inhibition" biases in supervisory actions, and to ensure consistency among different supervisors.[25] The work of the SSM on this front will be fundamental for a consistent implementation of future supervisory measures.

5.3 BLOCK 3: DIVERSITY OF RISK METRICS AND MORE AND BETTER INFORMATION

There are several areas where the Basel capital framework relies heavily on ratings from Credit Rating Agencies (CRAs), but this reliance is particularly strong for the treatment of sovereign exposures. The risk inputs for the calculation of capital requirements for sovereign exposures depend on the approach banks follow. In the Standardised Approach (SA) for credit risk there is a direct mapping from CRAs ratings to risk weights [see Basel Committee (2006)]. In the Internal Ratings Based Approach (IRBA), risk weights for sovereign exposures are a function of banks internal estimations of probabilities of default. Both types of mappings from CRAs or internal risk inputs to risk weights have significant problems when applied to sovereign exposures.

5.3.1 Problems when using CRA ratings for sovereign exposures

There are at least three problems when CRA ratings are used to allocate capital for sovereign exposures. First, CRA ratings do not provide the type of input that risk-weights need. Risk weights require ratings to provide a cardinal risk metric – for instance, a level of probability of default for a given exposure –. But CRAs have widely recognized that their ratings scale reflect ordinal risk ratings, rather than targeting specific default probabilities or expected losses [see IMF (2010)]. Even when cardinal metrics for each rating grade could be derived – for example, from transition matrices – the calibration and validation of specific metrics for sovereign risk is difficult to achieve as result of the very few number of default events in advanced economies.

Second, CRA ratings can create significant cliff-edge effects in capital requirements as high-lighted by the FSB (2010). Partly due to the very low frequency of defaults in high-quality sovereign portfolios, migrations between grades tend to occur quite abruptly, which translates to sudden jumps in risk-weights and capital requirements (see Chart 10). This mechanistic feed-through of CRA ratings to risk-weights can in turn exacerbate the procyclicality of microprudential capital requirements. The issue of procyclicality in rating-based regulation (both internal and external ratings) is one of broad policy concern [see for example Repullo, Saurina and Trucharte (2010)]. But the problem is particularly acute for sovereign risk.

Arguably, this "discontinuity problem" may be alleviated by using more granular risk weights scales. But this is unlikely to be of much help in practice. CRA ratings migrations for high-quality sovereign bonds are not smooth. And there is a "clustering effect" which reduces the number of ratings grades actually perceived. Market practices tend to "cluster" rating grades (around 21 for major agencies) around a few buckets: investment grade, non-investment grade, and speculative or in default. This "clustering effect" amplifies the "cliff-edge" effects observed from rating transitions and produces a negative externality for the downgraded sovereign which can lead to destabilising spillovers.[26] For example, the distinction between investment and sub-investment grade for sovereign debt creates a discontinuity in the perception of risk which can trigger sharp increases in banks' funding

25 Inaction bias may occur at the moment of having to implement or activate a given policy or instrument. By contrast, inhibition bias may occur at the moment of having to retreat or relax a given policy or instrument. Both biases are relevant to the case of sovereign risk.

26 The clustering of CRA ratings is also associated to the "certification" role that CRA ratings is commonly attributed. In this role, CRA are perceived as a certification that a given assets belong to a particular sub-class.

cost, adding to the increases due to the "sovereign floor" effect. On this, the empirical analysis from the IMF (2010) shows that CRA ratings do have an impact on the funding costs of issuers and consequently their actions can have an effect on financial stability.

Third, the "hard-wiring" of CRA ratings for capital allocation affects market participants' incentives accentuating over-reliance on external credit ratings as the only source of information to assess sovereign risk. This over-reliance on CRA ratings also reduces regulators and banks' incentives to investigate and exploit a more diversified set of information to assess the fundamentals of their public debt exposures. CRA judgements may be seen as the single and "official" truth. A mechanistic and automatic allocation of ratings to risk weights and capital plays down the potential role of more comprehensive approaches to assess the net effect of sovereign risk on banks' balance sheets.

Whilst one could think that some of the problems of using mechanistic rules based on CRA ratings could be mitigated by using banks' own internal estimation, the fact that sovereign defaults are very rare events in advanced economies also pose significant challenges for the estimation and validation of the risk inputs used in the internal estimations. And in practice, banks' internal models tend still to rely on CRA ratings, for example as benchmarks for their own internal estimations [Deb *et al.* (2011)].

Arguably, CRA ratings have made progress to avoid being reactive, to increase the stability of their ratings and to give anticipated signals of their expected movements *(e.g.* through "outlook" notifications). Yet, the net effect of these actions in practice – particularly during crises as the recently experienced – has not been fully assessed yet.

5.3.2 A possible way forward

Standard setters and regulators have been called to reduce the reliance on CRAs. This does not mean that CRA ratings could not and should not still be a valuable source of information for market participants, particularly for new securities or for those ones where information is insufficient or inadequate. This means that efforts should be made to avoid that CRA ratings end up being the "only" source of information for risk assessments in regulation and in investors' decisions. One way to contribute to this aim is promoting and making available more transparent and diversified sources of information and risk metrics. These include structural risk metrics which are less subject to destabilising cliff-effects, and which could take into consideration the multiple dimensions of sovereign risk.

Drawing on elements from Debt Sustainability Analysis (DSA) techniques could be a useful way to enrich the range of risk metrics to guide supervisory decisions on sovereign risk. For example, it could be explored the opportunity of using elements from well established debt sustainability frameworks –as for example, the IMF framework for public debt sustainability analysis [IMF (2013)] in combination with other approaches usually applied in emerging economies [see for example, Borensztein *et al.* (2013)].

Market data can also be a source of information to enhance decision taking. There are, however, some well-known limitations when market data is used for regulatory purposes [Bond, Goldstein and Prescott (2010)]. One of the usual problems is that it can induce further procyclicality in the system.[27] In addition, market prices may be reflecting a variety of factors simultaneously. Data on sovereigns CDS, for instance, showed very little movements in the run-up of the crisis with all major CDS in the EU at very similar low levels

27 Related to this, see for example IMF (2008) for an empirical analysis of the effects of fair value accounting on procyclicality.

and with quite synchronous fluctuations. This may had been suggesting in principle the existence of quite even fundamentals among EU countries. But, since autumn 2008 there have been large and abrupt swings in some sovereign CDS spreads and a broad "decoupling" into two distinct groups which are difficult to justify solely based on changes in fundamentals. Factors such as market illiquidity, the perceived "safe haven" status of some securities, and collective changes in investors' appetite towards risk may have also played a role in addition to possible changes in fundamentals. How to disentangle these factors is not easy in practice. As a consequence of these difficulties, regulators may be more willing to accept the idea of tightening requirements when market indicators worsen, but they may be less determined to revert on their decisions once market indicators improve. This "inhibition bias" in policy reactions can perpetuate in time measures which were originally assumed as temporary – or at least conditional to fluctuations in market indicators –. And ultimately, this can lessen the effectiveness of these measures in the future.

One way to improve the quality of market data and also to help market discipline to work effectively is by providing adequate and timely disclosures. More and better information on sovereign risk in banks' balance sheets allows better assessments both from market participants as well as from supervisors. Comparability of sovereign risk disclosures could also be improved by implementing mandatory reporting templates containing a minimum set of standardised information on the subject, which could be periodically adjusted by supervisors.

5.4 CONNECTING THE DOTS

Sovereign risk is special. It affects and is affected by macroeconomic dynamics; it is closely related to fiscal and monetary policy and plays a key role as a risk-free or reference asset for the working of financial markets and the economy as a whole. All this creates many and profound interconnections between sovereign risk and financial stability.

Against this background, a macroprudential Pillar 2 approach to sovereign exposures appears as the most suitable way to address some of the sovereign risk manifestations in the EU and to guide supervisory decisions on the matter.[28] The key advantage of a macroprudential approach would be its capacity to adopt a wide but also integrated view of the issue. Additionally, as discussed in the second block, sovereign risk calls for the need of flexible, adaptable tools and able to gauge the extent and timing of regulatory measures to different contexts and circumstances.

Following a "constrained discretion" scheme, the macroprudential Pillar 2 approach envisaged is one which can be guided both by quantitative techniques – *e.g.* macro stress-tests, risk metrics from DSA –, and also qualitative information – *e.g.* experts' judgement –. This approach should also be complemented with general principles and guidelines for the macroprudential authorities, and with adequate and timely disclosures. Related to use of macro stress-tests to help guiding supervisory decisions, the experienced being gained with the implementation of stress-tests in the EU is proving to be a valuable contribution in this direction.

Applying a comprehensive costs and benefits assessment for the measures being sought is also an integral part of the approach proposed. This assessment, in particular, should assess interactions with stabilising fiscal policies, take into account sovereign risk special characteristics and provide specific answers to the problems identified.

28 Chapter 6 of the ESRB (2014) handbook on operationalising macroprudential instruments provides further details on possible macroprudential uses of the Pillar 2.

For example, policy measures which do not solve the problem of over-reliance on external credit ratings, which ignore the interconnections with stabilising policies in a context of widespread market illiquidity, short-term speculative attacks and "flight to safety", or are blind to the ongoing economic environments, risk falling into the bag of "medicines that are worse than the disease".

6 Conclusions

Sovereign debt plays a central role in the economy and it is intimately linked to the notion of safe assets. Sovereign debt acts as a reserve of value, as a "reference rate" in financial systems and as a source of liquidity in markets *(e.g.* sovereign debt is widely used as collateral in central bank and market operations). As a result, sovereign debt is close to the concept of fiat money *(i.e.* "cash equivalent") in advanced economies, and therefore it is essential for the smooth transmission of monetary policy. Sovereign debt is also a key component in the implementation of inter-temporal fiscal policy. Governments with good preconditions can afford to implement stabilising fiscal policies thus helping to smooth macroeconomic cycles and – in times of stress –, to mitigate the negative effects of crises. Lastly, sovereign debt is also a key concept within prudential regulation, involving a number of regulatory areas, not only in banking regulation but also in other sectors, as for example insurance and market regulation.

The unprecedented severity of the EA sovereign crisis has prompted a lively debate on the regulatory treatment of sovereign exposures and the potential routes for reforming the current prudential treatment of sovereign risk in the EA. Three main arguments have been posed thus far. First, that the current regulatory treatment of sovereign debt biases the banks' decisions towards sovereign debt. Second, that the current treatment was not reflecting risks from banks' sovereign debt. And third, that the current regulatory treatment of sovereign debt generates incentives to pursue "carry trade" strategies. The first and second arguments boil down to a broader point on the loss of the "risk-free status" for EA sovereign assets and the consequent need for regulation to reflect the risks stemming from banks' holdings of this now risky debt. The third one is a more specific argument on a potential effect from the current regulatory treatment of sovereign risk in the EU.

On the third of these arguments, we do not find evidence that "carry trades" explain the changes in domestic debt holdings in our sample. Increasing sovereign yields either did not significantly affect domestic sovereign debt holdings or had the opposite sign. In contrast, we do find a significant effect of macroeconomic variables – such as industry production and unemployment – on debt holdings. Our results support the view that the macroeconomic situation in the countries hit by the recent crisis has been the main determinant of banks' domestic sovereign exposures, rather than risk seeking strategies such as "carry trades". Lack of profitable investment alternatives, higher funding costs for banks in countries under stress, the introduction of new liquidity standards, and striving to mitigate the effects of the crisis on the whole economy and thus on banks' balance sheets themselves, are some of the factors explaining this link between macroeconomic deterioration and the observed increase in domestic sovereign debt holdings. Due to lack of data, we cannot carry out a similar analysis on the determinants of non-domestic sovereign debt holdings. In this case, carry trade opportunities might still play a role. The macroeconomic explanations that we have discussed do not apply in many EA countries which already have growing economies, and the incentives to hold peripheral sovereign debt might have increased since the stabilisation of the sovereign crisis but large sovereign spreads differentials still remain.

On the first two arguments, whilst we agree that the argument holds for a variety of assets, we argue that sovereign risk in the EA is a very special risk which needs to be tackled at its root source in first instance and which merits a distinctive treatment in prudential

regulation. This implies that solving the existent fiscal imbalances and ensuring sound inter-temporal fiscal policy both at the individual and EA level is one of the main challenges ahead and a necessary condition for a stable financial system.

As a second route, we describe the key characteristics of sovereign risk and – based on them – we construct a set of three building blocks for the design of prudential policy in this area. In our view, a "macroprudential Pillar 2 approach" is the best suited to manage the special characteristics of sovereign debt exposures in advanced economies, including the EA case. A macroprudential Pillar 2 approach would allow for a wide but integrated view of the issue. As such, it is better equipped to assess the multiple interrelationships between sovereign and financial stability, as well as the interactions with fiscal and monetary policy.

Following a "constrained discretion" scheme, the approach proposed can integrate elements both from quantitative techniques – *e.g.* macro stress-tests – as well as qualitative analysis – *e.g.* experts' judgement –. This approach proposed should also be complemented with general principles and guidelines for the macroprudential authorities and with adequate and timely disclosures – *e.g.* using mandatory standardised templates could be explored –.

We suggest expanding the diversity of the risk metrics being used to guide supervisory decisions – *e.g.* drawing on elements from DSA techniques – and taking into account differences among financial systems. As part of the macroprudential Pillar 2 approach proposed, we also suggest applying comprehensive cost and benefit analyses to reflect the special characteristics of sovereign risk and to capture effects on stabilising policies.

Finally, the analysis on the prudential treatment of sovereign risk should consider in our view the extent to which the measures proposed do contribute to solve the underlying problems identified – *e.g.* over-reliance on external credit ratings – or, in contrast, to reinforce them.

REFERENCES

ACHARYA, V., I. DRECHSLER, and P. SCHNAL (2011). *A Pyrrhic victory? Bank bailouts and sovereign credit risk,* NBER Working Paper.

ACHARYA, V., and S. STEFFEN (2013). *The "greatest" carry trade ever? Understanding Eurozon bank risks,* NBER Working Paper No. 19039.

ALESINA, A., and F. GIAVAZZI (2013). *Fiscal policies after the financial crisis,* The University of Chicago Press, Chicago and London, p. 1.

ANGELINI, P., G. GRANDE, and F. PANETTA (2014). *The negative feedback loop between banks and sovereigns,* Banca d'Italia Occasional Paper 213.

ANGELONI, C., and G. WOLFF (2012). *Are banks affected by their holdings of government debt?,* Bruegel Working Paper No. 2012/07.

AYUSO, J. (2013). "An analysis of the situation of lending in Spain", *Economic Bulletin,* October, Banco de España.

BANCA D'ITALIA (2010). *Fiscal Policy: Lessons from the Crisis,* Papers presented at a Public Finance Workshop held in Perugia, 25-27 March, Introduction.

BARRO, R. (1979). "On the determination of the public debt", *Journal of Political Economy,* 87(6) pp. 940-971.

BASEL COMMITTEE ON BANKING SUPERVISION (2014). *Fundamental review of the trading book: A revised market risk framework,* BIS, January.

— (2013). *Basel III: The Liquidity Coverage Ratio and liquidity risk monitoring tools,* BIS, January.

— (2011). *A global regulatory framework for more resilient banks and banking systems,* BIS, June.

— (2010). *Basel III: International framework for liquidity risk measurement, standards and monitoring,* BIS, December.

— (2009). *Revisions to the Basel II market risk framework,* BIS, July.

— (2006). *International Convergence of Capital Measurement and Capital Standards,* BIS, June.

BATTISTINI, N., M. PAGANO, and S. SIMONELLI (2013). *Systemic risk and home bias in the Euro Area,* mimeo.

BI, H. (2012). "Sovereign default risk premia, fiscal limits, and fiscal policy", *European Economic Review* 56, pp 389-410.

BLUNDELL-WIGNALL, A. (2012). "Solving the financial and sovereign debt crisis in Europe", *OECD Journal: Financial Market Trends,* Vol. 2011, Issue 2.

BOND, P., I. GOLDSTEIN and E. S. PRESCOTT (2010). "Market Based Corrective Actions". *The Review of Financial Studies* 23, pp. 781-820.

BORENSZTEIN, E., E. CAVALLO, P. CIFUENTES and O. VALENCIA (2013). "Integrated Template for Debt Sustainability Analysis: Version 2.0, Instruction Manual, Revised Version", Inter-American Development Bank Technical Note, No. IDB-TN-576.

BRETON, R., C. PINTO, and P. F. WEBER (2012). "Banks, moral hazard, and public debts", Banque de France, *Financial Stability Review,* No. 16, April.
CAVALLO, E., and A. IZQUIERDO (eds.) (2009). *Dealing with an international credit crunch,* Inter-American Development Bank, Washington DC.
CLAESSENS, S., Z. POZSAR, L. RATNOVSKI, and M SINGH (2012). *Shadow banking: economics and policy,* IMF Staff Discussion Note, December.
COEURÉ, B. (2012). *The euro area sovereign debt market: lessons from the crisis,* Speech at the 12th IMF Annual Forum on Managing Sovereign Risk and Public Debt: "Managing Sovereign Debt: A Seismic Shift in demand and Supply Dynamics?", Rio de Janeiro, June.
DE PAOLI, B., G. HOGGARTH, and V. SAPORTA (2009). *Output costs of sovereign crises: some empirical estimates,* Bank of England Working Paper No. 362.
DEB, P., M. MANNING, G. MURPHY, A. PEÑALVER and A. TOTH (2011). *Whither the credit ratings industry?,* Financial Stability Paper No. 9, March.
DREHMANN, M., C. BORIO and K. TSATSARONIS (2011). *Anchoring countercyclical capital buffers: the role of credit aggregates,* BIS Working Paper No. 355.
DUNNE, P., J. MOORE, and R. PORTES (2007). "Benchmark status in fixed-income asset markets", *Journal of Business Finance & Accounting,* Volume 34, Issue 9-10, Nov-Dec.
EUROPEAN COMMISSION (2013). *Report on Public finances in EMU*.
— (2012). *A blueprint for a deep and genuine economic and monetary union,* Launching a European Debate.
EUROPEAN SYSTEMIC RISK BOARD (2014). *The ESRB handbook on o perationalising macro-prudential policy in the banking sector.*
FEYEN, E., and I. GONZÁLEZ DEL MAZO (2013). *European bank deleveraging and global credit conditions. Implications of a multi-year process on long-term finance and beyond,* The World Bank Policy Research Working Paper 6388.
FINANCIAL STABILITY BOARD (2010). *Principles for reducing reliance on CRA ratings*.
FISHER, P. (2013). *Reflections on the meaning of "risk free",* BIS Papers No. 72, July.
GIOVANNINI, A. (2013). *Risk-free assets in financial markets,* BIS Papers No. 72, July.
HALDANE, A. G. (2012). *Financial arms races,* Speech delivered at the Institute for New Economic Thinking, Berlin, on 14 April.
HANNOUN, H. (2011). *Sovereign risk in bank regulation and supervision: Where do we stand?,* Financial Stability Institute High-Level Meeting, Abu Dhabi, UAE, 26 October.
INTERNATIONAL MONETARY FUND (2008). Chapter 3: Fair Value Accounting and Procyclicality, *Global financial Stability Report,* October.
— (2010). *Global Financial Stability Report* (GFSR). Chapter 3: The uses and abuses of sovereign credit ratings, October.
— (2012). *Global Financial Stability Report* (GFSR). Chapter 3: Safe assets: financial system cornerstone?, April.
— (2013). *Staff Guidance note for public debt sustainability analysis in market-access countries.*
JARROW, R. (2007). "A critique of revised Basel II", *Journal of Financial Services Research,* 32, pp. 1-16.
KASHYAP, A., and J. STEIN (2004). *Cyclical Implications of Basel II Capital Standards,* Federal Reserve Bank of Chicago Economic Perspectives, 1st Quarter, pp. 18-31.
KUPIEC, P. (2006). *Basel II: A case for recalibration,* FDIC Center for Financial Research Working Paper No. 2006-13.
LANE, P. R. (2012). "The European sovereign debt crisis", *The Journal of Economic Perspectives* 26 (3), pp. 49-67.
MERLER, S., and J. PISANI-FERRY (2012). "Hazardous tango: sovereign-bank interdependence and financial stability in the euro area", Banque de France, *Financial Stability Review,* No. 16, April.
NAKASO, H. (2013). *Financial markets without a risk-free sovereign,* BIS Papers No. 72, July.
NOUY, D. (2012). "Is sovereign risk properly addressed by financial regulation?", Banque de France, *Financial Stability Review* 16, pp. 95-106.
PRAET, P. (2013). "Transcript of interview with ECB's Peter Praet", *Financial Times,* December 11.
REINHART, C., and K. ROGOFF (2009a). "The aftermath of financial crises", *American Economic Review,* American Economic Association, vol. 99(2), pp. 466-72, May.
— (2009b). *This Time Is Different: Eight Centuries of Financial Folly,* Princeton, New Jersey, Princeton University Press.
— (2011). "From Financial Crash to Debt Crisis", *American Economic Review,* vol. 101, No. 5, pp. 1676-706.
REPULLO, R., J. SAURINA, and C. TRUCHARTE (2010). "Mitigating the Pro-cyclicality of Basel II". *Economic Policy,* 64, pp. 659-702.
REPULLO, R., and J. SUÁREZ (2013). "The Procyclical Effects of Bank Capital Regulation", *Review of Financial Studies,* 26, pp. 452-490.
SINGH, M. (2011). *Velocity of pledged collateral: analysis and implications,* IMF Working Paper 11/256, November.
— (2013). *Collateral and monetary policy,* IMF Working Paper, WP/13/186.
TARULLO, D. (2008). *Banking on Basel,* Peterson Institute for International Economics, August.
VAN ROMPUY, H. (2012). *Towards a genuine economic and monetary union,* Report by the President of the European Council EUCO 120/12, PRESSE 296, PR PCE 102.
WEIDMANN, J. (2013). "Stop encouraging banks to buy government debt", *Financial Times,* September 30.
WOLFF, G. (2011). *Is recent bank stress really driven by the sovereign debt crisis?,* Bruegel Policy Contribution No. 2011/12.

Appendix. Unit root and cointegration tests

We study the presence of unit roots in Table A.1. Using the whole sample, we cannot reject the presence of unit roots in the sovereign yields, the spread, industrial production and unemployment. This means that these series are not stationary for the sample period analysed. The only exception is the Irish industrial production. In contrast, the evidence in favour of unit roots in domestic debt is weaker. Specifically, we obtain rejections of the unit root hypothesis for some core EA countries (Austria, Belgium, Finland, France and Netherlands). To check the robustness of these results, we consider only the pre-crisis sample in Table A.1.B. These results show that, for core EA countries, only the unit root rejection of the Dutch variable is robust to the testing sample. In addition, in the pre-crisis sample we obtain unit root rejections in the domestic debt variables of Ireland and Portugal. We also observe some sensitivity of the tests to the sample for the spread and industrial production of Greece and Ireland. As a result and despite these few exceptions, we will take the first differences of all variables in order to perform a consistent treatment across countries.

P-VALUES OF THE AUGMENTED DICKEY-FULLER UNIT ROOT TESTS

TABLE A.1

A. FULL SAMPLE (200001-201309)

	Domestic debt	Own yield	Spread	Industrial production	Unemployment
Austria	0.032**	0.700	0.240	0.644	0.321
Belgium	0.011**	0.578	0.538	0.470	0.392
Finland	0.005***	0.728	0.374	0.314	0.165
France	0.018**	0.604	0.615	0.787	0.797
Germany	0.618	0.763		0.511	0.878
Greece	0.568	0.999	1.000	0.987	0.978
Ireland	0.739	0.448	0.687	0.004***	0.916
Italy	0.737	0.112	0.752	0.889	0.987
Netherlands	0.001***	0.700	0.343	0.181	0.944
Portugal	0.999	0.464	0.717	0.895	0.939
Spain	0.779	0.219	0.831	0.971	0.941

B. PRE-CRISIS SAMPLE (200001-200712)

	Domestic debt	Own yield	Spread	Industrial production	Unemployment
Austria	0.216	0.429	0.545	0.971	0.662
Belgium	0.823	0.438	0.531	0.964	0.532
Finland	0.200	0.463	0.532	0.967	0.998
France	0.476	0.401	0.338	0.487	0.715
Germany	0.701	0.387	1.000	0.999	0.439
Greece	0.968	0.243	0.017**	0.002***	0.850
Ireland	0.003***	0.435	0.456	0.089*	0.115
Italy	0.763	0.445	0.596	0.610	0.396
Netherlands	0.001***	0.416	0.283	0.982	0.683
Portugal	0.046**	0.462	0.537	0.626	0.708
Spain	0.909	0.454	0.652	0.961	0.695

SOURCE: Authors´ elaboration.
NOTES: The null hypothesis is that the variable contains a unit root in a model where up to two lags of the endogenous variable are allowed. IP denotes the natural logarithm of industrial production. The Greek sample considered in Panel a only includes data until 2010. One, two and three asterisks denote statistical significance at the 90%, 95% and 99% levels, respectively.

COINTEGRATION TESTS

TABLE A.2

	Pre-crisis sample		Full sample	
	Cointegration rank	Domestic debt	Cointegration rank	Domestic debt
Austria	1	2.57**	1	-0.26***
Belgium	0		0	
Finland	0		0	
France	0		1	-0.56
Greece	0		0	
Ireland	1	-0.83***	1	-8.01***
Italy	0		1	-0.32*
Netherlands	1	-0.08**	1	1.89***
Portugal	1	0.05	1	61.66
Spain	0		0	

SOURCE: Authors´ elaboration.
NOTES: The columns labeled as “Cointegration rank" report the rank estimate at the 95% level of a vector error correction model of the national sovereign yield, the German bund yield and domestic debt for each Euro Area country. For those cases in which the rank is greater than zero, the factor loading of domestic debt is reported. A restricted constant and up to three lags of the dependent variables in first dierences are allowed. One, two and three asterisks denote statistical significance at the 90%, 95% and 99% levels, respectively.

We report the results of cointegration tests in Table A.2. In some cases (Belgium, Finland, Greece and Spain for the full sample), we obtain a zero cointegration rank estimate. In other cases (France and Portugal), we do find a cointegration relationship, but the coefficient of domestic debt is not significant. And in some of the remaining cases, the presence of a unit root in domestic debt is not robust to the testing sample. In sum, we do not find enough statistical evidence to consider a cointegration in the levels that includes the holdings of domestic debt together with sovereign yields (see Table A.2). Hence, the data does not seem to support the strong restrictions that a long run relationship between sovereign yields and banks’ sovereign debt holdings would imply.

FINANCIAL DISINTERMEDIATION IN INTERNATIONAL MARKETS AND GLOBAL BANKS FUNDING MODELS

José María Serena Garralda [*]

(*) José María Serena Garralda, of the Associate Directorate General of International Affairs, Banco de España. The author thanks comments of Ricardo Correa, Emilio Muñoz de la Peña, Daniel Nolle, Adrian van Rixtel, Eric Wong, and an anonymous referee.

FINANCIAL DISINTERMEDIATION IN INTERNATIONAL MARKETS AND GLOBAL BANKS FUNDING MODELS

This paper investigates the process of financial disintermediation in international markets after the global financial crisis. Since the outbreak of the crisis, global banks are reducing their cross-border positions, this way reversing their large expansion in the period 2000-2008. Global banks funding structures are shifting in parallel, with a sharp and protracted reduction in wholesale funding. We test whether this trend towards more stable funding patterns explains the contraction in cross-border bank financing, using a panel of 56 countries, for the period 1991-2013. We find that net redemptions of banks' international debt or the declining activity of global banks' branches in the US important drivers of the process. We highlight next how, in some regions, financial disintermediation is a defining feature of the post-crisis international markets. International capital markets have gained importance as source of external financing for private borrowers headquartered in emerging economies, supported by easy monetary conditions in advanced economies. The potential implications of such process for financial stability have raised concerns. Assessing them requires further information on bond holders' investment profiles, and borrowers' financial soundness.

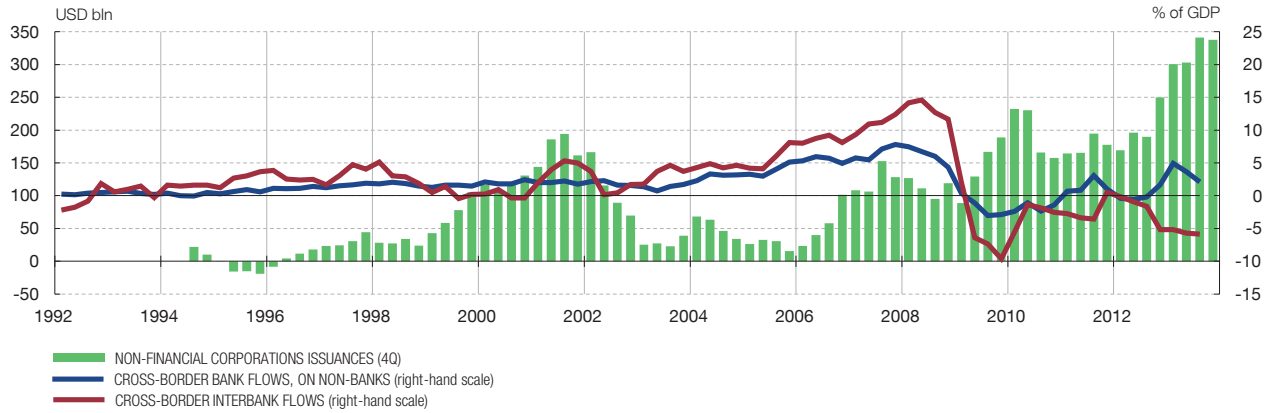
1 Introduction

The process of financial integration experienced a turning point after the global financial crisis. Global banking is today described by cross-border fragmentation. Cross-border bank claims are experiencing a sustained and deep contraction which lasts since the outbreak of the global financial crisis. The contraction of cross-border interbank claims is sharper, but cross-border claims vis-à-vis non banks have also remained subdued – Chart 1 –. It is also apparent in this chart how non-financial corporations' debt issuances at international markets have increased protractedly, in the same period. Issuances are nearly three times higher than in 2008, and have reached an all-time high after the global financial crisis.[1] Financial disintermediation seems therefore a defining feature of the post-crisis international markets.

The process of cross-border bank deleveraging is a reversal of the rapid expansion of banks' cross-border activity in the period 2000-2008, which was fostered by the development of

1 Cross-border bank deleveraging also contrasts with the resilience of other models of internationally expansion. For instance, banking subsidiaries' local claims have grown, a development attributed to the stability of their funding models, based on local liabilities and capital [CIEPR (2012)].

BANKING FRAGMENTATION AND NON-FINANCIAL COMPANIES ACCESS TO CAPITAL MARKETS (a) CHART 1



SOURCE: BIS.

a The graph shows new patterns of financial integration after the global financial crisis. Non-financial corporations issuances are shown in US bn (sum of last four quarters). Cross-border bank flows in the last four quarters are measured relative to each country's GDP, as a simple average of all countries of the sample (see appendix 1 for details on the data sample). Non-financial corporations issuances in international markets have increased markedly. Cross-border bank flows have not recovered after the global financial crisis, and cross-border interbank flows are experiencing a marked and steady contraction.

centralized funding structures. Banking groups headquartered in a number of advanced economies, in particular euro area countries, obtained wholesale funding in international markets, and invested them worldwide [CGFS (2010c), McCauley, McGuire and Von Peter (2010), Shin (2012)]. Today, these global banks funding structures are shifting in parallel to cross-border bank deleveraging.[2] Wholesale funding is contracting, as part of broader shifts towards more stable funding sources.

These shifts in banks' funding patterns are particularly relevant in financial centres [Serena and Valdeolivas (2014)]. Global banks' branches in the US, which were used as funding vehicles during the period 2000-2008, are no longer a source of financial resources for their banking groups [Goulding and Nolle (2012)]. EU and US banks branches in offshore centres such as Hong-Kong are experiencing similar changes (HKMA (2013). The changes in international funding patters are broad, and are not limited to these few, although relevant, financial centres [Caruana and Van Rixtel (2012)]. Banks international net issuances are contracting sharply on an aggregate basis. Cross-border interbank liabilities are also contracting, in particular by banks headquartered in advanced economies [García-Luna and Van Rixtel (2014)]. Global banks activity from financial hubs remains subdued. Regulatory reforms, either at the global level, or in home and host countries, are among the main underlying factors [Tarullo (2012, 2014), CGFS (2010c), Gambacorta and Van Rixtel (2013)]. Therefore, this trend towards more stable funding models is probably of permanent nature. Global banks which expanded overseas by establishing locally funded and capitalized subsidiaries have been more resilient.

In stark contrast with global banks' cross-border deleveraging, international capital markets show a strong dynamism. International issuances – bonds issued by non-residents, in all markets –, have increased, particularly in emerging economies [Goodhart (2014), Turner (2014)]. It has been suggested that banks could be "losing ground" in favour of international capital markets [BIS (2013), Deutsche Bank (2014)].

These developments pose a number of interesting, unexplored, and pressing questions. Are cross-border bank disinvestments driven by the contraction in global banks international wholesale funding? Are capital markets counterbalancing global banks cross-border deleveraging? And, which are the implications for the transmission of global liquidly across borders?

The objective of this paper is to shed light on these issues. We will argue that banking fragmentation reflects, to some extent, a post-crisis reassessment of global banks business models. Banks are obtaining less funding from international wholesale markets. These changes have global reach implications, frequently overlooked. International wholesale funding was instrumental to finance cross-border activity. Accordingly, its shrinking importance could be a driver of cross-border bank deleveraging.

We investigate econometrically this hypothesis, building on a database comprising quarterly data for 56 countries, emerging and advanced, for the period 1991-3Q2013. Our results suggest that new funding patterns are among the key factors behind the sharp contraction in cross-border bank flows, and therefore impacting on financial integration.

---

2 Global bank are those which have any activity of international reach -outside the country where the parent bank is headquartered. They are also known as internationally active banks. Global banks can expand abroad using different models [McCauley *et al.* (2010)]. We are implicitly focusing on the so-called international banks, which expand through cross-border investments, and centralized funding. Multinational banks are another typology of global banks, not analyzed in this article. They expand overseas by establishing subsidiaries, with a decentralized funding structure. Foreign subsidiaries are locally funded and capitalized, so multinational banks gain international.

We show next how heightened activity in capital markets, coupled with the steady shrinkage of cross-border banking activity, has implied, from the perspective of recipient countries, a shift in the composition of their external financing. There is an ongoing trend towards financial disintermediation: countries obtain less international financing from banks, and more from capital markets. Geographical breakdowns show that, in areas such as Emerging Asia or Latin America, capital markets have gain relative importance relative to banks' cross-border credit. In these countries, non-financial corporations' issuances have reached all-time high volumes. It remains open whether this substitution is short-lived, since other factors, such as the accommodative monetary policy in advanced economies, have been supportive [Lo Luca *et al.* (2014)]. Moreover, for some borrowers, such as SMEs, capital markets could be an imperfect substitute of cross-border bank financing [Larosière (2013)]. The increasing access to capital markets by banks headquartered in emerging economies is also remarkable.

The rest of the article is structured as follows. In Section 2, we describe in detail how global banks funding in international markets is decreasing after the global financial crisis. In Section 3, we investigate econometrically the impact of these shifts on cross-border bank investments. In Section 4, we depict the main changes in financial integration after the global financial crisis. Finally, in Section 5, we discuss the main implications of these trends, and the questions they open. Large international debt issuances pose risks, either overborrowing or currency mismatches. Bond markets could be new carriers of global liquidity. The impact of tightening of global liquidity conditions on bond holders investment decisions would depend on the investors risk profile, investment horizon, or leverage.

2 Global banks funding patterns after the global financial crisis

In this section we discuss how global banks have reduced their reliance on international wholesale financing. Wholesale international financing was instrumental to finance global banks cross-border expansion. Therefore the current decline in international financing is a reversal of the previous process, and has far-reaching implications for financial integration.

Whole sale funding refers to all financing from non-retail sources. Retail funding are mostly small, insured deposits, and similar instruments, such as promissory notes. Wholesale funding includes a wide range of financial instruments: debt instruments, interbank loans, and any other liabilities versus institutional investors.[3]

The trend towards more stable funding patterns is being analyzed at length, using consolidated balance sheets – see for instance, IMF (2013), for a global analysis, or ECB (2012), for an analysis of euro area developments –.

We focus instead on the international dimension. Global banks usually tap wholesale funding in international markets, either by issuing debt in international markets, through cross-border interbank loans, or by using branches in key financial centres as funding vehicles.

International funding patters are not easy to analyze systematically, so we use two different approaches. We show first descriptive evidence on global banks branches activity in key financial centres, such as US and Hong-Kong. As a second step, we show evidence on aggregate funding patterns of global banks in international markets, either through debt issuance, or through cross-border interbank financing. Both approaches suggests global banks have decreased their wholesale funding in international markets.

3 Wholesale funding can have different maturities, or degree of stability, which are not discussed in this section [see Chen *et al.* (2012)].

2.1 BRANCHES OF FOREIGN BANKS IN KEY FINANCIAL CENTRES

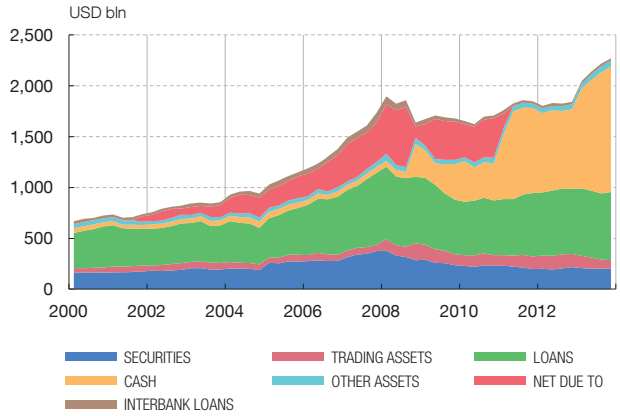
The US financial market has been for years a key funding location for non-US international banks. The depth of its financial markets and the prominence of the US dollar as currency of invoice make it an attractive financial centre. Global banks' branches in the US have therefore an important role as funding vehicles of their banking groups.[4]

Their activity has experienced two dramatic shifts despite the apparent stability of branches' activities - their balance sheets have increased in size since the onset of the global financial crisis. These shifts have to do with the balance sheets composition, as shown in Chart 2 [see Goulding and Nolle (2012) for a detailed analysis].

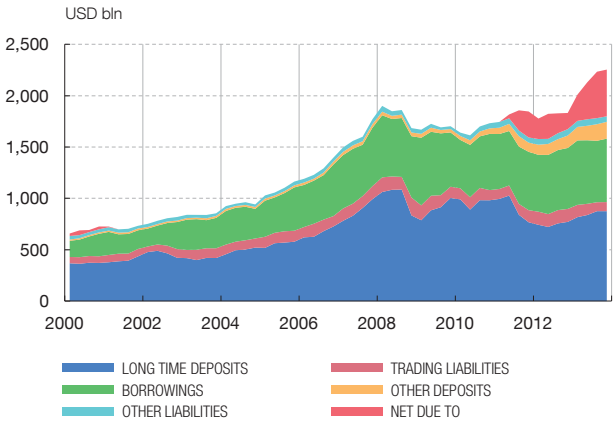
4 Foreign banking offices in the US are either branches (and agencies) or subsidiaries. Foreign-owned subsidiaries are US commercial banks, of which a foreign banking organization owns at least 25 percent. US branches and agencies of foreign banks are incorporated in their foreign banking organizations. Foreign-owned subsidiaries and US branches of foreign banks have very different activities, analyzed in detail in Goulding and Nolle (2012).

BRANCHES OF GLOBAL BANKS IN THE US, SELECTED BALANCE SHEET ITEMS (a) CHART 2

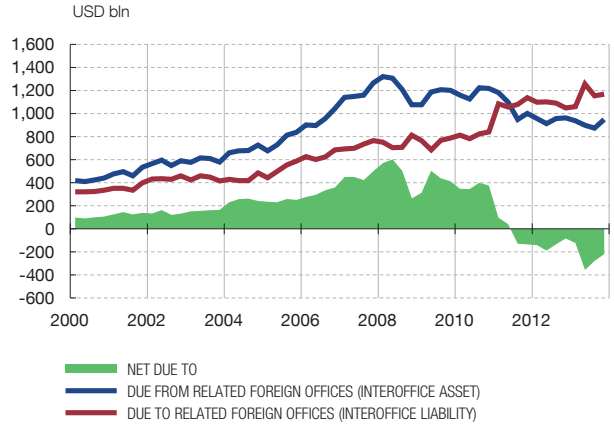
2.1 ASSETS



2.2 LIABILITIES



2.3 NET DUE TO



2.4 US BRANCHES, BALANCE SHEET

Assets	Liabilities
Bank credit	Deposits
Securities	Large time deposits
Loans and leases	Other deposits
Interbank loans	
Cash assets	Borrowings
Trading assets	Trading liabilities
Other assets	Other liabilities
	Net due to (Due to / From related foreign offices)

SOURCE: US Financial Accounts; 4.30 Assets and Liabilities of U.S. Branches and Agencies of Foreign Banks.

a The chart shows the significant changes in the activity of US branches of Foreign Banks Organizations. Charts 2.1 and 2.2 break down US branches balance sheet; as detailed in chart 2.4 above, assets are break down in bank credit (securities; loans and leases; interbank loans); cash assets; trading assets and other assets. Liabilities are broken down in wholesale deposits; borrowings; trading liabilities and other liabilities. Net Due to positions vis-a-vis related foreign offices (interoffice) can be either a source of funding, or an use. Chart 2.3 zooms in Net Due To Positions. a positive value reflects a net creditor position of branches vis-a-vis their banking groups, while a negative value implies FBOS are importing funding from their banking groups. The aggregate Net Due To Position can be break down between branches with a net debtor position vis-a-vis their banking groups, represented as the red line; and branches with a net creditor position vis-a-vis their banking group, represented with a blue line. In the last two years, branches with a creditor position have decreased it steadly; at the same time, branches with a debtor position are importing larger amounts of financing from their banking groups.

Panel 2.4 present a stylized balance sheet. Assets are classified either as bank credit (securities, loans and leases, and interbank loans), cash assets, or trading assets. Liabilities are classified either as wholesale deposits, borrowed funds, and trading liabilities. Branches of foreign banks cannot take retail deposits from US citizens or residents, so all funding is wholesale.

Net Due To (NDT) positions vis-à-vis (foreign) relate banking offices are a key item to track branches activity. In panel 2.4, NDT positions are included in the right-hand-side of the balance sheet. However, they can be either an use (asset), or a source (liability). If branches are providing financial resources to their banking groups overseas, NDT positions are positive, and therefore constitute an asset. If branches are net importers of financing, NDT positions are negative, and booked as a liability.

The evolution of assets and liabilities is shown in panels 2.1 and 2.2. Branches obtained the bulk of funding from wholesale deposits and borrowed funds, in the period 2000-2008. Part of this funding was channelled abroad, to their banking groups. Therefore branches NDT positions vis-a-vis related banking offices were an asset. Such net creditor position reached its peak in mid-2008, when accounted to 35% of the balance sheet. The remaining assets were allocated to bank credit. Cash holdings were negligible.

The first remarkable change after the crisis has to do with the branches financial position vis-à-vis their banking groups. Branches decreased the funds channelled towards their banking groups, so that in mid-2011, NDT positions vis-à-vis their banking groups became a liability (apparent in panel 2.2). This net debtor position has widened since then, reflecting that branches are obtaining funding from their banking groups, overseas.

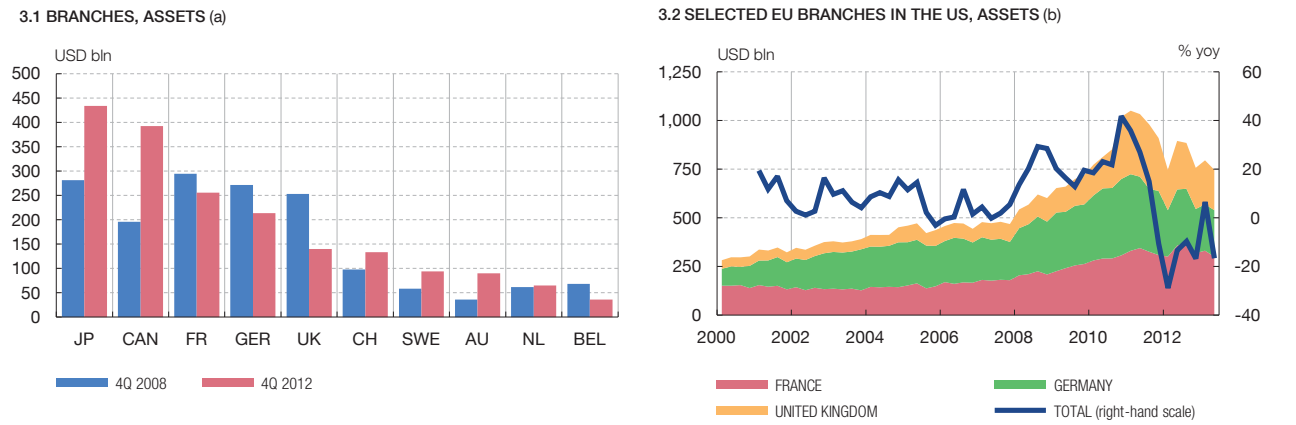
The aggregate NDT position can break down between creditor and debtor branches. Due from related foreign offices (interoffice assets) aggregate the NDT positions of branches with net claims vis-à-vis their banking groups. Due to related foreign offices (interoffice liabilities) include the positions of branches with net liabilities.

Panel 2.3 shows these two measures, and also the aggregate NDT position (previously included in panels 2.1 and 2.2). Branches with net creditor positions vis-à-vis their banking groups have decreased the funding channelled overseas. This is an underlying factor behind the contraction in aggregate creditor NDT positions. The increase in the funds obtained by branches with a net debtor position vis-à-vis their banking groups is a second factor. The joint effect is the dramatic shift in the activity of branches of foreign banks.

The increasing volume of cash assets held in the Federal Reserve is the second remarkable shift in US branches activity. The increase is so sizable that cash holdings already represent the bulk of branches assets. Hence, branches investment profile has became more conservative: much of their funding, either domestically-obtained or received from overseas, is hoarded in the Federal Reserve cash vaults [McCauley and McGuire (2014)].

It is not possible to ascertain which branches have decreased their funding overseas. However, we can break down their assets under management according to the nationality of their banking groups (Chart 3). The shrinking balance sheet of European branches suggests they might be those under retreat. The combined assets of French, German, and UK banks, was well above 1 trillion dollars in 2008. At the end of 2012, their assets represented

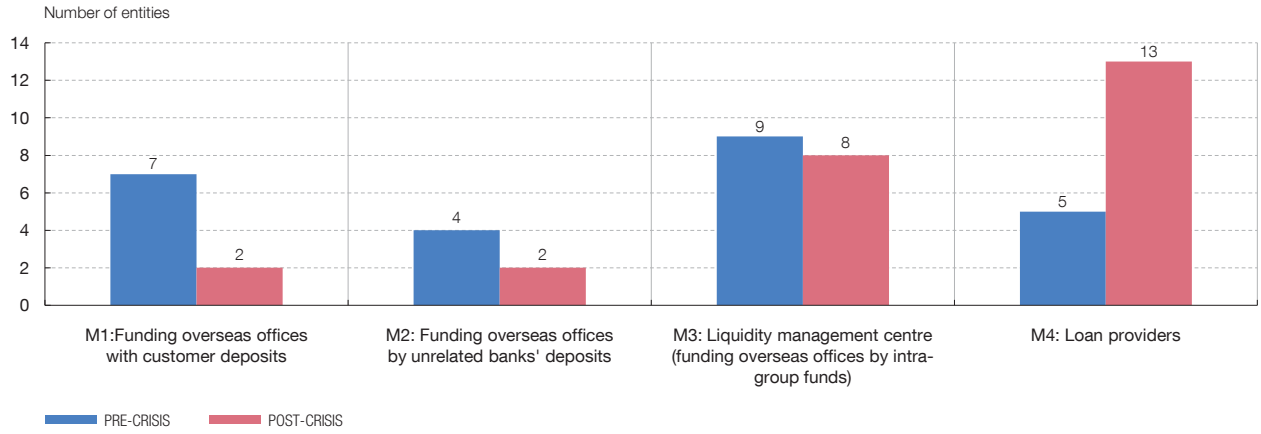
BRANCHES OF FOREIGN BANKS IN THE US (a) CHART 3



SOURCE: Structure Data for the U.S. Offices of Foreign Banking Organizations.

a US branches of foreign banks, by nationality of their parent bank.
b Historical evolution of UK, French, and German US branches.

FOREIGN BRANCHES IN HONG-KONG. EU AND US BANKS, BREAKDOWN BY TYPE OF ACTIVITY (a) CHART 4



SOURCE: HKMA (2013).

a The graph shows how EU and US branches are classified, according to their activity, by the Hong-Kong Monetary Authority, before and after the global financial crisis. The number of "funding branches" – models 1 y 2 – has shrinked, and the number of branches classified as loan providers has increased.

only 600 US bn. The volume of assets Japanese, Canadian, or Australian, branches has, on the contrary, increased. They can be amongst those increasingly present in US financial markets, focused on hoarding liquidity in the Federal Reserve.

A similar declining role of branches as funding vehicles of their banking groups is observed in other key financial centres, such as Hong-Kong. Chart 4 presents the Hong-Kong Monetary Authority classification of EU and US branches according to their activity. They are classified in four groups: branches focused on funding overseas offices with customer deposits (group 1); funding overseas offices by unrelated banks' deposits (group 2); branches akin to liquidity management centres (group 3); and loan providers (4). Branches classified as loan providers have increased to 13 – well above the 5 branches classified as loan providers before the crisis –. Branches classified as funding vehicles of overseas offices have decreased to 4, while before the crisis 11 branches were used as funding vehicles by their banking groups.

2.2 INTERNATIONAL WHOLESALE FINANCING

We turn now to the analysis of global banks aggregate funding patterns in international markets: international bond issuances, cross-border interbank liabilities, and global banks activity in financial hubs.

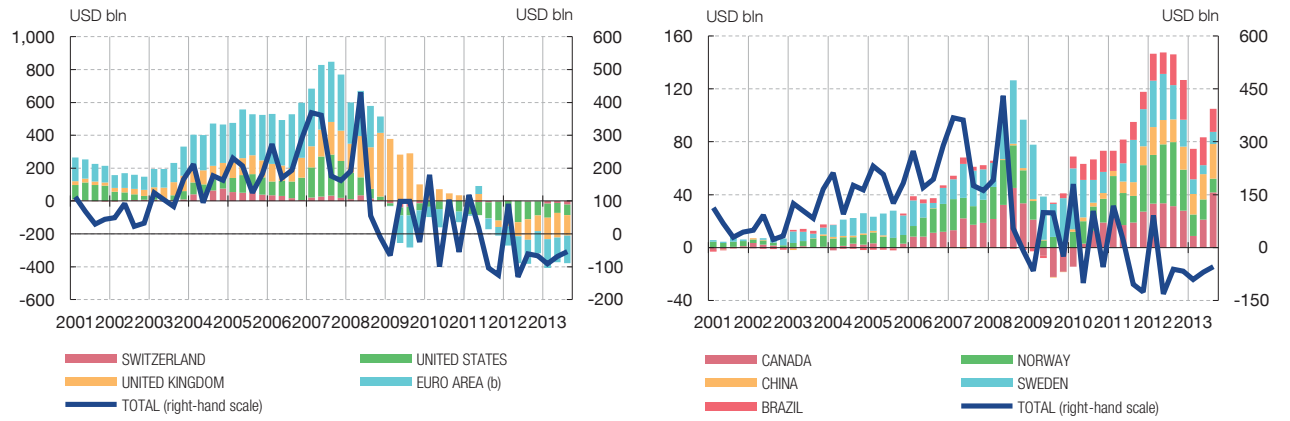
BIS securities data track net international issuances, classifying banks according to the nationality of their banking groups. The information is compiled on a national basis, so that issuances by foreign subsidiaries, branches, or vehicles are classified according to the nationality of the ultimate owner of the entity. Therefore, international bond issuances are those in which the ultimate issuer is not headquartered in the market of issuance.

Chart 5 shows the protracted contraction of net aggregate international issuances –represented by the black line, included in both panels. This trend is driven by the deleveraging of banks headquartered in UK, US, Switzerland and most euro area banking systems, which are redeeming international debt, on net basis. Other banks, headquartered in emerging (Brazil or China) and some advanced economies (Canada, Norway, or Sweden) have increasingly tapped international markets after the global financial crisis. However, their increase is not large enough to compensate the large and protracted redemption of debt by the aforementioned banking systems

The net redemptions of global banks' international debt might reflect different factors, ranging from temporary closures of financial markets in some banking systems, to higher funding costs, or, structural policy-driven changes in funding models. Whichever is the reason, they imply less towards less wholesale funding in international financial markets.

There are broader changes in banks' debt issuances after the global financial crisis, not easily grasped in aggregate data. Bank-level data suggests that debt issuances have experienced significant composition effects [see Van Rixtel and Gasparini (2013), for an analysis on euro area patterns]. Debt issuances have shifted towards secured funding. In some banking systems, government sponsored issuances increased, and a higher fraction of bond issuance was retained, to be used as collateral. As collateralized debt issuances

BANK ISSUANCES IN INTERNATIONAL MARKETS. BREAKDOWN BY NATIONALITY OF PARENT BANK (a) CHART 5



SOURCE: BIS.

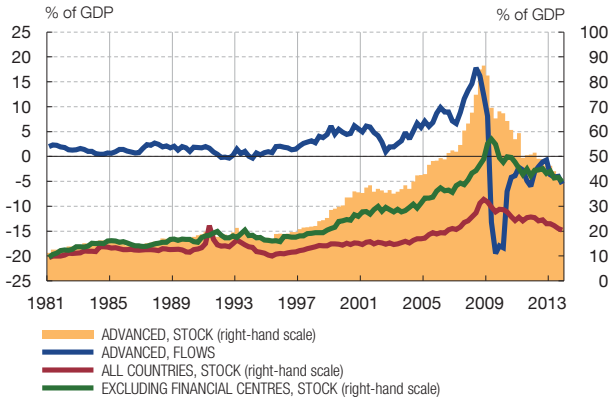
a The graph shows the recent evolution of banks net international bond issuances. International bond issuances are those issued outside the market where the borrower resides. Issuances are classifed by tha nationality of the parent bank. Therefore, issuances by foreign subsidiaries/branches are classified according to the nationality of their banking group. Panel A shows net international issuances of banking systems which are deleveraging. These include mostly european banks, and the US. Euro area includes France, Germany, Italy, and Spain .Panel B shows net international issuances of banks tapping international markets, such as emerging market banking systems, and also a number of developed countries which includ Canada, Norway, or Sweden. The blue line represents global banks total issuances.

b Germany, France, Italy and Spain.

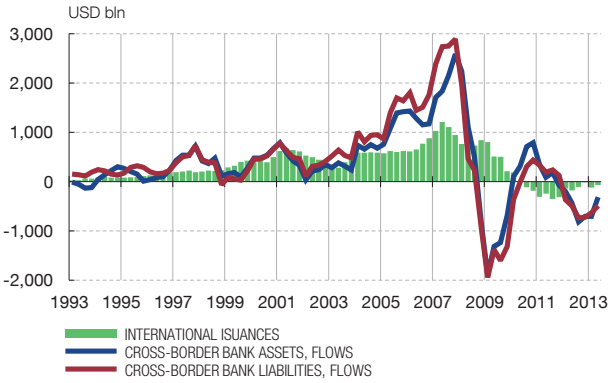
INTERBANK LIABILITIES AND FINANCIAL HUBS

CHART 6

6.1 INTERBANK LIABILITIES. CROSS-BORDER (a)



6.2 FINANCIAL HUBS AND GLOBAL BANKING ACTIVITY (b)



SOURCE: BIS Locational Banking Statistics, national accounts.

a Cross-border interbank liabilities, average stocks in GDP terms of advanced economies; of advanced economies, excluding financial centres; of all countries. The chart also shows changes in cross-border interbank liabilities, in the last four quarters, measured also relative to GDP, for advanced economies, which explain the large build-up in banks' external, non-core, liabilties, and the subsequent contraction.

b Activity of Internationally active banks in countries which have features of financial hubs (Hong-Kong, Luxembourg, Iceland, Irland, Switzerland, United Kingdom, US). The chart shows changes in internationally active banks cross-border assets and liabilities, booked in financial hubs shown in US million: they have a remarkable synchronization, and are experiencing a sizable contraction. Internationally active banks issuances from financial hub have a similar pattern: they increased before the global financial crisis, and are currenty contracting.

increased substantially after the global financial crisis, asset encumbrance became a risk, amidst heightened counterpart credit risk, and ongoing regulatory reforms. The process had probably implications for banks cross-border activity, since reflected scarcer unsecured funding and, altogether, an increase in funding costs [CGFS (2013)]. Such analysis is, however, beyond the scope of this paper.

Cross-border interbank liabilities have also contracted sharply, in particular between advanced economies banks. Panel 6.1 shows the evolution of cross-border interbank loans. Interbank liabilities, measured in GDP terms, reached to 90% of GDP in advanced economies at the end of 2008, and 60% excluding financial centres. Interbank liabilities also increased in emerging economies, although to lower levels – an average of 30% of GDP –.

The outbreak of the global financial crisis was a turning point in cross-border interbank financing. Cross-border interbank liabilities have contracted protractedly, in every quarter since 2009. The stock of cross-border interbank liabilities in advanced economies has halved, while that of emerging economies is 35% lower than its peak. The reduction in cross-border interbank liabilities reflects, in some banking systems, less financing obtained from overseas. It can reflect as well lesser degree of liquidity management from financial hubs.

The subdued activity of global banks from their banking offices operating in financial hubs is apparent in panel 6.2. Cross-border assets and liabilities booked by banking offices in financial centers increased sharply, and with great synchronization, in the period 2000-2008. They suffered a sharp reversal and, after a short-lived recovery, cross-border banking activity is contracting again. This is consistent with evidence of lower activity by global banks from financial centers. Banks headquartered in the euro area or Switzerland are amongst those reducing their cross-border interbank activity from United Kingdom [García-Luna and Van Rixtel (2014)].

3 Drivers of cross-border bank flows. Econometric analysis

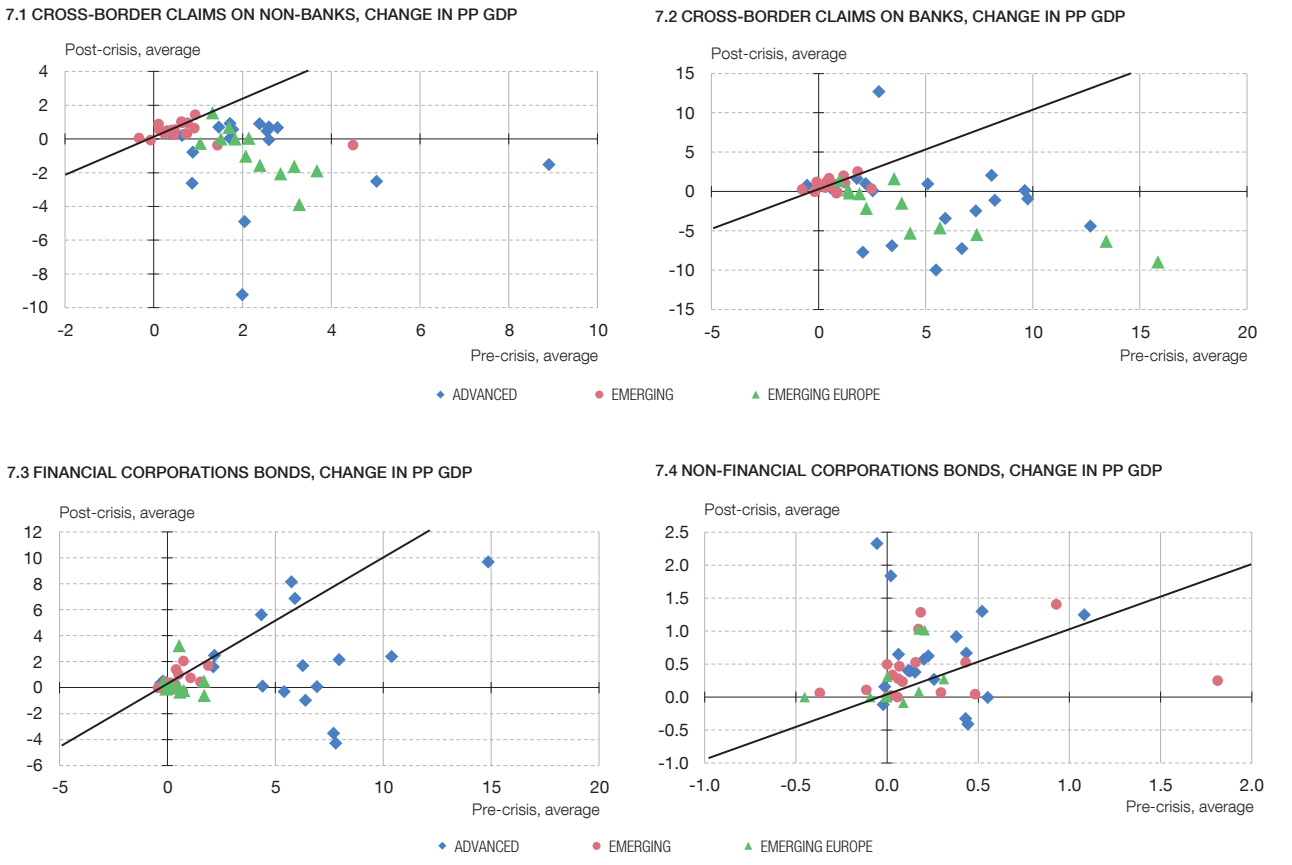
In this section we investigate econometrically the drivers of cross-border banking activity building on the previous work of Bruno and Shin (2013). Our focus lies on the statistical and economic significance of different measures of global banks reliance on international wholesale funding. The results confirm that cross-border bank investments depend positively on global banks international wholesale funding. As for the economic significance, the sharp contraction in banks' international wholesale funding explains 1/3 of the cross-border bank flows reduction after the global financial crisis.

3.1 PRELIMINARY EVIDENCE

International banks are shedding cross-border bank assets, in parallel to their contraction in wholesale international funding. The process is impacting on countries' international financing, as shown in Chart 7.

In this chart, dots represent countries' reliance on different sources of funding, measured in GDP terms, before and after the crisis (horizontal and vertical axis). Dots above the bisecting line reflect a country is relying more on a given source of financing after the crisis. We break down international financing between cross-border claims on non-banks (panel 7.1), cross-border interbank claims (panel 7.2), financial corporations' international issuances (panel 7.3), and non-financial corporations' international issuances (panel 7.4). This highlights how countries financing patterns are changing.

FINANCIAL INTEGRATION AFTER THE CRISIS. CROSS-COUNTRY ANALYSIS (a) CHART 7



SOURCES: BIS, International Banking Statistics; BIS Securities Statistics; national accounts, owns elaboration.

a Pre and post-crisis average value of each variable: Non-financial corporations international bond issuances; Financial corporations international bond issuances; Cross-border claims on non-banks and Cross-border claims on banks. Pre-crisis average is the average of 2005, 2006, and 2007; Post-crisis average is the average of 2010, 2011, 2012, and 2013. Each dot represents a country: advanced countries are represented in blue, Emerging Europe countries in green, and the rest of emerging economies (Asian, Latin American, and a number of countries of Africa & Middle East) in red. If points are above the bisecting line, countries have relied more on that source of financing after the crisis.

Cross-border bank flows on non-banks headquartered in advanced economies and emerging Europe are contracting – panel 7.1 –, where most dots are below the bisecting line. The impact on other emerging economies, represented as red dots, is less clear-cut. Cross-border interbank flows have contracted even more sharply, in particular vis-a-vis advanced economies – panel 7.2 –. As for financial corporations debt issuances in international markets, there are net redemptions in most advanced economies – panel 7.3 –, although with some relevant outliers. This contrasts with the large international issuances by financial corporations' headquartered in number of emerging economies. These stylized facts are consistent with the more aggregate pattern show in Chart 2. Finally, panel 7.4 shows how non-financial corporations' international debt issuances have increased. The increase is common to non-financial companies headquartered in emerging and advanced economies alike, although their size is still low, measured in GDP terms. We delve into this trend in Section 4.

3.2 DATA ISSUES

We turn now to the econometric analysis on the drivers of cross-border bank flows. Our panel data includes 56 countries – advanced, emerging, and financial hubs – which are listed in Appendix 1. We use quarterly data for the period 1991-2013. We construct measures of quarterly cross-border bank investments building on the BIS International Banking Statistics: cross-border investments in all sectors (Table 6A); and on banks (cross-border interbank claims, constructed as the difference between Tables 6A and 6B). We define the dependent variable in Section 3.3.

To investigate the relevance of global banks funding patterns as drivers of cross-border bank flows, we construct a number of proxies, detailed in Table 1.

Changes in outstanding volumes of global banks international bonds are deemed a measure of banks' international funding patterns. Global banks international bonds increased before the global financial crisis, and are experiencing a protracted contraction afterwards. We construct this variable using BIS Securities data to test if this is driving global banks cross-border deleveraging.

Branches in the US were also a source of funding for global banks using centralized funding models. We construct a measure of the Net Due To positions share in branches total assets, using the Assets and Liabilities of U.S. Branches and Agencies of Foreign Banks (4.30). The evolving relevance of centralized funding models are reflected in the sharp changes in NDT positions. Branches Net Due To positions vis-à-vis their banking groups were large and positive during the period 2000-2008. The declining importance of branches as funding vehicles is reflected in the protracted reduction in creditor NDT positions. We expect decreases in net creditor NDT positions to impact negatively on cross-border bank flows.

MEASURING GLOBAL BANKS INTERNATIONAL FUNDING. MAIN VARIABLES — TABLE 1

	Description	Source
Banks international issuances (+)	Quarterly change in the outstanding total stock of banks international debt securities	BIS, Table 12
US branches funding (+)	Quarterly change in the net due to position of branches of foreign banks, vis-a-vis their banking groups (positive if creditor)	Reserva Federal, Assets and Liabilities of U.S. Branches and Agencies of Foreign Banks (4.30)
Broker Dealer Leverage (+)	Quarterly change in the, leverage of the broker-dealer sector US, measured as the ratio (liabilities plus equity)/equity	Flow of Funds, L. 128

SOURCE: Author's elaboration.

Branches have not separate capital, so it is not possible to compute their leverage. However, there are shifts in branches risk-appetite. Their current liquidity hoarding, described in Section 2.1, is an extreme example. US broker-dealer leverage is considered a proxy of branches activity, since both institutional sectors are influenced by similar factors [Bruno and Shin (2013)]. Therefore we compute the leverage of the US Broker-Dealer sector, using the Flow of Funds, and introduce it as proxy of global banks activity in wholesale funding markets. Higher leverage is expected to affect positively cross-border bank flows.

Cross-border bank flows are expected to depend on other global factors, not directly related to global banks funding patterns. These variables include world GDP growth, or global risk aversion (measured by the VIX). The VIX can be interpreted a measure of global banks risk-aversion. Alternatively the VIX can be considered a proxy of banks' funding costs in wholesale markets.

We include also a number of country-specific variables which are also expected to influence cross-border bank flows. The selection is guided by previous work on determinants on capital flows – pull factors –. The variables included as control variables are domestic GDP growth, the current account balance, the sovereign rating, and measures of fiscal soundness (fiscal balance and public debt). Countries with sounder economic fundamentals are expected to receive more cross-border bank flows.

3.3 ECONOMETRIC FRAMEWORK

We estimate the following equation:

$$xb_{it} = \varnothing xb_{t-1} + \beta' f(local_{it}) + \gamma\, g(global_t) + \alpha_i + y_t + \epsilon_{it} \qquad [1]$$

where cross-border bank flows xb_{t-1} on country i, at quarter t, depend on a vector of country-specific variables $f(local_{it})$ and a vector of global variables $g(global_t)$. The latter includes the measures of global banks funding patterns, and the remaining global factors (VIX, and world GDP growth). The right-hand side variables include a lag of the dependent variable, xb_{it-1}, country-fixed effects, and time effects.

Cross-border bank flows xb_{it} are quarterly flows, measured in GDP terms, and standardized at the country-level. To standardize them we divide cross-border bank flows by their historical (country-specific) standard deviation, following Broner *et al.* (2013).

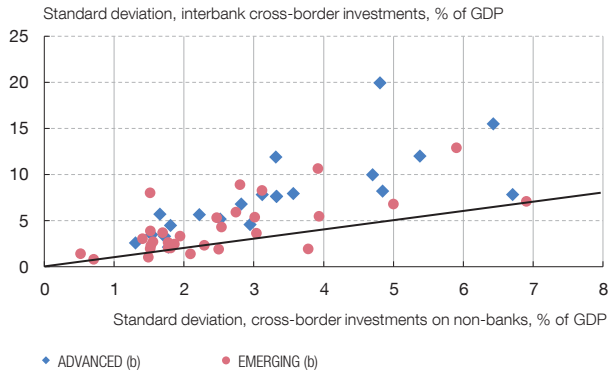
$$xb_{it} = (XB_{it} / PIB_{it}) / sd_{xb_{it}} \qquad [2]$$

This standardization is important. Cross-border bank flows received by countries, even scaled by their GDP, have remarkable differences in size and volatility. This is apparent in Chart 8 which plots the historical country-specific volatility of bank flows: volatility of cross-border bank flows on non-banks is plotted in the horizontal axis, against the interbank flows volatility, in the vertical axis. Each dot represents a country.

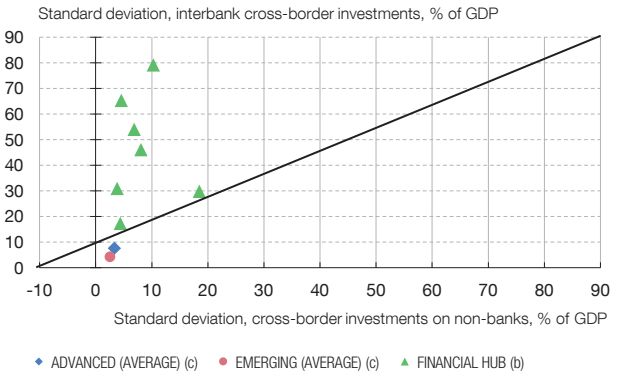
Panel 8.1 shows volatility of advanced and emerging economies, which are represented with blue and red dots, respectively. It is apparent how volatility is much higher in advanced economies. The chart also shows that cross-border interbank claims are more volatile than claims on non-banks, since most of the dots are above the bisecting line. Panel 8.2 shows the volatility of cross-border bank flows to financial hub. It is much higher than that of advanced and emerging economies – to ease the comparison the average volatility of cross – border bank flows to these countries is included.

CROSS-BORDER BANK FLOWS. HISTORICAL COUNTRY-SPECIFIC VOLATILITY (a) CHART 8

8.1 EMERGING AND ADVANCED COUNTRIES



8.2 EMERGING AND ADVANCED COUNTRIES AND FINANCIAL HUB



SOURCE: BIS (Locational Banking Statistics).

a Standard deviation of quarterly flows, measured in GDP terms, for the period 1Q 1991 2Q 2013.
b Each dot represents a country.
c Average volatility of emerging and advanced countries including in the sample.

Cross-border bank flows, once standardized, can be interpreted as deviations from each country-specific dynamics. In Section 3.5, we rescale the results to gauge their economic size in percentage points of GDP.

3.4 MAIN RESULTS

We estimate equation [1] with system-GMM. We instrument the three variables deemed endogenous, which are the lag of the dependent variable, domestic GDP growth, and the current account balance.[5] In columns 1 to 3 our dependent variable are cross-border bank flows on all counterparts.

Column 1 estimates the model for all countries. The results confirm that cross-border bank flows depend on global banks reliance on international, wholesale, funding. Cross-border bank flows depend positively on global banks issuances in international markets. Therefore, net redemptions of banks international debt – Chart 2 – have as a by-product cross-border asset shedding.

Cross-border bank flows depend positively on increases in the NDT position of branches of foreign banks in the US vis-à-vis their banking groups. It implies that global banks have more lending resources. Accordingly the sharp reversal in the funds channelled from US markets to non-US global banks implies less cross-border banking activity. Finally, the leverage of the US broker-dealer sector, a proxy of activity of wholesale, international banks, also has the expected positive impact on cross-border bank flows.

As for the rest of global variables, cross-border bank flows depend positively on world global growth. VIX increases impact negatively on cross-border bank investments. Cross-border investments can be impaired by global banks heightened risk-aversion, proxied by the VIX.

Country-specific variables also are important determinants of cross-border bank flows. Countries with higher GDP growth rates attract more bank flows, as do countries with

5 We use system-GMM to estimate all specifications. We introduce time dummies to control for cross-country correlation. As for the number of lags used as instruments, we choose it so as to avoid having too many instruments (as detailed in the tables). Following standard rules-of-thumb, we target a number of instrument similar to N [Roodman (2006)]. Arellano-Bond autocorrelation tests are reported, while Hansen tests (not shown) do not reject the null hypothesis that overidentifying restrictions are valid.

better sovereign rating. Public debt to GDP ratios are negatively associated with cross-border bank investments received. Other variables deemed as potentially relevant, such as current account balance or the fiscal balance, are not statistically significant.

We conduct a number of robustness checks. First, we investigate if the results hold in different country samples. In column 2 we exclude financial centres. These countries are not strictly capital flows recipient countries, and share features with hubs which banks use to manage liquidity routinely. Therefore their correlation with funding matters could be endogenous, and not a connection between funding and asset shedding. We find very similar results.

In column 3, we estimate the model excluding also euro area countries. Financial integration in Europe was boosted by the introduction of the euro. It was mostly bank-based, and had very

CROSS-BORDER BANK FLOWS (a) TABLE 2

Dependent variable is cross-border bank flows

	Total (1)	Excluding financial centres (2)	& Excluding euro area (3)
Country-specific variables			
Lag Bank flows - GDP terms, standarized	-0.399*** [0.121]	-0.236 [0.151]	-0.417** [0.162]
Current account - GDP terms	-0.018* [0.010]	-0.033*** [0.010]	-0.021 [0.037]
Domestic GDP growth	0.053** [0.024]	0.042* [0.024]	0.050 [0.036]
Standard & Poors Rating	0.067*** [0.010]	0.061*** [0.012]	0.059*** [0.013]
Public debt to GDP	-0.003** [0.002]	-0.003 [0.002]	-0.004 [0.003]
Fiscal balance to GDP	0.004 [0.013]	0.006 [0.012]	-0.000 [0.026]
Global variables			
World GDP	0.177*** [0.030]	0.185*** [0.034]	0.161*** [0.038]
VIX	-0.247*** [0.083]	-0.198* [0.107]	-0.121 [0.109]
BrokerDealer Leverage	0.109*** [0.021]	0.104*** [0.021]	0.106*** [0.026]
US branches funding	-1.927*** [0.400]	-1.706*** [0.461]	-2.200*** [0.444]
Banks international issuances	1.356*** [0.431]	1.225** [0.499]	1.518*** [0.544]
Observations	3,977	3,413	2,542
Number of id	54	46	36
Instruments	56	53	44
Test Arellano-Bond AR(1)	0.0836	0.0325	0.258
Test Arellano-Bond AR(2)	0.352	0.739	0.311

SOURCE: Author's elaboration.

a Robust standard errors in brackets; *** p<0.01, ** p<0.05, * p<0.1. Equations estimated using system GMM. Variables treated as endogenous are the lag of the dependent variable, domestic GDP growth, and the current account. We choose the number of lags used as instruments in order to avoid instrument proliferation, and taking into account residual autocorrelation paterns. In columns 1 and 3 the minimum lag is 1 and 2 for the levels and transformed equation; and the maximum lag is modified depending on the number of groups (12 and 8, respectively). In column 2 lags 3 to 12 are used (2 in the transformed equation). Hansen-Tests (not reported) do not reject the null-hypothesis that overidentifying restrictions are exogenous. Column 2 excludes financial centres. Column 3 excludes financial centres and euro area countries.

specific features. Retail banking remained mostly national and interbank lending, or direct cross-border investments boomed [Sapir and Wolff (2013)]. Since the outbreak of the crisis cross-border interbank flows are experiencing a particularly protracted contraction. Financial fragmentation can be attributed to an important extent to idiosyncratic developments [Millaruelo and del Río (2013)]. Therefore it is sensible to test whether the results are robust to the exclusion of euro area countries. Most of them hold in this alternative data sampling, although cross-border bank flows do not depend on the VIX.

3.5 ADDITIONAL ROBUSTNESS CHECKS. TIME SPANS, AND SECTOR OF COUNTERPART

In Table 3 we present additional robustness checks. First, we analyze alternative time spans. We expect cross-border bank flows to be more dependent on global financial conditions in periods in which centralized funding models were more prominent. Therefore,

ROBUSTNESS CHECKS (a)

TABLE 3

Dependent variable is:

	Cross-border bank claims		Interbank claims	
	Until 1Q2010 (1)	1999-2010 (2)	All sample (3)	1999-2010 (4)
Country-specific variables				
Lag Bank flows - GDP terms, standarized	-0.423*** [0.145]	-0.565*** [0.186]	-0.478* [0.246]	-0.587*** [0.190]
Current account - GDP terms	0.011 [0.038]	0.007 [0.042]	-0.113*** [0.038]	-0.105*** [0.033]
Domestic GDP growth	0.025 [0.032]	0.011 [0.062]	0.033 [0.048]	-0.000 [0.090]
Standard & Poors Rating	0.067*** [0.015]	0.092*** [0.017]	0.045** [0.021]	0.058** [0.027]
Public debt to GDP	-0.008** [0.004]	-0.010* [0.005]	0.002 [0.003]	0.000 [0.004]
Fiscal balance to GDP	-0.015 [0.027]	-0.029 [0.035]	0.050 [0.033]	0.044 [0.040]
Global variables				
World GDP	0.367*** [0.066]	0.425*** [0.085]	0.133*** [0.047]	0.356*** [0.112]
VIX	-0.347*** [0.133]	-0.437*** [0.159]	-0.266** [0.113]	-0.558*** [0.193]
BrokerDealer Leverage	0.120*** [0.028]	0.128*** [0.028]	0.098*** [0.032]	0.105*** [0.035]
US branches funding	-2.666*** [0.422]	-2.920*** [0.511]	-1.801*** [0.450]	-2.270*** [0.464]
Banks international issuances	1.515** [0.707]	1.874* [1.068]	1.142 [0.943]	1.648 [1.189]
Observations	2,049	1,352	2,526	1,352
Number of id	34	34	36	34
Instruments	36	40	41	33
Test Arellano-Bond AR(1)	0.262	0.693	0.367	0.464
Test Arellano-Bond AR(2)	0.325	0.221	0.360	0.0721

SOURCE: Author's elaboration.

a Robust standard errors in brackets; *** p<0.01, ** p<0.05, * p<0.1.Equations estimated using system GMM. Variables treated as endogenous are the lag of the dependent variable, domestic GDP growth, and the current account. We choose the number of lags used as instruments in order to avoid instrument proliferation, and taking into account residual autocorrelation paterns. In columns 1 and the minimum lag is 1 and 2 for the levels and transformed equation; and the maximum lag is 8 and 10. In columns 3 and 4 the minimum lag is 2 and 3 for levels and transfromed equation, and the maximum lag is 8 and 10, respectively). Hansen-Tests (not reported) do not reject the null-hypothesis that overidentifying restrictions are exogenous. All estimations exclude financial centres and euro-area countries.

we estimate the model for different sub-periods: column 1 presents results of sub-period 1991-2010; while column 2 uses period 1999-2010. This is the period when centralized funding models were more prevalent.

The results hold, qualitatively, in both sub-periods. Interestingly, a number of global variables have higher economic size. The coefficient of the VIX – the measure of funding costs in wholesale markets or global risk aversion – is highest in the period 1999-2010. We find a similar increase in the economic size our three measures of global banks funding patterns. World GDP growth has also a stronger economic impact on cross-border bank flows.

Finally, in columns 3 and 4 we use as dependent variable cross-border interbank claims (claims on banks). They are the most volatile source of cross-border bank financing. The results for the whole time span are qualitatively very similar to our benchmark results. The results obtained in the sub-period 1999-2010 are also stronger.[6] The main difference is the non-significance coefficient of banks international issuances. Cross-border interbank claims have probably shorter maturities, and they might be associated with shorter-term liabilities.

3.6 ECONOMIC SIZE

We investigate next the economic size of our main results (Table 2, first column, obtained excluding financial centres). In order to measure the quantitative importance of the shifting funding patterns of global banks, we classify drivers in four groups: global banks funding patterns, other global factors, country-specific factors, time effects. Non-significant variables are included in the unexplained variation. We compute the average impact of each group of variables at a country-level. Then we average this impact for advanced and emerging economies, and compute their contribution to cross-border bank flows before and after the crisis (pre: 1Q2000-3Q2008, post: 1Q2010-3Q2013). Since cross-border bank flows, and its drivers, are measured in terms of (country-specific) standard deviations, we need to rescale them. Therefore we multiply them by the average standard deviation of cross-border bank flows in emerging and advanced economies. Chart 9 shows the decomposition, for advanced and emerging economies (panel 9.1 and 9.2, respectively). We present the information annualized.

Cross-border bank flows have experienced a sizable contraction, which is stronger in advanced economies. In these countries, cross-border bank flows are, on average, 20 pp of GDP lower than before the global financial crisis.

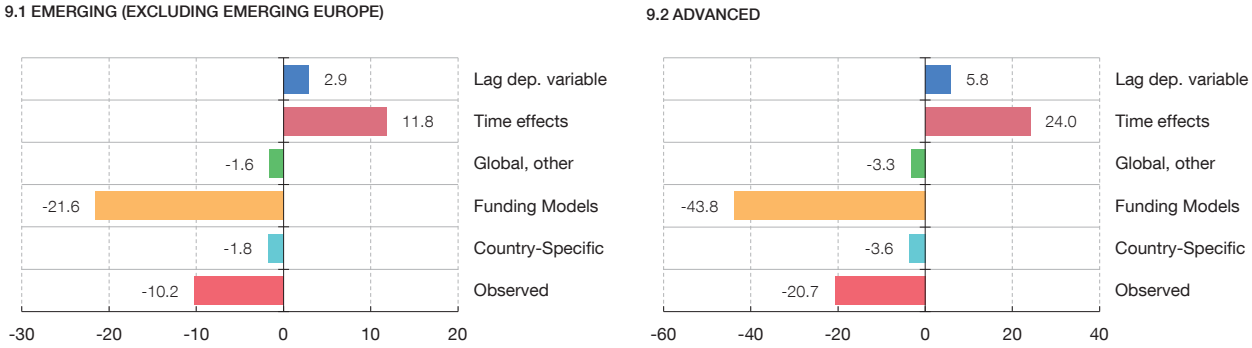
The contraction of international wholesale funding represents the key driver. Indeed, global banks new funding patterns predict a contraction in flows twice as important as the observed. Other global factors (including world GDP growth and risk aversion) explain 15% of that reduction. As for country-specific variables, they have less impact: they explain 20% of banking fragmentation, reflecting lower economic growth and worsening in sovereign rating. Time dummies have a large, positive, impact, this way partially counterbalancing the negative impact of global variables on cross-border bank flows after the crisis.

This sizable impact of time-effects on cross-border bank flows suggests that an unobserved, global factor, has partially smoothed the retrenchment of wholesale-oriented global banks headquartered in advanced economies.[7] This could reflect that, short after the crisis, a

6 Coefficients measure the impact of variables on standardized cross-border bank flows. Since interbank flows are more volatile, all variables have stronger impact on them, measured in pp of GDP (see Chart 8).

7 If the model is estimated removing the time dummies, the coefficients of global variables become much smaller – for instance, the coefficient of the broker-dealer leverage (the most important single variable) halves –.

CROSS-BORDER BANK FLOWS AFTER THE GLOBAL FINANCIAL CRISIS. AVERAGE ECONOMIC IMPACT (a) CHART 9



SOURCE: Author's estimations.

a The charts show the average change in cross-border bank flows on emerging and advanced economies, after the global financial crisis: pre-crisis includes quarters 1q2000-3q2008, post-crisis quarters 1q2010-2q2013. Annualized changes. Drivers of the change are computed using the coefficients of table 2, column 2. The chart shows the average impact in emerging economies, and in advanced economies. Determinants are grouped in 1) Funding models: bank international issuances, Net Due To positions of US branches of FBOS, and leverage of broker-dealer sector; 2) Other global factors: world GDP growth, and VIX; 3) Country-specific variables: current account/GDP, domestic GDP growth, sovereign rating, public debt/GDP, fiscal balance; d) Time Effects; e) Lag of the dependent variable. Non-significant variables are asigned to the residual. These results are already rescaled -in the econometric analysis cross-border bank flows are standarized. We use the average standard deviation, which is 4.3 and 9, for emerging and advanced economies (chart 8 shows the country-specific standard deviation for emerging and advanced economies).

number of banking systems engaged in a cross-border expansion, less dependent on wholesale international funding. Emerging markets banking systems have expanded overseas, to an important extent relying on their domestic retail funding (CGFS (2014). In areas such as Asia-Pacific, their cross-border activity has picked strongly, so that intrarregional banks represent the bulk of cross-border credit. Japanese banks overseas expansion has also increased, financed either with corporate deposits, or currency swaps of their domestic currency retail funding [Lam (2013)]. Global banking after the crisis is defined, therefore, by a sharp contraction of wholesale-funding cross-border activity, and a modest decoupling of cross-border bank flows from these factors.

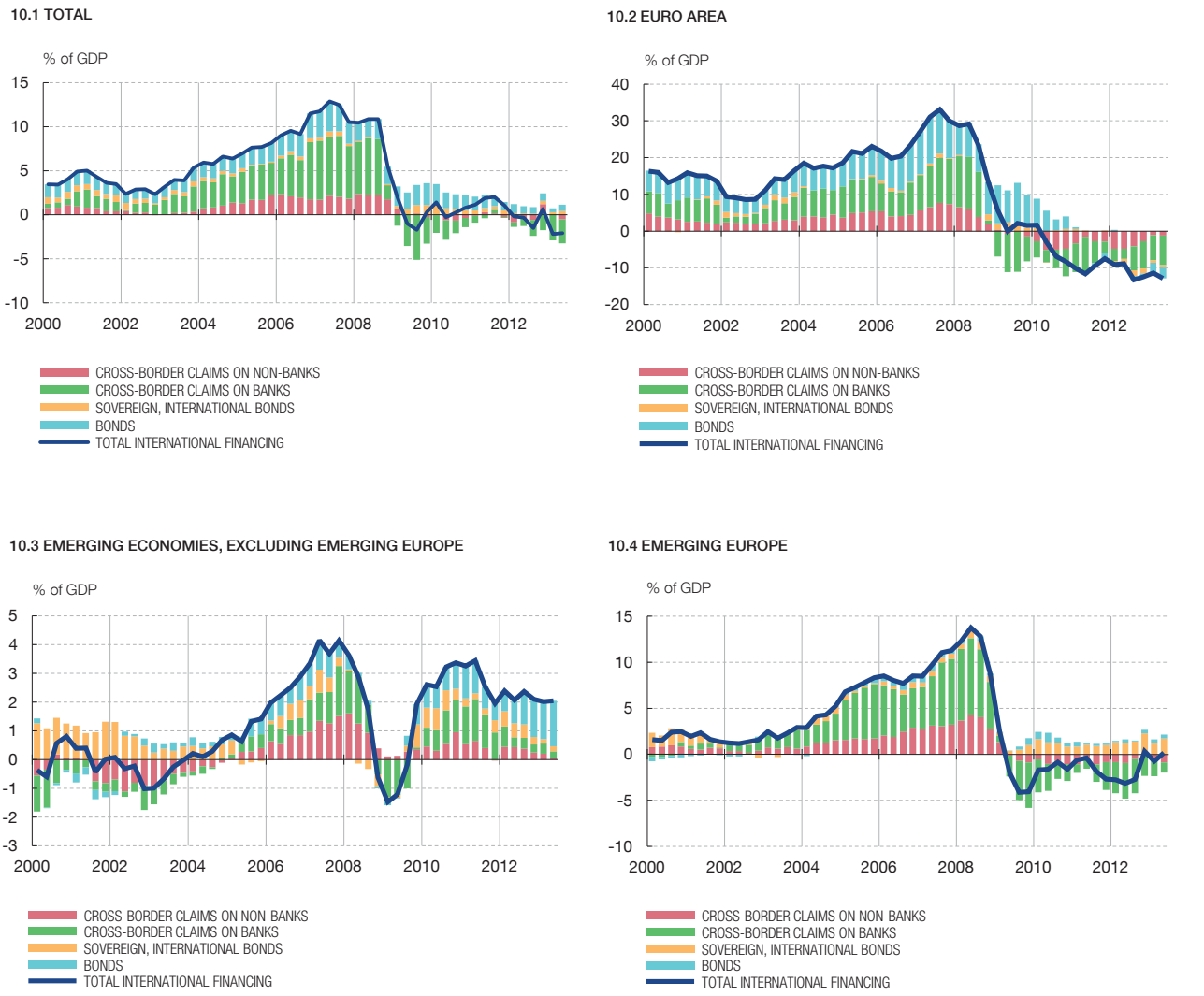
4 Financial disintermediation in international markets after the crisis

The retrenchment of international banks through cross-border asset-shedding is impacting strongly on financial integration. Banks are losing importance as providers of cross-border credit. International capital markets are gaining relative importance. In some geographical areas, international capital markets have also increased in absolute terms. This trend towards financial disintermediation in international markets is depicted in Chart 10.

International financing is break down between funding obtained from banks, and from capital markets. Cross-border bank claims are investments by banks operating overseas, on residents in the recipient economy. These investments can be either on banks, or on non-banks (all other sectors). International issuances are those by residents in the country, in all markets, excepting the domestic. Therefore, they are not necessarily associated with balance of payment flows. We present separately issuances by sovereigns and by other institutional sectors (including banks, non-financial corporations, and other financial institutions (bonds). Capital flows are measured relative to GDP, as a sum of the last four quarters. In other to account different geographical patterns, we show evolutions in the euro area, emerging economies, and emerging Europe.

Panel 10.1 shows that cross-border bank flows are experiencing a protracted contraction, particularly severe in interbank financing. International issuances have hold better, although remain small in absolute terms. Financial fragmentation is sharper in the euro

FINANCIAL INTEGRATION AFTER THE GLOBAL FINANCIAL CRISIS. RECENT EVOLUTION (a) CHART 10



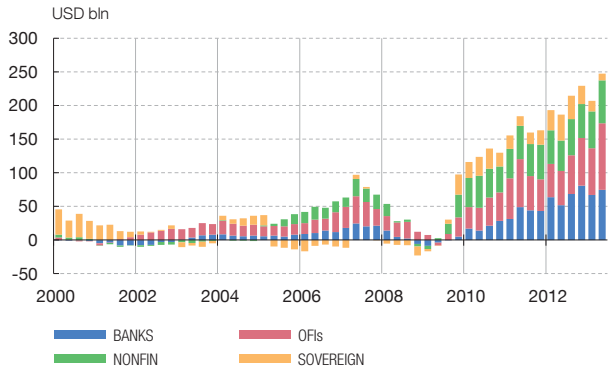
SOURCE: BIS Securities Statistics, Table 12.

a The charts show the changes in international financing of countries after the global financial crisis, by showing the evolution of selected items: cross-border bank flows on non-banks; cross-border interbank flows; international issuances by sovereigns; the rest of international issuances (i.e., by banks, non-financial corporations, and other financial companies). International issuances are those in which the issuer is a non-resident, and frequently target foreign investors. They are classifed according to the nationality of the ultimate owner of the company (Table 12, BIS Securities Statistics). International issuances are not necessarily related to balance of payment capital flows . FDI, which is not shown, has been more stable over time. Data is shown in GDP terms, as a simple average of the countries included in each group.

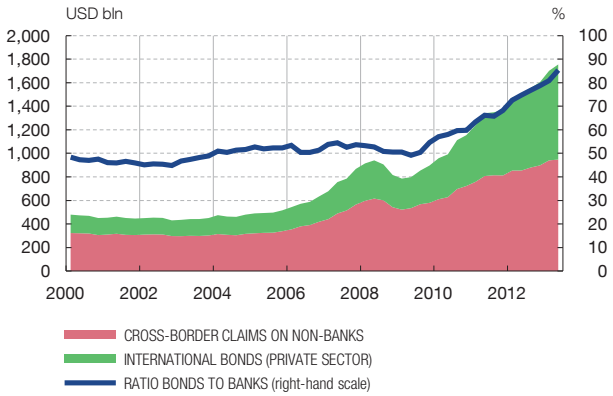
area – panel 10.2 –, where cross-border bank flows are contracting, and international issuances remain low. There are also sizable cross-border bank disinvestments vis-a-vis emerging Europe. Cross-border bank flows vis-à-vis the rest of emerging economies have hold better – panel 10.3 –, but have not recovered the pre-crisis levels.

We investigate next additional features of international issuances in Emerging Asia and Latin America. In both areas, large private international debt issuances have counterbalanced the lesser importance of cross-border bank financing. This trend is driven by private issuances, as shown in panel 11.1, which breaks down international issuances by type of issuer: non-financial corporations, banks, other financial institutions, and sovereigns. Non-financial corporations' international issuances are three times larger than before the global financial crisis, while banks and other financial institutions international issuances have had a slightly increase.

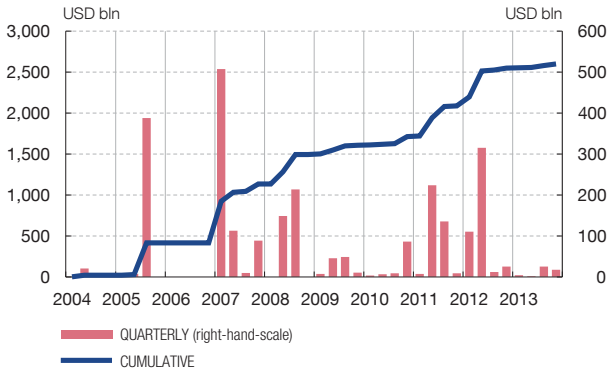
11.1 EMERGING ECONOMIES, EXCLUDING EMERGING EUROPE (a)



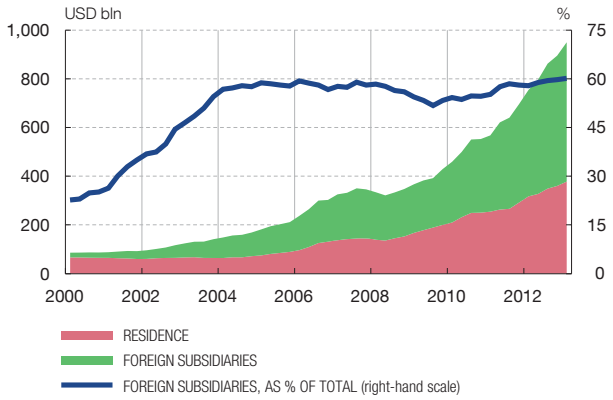
11.2 RELATIVE VOLUME OF BONDS AND CROSS-BORDER BANK FLOWS



11.3 SMEs ISSUANCES IN EMERGING ECONOMIES



11.4 ISSUANCES BY FOREIGN SUBSIDIARIES



SOURCES: BIS (Securities and International Banking Statistics) and Bloomberg.

a Latin America, Emerging Asia, Africa and Middle East. International issuances, breakdown by issuer: banks, other financial institutions (OFIs), non-financial corporations; and sovereigns.

Thus, international capital markets are gaining importance relative to cross-border banking in Latin America and Emerging Asia.[8] The volumes of cross-border bank claims and outstanding international bonds are compared in panel 11.2. International bonds issued by non-sovereigns were half-the volume of cross-border bank claims until 2010. Bonds started to gain importance in 2010. Bonds issued in international markets already represent 85% of cross-border bank claims in Emerging Asia and Latin America.

This process of international financial disintermediation might pose risks. Capital markets can be a poor substitute of cross-border bank financing for some borrowers, for instance, SMEs. Firm-level data suggests that bond issuances are positively related to asset size. Panel 11.3 shows international issuances by SMEs headquartered in emerging economies. It suggests they remain relatively low, despite a pick-up in 2011 and 2012. The sharp reduction in SMEs issuances in 2013 might reflect a shutdown of capital markets, which contrasts with the still resilient access of the whole population of firms. A proper assessment requires delving in recent trends in SMEs access to domestic bank credit, or domestic bond markets.

8 In the following analysis, Emerging Asia includes India, Indonesia, Malaysia, Philippines, and Thailand. Latin America includes Argentina, Brazil, Chile, Colombia, Mexico, Peru. Korea and China are not included, and have different patterns.

On the other hand, large issuances can lead to build-up of potential risks and vulnerabilities in firms' balance sheets. Aggregate evidence suggests that international issuances have been denominates mostly in dollars, although issuances in emerging market currencies have increased [Gruic and Wooldrdige (2013); see also IADB (2014) for an analysis of Latin America]. Large issuances by emerging-markets multinationals foreign-subsidiaries have also attracted attention, as a potencial source of hidden vulnerabilities. The historical record suggests, however, that this practice has not changed recently. Panel 11.4 shows issuances by domestically-based companies and their foreign subsidiaries in international markets. Their relative importance has remained constant, as depicted their ratio, which has remained stable all over the period.

5 Conclusions

Financial integration goes ahead after the global financial crisis, although has experienced remarkable changes. Financial disintermediation has increased in international markets. This is particularly important in some emerging economies, where bonds' weight in international financing has increased despite the relative resilience of cross-border banking. These countries obtain more funding from international capital markets, and less from cross-border banking

The lesser relative importance of global banks in international finance reflects their new business models, with decreasing importance of wholesale international financing. Regulation intended to achieve more stable funding patterns is among the prime drivers of a process which, therefore, has probably a permanent nature. Global banks which expanded overseas by establishing foreign subsidiaries, with local funding, have been more resilient [CIEPR (2012)].

A few banking systems depart from this general trend. For instance, emerging banking systems are expanding their cross-border activity, at a modest scale, and with less reliance on market-based financing [CGFS (2014)]. Recently, issuances by banks headquartered in some emerging economies have picked up. This could eventually become a source of vulnerabilities, since represent wholesale financing which banks could use to finance domestic credit.

Financial disintermediation poses risks and uncertainties for financial stability. Cross-border bank flows have been historically a very volatile source of external financing, highly connected with global financial conditions. The impact of tightening of global financial conditions on bond holders and borrowers is more uncertain. Large issuances have been supported by factors which could be temporary, as easy monetary policy in advanced economies. The sharp sell-off in emerging economies bond markets after tapering talks in May 2013 suggests new channels of transmission of global financial conditions [Turner (2014)]. The financial stability implications of an eventual process of international financial disintermediation would depend on issues such as the investors risk profile, investment horizon, or leverage.

As for borrowers, non-financial corporations' large debt issuances have caused concern, since, based on historical records, are considered telltale signs of overborrowing or currency mismatches. However, understanding these risks requires a firm-level analysis on balance-sheet soundness. Issues such as companies leverage, rating, or an eventual substitution of banks financing by bond issuances are of interest.

Finally, it is worth noting that, for some nonfinancial corporations, capital markets can be an imperfect substitute of cross-border bank financing. Access to capital markets is often more restrictive for SMEs. There is little evidence of an increasing access of SMEs to international financial, their ability to tap markets at large-scale is yet to be tested.

REFERENCES

BIS (2013). *BIS Quarterly Review,* December.

BRONER, F., T. DIDIER, A. ERCE and S. L. SCHMUKLER (2013). "Gross capital flows: Dynamics and *crisis", Journal of Monetary Economics* 60, pp. 113-133.

BRUNO, V., and H. SHIN (2013). *Capital Flows and the Risk-Taking Channel of Monetary Policy,* NBER Working Paper No. 18942.

CARUANA, J., and A. van RIXTEL (2012). *International financial markets and bank funding in the euro area: dynamics and participants,* BIS.

CEPR (2011). *Cross-border Banking in Europe: Implications for Financial Stability and Macroeconomic Policies.*

CGFS (2010a). *The functioning and resilience of cross-border funding markets,* CGFS Report No. 37, March.

— (2010b). *Long-term issues in international banking,* CGFS Report No. 41, July.

— (2010c*). Funding patterns and liquidity management of internationally active banks,* CGFS Report No. 39, May.

— (2013). *Asset encumbrance, financial reform, and the demand for collateral assets,* CGFS Paper No. 49.

— (2014). *EME banking systems and regional financial integration*, CGFS Paper No. 51.

CHAN, N. (2011). "Universal banking-Hong Kong's perspective", *Keynote address at the Asian Banker Summit.*

CHEN, S., A. HAECHLER, C. MARSH, S. SAKSONOVS and H. SHIN (2012). *Exploring the dynamics of global liquidity*, IMF Working Paper No. 12/246.

CIEPR (2012). *Banks and Cross-Border Capital Flows: Policy Challenges and Regulatory Responses*, September.

CORREA, R., H. SAPRIZA and A. ZLATE (2012). *Liquidity shocks, dollar funding costs, and the bank lending channel during the European sovereign crisis,* Board of Governors of the Federal Reserve System International Finance Discussion Papers No. 1059, November.

DEUTSCHE BANK (2014). "Tight bank lending, lush bond market. New trends in European corporate debt issuance", *Current Issues. Global financial markets*, Deutsche Bank Research.

DUDLEY, W. (2013). *Fixing wholesale funding to build a more stable financial system,* New York Bankers Association 2013 Annual Meeting.

ECB (2012). *Changes in bank financing patterns*.

FENDER, I., and P. MCGUIRE (2010). "Bank structure, funding risk, and the transmission of shocks across countries: concepts and measurements", *BIS Quarterly Review,* September.

GAMBACORTA, L., and A. VAN RIXTEL (2013). *Structural bank regulation initiatives: approaches and implications,* BIS Working Papers No. 412.

GARCÍA-LUNA, P., and A. VAN RIXTEL (2014). "International interbank activity in retreat", Box 1, *BIS Quarterly Review,* March.

GOODHART, C. (2014). "Pattern of policy tightening is different this time", *Financial Times,* 3rd April.

GOULDING, W., and D. NOLLE (2012). *Foreign banks in the US: A primer,* International Finance Discussion Papers No. 1064.

GRUIC, B., and P. WOOLDRDIGE (2013). "Who is issuing international bonds denominated in emerging market currencies?", Box 2, *BIS Quarterly Review,* December.

HAHM, J.-H., H. SHIN, and K. SHIN (2012). *Non-core liabilities and financial vulnerabilities,* NBER Working Paper No. 1848.

HONG-KONG MONETARY AUTHORITY (2013). *Half-Yearly Monetary and Financial Stability Report,* Box 6, "Changing business models of Hong Kong branches of US and European banks".

IADB (2014). "Global recovery and monetary policy normalization. Escaping a chronicle foretold?", *2014 Latin America and Caribbean Macroeconomic Report.*

IMF (2013). *Global Financial Stability Report,* October.

LAM, W. R. (2013). *Cross-border Activity of Japanese Banks*, IMF Working Paper n.º 13/235.

LAROSIÈRE, J. (2013). "A world of warning: banking regulation is about to create pro-cyclical damage", *European Savings Banks Conference.*

LO LUCA, M., G. NICOLETTI, and A. VIDAL MARTÍNEZ (2014). *Global bond corporate issuance: What role for US quantitative easing?,* ECB Working Paper N1 1649, March.

MARTÍN-OLIVER, A. (2013). "Financial integration and structural changes in Spanish banks during the pre-crisis period", *Estabilidad Financiera,* No. 24.

MCCAULEY, R., and P. MCGUIRE (2014). "Non-US banks' claims on the Federal Reserve*", BIS Quarterly Review,* March.

MCCAULEY, R., P. MCGUIRE, and G. VON PETER (2010). "The architecture of global banking: from international to multinational?"*, BIS Quarterly Review,* March*.*

MCCAULEY, R., C. UPPER, and A.VILLAR (2013). "Emerging market debt securities issuance in offshore centres", Box 2, *BIS Quarterly Review,* September.

MCGUIRE, P., and G. VON PETER (2009). *The US dollar shortage in global banking and the international policy response,* BIS Working Paper No. 201.

MILLARUELO, A., and A. DEL RÍO (2013). "La fragmentación financiera en la zona del euro durante la crisis", *Boletín Económico,* December, Banco de España.

ROODMAN, D. (2006). *How to Do xtabond2: An Introduction to "Difference" and "System" GMM in Stata,* Center for Global Development Working Paper No. 103.

SAPIR, A., and G. B. WOLFF (2013). "The neglected side of banking union: reshaping Europe's financial system", Bruegel Policy Note.

SERENA, J. M., and E. VALDEOLIVAS (2014). *Integración financiera y modelos de negocio de los bancos globales,* Documentos Ocasionales, No. 1401, Banco de España.

SHIN, H. (2012). "Global banking glut and loan risk premium", *2011 Mundell-Fleming Lecture, IMF Economic Revue* 60, pp. 155-192, July.

— (2013). "The Second Phase of Global Liquidity and its Impact on Emerging Economies", *Keynote address at the Federal Reserve Bank of San Francisco Asia Economic Policy Conference.*

TARULLO, D. (2012). "Regulation of Foreign Banking Organizations", Board of Governors of the Federal Reserve System, Speech at the Yale School of Management Leaders Forum.

TARULLO, D. (2014). *Opening Statement by Gov. Daniel K. Tarullo, "Enhanced Prudential Standards for Bank Holding Companies and Foreign Banking Organization".*
TURNER, P. (2014). *The global long-term interest rate, financial risks and policy choices in EMEs,* BIS Working Paper, No. 441.
VAN RIXTEL, A., and G. GASPARINI (2013). *Financial crisis and bank funding: recent experience in the euro area,* BIS Working Paper, No. 406.

APPENDIX. DATA DESCRIPTION

Our panel data includes 54 countries, which can be classified as advanced, emerging, or financial hubs. Advanced economies: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Israel, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, United States. Emerging economies: Latin America; Argentina, Brazil, Chile, Colombia, Mexico, Peru, Uruguay, Venezuela; Emerging Asia: China, India, Indonesia, Korea, Malaysia, Philippines, Thailand; Emerging Europe: Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Russia, Slovakia, Slovenia, Turkey; other emerging; Qatar, Egypt, South Africa. Financial hubs: Hong-Kong, Luxembourg, Singapore (Iceland, Switzerland, United Kingdom, United States are also considered financial hubs).

Euro area countries include Austria, Belgium, Finland, France, Greece, Ireland, Italy, Netherlands, Portugal, Spain. We do not include in our sample Malta and Cyprus, which share features with financial hubs, during a short-period of time.

We use quarterly data, for the period 1Q1991-3Q2013. Table A.1 shows descriptive statistics. Table A.2 shows the correlation matrix between the variables.

DESCRIPTIVE STATISTICS

TABLE A.1

	Mean	Median	Std. Dev.	Min	Max	Source
Country-specific						
Current account to GDP	-0.491	-1.013	6.166	-50.507	38.450	IMF, national accounts
GDP growth	3.307	3.393	4.841	-54.819	119.429	National accounts
Sovereign rating	15.992	16.000	4.571	0.000	21.000	S&P
Public Debt to GDP	57.645	49.470	52.479	1.060	1,266.220	IMF, national accounts
Primary balance to GDP	-1.974	-1.898	4.784	-140.620	20.183	IMF, national accounts
Global variables						
World GDP growth	2.644	2.823	1.379	-2.832	4.758	IMF, WEO
VIX, qoq change	-0.005	-0.019	0.195	-0.489	0.847	CBOE
Broker Dealer Leverage	15.050	13.612	5.903	5.596	30.680	Flow of Funds, L.128
NDT position, qoq change	0.001	-0.002	0.048	-0.153	0.387	Structure and Share Data, 4.30
Banks international issuances	0.035	0.041	0.039	-0.068	0.123	BIS Securities data
Cross-border bank flows measures						
All countries						
On all counterparts	4.013	1.074	33.923	-848.896	867.958	BIS IBS, national accounts
On banks	2.626	0.537	29.497	-789.600	836.573	BIS IBS, national accounts
On non-banks	1.387	0.440	13.307	-289.685	287.322	BIS IBS, national accounts
Excluding Financial centres						
On all counterparts	1.374	0.836	7.993	-99.395	78.888	BIS IBS, national accounts
On banks	0.782	0.408	6.978	-129.646	74.818	BIS IBS, national accounts
On non-banks	0.592	0.350	3.322	-38.703	53.224	BIS IBS, national accounts

SOURCE: Author's elaboration.

CORRELATION MATRIX

TABLE A.2

	Current Account (GDP terms)	Domestic GDP growth	Standard & Poors rating	Public Debt to GDP	Fiscal Balance to GDP	World GDP growth	VIX	Broker Dealer Leverage	US branches funding	Banks international issuances
Current Account (GDP terms)	1									
Domestic GDP growth	-0.2343	1								
Standard & Poors rating	-0.8244	0.2967	1							
Public Debt to GDP	0.8202	-0.2735	-0.8339	1						
Fiscal Balance to GDP	0.0094	0.5242	-0.024	0.0152	1					
World GDP growth	-0.1228	0.4279	0.0307	0.0126	0.3977	1				
VIX	0.0018	0.0496	0.0146	-0.0483	0.0822	0.0975	1			
Broker Dealer Leverage	0.072	0.1296	-0.0436	0.127	0.6341	0.4043	0.1453	1		
US branches funding	0.0263	0.106	0.0343	-0.0714	-0.0823	-0.0124	0.5145	-0.2286	1	
Banks international issuances	0.0048	0.1204	-0.0566	0.1591	0.4096	0.2837	-0.2392	0.5175	-0.21	1

SOURCE: Author's elaboration.

A FIRST APPROACH TO CREDITOR MONITORING, THE PARADOXICAL MISSING LEVER OF CORPORATE GOVERNANCE IN SPAIN

Carlos Ara (*)

(*) Carlos Ara, Associate at *Cuatrecasas, Gonçalves Pereira* S.L.P. This paper is part of the thesis submitted in May 2013 to the Stanford Program in International Legal Studies at the Stanford Law School, Stanford University, in partial fulfillment of the requirements for the degree of Master of the Science of Law. The author would like to thank Professor George G. Triantis for his time and sound advice in supervising the research work. Useful comments from Professor G. Marcus Cole, and continuous advice and academic support from professors José Antonio García-Cruces and Vicente Salas are also acknowledged. Needless to say, any inaccuracy or mistake is exclusive responsibility of the author.

A FIRST APPROACH TO CREDITOR MONITORING, THE PARADOXICAL MISSING LEVER OF CORPORATE GOVERNANCE IN SPAIN

The goal of this paper is to analyze empirically whether debt-holders actually develop a significant role in the corporate governance of distressed companies, as the economic theory would suggest.

Although bankruptcy is still compulsory in Spain, going-concern companies draw on out-of-court workouts primarily, setting aside the petition as the last resort to handle corporate insolvency. Bankruptcy remains thus as a venue for liquidating insolvent companies, which is at odds with the goals of the Spanish Bankruptcy Act. The empirical question that follows is whether this behavior draws on a rational decision grounded on the economics of transaction costs as a reaction against a governance problem.

The data indicates that professional adjusting debt-holders rarely enforce creditor contractual remedies out-of-court, and that the structure of the Spanish bankruptcy proceeding disincentives shareholders filing a petition. Both findings cast doubt on the accuracy of Spanish insolvency law to provide stakeholders with effective tools of corporate governance to manage the agency problem that insolvency poses.

The conclusion of the research is that our legal culture does not take account yet of the role of debt in corporate governance. This unsettling reality may put in jeopardy the ability to refinance going-concern businesses.

1 Introduction[1]

Under Spanish law, corporate insolvency refers to the inability to meet liabilities as they come due.[2] However, an insolvent – a financially distressed – corporation may still be economically viable if it preserves its comparative advantage to compete in the market.[3] In such a case, the business has "going-concern value" because its assets are worth more put together as an operating business unit than if liquidated separately. Hence, an insolvent company may still succeed in the market place if it changes its capital structure through a workout, whether out-of-court or in bankruptcy.[4]

Bankruptcy exists to address insolvency's collective action problem (the deadly race against the debtor's assets[5]), by reducing the transactions costs that creditors would otherwise bear. This being said, bankruptcy's transaction costs may outweigh the potential upsides of filing a petition. The issue is whether or not bankruptcy's hurdles (such as the automatic stay) are always that worth it for creditors, the new residual claimants of debtor's assets. For instance, insolvency's collective action problem may be less severe in the case of going-concern companies with concentrated capital structure, where an out-of-court workout may enable going-concern companies – and their creditors – to minimize

1 While strongly grounded on the economic analysis of corporate and insolvency law, this is an empirical research work based on semi-structures interviews. The paper is updated to the last reforms of Spanish law, but the empirical analysis is restrained to the data available until April 2013 (the date of the last interview): the statistics of 2011. Further empirical research may analyze the impact of the most recent reforms as per the data available for subsequent years.

2 See article 2 of the Spanish Act 22/2003 of July 9, 2003, of Bankruptcy (the "SBA").

3 Corporate insolvency may be related to financial and/or economic distress. Whereas economic distress may stem from the loss of the debtor's comparative advantage, financial distress arises when liabilities exceed the company's assets (or, under Spanish law, when the debtor cannot pay the debts as they come due).

4 A composition agreement is just a judicially sanctioned workout.

5 This is an example of the prisoner's dilemma. See Adler, Baird, and Jackson (2007).

transaction costs. It may also permit to avoid, for example, the brand prejudice that bankruptcy may encompass and the sure external interference in debtor's corporate governance. An out-of-court workout is thus a contract entered into between a company and its creditors to remove insolvency by restructuring the debtor's capital structure, so that an economically viable company may continue to run its potentially profitable business in the market. From this perspective, bankruptcy may be characterized as an optimal venue to handle corporate insolvency upon the failure of the rest of corporate and negotiated mechanisms (such as an out-of-court workout). In other words, bankruptcy may step in when asymmetric information and stakeholders' different incentives make transaction costs related to the hidden action and the moral hazard problems unmanageable. Thus, going-concern companies, especially those with a high degree of debt concentration, may find it attractive to draw on an out-of-court workout to deal with corporate insolvency. This should be an *ex ante* choice almost exclusively grounded on the economies of transaction costs, though conveniently monitored *ex post* by the residual claimants of debtor's assets (the unsecured creditors).[6]

Under Spanish law, however, bankruptcy petition is compulsory. Filing is a must within two months as from debtor's actual or constructive awareness of its insolvency.[7] As a matter of law, bankruptcy judges must oversee corporate reorganization or the liquidation of insolvent debtors' assets through a bankruptcy proceeding. Hence, the SBA establishes that bankruptcy is the sole venue to deal with corporate insolvency. This is arguably a response to past strategic behavior in detriment of unsecured creditors.[8]

In contrast, the law in action approach shows that bankruptcy is not the first choice for going-concern companies, which usually draw on out-of-court alternatives to handle corporate insolvency.[9] In fact, corporate debtors petition where it is not possible to turn to out-of-court restructuring alternatives. Instead of bankruptcy compositions, going-concern companies draw on out-of-court workouts "in the shadows of bankruptcy" to handle corporate insolvency. First, whilst the SBA formally pursues corporate reorganization through a composition agreement as bankruptcy's "normal" solution to maximize creditor recovery, official statistics show that more than 90 percent of bankrupt companies are liquidated.[10] Moreover, only 7.13 percent of the pending bankruptcy proceedings in 2011 (202 out of 2,835) were aimed at reaching a composition agreement.[11] Official data shows that this figure ultimately stems from the impaired economic and financial condition upon the filing.[12] Most companies filing a bankruptcy

6 Unsecured creditors step in the shoes of the shareholders as the residual claimants of the corporation upon insolvency insofar as they become the stakeholders with best incentives to maximize the assets value. This is due to their pro-rata recovery (they benefit from an efficient management in the margin). They should have standing to file a derivative lawsuit, as well as voice and voting rights as per the solution to remove insolvency, whether it is handled out-of-court or in bankruptcy. This is the shift in the corporate governance of distressed companies that insolvency should trigger.

7 See article 5 of the SBA

8 See preamble to the SBA.

9 Indeed, the SBA's oversight of privately conducted out-of-court schemes never prevented stakeholders from turning to this possibility at all. See Rojo (2003).

10 According to official statistics, the debtor's assets were liquidated in 92.7 percent of 2011 bankruptcy proceedings. Only 287 bankruptcy proceedings out of 2,920 (9.83 percent) concluded in 2011 with the judicial approval of a composition agreement. It is important to note, however, that liquidation may follow if the composition fails. Indeed, 2.8 percent of total liquidations in 2011 followed a previously failed composition agreement. See Van Hemmen (2012).

11 See Van Hemmen (2012). Ninety-two (92.87) percent of 2011 unconcluded bankruptcy proceedings were aimed at liquidating debtor's assets. All the statistical data that follows also stems from Van Hemmen (2012).

12 Without challenging the convenience of further incentivizing post-petition financing as some authors contend, this issue may not have such a direct relationship with the number of companies that are liquidated.

petition have already failed both financially and economically. Sixty-one percent of 2011 bankrupt companies had negative operative margin, whereas 72 percent of 2011 bankrupt companies would not be able to pay back their claims in less than 25 years. Not surprisingly, economic scholars estimate that only 11 percent of companies going bankrupt in 2011 would be able to reach a composition agreement. As a result, the primacy of liquidation over composition is not expected to turn around, at least, for three years.[13] Although, liquidation does not necessarily entail piecemeal liquidation and the shuttering of business units,[14] compositions are far from consisting of the "normal" solution to bankruptcy.

Second, the largest financially troubled companies prefer to turn to out-of-court workouts. The size (total liabilities) of a bankruptcy proceeding in Spain is on average 6.5 million Euros, while the mean is 1.27 million Euros. Only 10.6 percent of companies going bankrupt in 2011 have liabilities over 10 million Euros. Furthermore, the data shows a decreasing size of the companies going bankrupt. On the other hand, companies turning to a bankruptcy-proof out-of-court workout have on average liabilities of 310 million Euros (mean 37 million). Although bankruptcy is formally compulsory to manage insolvency, blue-chips do endeavor in actuality to avoid the petition. In other words, the filing occurs when piecemeal liquidation seems to be the most feasible solution to insolvency's collective action problem. Bankruptcy has also become the residual option to handle corporate insolvency of financially distressed but economically viable flagships.

In sum, insolvent corporate debtors must file a bankruptcy petition under Spanish law, which will most likely lead to their liquidation. As a result, the SBA's twofold goal has arguably failed. Going-concern companies dislike bankruptcy, which, far from being a venue for corporate reorganization, has turned out to be chiefly a liquidation proceeding. The Spanish branches have reactively protected out-of-court workouts subsequently in the four main reforms of the SBA.[15]

Part II comprises the hypothesis and the empirical question. a selected literature review of the public policy considerations that ground the debate between the compulsory judicial oversight of corporate insolvency and out-of-court transactional alternatives. Part III contains a selected literature review of the role of debt in corporate governance from an economic perspective. Part III is concerned with the analysis of the data. It also contains the discussion about the lack of enforcement of financial covenants and events of default. Lastly, part IV contains the conclusions and proposals for further empirical legal scholarly work.

2 Hypothesis, empirical question, and normative background

Statistics show that Spanish going-concern companies avoid the petition where an out-of-court workout (either protected or not) is still feasible. The puzzle that follows is whether or not this is actually a "social stigma," a runaway from liquidation statistics, or an economic decision grounded on the SBA's efficacy and efficiency in reducing agency costs. Hence the significance of analyzing the expectations and concerns of stakeholders

13 No less than three years is the average duration of bankruptcy for companies with liabilities over €10 Million. In addition, only 11 percent of 2011 filing companies are expected to avoid liquidation in light of their financial accounts and accounting ratios upon petition.

14 Liquidation promotes the sale of business units as a going-concern. Yet, this occurs when the business is economically viable, which is not what the statistics suggest. See articles 149 and 191ter of the SBA.

15 See the Royal Decree-law 3/2009 of March 27, 2009, on urgent tax, financial, and insolvency law measures in view of the unfolding economic situation; the acts 38/2011 of October 10, 2011, on partial reform of the SBA, and 14/2013, of September 27, on Support of Entrepreneurs, and the Royal Decree-law 4/2014, of March 7, on urgent measures concerning the refinancing and the restructuring of corporate debt (the "Royal Decree-law 4/2014").

related to out-of-court workouts, the device mostly utilized by going-concern companies to handle corporate reorganization in Spain.[16]

The hypothesis is that creditors avoid bankruptcy because they feel more comfortable to promote a workout that removes insolvency out-of-court. Therefore, the empirical question is whether or not lenders enforce creditor remedies in monitoring activities. The normative perspective is concerned with the consequences of this issue in the corporate governance of distressed companies in Spain. In other words, the following lines address whether or not the "shadow" restructuring arena permits stakeholders to handle the agency problem more appropriately than bankruptcy and how it influences corporate decision-making.

3 The role of debt in corporate governance

3.1 THE AGENCY THEORY OF THE FIRM

Corporate law aims at reducing agency costs by facilitating coordination among participants in the corporate enterprise. Asymmetric information and opportunism, inherent to rational economic agents, give rise to agency problems. An agency problem is basically the acknowledgment of a conflict of interest that takes place within an organization. According to the Berle-Means conventional model, the incorporation of a legal entity and the subsequent separation of property and management give rise to the debate about the corporate governance of the firm.[17] In addition to the agency problem between shareholders and managers, scholarly work has identified two further kinds of agency problems: conflicts among shareholders, and conflicts between the corporations other constituencies, such as creditors.

3.2 ASYMMETRIC INFORMATION, TRANSACTION COSTS, COVENANTS, AND EVENTS OF DEFAULT

When considering whether to grant a loan, a lender is reasonably concerned about the likelihood that it can collect the funds in the agreed date. Lenders cannot know *ex ante* the borrower's information and what the borrower's future behavior will be. This is due to the issue of asymmetric information, which has traditionally been divided by finance scholars into "hidden information" and "hidden action" (moral hazard) problems.[18] The borrower's rational actions during the term of the loan may put at risk the funds' return. Because of shareholders' limited liability, the managers have incentives under distressed scenarios to invest in high-risk projects in order to maximize shareholder's return on equity (ROE), even if the *expected* return on assets (ROA) from the new project (the net present value) is negative.[19] The moral hazard problem triggers a trade-off between the risk of "overinvestment,"[20] which consists of the substitution of low-risk assets or business

16 The data stems from eighteen (18) interviews addressed to leading finance, restructuring, and bankruptcy lawyers from Madrid, who were selected using the most well known Spanish and international rankings: *Best Lawyers, Chambers and Partners* (Global and Europe), *IFLR 1000, PLC Which Lawyer, Expert Guides, The Legal 500,* and *Who's Who Legal.* The interviewees, all of them with over 10 years of experience, are litigators or transactional lawyers. They were also screened according to their different background prior to becoming practitioners (former judges, professors, or bankruptcy trustees). The snowballing strategy led to contacting the restructuring in-house counsel of one of Spain's largest banks. The selection of lawyers from Madrid as the research population seemed sensible for two reasons. First, 35 percent of the 2011 bankruptcy-proof out-of-court workouts, which represented 82.7 percent of claims subject to one of such out-of-court workouts, were concluded in Madrid. Second, reportedly there is no leading finance, restructuring, and bankruptcy law firm in Barcelona without an office in Madrid according to Spanish and international rankings. Yet, further empirical work may extend the research to other cities in light of the statistics of subsequent years. It would be advisable to wait at least until 2016 to observe the data once the SBA's reforms of 2013 and 2014 have settled among legal actors.

17 See Berle and Means (1932); Fama and Jensen (1983); and Triantis and Daniels (1995).

18 See Fama and Miller (1972); Jensen and Meckling (1976). While hidden information is concerned with borrower's better information over the assets' value (including the risk of insolvency), hidden action refers to borrower's control over the assets. The hidden information problem appears before borrowing, whereas the hidden action problem is concerned with *moral hazard,* which appears when a person does not bear the risks of her actions and, therefore, does not have incentives to take care of them.

19 See Brealey, Myers, and Marcus (2007).

20 See Scott and Triantis (2010). Security interests also develop a significant role in addressing the agency problem between shareholders and creditors. See Scott (1986).

projects for high-risk ones, and the risk of "debt overhang or underinvestment"[21], which may thwart profitable business opportunities.[22]

As a result of the hidden information and the moral hazard problems, the corresponding increase in transaction costs is reflected in a higher interest rate or even in the refusal to grant funds. Covenants and events of default anticipate debtor's financial distress and aim at reducing its opportunism in taking advantage of the asymmetric information (hidden action).[23] To the extent that covenants and events of default serve to reduce transaction costs all the parties are better off. The question that follows is how these contractual devices can also develop a further role from a corporate governance perspective. At issue is whether or not banks' monitoring activities may yield net positive externalities for all the stakeholders beyond the protection of their interests.

3.3 HE ROLE OF COVENANTS FROM THE INTERACTIVE CORPORATE GOVERNANCE PERSPECTIVE

Information requirements *(ex ante),* and covenants and events of default, in addition to security interests, *(ex post)* place financial creditors in a privileged position to monitor borrowers' activities. Although creditors rationally seek their own interest (the collection of their claims), their monitoring activities and subsequent decisions may provide valuable information for the rest of the firm's stakeholders.

First, creditors may contribute to reduce managerial slack and contribute in controlling managerial misbehavior. This is an "unintended" consequence of creditors' monitoring role that ultimately stems from the hallmark of corporate law: shareholders' limited liability for business debts.[24] The separation of the corporation and shareholders' estates may increase the value of both types of assets as security because of creditors' specialization in their monitoring activities, yielding a comparative advantage akin to learning economies.[25] Hence, creditors (particularly secured creditors) may succeed in supervising debtor's behavior, indirectly helping to monitor the managers. On this account, creditors react when they spot managerial misbehavior that may put at risk the corporation's assets value.[26] The subsequent "exit" or "voice" action of monitoring creditors may be what yields "signals" and related net positive externalities for the benefit of other stakeholders.[27] Indeed, the monitoring role of other constituencies, mainly creditors,[28] brought scholars

21 Regarding the trade-off between the problems of underinvestment and overinvestment, see Triantis (1992, 2000); and Schwarz (1997).

22 Subsequent lenders will request from the debtor a security interest over the new assets, which prior lenders may anticipate and prevent in a race toward priority in the proceeds.

23 The scholarly literature has classified loan covenants into four typical categories. See Gulati and Triantis (2007): (i) covenants aimed at monitoring the borrower's actions regarding the maintenance of assets' value; (ii) covenants that address the risk of underinvestment and, in general, the moral hazard problem between shareholders and creditors; (iii) covenants that aim at anticipating insolvency or, in general, at monitoring the deterioration of the lender's exit option; and (iv) covenants concerned with transactions costs among creditors, which explain the rationale of syndicated loans. See Triantis (1992); Armour, Cheffins, and Skeel, Jr. (2002); and Baird and Rasmussen (2006).

24 Limited liability and the subsequent "entity shielding" effects shift the business risk from shareholders to the other constituencies, remarkably creditors. See Hansmann *et al.* (2006).

25 See Scott and Triantis (2010).

26 However, their reaction should be reasonably early.

27 See Triantis and Daniels (1995), who, relying on Hirschman (1970), disaggregate the governance activity of any individual stakeholder into monitoring and reaction ("exit"– termination of the contractual relationship with the company – or "voice" option – deliberate attempt to correct, rather than escape from, an objectionable situation). Their theory is based on two premises. First, the existence of net positive externalities from the monitoring activities of each stakeholder, as long as the common interest in reducing managerial slack is not offset by the conflicts of interest among the different stakeholders. Second, through their observable reactions, each stakeholder provides valuable information picked up by the monitoring activities of the other stakeholders. Hence, the system of inter-stakeholders signals permits the information gathered by dispersed stakeholders with concentrated expertise and heterogeneous perspectives on the firm's affairs to be communicated to those stakeholders best able to correct the managerial slack, thereby contributing to the global diminution of transactions costs and the firm's value maximization for the benefit of all stakeholders.

28 See Armour, Cheffins, and Skeel, Jr. (2002) and Baird and Rasmussen (2006).

to describe corporate governance as an interactive system.[29] According to this view, each stakeholder would process corporate information and react to it accordingly, or react to others' actions. Besides interdependences, the interactive element of corporate governance would contribute to the collective interest in controlling managerial slack. Therefore, other stakeholders may benefit from the monitoring role of adjusting creditors according to the "interactive corporate governance theory."[30]

Second, unsecured creditors and other constituencies may also benefit from the monitoring role of banks from the view of the agency problem between shareholders and creditors. Although there is no "legal" agency relationship between shareholders and creditors,[31] there definitely is an agency problem between shareholders and creditors. Creditors do have incentives to control "shareholders' misappropriation" of funds by way of, for instance, imprudent distribution of dividends in view of the financial picture of the company.[32] Creditors of course take for granted that shareholders' and directors' incentives are perfectly aligned.[33] In furtherance of corporate law default rules, adjusting creditors are concerned with stepping in the corporate governance of the firm under certain conditions (the "contractual solution"). This concern stems from the absence of recognition by the law that in distressed scenarios corporate voice should be given to creditors, the new residual claimants from an economic point of view.[34] To the extent that creditor monitoring activities create net positive externalities all the stakeholders are better off. Unsecured creditors may take advantage of the advice of professional creditors as delegated monitors, whose expertise may be valuable under distressed scenarios if they are adequately incentivized.[35]

It is possible just to refer to one account of creditor monitoring. At the end of the day, the second branch (the agency problem between shareholders and creditors) rises at a juncture at which directors should not only turn to shareholders' interest. In other words, creditors' major concerns to address managerial slack occur in financial distress, when they happen to have the best incentives to maximize the value of the assets and to monitor directors.

3.4 DEBT RESTRUCTURING UNDER DISTRESSED SCENARIOS: THE PEAK OF THE AGENCY PROBLEM

The peak of the agency problem between shareholders and creditors arises in fact in the vicinity of insolvency.[36] Insolvency triggers a shift in the residual claimants as creditors do have better incentives than managers to maximize corporate value since they benefit in the margin from a more efficient management. Managers are expected to seek high-risk business projects, whereas creditors do endeavor to avoid the risk of overinvestment that may lead-up to insolvency.[37] The following numerical example shows the distortion of shareholders'

29 See Triantis and Daniels (1995).
30 See Triantis and Daniels (1995).
31 According to Gulati and Triantis (2007), a lender would invest in a business borrower in order to rely on the managers' expertise in carrying out a particular business project.
32 See Kraakman *et al.* (2009). Legal personality protects the firm's assets from the owners' creditors' claims, while limited liability protects the assets of the owners from the claims of the firm's creditors.
33 See Triantis and Daniels (1995).
34 As Kraakman *et al.* (2009) explain, shareholders are a corporation's "residual claimants" in the sense that they are entitled to appropriate all (and only) the net assets and earnings of the corporation after all the contractual claimants (such as employees, suppliers and customers) have been paid in full. This rationale applies to unsecured creditors in distressed scenarios (see footnote 6).
35 See Gulati and Triantis (2007), who contend that the value of banks as delegated monitors is limited by the race against the debtor' assets that insolvency prompts. See in contrast Baird and Rasmussen (2006). See Gilson and Vetsuypens (1994), who set the basis for the empirical analysis of this issue.
36 Leverage maximizes shareholders' ROE provided that new business projects' ROA exceeds the capital cost. Notwithstanding that the net present value may be negative, the level of risk and the expected positive returns are positively correlated. See Brealey, Myers, and Marcus (2007).
37 There may be this a trade-off between the risks of underinvestment and overinvestment in the vicinity of insolvency.

incentives in distressed scenarios. There are three business projects (the price is assumed to be fair[38] and the debtor will not become insolvent or unreasonably undercapitalized as a result of any of the transactions).[39] The first project is a sale of a business unit, which will give rise to a certain consideration (€10,000,000). The second project will produce, with equal probability, either €15,000,000 or €5,000,000 net proceeds. Lastly, the third project will give rise to either €100,000,000 (10 percent probability) or nothing (90 percent probability). Lastly, the company has €10,000,000 liabilities coming due in December. The following table summarizes the example:

CONFLICT OF INTEREST UNDER DISTRESSED SCENARIOS — TABLE 1

Project	Business project	Probability	Net proceeds	Expectancy
1	Sale of business unit	100%	€10,000,000	€10,000,000
2	Purchase of business unit	50%	€15,000,000	€10,000,000
		50%	€5,000,000	
3	Investment in a new venture	10%	€100,000,000	€10,000,000
		90%	€ 0	

SOURCE: Author's elaboration.

Under these assumptions, the three business projects will give rise on average to the same expected proceeds ($10,000,000). Creditors and shareholders will though differ in their preference regarding the managers' final choice. Creditors will want managers to invest in the safer first project. However, shareholders will prefer that managers invest in the riskier third one, because this might allow to a dividends' distribution. Hence the conflict of interests and the resulting agency problem.

Debt restructuring involves a fight for corporate control that may end up in bankruptcy if the contractual solution does not overcome the agency problem. Shareholders prefer engaging in high-risk and potentially more profitable business projects at the expense of refinancing creditors (risk of overinvestment). Adjusting creditors bargain to monitor managers, which may deprive the debtor of risky but potentially profitable business projects (risk of underinvestment).

3.5 BANKRUPTCY AS THE LAST RESORT TO HANDLE THE CORPORATE GOVERNANCE PROBLEM THAT INSOLVENCY POSES

Bankruptcy is in large part a procedure that responds to a collective action problem without distorting creditors' substantive rights. The rules of the bankruptcy proceeding, therefore, reduce transaction costs by preventing unsecured creditors from engaging individually in a costly and unsuccessful race against the debtor's assets. This background may only work provided that bankruptcy actually entails a shift in the corporate governance of the firm. Manager-friendly or excessively bureaucratized legal systems restrict creditors from filing the petition.

According to the role of debt in "interactive corporate governance" account,[40] bankruptcy would be the last resort to address managerial slack when the rest of corporate governance

38 Both the borrower and a third party will receive a consideration of reasonable equivalent value to their performance under the business project. The transaction would not be subject to claw-back under article 71 of the SBA accordingly.

39 Nor will any of the three business projects cause the debtor to incur debts beyond its ability to pay. The transaction, would not be subject to claw-back under the article 71 of the SBA or the state or federal U.S. fraudulent conveyance law.

40 See Triantis and Daniels (1995).

mechanisms fail.[41] Creditors and directors do bargain out-of-court unless asymmetric information increases transaction costs so dramatically that a forced-sale of company's assets to creditors through bankruptcy turns out to be the economically efficient solution. In other words, filing a bankruptcy petition would make economic sense where the transaction costs of handling corporate insolvency out-of-court become unmanageable due to the hidden information and moral hazard problems.[42]

Covenants and events of default reduce transaction costs and may lead the adjusting creditors to develop delegated monitoring and corporate governance activities. Debt instruments thus set the basis for accelerating ("exit") or reaching an out-of-court workout ("voice") upon the signals spotted by professional adjusting creditors. Lenders may step in if the management goes beyond the agreed-upon financial risk. Bargaining consists of threatening to accelerate the loan if management fails to meet creditors' demands (more voice). Negotiations may in turn lead to an out-of-court workout, where creditors may bargain with the petition. The threat is the forced sale of the debtor's assets to creditors that bankruptcy should permit in as much as unsecured creditors become the new residual claimants of the debtor's assets upon insolvency.

From an economic perspective, creditors may thus file a petition provided that bankruptcy's transaction costs do not outweigh this shift in the corporate governance of the firm. While recovery statistics and the time, cost, and bureaucracy of the proceeding are definitely important, creditors' ability to decide whether to propose a plan of reorganization or to prompt the sale of business assets is king in this economic decision. Otherwise creditors do not actually have incentives to file a petition. Nor will their bargaining threat be that credible. Differently put, creditors' standing to file for involuntary bankruptcy may be of little use in their bargaining to influence management in the vicinity of insolvency if the declaration does not entail a clear cut-off in the firm's corporate governance.

3.6 THE PUZZLE OF DIRECTORS' FIDUCIARY DUTIES AND LENDER LIABILITY

The contractual solution bypasses the agency problem by vesting a new constituency (professional adjusting creditors) with corporate voice. However, corporate law does not recognize a takeover in the corporate governance of the firm in distressed scenarios, which triggers lenders' risk of insider subordination or even liability. On the other hand, because insolvency encompasses a shift in the residual claimants, directors may be charged with a breach of their fiduciary duties by two different constituencies if financial distress is handled out-of-court. The question is whether or not insolvency should entail a shift in directors' fiduciary duties in order to protect creditors in the vicinity of insolvency (or when insolvency is handled out-of-court). The pervasive issue is whether or not unsecured creditors may sue directors for their actions in the vicinity of insolvency.[43]

This question was first raised in the United States following Chancellor Allen's famous footnote 55 in *Crédit Lyonnais.*[44] In rejecting shareholders' derivative lawsuit for breach of directors' fiduciary duties, the Court of Chancery contended that directors would not breach their fiduciary duties if they looked at creditors' interest *in the vicinity of insolvency.*[45]

41 See Triantis and Daniels (1995).

42 Bankruptcy may be the only way to manage corporate insolvency if creditors are for example so dispersed that the common action problem impedes an out-of-court workout.

43 See the United Nations Commission on International Trade Law (2013).

44 See Crédit Lyonnais Bank Netherland, N.V. v. Pathe Communications Corp., 1991 WL 277613 (Del. Ch. Dec. 30, 1991), pp. 1-31, at 25-26.

45 See also section 172.3 of the UK Companies Act of 2006. "The duty imposed by this section has effect subject to any enactment or rule of law requiring directors, in certain circumstances, to consider or act in the interests of creditors of the company".

What the opinion did not clarify, however, is that this assertion was not at all at odds with the business judgment rule,[46] as the Delaware Chancery Court eventually sustained.[47] The unintended consequence was the issue of directors' liability to creditors[48] for "deepening" a corporation's insolvency.[49] This case gave rise to disputes by creditors who filed direct actions[50] ultimately seeking to reach a "deep-pocket" as a last and desperate attempt to collect their claims.[51] In *Production Resources*[52] and *Trenwick America,*[53] the Chancery Court of Delaware further contended the shift of residual claimants' rights that occurs upon corporate insolvency, which was eventually confirmed by the Delaware Supreme Court in *NACEPF.*[54] However, this shift provides standing to file a corporate lawsuit,[55] but not to bring direct actions against the directors.[56] The court further concluded that *Crédit Lyonnais* had just aimed at providing a liability shield against stockholders' derivative lawsuits to directors that turned to creditors' interests in the vicinity of insolvency, rather than a sword for unsatisfied creditors.[57]

In actuality, this hardly meets creditors' needs and expectations because their preferred relief is generally individual (they are concerned about collecting their claims soon and first, especially as insolvency approaches).[58] Besides, squeezed-out unsecured creditors due to preferred payments might hardly try a direct lawsuit against directors for breach of their duty of loyalty.[59] In *Asmussen*[60] and *Pennsylvania Co.,*[61] the Chancery Court of Delaware held that preferred payments do not entail a breach of fiduciary duty, unless the creditor is a stockholder or a director.[62] In other words, unsecured creditors concerned about preferential payments cannot be protected by the "zone of insolvency" doctrine. Instead, they have standing and, indeed, should file a bankruptcy petition to protect their interest.[63]

In short, there is no "shift" in the director's fiduciary duties or in the firm's interest, which remains the same: directors must be loyal to the corporation and pursue the maximization of the corporate assets value. There is just a gradual "shift" in the identity of the residual

---

46 See *Gagliardi v. TriFoods Int'l, Inc.,* 683 A.2d 1049, 1052 (Del. Ch.1996).

47 See *Trenwick America Litigation Trust v. Ernst & Young, L.L.P.,* Del. Ch., 906 A.2d 168 (2006), pp. 168-218. The Chancery Court of Delaware rejected the existence of an independent cause of action for "deepening insolvency" and that the "zone of insolvency" could give rise *per se* to a new enhanced standard of judicial review. Chancellor Strine argues that "deepening insolvency" might be a criterion to determine damages caused to unsecured creditors in their condition of new residual claimants (with standing to file a derivative lawsuit).

48 Chancellor Strine sharply argued in *Production Resources,* however, that there would be little room for derivative claims if creditors, as expected, protected their interests contractually. See *Production Resources,* at 790.

49 Whilst Crédit Lyonnais rejected a stockholders' claim for breach of fiduciary duty (the shield), impaired creditors drew on this case to reach out to an additional "deep-pocket" (the sword).

50 *Acción individual de responsabilidad* under Spanish law.

51 See *Trenwick America* or *Production Resources Group L.L.C. v. NCT Group, Inc,* Del. Ch., 863 A.2d 772 (2004), pp. 772-883, and *North American Catholic Educational Programming Foundation, Inc. v. Rob Gheewalla, Gerry Cardinale and Jack Daly,* Del., 930 A.2d 92 (2007), pp. 92-103 ("NACEPF"). See also Veasey (2009).

52 See *Production Resources,* at pp. 790-791.

53 See *Trenwick America,* at pp. 194-195, footnote 75.

54 See *NACEPF,* at 101.

55 This is what the Delaware Supreme Court confirmed in *NACEPF* (see page 101). The "zone of insolvency doctrine" does not give rise, however, to a direct action.

56 This solution is similar to the one provided under article 240 of the Spanish Limited Liability Companies Act.

57 See *Production Resources,* at 788. See also Veasey (2009).

58 Moreover, most Delaware corporations include as a default rule the charter's exculpatory provision under §102(b)7 DGCL (or similar provision in other states), which shields directors' grossly negligent actions if they act with good faith.

59 The protection under §102(b)7 DGCL does not apply to the breach of the fiduciary duty of loyalty.

60 See *Asmussen v. Quaker City Corp.,* 156 A. 180 (Del. Ch.1931), pp. 180-183, holding that the directors of an insolvent corporation may prefer one creditor to another.

61 See *Pennsylvania Co. for Insurances on Lives and Granting Annuities v. South Broad St Theatre Co,* 174 A. 112, pp. 115-116 (Del. Ch.1934), pp. 112-117, carving out an exception of preferred payments made to insiders.

62 However, see the Spanish Supreme Court's order as of November 30, 2001 (RJ 2001, 9854).

63 In *Asmussen,* at 182, the Court of Chancery held that creditors should file a petition to protect them against preferential payments to other creditors. Whether or not the bankruptcy may be too "manager-friendly" is a different issue.

claimants as it approaches the "zone of insolvency". The U.S. deepening insolvency doctrine may be boiled down to the simple proposition that directors owe a fiduciary duty to the corporation, rather than to the shareholders or any other constituency.[64] In other words, until actual insolvency arises, directors owe fiduciary duties to the corporation and the shareholders act in their capacity as residual claimants and risk bearers. Corporate law provides shareholders with voting rights and standing to file a derivative lawsuit as their interest is aligned with the maximization of the corporation's value. The other voluntary stakeholders, especially adjusting creditors, are expected to decide rationally whether or not to engage with the firm and to protect their economic interests contractually, which should not give rise to lender liability concern associated to "shadow" or *de facto* direction if they step-in upon financial distress.

4. Analysis of the data and discussion

None of the interviewees was of the opinion that "common market practice" loans or workouts are fully enforceable under Spanish law. Banks' internal risk committees instruct their lawyers to draft tons of covenants and events of default. This is the "just in case" policy. It consists of including "everything", unless it actually harms the banks' interest. However, banks are thereafter extremely cautious to enforce their contractual rights. But for lack of payment or a few – sometimes doubtful – examples of reduction of the guarantees package, the interviewees said, professional adjusting creditors do not enforce covenants and the corresponding events of default to accelerate. There is furthermore a widespread perceived judicial threat of banks being held as "insiders". Bargaining is regarded suspiciously, particularly in the vicinity of insolvency. Lawyers endeavor to hide the exercise of influence over the debtor's management in the negotiations of an out-of-court workout.

Assuming that the internationalization of finance and restructuring law has caused loans and workouts to become "boilerplate" to a significant degree, this section is concerned with the unsettling practical consequences of the lack of awareness of the role of debt in corporate governance. It analyzes what might be two of the hottest issues in the Spanish restructuring arena: the risk of professional adjusting creditors being treated as insiders,[65] and the mere formal protection of unsecured creditors by Spanish insolvency law. Lack of express bargaining on enforcement may misbalance stakeholders' incentives. The Spanish "shadow" out-of-court restructuring arena may hardly provide a more efficient framework than bankruptcy to handle insolvency's collective action problem.

4.1 LACK OF ENFORCEMENT OF FINANCING CONTRACTS

4.1.1 The "exit option". Lack of enforcement of covenants and events of default

From the point of view of a Spanish practitioner, the role of debt in corporate governance may be striking, particularly in the vicinity of insolvency. Some of the interviewees were indirectly asked whether or not covenants and events of default might be aimed at influencing debtors' corporate governance. Whereas most of them answered negatively, especially in light of the insider subordination risk or even the lender liability judicial threat, one of them asserted that "these doctrinal theories are far away from the reality of Spanish law".

64 See Allen, Kraakman, and Subramanian (2012).

65 The factual consideration of "shadow" or even *"de facto* directors" might be partially grounded on the bargaining to monitor debtor's management under distressed scenarios. Insider consideration encompasses subordination, the loss of security interests. It might also be challenging if bankruptcy is held "guilty." See Professor Pulgar (2012a). In addition to being liable for damages and losing their claims, a "guilty" holding may trigger official or *de facto* directors' liability for the impaired claims for willfully or grossly negligently causing or deepening the debtor's insolvency. The classification phase opens upon liquidation or when the judicially approved composition agreement is considered "prejudicial" for creditors (discharge of more than a third of the claims or a stay of payment beyond three years under article 167 of the SBA). On a lesser level, third parties may also be judicially declared accomplices for willfully or grossly aiding and abetting negligently in causing or deepening debtor's insolvency (see articles 166 and 172 of the SBA). Accomplices lose their claims, must give back any payment received from debtor, and may be liable for damages (but not for the impaired claims).

The data shows that acceleration is almost unheard of in practice. True, lack of payment of principal or interests, as well as security interest issues are enforceable in merits of articles 1124 and 1129 of the Spanish Civil Code. However, banks do rarely enforce other kind of covenants and events of default. Some of the most experienced attorneys contended that acceleration for reasons other than non-payment is basically unheard of in Spanish practice. A former judge was not aware of any related case law. Three of the interviewees reported that they were only aware of an extremely isolated acceleration case following the increase of the ratio of loan-to-value. Actually, the event of default that had triggered acceleration was not the breach of the covenant (a predetermined loan-to-value ratio), but the debtor's unwillingness to grant further security interest to restore the ratio. This empirical evidence only confirms the "stare decisis" of the Spanish Supreme Court. It has stated, over and over again, that termination for breach (and thus acceleration) cannot depend on the sole discretion of one of the parties to the contract.[66]

4.1.2 The "voice option". The role of debt in the corporate governance of distressed firms

All in all, the low degree of enforcement of covenants and events of default should not be surprising. Enforcement of covenants (acceleration) through the corresponding events of default, either as breach or acceleration, is concerned with the so-called "exit option".[67] However, the interactive corporate governance theory indicates that the "exit option" may only work as a threat in practice,[68] regardless of the useful information that acceleration may provide to other constituencies of the firm.[69] To be sure, an event of default entitles creditors to accelerate, demand payment, and repossess collateral. However, this option has commercial costs, particularly when professional adjusting creditors have already developed monitoring abilities in specialized economic sectors. In addition, contract termination deprives adjusting creditors of the earnings of a smooth commercial relationship with the defaulting debtor.

Thus, banks and other nontraditional professional adjusting debt-holders[70] primarily include covenants and events of default to bargain with the threat of acceleration. This corporate governance tool enables adjusting creditors to align directors and management decision-making with their interest, and to keep them far from shareholders' incentives, which may diverge from the corporate interest as the debtor approaches the twilight zone (the zone of insolvency). Rather than accelerating, which is rarely followed by collection, adjusting creditors agree to negotiate with the goal of constraining management in exchange of restructuring their debt instruments. This is the so-called "voice option".

Importantly, creditor monitoring, while self-interested, has positive externalities that benefit the rest of stakeholders.[71] In the vicinity of insolvency, directors serving shareholders' interest exclusively may not be maximizing corporate value. Hence, monitoring activities exerted by professional adjusting creditors may effectively address managerial slack or exert influence toward an efficient management of the assets. This contributes to reduce agency costs in the case of atomized unsecured creditors. At least, it bypasses the distorted incentives of the shareholders who may want the directors to invest in high-risk projects at the expense of creditors, while putting at risk the interest of other constituencies. Where bargaining fails, acceleration still provides a valuable monitoring signal to the other

66 See, Spanish Supreme Court's orders of June 4, 2008 (RJ 2008, 3196), December 12, 2008 (RJ 2009, 152), December 16, 2009 (RJ 2010, 702), and February 17, 2011 (JUR 2011, 3316).

67 See Triantis and Daniels (1995), and Hirschman (1970).

68 See Gulati and Triantis (2007).

69 See Triantis and Daniels (1995).

70 See Baird and Rasmussen (2006).

71 The reason why creditors' monitoring activities may benefit other stakeholders, namely the rest of dispersed and unsecured creditors, is related to the role of delegated monitoring. See Gulati and Triantis (2007).

stakeholders. Yet, this eliminates the net positive externalities from banks' monitoring activities that may benefit other stakeholders, who, nonetheless, may analyze the acceleration signal and react against the slack.[72]

Well, the interviews indicate that adjusting creditors do not bargain that much in the vicinity of insolvency because they are concerned about the risk of insider subordination in subsequent bankruptcy. Moreover, a couple of interviewees noted that a considerable number of "boilerplate" covenants and events of default are unenforceable (and unhelpful in negotiations).

4.1.3 Boilerplate clauses and the "just in case everything" mandate

Lack of enforcement of covenants and events of defaults is puzzling in light of the large contracts that debt instruments constitute. As a result, these interviewees were asked why professional adjusting creditors' legal advisers do endeavor to include "unenforceable" covenants and events of default in debt instruments. The first reason is the "everything, just in case strategy". Some of the interviewees indicated that external counsels are indeed instructed to include "everything." Certain provisions are just included to keep track with previous transactions in order to avoid problems with banks' internal risk committees. Clients request, they explained, not to remove any of those clauses unless their inclusion might be detrimental to the bank for some reason, regardless of whether or not they are actually enforceable. Second, these clauses are maintained in the models just in case the law may change. Certain debt instruments, related to corporate or project finance, are expected to be in force for a long period of time. However, two of the interviewees who specialize in lenders' advice stressed that these clauses have actually become boilerplate. Hence, they said, one should get used to seeing unenforceable or even null provisions, such as *ipso facto* clauses following bankruptcy.[73] All in all, they contended, external counsels advice banks about the unenforceability of those clauses in their legal opinions.

Again, this absence of legal culture of the role of debt in corporate governance may deprive other constituencies from the economies associated to delegated creditor monitoring.

4.1.4 Legal threats akin to the risk of insider subordination

Adjusting creditors do not bargain with the "threat" of acceleration in Spain, particularly in the vicinity of insolvency. The vast majority of interviewees pointed out the risk (and banks' concern) of their treatment as shadow or *de facto* directors, with the associated hazards of insider subordination or even lender liability risk. The view was confirmed by the "in-house" head of restructuring of one of the Spanish largest banks.

Unless the covenant or event of default is perfectly and thoroughly connected to the contract's consideration, they say, the consequences of trying to influence management decision-making may be challenging. First and foremost, as insiders their claims may be subordinated.[74] This moreover deprives lenders from their security interests for the purposes of recovery under bankruptcy. To make things worse, bankruptcy's classification phase[75] might even trigger lender liability. In case of "guilty" bankruptcy, official or *de facto* directors willfully or grossly negligently *causing or deepening* debtor's insolvency may be liable for the impaired claims.[76] At a lower level of lender liability, creditors might also be judicially held to be *accomplices*[77] for willfully or grossly negligently aiding and abetting in causing or

72 See Triantis and Daniels (1995).
73 See article 61.3 of the SBA.
74 See articles 92.5 and 93.2 of the SBA.
75 See footnote 65.
76 See articles 163-175 of the SBA.
77 See article 166 of the SBA.

deepening debtor's insolvency. A complicity holding encompasses the impairment of any claims against the estate, the reimbursement of any "undue" collected amount, and liability for damages.[78]

Notably, the interviewees did not agree with the insider subordination or lender liability risk. They strongly disagreed with it. This makes sense. They nevertheless took it into account, they explained, in light of case law.[79] Moreover, one of the lawyers suggested that the Spanish Supreme Court is currently considering this issue of shadow or *de facto* administration. This lawyer noted rumors and even leaks aimed at banks so that they refrained from joining "steering committees"' during restructuring negotiations. Further, the in-house head of restructuring of one of the largest Spanish banks contended that express bargaining with the threat of enforceability of acceleration is not useful at all. It is rather challenging in light of current case law. For instance, the sale of a controlling shareholder's stake would not trigger the threat of acceleration provided that the debtor did not default in paying its obligations. Nor would the breach of a divestiture plan agreed in an out-of-court workout prompt bargaining with a bankruptcy petition if the debtor was paying punctually.[80]

All in all, a transactional attorney with expertise in advising banks argued that debtors are not indifferent following an event of default. While others, namely litigators, asserted that they do advise borrowers about the extent to which "they can live with events of default", this transactional attorney insisted that debtors do not leverage with the bargain of insider subordination or even lender liability. Borrowers do promptly request a waiver. This attorney furthermore stressed that debtors should either perform or ask for a waiver in order not to be deprived of credit in the future. Yet, this threat depends on whether or not the adjusting creditor is already held-up in its investment on the borrower. To clarify the point, none of the interviewees would feel comfortable with the appointment of a "chief restructuring officer" at the request of the banks. Similarly, creditors are urged not to get involved in the "intellectual authority" of a divestiture plan or even a business plan. Moreover, proceeds should flow directly from the debtor's bank account. Thus, irrevocable powers of attorney to sell a business unit or grant a security interest are examined extremely carefully.

4.1.5 Adjusting creditors do not use their privileged information

The pernicious consequences of missing delegated creditor monitoring rely of course on the assumption that lenders may be willing and definitely would be ready to engage in those governance activities. Quite the opposite, the data shows that banks' degree of carefulness and diligence varies during the commercial relationship. To be sure, the limited judicial culture and the subsequent risk of insider subordination or lender liability regarding acceleration or exercise of the "voice" option, is a hot issue, confirmed by the in-house head of restructuring and bankruptcy of one of the largest Spanish banks. Nonetheless, it turns out that lower level employees with insufficient legal background usually conduct servicing activities, which include creditor monitoring. Therefore, certain professional adjusting creditors, mainly banks, may be charged with a low degree of diligence in monitoring debtor's activity. This is probably more reprehensible than the "just in case" strategy. A lender's attorney who advises banks represented that he becomes aware of financial distress sometimes only upon debtors' request of a waiver. This means that professional adjusting creditors do not control as much as they could. In particular, they do not take advantage of the privileged information they have about borrowers until

78 See article 172 of the SBA.

79 Some of them referred to the order from the commercial court No. 1 of Málaga, of April 7, 2011 (JUR 2011, 329906).

80 One of the interviewees asserted that this breach may nevertheless give rise to either payment or default sooner or later (especially if creditors came up with the divesture plan), which may subsequently entitle creditors to accelerate.

financial distress actually arises. The degree of diligence increases again during the negotiation of a workout. Indeed, as with the initial agreement, the conclusion of an out-of-court workout needs the approval of the committee on internal risks.

In short, Spanish insolvency law does not incentivize professional adjusting creditors to bear corporate governance responsibilities and engage in delegated monitoring roles out-of-court. Instead of an *ex ante* insider subordination or even lender liability risk,[81] it may be more useful to analyze empirically whether appropriately incentivized adjusting creditors may effectively engage out-of-court[82] in delegated monitoring responsibilities to overcome insolvency out-of-court as an alternative to bankruptcy. This work should take account of professional adjusting creditors' incentives towards individual collection or even liquidation. This quantitative research work may not make a lot of sense though if banks do not enforce covenants and events of default in practice. The degree of diligence of banks is at issue. It is regrettable in any event that they do not take advantage of their privileged information.

4.2 THE ECONOMIC DILEMMA BETWEEN BANKRUPTCY AND OUT-OF-COURT WORKOUTS

The data confirms that bankruptcy's transaction costs have prompted economic agents to turn primarily to out-of-court workouts when it comes to dealing with financial distress. No stakeholder has good incentives to petition bankruptcy, where unsecured creditors are far from becoming materially the new residual claimants over the debtor's assets.

4.2.1 The role of bankruptcy in Spain

4.2.2 The choice between filing and handling insolvency "out-of-court"

Handling corporate insolvency out-of-court encompasses notable risks for both unsecured and professional adjusting creditors. First, the lack of legal culture on the role of debt in corporate governance brings about significant risks related to subordination and lender liability. Second, professional adjusting creditors out-of-court may squeeze the unsecured creditors out.[83] Bankruptcy is aimed at protecting unsecured creditors equally according to the absolute priority rule, while out-of-court mechanisms are the result of the negotiations between directors (the shareholders' formal fiduciaries) and the adjusting creditors, who rely upon their contractual bargaining power. As a result, the choice (in-court or out-of-court) may not be neutral for creditors. This is puzzling because the freeze-out and holdout[84] problems may outweigh the economic gains of handling insolvency out-of-court.

Indeed, under the SBA the suspension of the debtor's duty and the creditors' ability to file is only suspended for up to six months. In other words, an out-of-court workout is an alternative to bankruptcy provided that corporate insolvency is removed within six months. As some of the interviewees pointed out, the SBA contains a basic but important inconsistence. Whereas the reforms endeavor to promote out-of-court workouts as an efficient device to address pre-insolvency and, to certain extent, actual corporate insolvency, early petition is also provided with incentives. This may raise strategic behavior that benefits no stakeholder. Whereas adjusting creditors may bargain to impose discharges and/or

81 See Navarro (2011).

82 The goal would be to develop an econometric model aimed at identifying effective tools of creditor governance. The analysis of out-of-court workouts would allow to propose a binary LOGIT model ("1": bankruptcy; "0": success –so far). In addition to certain control independent variables, such as the industry or the amount of the deal, the model would permit analyzing the effects of covenants and events of default in preventing and overcoming corporate insolvency.

83 The debtor would not object to the reduction of its commercial debt provided that the suppliers are enough loyal to (or help-up with) the company. This is just another example of the shareholders' bad incentives in distressed scenarios.

84 Holding-out unsecured creditors may bargain as much as the debtor with the petition and the insider subordination risk.

stays of payments, unsecured non-financial creditors (or even the debtor) may develop greenmailing strategies with the petition after the six months suspension period elapses.

Three of the interviewees suggested, nevertheless, that according to their experience unsecured creditors were totally willing to collect their claims with a significant discount just to avoid bankruptcy. The large majority of the interviewees claimed indeed that Spanish law actually needs a "good copy" of the UK scheme of arrangement. A pre-insolvency proceeding or even an alternative to bankruptcy upon insolvency, with a reasonable degree of judicial overview,[85] would certainly eliminate much of these risks.

4.2.3 Who calls the shots in the Spanish bankruptcy proceeding?

Although the Spanish bankruptcy proceeding is "manager-friendly"[86] (as director keep their role as a default rule), both shareholders and directors escape from bankruptcy to the same extent as creditors do in actuality. Official or *de facto* directors may be held liable to the debtor's creditors for the impaired claims if bankruptcy is classified as guilty. Managers and directors may lose their jobs, while the debtor may end up losing the property of its assets. As per debtors' promoted compositions, the freedom of contract principle is moreover drastically reduced in bankruptcy. A composition cannot include discharges exceeding half of the claims or stays of payment beyond five years.[87] Moreover, discharges exceeding a third of the claims or stays of payment beyond three years will prompt the judge to open the classification phase.[88] In addition, there is no mechanism for a majority of privileged creditors to be able to cramdown a composition over dissenting privileged creditors, which makes undoable a plan of reorganization in special purposed vehicles where all the assets are encumbered.[89] Needless to say, workers do not have any incentive to file for bankruptcy, as they will most likely lose their jobs unless the assets are sold in liquidation as a going-concern business.[90] Until very recently, banks avoided bankruptcy to avoid reporting the corresponding losses in their balance sheets. Now, like any other creditor, they are just unwilling to spend time and money litigating or even waiting for the end of a proceeding that will last on average three years.[91] They may be also deterred by insider subordination and even lender liability considerations.[92]

To be sure, the fact that unsecured creditors *should* be the debtor's assets' new residual claimants it does not mean that they actually call the shots in bankruptcy. True, unsecured creditors are taken into account to validly hold a creditors' general meeting and to approve a proposal of composition.[93] Yet, the legal majority of 50 percent[94] may be distorted with agreements with secured creditors promoted by the debtor. Significantly, a creditor cannot petition liquidation or prompt the sale of business units. In fact, unsecured creditors rarely

85 The draft bill proposed by Professor Rojo included a pre-insolvency proceeding with a lesser degree of judicial overview. See Rojo (2003). Current scholarship insists, however, on the need to promote out-of-court workouts without judicial intervention. See Pulgar (2012b), who argues that judicial overview entails an undesirable degree of bureaucracy that has jeopardized the social impact of the new pre-insolvency proceedings of France and Italy.

86 Scholars have classified bankruptcy proceedings as "manager-displacing" or "manager-friendly" as a counterbalance to the degree of concentration of capital and debt. See Armour, Cheffins, and Skeel, Jr. (2002), who argue that "manager-friendly" bankruptcy proceedings would make sense in cases of dispersed creditors, whilst "manager-displacing" proceedings would be a useful tool of corporate governance in the presence of a high degree of creditor concentration.

87 See article 100 of the SBA. Yet, companies with "geographic economic relevance" may enjoy more room.

88 See footnote 65.

89 The Royal Decree-law 4/2014, of March 7, enables certain mechanisms that are not yet available in bankruptcy.

90 Except the sale of the business unit as a going-concern.

91 See Van Hemmen (2012).

92 In addition, banks' security interests may not survive the sale of a business unit according to a liquidation plan in accordance with the decisions of March 11, 2013, of the Court of Appeals of Barcelona (No. 36/2013), and July 23, 2013, of the Spanish Supreme Court (No. 491/2013). See articles 148 and 149 of the SBA.

93 See articles 116 and 124 of the SBA.

94 See article 124 of the SBA.

assume the control of debtor's assets in bankruptcy. First, bankruptcy may hardly prompt a "forced sale" of the debtor's assets to creditors in Spain. The petition does not trigger corporate debtor's dissolution, whose legal entity survives until liquidation. The only possibility consists of reaching a composition to sell the debtor's assets to a Newco (incorporated by the creditors) that assumes the claims in consideration for the business unit. This is the so-called *convenio de asunción,*[95] which is almost unheard of in practice. To make things worse, some scholars[96] contend that the debtor should consent to it (which is extremely unlikely), as otherwise it would consist of an expropriation. Second, creditors cannot petition liquidation.[97] The SBA's reform of 2011 just empowered the trustee to petition liquidation if the debtor's business activity is shut down.[98] Moreover, bankruptcy is judicially controlled as a matter of law, which makes it too bureaucratized. For example, the judge must proceed with the composition phase notwithstanding how unlikely it may be to reach a composition.[99] She must summon the creditors' general meeting as a default rule.[100] Further, the judge cannot order liquidation until she confirms that there is no composition proposal, or that no proposal has been accepted in the creditors' general meeting.[101] Quite the opposite, liquidation is the realm of the debtor, who can even leverage with the petition to attempt to avoid a forced sale through a *convenio de asunción* or whatever other sort of composition agreement proposed by creditors.[102] The rationale of the rule is that the debtor may undertake to manage the assets for the benefit of the creditors, or, according to the constitutional principle of freedom of enterprise,[103] to petition liquidation so that creditors are paid with the proceeds of the sale of the assets. Notably, a *convenio de asunción* does not impose a forced management of the assets in the interest of the creditors as a third party undertakes to run the business unit. What is important is that creditors should have the right to petition their "liquidation recovery" where they could prove that liquidation would entail a higher recovery than the proposed composition agreement. However, Spanish law does not provide for a best-interests test.[104] Quite the contrary, common wisdom still refers to the "sovereignty of the debtor" in deciding the solution to insolvency (an early sale of the business unit, a composition agreement, or liquidation).

Besides, the only proposals as per the sale of assets may come from the debtor or the official trustee.[105] This supposedly official representative of creditors supervises or steps in the role of the debtor's directors in making business decisions.[106] Not surprisingly, several of the interviewees asserted that bankruptcy does not attend at all to creditors' interests, despite that this is the SBA's formal goal. A lawyer who has been appointed as the official trustee in more than 150 bankruptcy proceedings confirmed this view. Asked about who

95 See article 100.2 of the SBA.
96 Significantly, see Pulgar (2007).
97 The creditors may only petition liquidation if the debtor becomes insolvent during the implementation of the composition (see article 142.2 of the SBA).
98 See article 142.3 of the SBA.
99 See article 111.1 of the SBA. The only way to avoid that delay is through the debtor's petition, which is highly unlikely. Sancho (2009) argues that the SBA is too naive in providing for the composition as the default solution in bankruptcy.
100 See article 111.2 of the SBA.
101 See article 143 of the SBA.
102 See article 128.3 of the SBA.
103 See article 38 of the Spanish Constitution.
104 The best-interests test allows each holder of a claim or interest in an impaired class to insist on receiving "property or value, as of the effective date of the plan, that is no less than that amount that such holder would so receive or retain if the debtor were liquidated" under Chapter 7 (see section 1129(a)(7) of Chapter 11 of the U.S. Bankruptcy Code).
105 Certain interviewees raised concerns about the qualification of the official trustees to deal with corporate insolvency.
106 As a default rule, voluntary bankruptcy proceedings give rise to the supervision regime, while non-voluntary proceedings lead to substitution (see articles 21 and 40 of the SBA).

prompted the sale of business units during the "common phase" (the so-called "Spanish 363 sales"), he replied that this was the trustee's business, who usually turns to the debtor's interest.[107] The in-house head of restructuring of one of the Spanish largest banks, in charge of supervising more than 2,000 bankruptcy proceedings, furthermore asserted that bankruptcy "feeds vulture bureaucrats at the expense of creditors". He furthermore criticized how businessmen suffered through bankruptcy and the loss of going-concern value following the petition. The sole exception raised by most of the interviewees was the new distressed M&A market prompted by the sale of the debtor's business units in liquidation. The corporate entity is dissolved and the directors are fired in liquidation. An effective procedure may enable a sale of the business unit that preserves its going-concern value and the workforce to some extent. The price is applied to pay the claims.

4.2.4 The stakeholders' runaway from bankruptcy. Empirical evidence about an economic decision rather than a cultural trait

Rather than being "manager-friendly" or "manager-displacing", the SBA is an overly procedural, bureaucratized, and judicially overseen proceeding. Unsecured creditors do not have in practice material voice to prompt a forced-sale of the assets or to petition liquidation in their purported capacity of new residual claimants. In a way, the legal certainty reactively pursued by the SBA has resulted in both the trustee and the bankruptcy judge acting as "agents" of the creditors' interests in bankruptcy.[108] In other words, the SBA only protects unsecured creditors formally to a great extent.[109] Rather than a last resort to solve a conflict of interest, bankruptcy is generally a poor solution for every stakeholder. No stakeholder is generally willing to file the petition in actuality (and thus the bargaining is not that credible).[110] The only exception consists of dissenting holding-out minor creditors without any likelihood of collection).[111] At most, debtors relying on support from the trustee or even certain judges could have certain incentives, which is absolutely at odds with the rationale of bankruptcy, and which confirms that the SBA's goal of protecting creditors may be at issue due to their limited material voice. Hence, no stakeholder has good incentives to file the petition.

Furthermore, bankruptcy challenges a going-concern business, as some of the interviewees suggested. Five of the interviewees asserted that *ipso facto* clauses are actually enforced in practice despite the formal prohibition under the SBA.[112] While the subordination threat[113] of third parties thwarting the effectiveness of an executory contract[114] is useful, they said, litigation and opportunity costs often prevent active opposition by the debtor or the official trustees. Bankruptcy is pernicious for the debtor's commercial relationships with credit providers, suppliers, administrative agencies, and clients. As a result, the brand value also declines. Thus, beyond a cultural bias against bankruptcy, which may still exist, there are economic reasons that account for a runaway from the use of the petition.

---

107 Because bankruptcy does not bring about the dissolution of the company, the shareholders maintain indeed a remote residual interest in the assets.

108 The consideration of unsecured creditors as residual claimants is unheard of under the SBA and rare in related legal scholarship. Instead of a committee of unsecured creditors, there is an official trustee supervised by the judge as per the vast majority of significant decisions, which raises concerns about the trustee's and the judges' economic training.

109 It is fair to say that individual creditors may file allegations in different phases of the bankruptcy proceeding.

110 Only 5.04 percent of the bankruptcy proceedings initiated in 2011 were non-voluntary *(i.e.* prompted by a creditor petition). See Van Hemmen (2012).

111 Only 2.4 percent of non-voluntary bankruptcy proceedings (7 out of 287) ended up with a judicially approved composition in 2011. Further, only 17 composition agreements followed a non-voluntary bankruptcy petition between 2006 and 2011. See Van Hemmen (2012).

112 Article 61.3 of the SBA bans clauses that allow third parties to terminate the contract just because of bankruptcy.

113 See article 92.7 of the SBA.

114 The administrative agencies enjoy a privileged regime that enables to terminate a contract under certain circumstances (see article 67 of the SBA). This deters debtors from filing for bankruptcy.

In short, the interviewees suggested hints that might confirm the conclusions drawn from the official statistics of bankruptcy proceedings in 2011. Every single stakeholder endeavors to escape from bankruptcy. Companies try to turn to an out-of-court workout ahead of filing the petition. Only a failure in the negotiations leads to bankruptcy, which explains the unsettling economic outcomes of insolvent companies upon petition's filing. In addition to the culture of the economically failed and socially defeated bankrupt debtor, which may still persist in Spain, the inconsistencies of the SBA (regardless of its good intentions) have confirmed Professor Rojo's warnings over time.[115] The concerns about past fraudulent experiences have turned bankruptcy into a too judicially overseen and perhaps inappropriate way of dealing with insolvency from the standpoint of the unsecured creditors' interest. If insolvency law is aimed at protecting unsecured creditors once they become (or should become) the residual claimants of the insolvent debtor's assets, then Spanish law still has significant room for improvement, as many scholars have already argued. The shift in the residual claimants' rights from shareholders to unsecured creditors is more theoretical than practical. While it seems doubtful in Spanish bankruptcy, it is totally ignored by corporate law when a going-concern company handles insolvency out-of-court.

4.2.5 The reform carried out by Royal Decree-law 4/2014, of March 7

Although the interviewees could not take it into consideration, the brand-new reform of the SBA seems to step in the debate about the identity of the residual claimants and the directors' fiduciary duties in the vicinity of insolvency. While the corporate governance structure in bankruptcy remains unchanged, the new regulation recognizes that shareholders do not have appropriate incentives when insolvency is addressed out-of-court. Under articles 165.4º, 172.2.1º, and 172 *bis* of the SBA, directors and shareholders who thwart a debt-for-equity swap agreed as a result of the conclusion of a bankruptcy-proof out-of-court workout[116] might be liable for the impaired claims where bankruptcy is classified as guilty. In addition, article 93.2.2º of the SBA sets forth that creditors leading the negotiation and conclusion of such a workout shall not be considered *de facto* directors just in view of the covenants and events of default imposed to the debtor as a result of the out-of-court workout. Any person arguing otherwise bears the burden of proof. However, these provisions do not apply to "unprotected" out-of-court workouts. Lastly, article 172 *bis* of the SBA eases the liability to the impaired claims by establishing a more demanding causation relationship.

5 Conclusions

The conclusion of this research is that the abundance of out-of-court workouts to handle corporate insolvency has little to do with a rational behavior grounded on the economics of transactions costs. Stakeholders do not make these contractual solutions over bankruptcy in a pursuit of efficiency. In fact, professional adjusting creditors rarely bargain explicitly with the enforcement of covenants and events of default out-of-court. This is arguably due to certain judicial threats of insider subordination or even lender liability, which shows a misunderstanding of the agency problem that underlies the corporate governance battle that distressed companies undergo. On the other hand, bankruptcy, which is still compulsory under Spanish law, does not trigger an actual shift in the corporate governance over the debtor's assets. As a result, neither bankruptcy nor the "shadow" out-of-court restructuring arena seems to provide stakeholders, particularly unsecured creditors, with an effective legal framework to manage corporate insolvency in order to preserve going-concern value.

Rather than sanctioning the "insider role" *ex ante* with a judicial threat, further empirical research may assess whether banks or other nontraditional professional adjusting creditors may develop

115 See Rojo (2003).

116 An independent expert must produce a report elaborating on the reasonableness of the debt-for-equity swap within the framework of the business plan that grounds the out-of-court workout.

effective delegated creditor monitoring responsibilities to overcome insolvency out-of-court, thereby avoiding bankruptcy's transaction costs. It remains unclear whether there may be a trade-off between handling insolvency out-of-court efficiently and the squeeze-out risk of certain minor unsecured creditors. So far, it is regrettable that professional adjusting creditors do not take advantage of their privileged information in a diligent manner. This casts doubt on whether they might be willing to engage in corporate responsibilities in exchange for avoiding the insider subordination risk. To be sure, this is an exploratory research work that does not attempt to ground any statistically significant conclusion. Based on the data gathered, however, creditor monitoring may be indeed the paradoxical missing lever of corporate governance in Spain. It seems that Spanish insolvency law only protects unsecured creditors formally.

REFERENCES

ADLER, B., D. BAIRD, and T. JACKSON (2007). *Bankruptcy. Cases, Problems, and Materials,* New York Foundation Press, fourth edition.

ALLEN, W., R. KRAAKMAN and G. SUBRAMANIAN (2012). *Commentaries and Cases on the Law of Business Organization,* Wolters Kluwer, fourth edition, p. 126.

ALONSO, C. (2011) "Derecho de Sociedades vs. Derecho Concursal. ¿Técnicas alternativas o complementarias de protección de los acreedores?", in C. Alonso, A. Alonso, and G. Esteban (dirs.), *La modernización del derecho de sociedades de capital en España (cuestiones pendientes de reforma),* Vol. II, Aranzadi, Cizur Menor, pp. 67-107.

ARMOUR, J., B. CHEFFINS, and D. SKEEL, JR. (2002). "Corporate Ownership and the Evolution of Bankruptcy Law: Lessons from the United Kingdom", 55 *Vanderbilt Law Review,* p. 1699.

BAIRD, D., and R. RASMUSSEN (2006). *Private Debt and the Missing Lever of Corporate Governance,* Chicago John M. Olin Law & Economics Working Paper No. 247.

BERLE, A., and G. MEANS (1932). *The Modern Corporation and Private Property.*

BREALEY, R., S. MYERS and A. MARCUS (2007). *Fundamentals of Corporate Finance,* McGraw-Hill.

FAMA, E., and M. JENSEN (1983). "Separation of Ownership and Control", *26 Journal of Law and Economics,* p. 301.

FAMA, E., and M. MILLER (1972). *The Theory of Finance.*

GILSON, R., and J. GORDON (2013). "The Agency Costs of Agency Capitalism: Activist Investors and the Revaluation of Governance Rights", forthcoming.

GILSON, S., and M. VETSUYPENS (1994). "Creditor Control in Financially Distressed Firms: Empirical Evidence", *72 Washington University Law Quarterly,* p. 1005.

GULATI, M., and G. TRIANTIS (2007). "Contracts Without Law: Sovereign Versus Corporate Debt", *75 University of Cincinnati Law Review.*

HANSMANN, H., and R. KRAAKMAN (2000). "The Essential Role of Organizational Law", *110 Yale Law Journal,* p. 387.

HANSMANN, H., R. KRAAKMAN, and R. SQUIRE (2006). "Law and the Rise of the Firm", *119 Harvard Law Review,* p. 1333.

HIRSCHMAN, A. (1970). *Exit, Voice and Loyalty: Responses to Decline in Firms, Organizations and States.*

JENSEN, M., and W. MECKLING (1976). "Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure", *3 Journal of Finance and Economics,* p. 305.

KRAAKMAN, R., J. ARMOUR, P. DAVIES, L. ENRIQUES, H. HANSMANN, G. HERTIG, K. HOPT, H. KANDA, and E. ROCK (2009). *The Anatomy of Corporate Law. A Comparative and Functional Approach,* Oxford University Press.

NAVARRO, M.ª (2011). "Los *covenants:* ¿sustitución del régimen del capital social o modificación del Derecho Concursal?", in C. Alonso, A. Alonso, and G. Esteban (dirs.), *La modernización del derecho de sociedades de capital en España (cuestiones pendientes de reforma),* Vol. II, Aranzadi, Cizur Menor, pp. 355-376.

NINI, G., D. SMITH and A. SUFI (2012). "Creditor Control Rights, Corporate Governance, and Firm Value", *The Review of Financial Studies,* 25 (6).

PULGAR, J. (2007). "Los convenios con asunción de pasivo en el marco de la transmisión concursal de la empresa", *Revista de Derecho Mercantil,* No. 266/2007.

— (2012a). *Preconcursalidad y Acuerdos de Refinanciación,* La Ley, Madrid.

— (2012b). "Reforma concursal, satisfacción de acreedores y reestructuración de empresas en crisis", *El Notario del Siglo XXI,* No. 41, January-February.

ROE, M. (1991). "A Political Theory of American Corporate Finance", 91 *Columbia Law Review.*

ROJO, Á., (2003). "La Reforma del Derecho Concursal Español", in Á. Rojo (dir.), *La Reforma de la Legislación Concursal,* Marcial Pons, Madrid.

SANCHO, I. (2009). "La Ley Concursal y su aplicación. Planteamiento general", in A. Fernández, J. A. Rodríguez, and R. Sebastián (dirs.), *La Ley Concursal y su aplicación*, Fundación de Estudios Financieros, paper 33, Madrid.

SCHWARZ, S. (1997). "The Easy Case for the Priority of Secured Claims in Bankruptcy", *47 Duke Law Journal.*

SCOTT, R. (1986). "A Relational Theory of Secured Financing", *86 Columbia Law Review.*

SCOTT, R., and G. TRIANTIS (2010). *Foundations of Commercial Law,* Foundation Press.

TRIANTIS, G., and A. CHOI (2013). "Market Conditions and Contract Design: Variations in Debt Covenants and Collateral", *New York University Law Review.*

TRIANTIS, G., and R. DANIELS (1995). "The Role of Debt in Interactive Corporate Governance", *83 University of California Law Review.*

TRIANTIS, G. (2000). "Financial Slack Policy and the Laws of Secured Transactions", *29 Journal of Legal Studies.*

— (1992). "Secured Debt Under Conditions of Imperfect Information", *21 Journal of Legal Studies.*

UNITED NATIONS COMMISSION OF INTERNATIONAL TRADE LAW (2013). "Report of Working Group V (Insolvency Law)", Forty-sixth session, Vienna, 8-26 July, pp. 9-12.

VAN HEMMEN, E. (2012). *Estadística concursal. Anuario 2011. El concurso de acreedores en cifras,* Colegio de Registradores de la Propiedad, Bienes Muebles y Mercantiles de España, San José.
VEASEY, N. (2009). "Counseling the Board of Directors of a Delaware Corporation in Distress", *135 American Bankruptcy Institute,* pp. 1-18.

ARTÍCULOS PUBLICADOS EN *ESTABILIDAD FINANCIERA*

Número 1 – septiembre 2001

Labor reciente del Comité de Basilea no relacionada con el capital,
Danièle Nouy

Las recomendaciones del Comité de Supervisión Bancaria de Basilea,
Raimundo Poveda Anadón

Introducción al Pilar 1 de Basilea II,
Fernando Vargas

El Proceso de Revisión Supervisora en las propuestas del Comité de Basilea,
Joaquín Gutiérrez García

Entidades de crédito: transparencia y disciplina de mercado,
Anselmo Díaz

El proceso de revisión de capital en la Unión Europea,
Cristina Iglesias-Sarria

Basilea II: efectos sobre la práctica supervisora,
José María Lamamié de Clairac y Francisco Gil Almansa

El coeficiente de solvencia de las entidades de crédito españolas,
Pilar Álvarez Canal

Capital regulatorio y capital económico: el efecto de la calidad crediticia y del ajuste por vencimiento,
Gregorio Moral, Carlos Corcóstegui y Raúl García

Modelos factoriales de riesgo de crédito: el modelo de Basilea II y sus implicaciones,
Carlos Trucharte Artigas y Antonio Marcelo Antuña

Número 2 – marzo 2002

Basilea 2: Desarrollos desde la publicación del papel consultivo de enero de 2001,
Cristina Iglesias-Sarria y Fernando Vargas

Capital regulatorio y capital económico: prociclicidad del Nuevo Acuerdo de Capital y análisis de escenarios de crisis,
Luis González Mosquera

Los determinantes del excedente de recursos propios de las entidades españolas,
Juan Ayuso, Daniel Pérez y Jesús Saurina

Dinámica temporal de diferentes definiciones de impago,
José Ramón Martínez Resano

Un sistema de clasificación (rating) de acreditados,
Carlos Trucharte Artigas y Antonio Marcelo Antuña

Tratamiento contable de los instrumentos financieros,
Anselmo Díaz

Supervisión del riesgo de liquidez,
Bernardo Orsikowsky

Riesgos en la compensación y liquidación transfronteriza de valores,
M.ª Nieves García-Santos

Número 3 – noviembre 2002

Indicadores adelantados de crisis y su papel en el análisis económico,
Santiago Fernández de Lis y Alicia García Herrero

Los derivados de crédito,
Jorge Pérez Ramírez

Incorporación de la tecnología de la información a la actividad bancaria en España: la banca por Internet,
Javier Delgado y María Jesús Nieto

Las pequeñas y medianas empresas en el sistema crediticio español y su tratamiento según Basilea II,
Jesús Saurina Salas y Carlos Trucharte Artigas

Estimación de la severidad de una cartera de préstamos hipotecarios,
Gregorio Moral Turiel y Raúl García Baena

Los sistemas de garantía de depósitos como promotores de la estabilidad financiera,
Luis Javier García Macarrón

Número 4 – mayo 2003

El marco general de la validación de procedimientos internos en Basilea II: el enfoque IRB,
Fernando Vargas

Ciclo económico y capital regulatorio: evidencia en un sistema de clasificación de acreditados,
Carlos Corcóstegui, Luis González Mosquera, Antonio Marcelo y Carlos Trucharte

Basilea II y la gestión de las entidades financieras: consideraciones estratégicas,
Manuel A. Méndez

La nueva regulación de los conglomerados financieros: cuestiones fundamentales,
José Manuel Gómez de Miguel

El gobierno de las empresas desde la perspectiva del análisis económico,
María Gutiérrez

Notas sobre la arquitectura de la regulación, supervisión y estabilidad financiera en Europa,
María Jesús Nieto y Juan M.ª Peñalosa

Número 5 – noviembre 2003

Algunas claves sobre la contabilidad europea: el nuevo proceso regulador y las nuevas normas,
Begoña Giner Inchausti

La contribución de los sistemas de pagos a la estabilidad financiera. El caso español,
Susana Núñez y María Luisa Leyva

Basilea II: tercer documento consultivo y últimos avances,
Linette Field

El estudio del impacto cuantitativo en España de la propuesta (CP3) de Nuevo Acuerdo de Capital de Basilea,
Cecilia Lozano

Basilea II: un análisis de los cambios en el enfoque IRB,
Jesús Saurina y Carlos Trucharte

Inversión en el sector financiero de los países emergentes: posibles riesgos y su gestión,
Sonsoles Gallego, Alicia García Herrero y Cristina Luna

El gobierno de la empresa bancaria desde la regulación,
Vicente Salas Fumás

De la función de riesgos: una aproximación a los riesgos del balance,
Juan Andrés Yanes y Jesús M. Tarriba Unger

Especialización crediticia y resultados en la banca europea,
Javier Delgado, Daniel Pérez y Vicente Salas

Número 6 – mayo 2004

Indicadores de estabilidad financiera (FSI). Origen, aspectos metodológicos y elaboración para las entidades de depósito españolas,
Cristina Luna

Las pruebas de estrés en los programas de evaluación del sistema financiero,
Roberto Blanco Escolar y Alicia García Herrero

Margen de intermediación de las entidades de depósito,
José Cebrián Carrasco

Implicaciones de Basilea II para América Latina,
Andrew Powell

Perspectivas de rentabilidad de la banca por Internet en Europa,
Javier Delgado, Ignacio Hernando y María Jesús Nieto

Análisis institucional y económico de la nueva Ley Concursal,
Esteban van Hemmen Almazor

Número 7 – noviembre 2004

El Nuevo Acuerdo de Capital «Basilea II» y su transposición europea: el proceso y la implementación,
Cristina Iglesias-Sarria y Fernando Vargas

Las Centrales de Riesgos: una herramienta para Basilea II,
Carlos Trucharte

Validación de enfoques IRB para el cálculo del capital mínimo por riesgo de crédito,
Gregorio Moral

Activos financieros en el exterior e indicadores de riesgo,
Raquel Lago y Jesús Saurina

Enfoque regulatorio en un mundo de riesgo no-cero,
Joseph Eyre

Capital regulatorio y capital económico: un análisis de sus determinantes,
Abel Elizalde y Rafael Repullo

Indicadores de riesgo a partir de los resultados contables de las empresas,
Sonia Ruano y Vicente Salas

Número 8 – mayo 2005

La perspectiva económica en las normas de información financiera,
Jorge Pérez Ramírez

El Banco de España y la vigilancia de los sistemas de pago,
Banco de España

Evolución en España de las tarjetas como medio de pago (1996-2004),
Departamento de Sistemas de Pago del Banco de España

XBRL, una herramienta para la transparencia y reducción de la carga informativa.
Los trabajos de la Asociación XBRL España,
Manuel Ortega

La evolución del sistema bancario español desde la perspectiva de los Fondos de Garantía de Depósitos,
Isidro Fainé Casas

Análisis de la dispersión de los tipos de interés de los préstamos y depósitos bancarios,
Alfredo Martín Oliver, Vicente Salas Fumás y Jesús Saurina

Prociclicidad, volatilidad financiera y Basilea II,
Emiliano González Mota

El tratamiento del riesgo operacional en Basilea II,
M.ª Ángeles Nieto Giménez-Montesinos

Número 9 – noviembre 2005

El FSAP, un instrumento para la estabilidad y el desarrollo,
Ignacio Garrido

Aspectos críticos en la implantación y validación de modelos internos de riesgo de crédito,
Raúl García Baena, Luis González Mosquera y María Oroz García

Las implicaciones de Solvencia II en el sector asegurador español,
Ricardo Lozano Aragüés

Cooperación en materia de supervisión en la Unión Europea y el papel del Comité de Supervisores Bancarios Europeos (CEBS),
Linette Field

Hedge funds y riesgo sistémico: una primera aproximación,
M.ª Nieves García Santos

Número 10 – mayo 2006

Ciclo crediticio, riesgo de crédito y regulación prudencial,
Gabriel Jiménez y Jesús Saurina

Un modelo de análisis del riesgo de crédito y su aplicación para realizar una prueba de estrés del sistema financiero mexicano,
Javier Márquez Díez-Canedo y Fabricio López-Gallo

Estimaciones de la EAD para contratos con límites de crédito explícito,
Gregorio Moral

La posición relativa de la banca española en el contexto europeo,
Luis Gutiérrez de Rozas

El gobierno corporativo de las entidades emisoras de valores cotizados en mercados oficiales. Un resumen del Informe Anual del ejercicio 2004,
Paulino García Suárez

Número 11 – noviembre 2006

Funciones y objetivos del Comité de Estabilidad Financiera (CESFI)
David Vegara

La responsabilidad de los administradores y directivos de las entidades de crédito
Jaime Herrero

Evaluación de las metodologías para medir el valor en riesgo
Clara I. González y Ricardo Gimeno

Medición efectiva del riesgo operacional
Santiago Carrillo Menéndez y Alberto Suárez

La aversión al riesgo en el mercado español de renta variable
Carlos L. Aparicio Roqueiro

Estructuras de titulización: características e implicaciones para el sistema financiero
Ramiro Losada López

Número 12 – mayo 2007

La supervisión financiera: situación actual y temas para debate
Gonzalo Gil y Julio Segura

MiFID: un nuevo marco de competencia para los mercados de valores
M.ª Nieves García Santos

Las tarjetas de pago ante el proyecto SEPA: algunas reflexiones
Sergio Gorjón Rivas

Un nuevo marco de seguro de depósitos para España
Pablo Campos, Miguel Yagüe e Iker Chinchetru

El proceso de acumulación de reservas de divisas: posibles riesgos para la estabilidad financiera internacional
Enrique Alberola Ila y Santiago Fernández de Lis

Determinantes microeconómicos de la morosidad de la deuda bancaria en las empresas no financieras españolas
Sonia Ruano Pardo

La especialización de las entidades de depósito en el crédito a las empresas no financieras
Javier Delgado

Número 13 – noviembre 2007

Algunas cuestiones relevantes en el proceso internacional de convergencia contable: IASB vs. FASB
Carlos José Rodríguez García y Alejandra Bernad Herrera

La evolución de las operaciones de Leveraged Buy Out y su financiación: posibles implicaciones para la estabilidad financiera
María-Cruz Manzano

El número de relaciones bancarias de empresas e individuos en España: 1984-2006
Gabriel Jiménez, Jesús Saurina y Robert Townsend

Dimensiones de la competencia en la industria bancaria de la Unión Europea
Santiago Carbó Valverde y Francisco Rodríguez Fernández

El proceso de apertura del sector bancario chino y el papel de la banca extranjera. Situación y perspectivas
Daniel Santabárbara García

La bancarización en Latinoamérica. Un desafío para los grupos bancarios españoles
José María Ruiz

Número 14 – mayo 2008

Regulación e innovación en la reciente crisis financiera
Jaime Caruana

The financial turmoil of 2007-?: a preliminary assessment and some policy considerations
Claudio Borio

Los déficits estructurales de liquidez y las tensiones en los mercados monetarios
Javier Alonso

Anatomy of a modern credit crisis
Ángel Ubide

La titulización de activos por parte de las entidades de crédito: el modelo español en el contexto internacional y su tratamiento desde el punto de vista de la regulación prudencial
Eva Catarineu y Daniel Pérez

Comparación histórica de episodios de turbulencias financieras globales
Pedro del Río

De los modelos de banca y la función de riesgos
Francisco Sánchez Ferrero y Juan Andrés Yanes Luciani

Understanding credit derivatives
Abel Elizalde and Alberto Gallo

Número 15 – noviembre 2008

El papel del modelo de «originar para distribuir» en la crisis financiera de 2007
José María Roldán

La banca española ante la actual crisis financiera
José Antonio Álvarez

La crisis de liquidez de 2007: hacia un nuevo modelo de industria financiera
Manuel González Cid

Algunas implicaciones de la crisis financiera sobre la banca minorista española
Santiago Fernández de Lis y Alfonso García Mora

La nueva circular sobre solvencia de las entidades de crédito: contenido e impactyo sobre la labor supervisora del Banco de España
Fernando Vargas y José María Lamamié

Estrategias de expansión de las entidades de depósito españolas. Una primera aproximación descriptiva
Javier Delgado, Jesús Saurina y Robert Townsend

Finanzas islámicas: desarrollo reciente y oportunidades
Alicia García-Herrero, Carola Moreno y Juan Solé

Número 16 – mayo 2009

Procyclicality and financial regulation
Charles Goodhart

El carácter procíclico del sistema financiero
Jordi Gual

El informe del grupo de alto nivel sobre supervisión financiera en la UE - «el informe Larosière»
Linette Field, Daniel Pérez y José Pérez

El impacto de la circular de solvencia en las entidades financieras
Enrique Martín Barragán y Ángel Berges

Las prácticas de gobierno corporativo de las entidades bancarias cotizadas en España 2004-2007. Análisis comparado con el Mercado Continuo
Rafael Crespí y Bartolomé Pascual

Formalismo judicial, control e incentivos en el concurso de acreedores
Estaban van Hemmen

Número 17 – noviembre 2009

Loan loss provisions in Spain. A working macroprudential tool
Jesús Saurina

Utilización de los sistemas IRB para el cálculo de provisiones anticíclicas
Juan Serrano

Can we enhance financial stability on a foundation of weak financial supervision?
John Palmer

Los instrumentos híbridos en los recursos propios de las entidades financieras: naturaleza y cambios tras la crisis financiera
José Manuel Marqués Sevillano y Alicia Sanchis Arellano

¿Qué queda de la agenda «Legislar mejor»?
Isabel Argimón

La estructura del mercado interbancario y del riesgo de contagio en Colombia
Dairo Estrada y Paola Morales

Número 18 – mayo 2010

Entidades financieras sistémicas: discusión de posibles medidas
Cristina Iglesias-Sarria y Fernando Vargas

Burden sharing for cross-border banks
Dirk Schoenmaker

Central bank independence and financial stability
Rosa M.ª Lastra

Las nuevas propuestas de Basilea en materia de riesgo de liquidez: de un enfoque cualitativo a un enfoque cuantitativo
Beatriz M.ª Domingo Ortuño

Crisis financiera, mecanismos de apoyo a las entidades de crédito en dificultades y derecho de la competencia
Francisco Uría

Número 19 – noviembre 2010

Las nuevas medidas de Basilea III en materia de capital
Elena Rodríguez de Codes Elorriaga

Impacto macroeconómico del reforzamiento de los requisitos de capital y liquidez
Ángel Gavilán

Nuevos requerimientos de información sobre el mercado hipotecario: un análisis del loan to value
Carlos Trucharte Artigas

Fair value accounting in banks and the recent financial crisis
Silviu Glavan

Dodd-Frank Wall Street Reform: un cambio profundo en el sistema financiero de Estados Unidos
Emiliano González Mota y José Manuel Marqués Sevillano

Hong Kong's international banking center: implications for Spain
Alicia García-Herrero

Número 20 – mayo 2011

Recargos de capital en carteras crediticias concentradas en un número reducido de acreditados
Juan Serrano y Antonio Peñaranda

Cooperative and savings banks in Europe: nature, challenges and perspectives
Rebeca Anguren Martín and José Manuel Marqués Sevillano

Cuantificación de los beneficios de la regulación prudencial
Isabel Argimón y Manuel Mertel

El comportamiento de los ratings crediticios a lo largo del ciclo
Mario Deprés Polo

Non-enhanced debt financing by euro area banks under severe financial stress
Luna Romo González and Adrian van Rixtel

Número 21 – noviembre 2011

El impacto de los nuevos estándares de liquidez desde el punto de vista de un banco central
Liliana Toledo

Living wills
Thomas F. Huertas and Rosa M. Lastra

Towards more consistent, albeit diverse, risk-weighted assets across banks
Mayte Ledo

Los ejercicios de estrés test: experiencia reciente y reflexiones sobre su futuro
Daniel Pérez y Carlos Trucharte

Tipos de referencia de las imposiciones a plazo fijo en los mercados interbancario y de deuda pública
Carlos Pérez Montes

Número 22 – mayo 2012

Comparing risk-weighted assets: the importance of supervisory validation processes
José María Arroyo, Ignacio Colomer, Raúl García-Baena and Luis González-Mosquera

An overview of the independent commission on banking reforms – motivations, measures and likely impact
Alejandra Kindelán and Nick Greenwood

FSB transparency initiatives
Gerald A. Edwards Jr.

Hacia mercados secundarios de titulización líquidos y eficientes
Óscar Arce, Anna Ispierto y Rosario Martín

Business models of international banks in the wake of the 2007-2009 global financial crisis
Manuel Merck, Adrian van Rixtel and Emiliano González Mota

Identificación y evolución de los ciclos de crédito en las economías avanzadas
Rebeca Anguren Martín

Número 23 – noviembre 2012

La resolución de activos bancarios a través de «bancos malos»
Juan Ayuso y Ana del Río

Las entidades financieras sistémicas: las medidas acordadas
Cristina Iglesias-Sarria y Fernando Vargas

El impuesto sobe transacciones financieras. Descripción de la propuesta de la Comisión Europea
Carmen Martínez Carrascal

Trade credit and credit crunches: Evidence for Spanish firms from the global banking crisis
Juan Carlos Molina Pérez

Número 24 – mayo 2013

Operationalising a macroprudential regime: goals, tools and open issues
David Aikman, Andrew G. Haldane and Sujit Kapadia

Banking Union
Thomas F. Huertas

Requerimientos prudenciales y ajustes valorativos por riesgo de contrapartida en derivados OTC: situación actual y perspectivas
Francisco Gil y Francisco Manzano

Covered bonds: the renaissance of an old acquaintance
Rebeca Anguren Martín, José Manuel Marqués Sevillano and Luna Romo González

Top-down stress tests as a macro-prudential tool: methodology and practical application
Carlos Pérez Montes and Carlos Trucharte Artigas

Financial integration and structural changes in Spanish banks during the pre-crisis period
Alfredo Martín-Oliver

Número 25 – noviembre 2013

Spanish dynamic provisions: main numerical features
Carlos Trucharte and Jesús Saurina

The impact of M&As on bank risk in Spain (1986-2007)
Santiago Carbó-Valverde, Jens Hagendorff and María J. Nieto

La transposición de Basilea III a la legislación europea
Jesús P. Ibáñez Sandoval y Beatriz Domingo Ortuño

Short-term debt, asset tangibility and the real effects of financial constraints in the Spanish crisis
Denisa Macková

Las entidades de seguros ante el nuevo entorno financiero
Clara Isabel González Martínez y José Manuel Marqués Sevillano

Número 26 – mayo 2014

Sentando las bases de la política macroprudencial: de las falencias pre-Lehman a los desafíos pos-Lehman
Augusto de la Torre y Alain Ize

Systemic risk, monetary and macroprudential policy
José-Luis Peydró

SEPA 2.0 – Avanzando en la integración europea: la Zona Única de Pagos en Euros (SEPA) en perspectiva
Sergio Gorjón Rivas y Ana Fernández Bedoya

Sovereign risk and financial stability
Christian Castro and Javier Mencía

Financial disintermediation in international markets and global banks funding models
José María Serena Garralda

A first approach to creditor monitoring, the paradoxical missing lever of corporate governance in Spain
Carlos Ara

ARTÍCULOS PUBLICADOS EN *NOTAS DE ESTABILIDAD FINANCIERA*

Número 1 – septiembre 2001	La provisión para insolvencias en las entidades de crédito. Presente, futuro y pasado *Rafael Prado*
Número 2 – noviembre 2002	Debida diligencia con la clientela de los bancos *Comité de Supervisión Bancaria de Basilea*
	Las Cuarenta Recomendaciones *Grupo de Acción Financiera sobre el Blanqueo de Capitales*
	Directrices globales para la prevención del blanqueo de capitales en actividades de banca privada *Grupo Wolfsberg*
	El sistema financiero y el blanqueo de capitales *Ignacio Palicio Díaz-Faes*
Número 3 – julio 2003	El modelo contable IASB. Análisis comparativo con la normativa de las entidades de crédito españolas *Jorge Pérez Ramírez*
	Comunicación de la Comisión al Consejo y al Parlamento Europeo. La estrategia de la UE en materia de información financiera: el camino a seguir
	Reglamento de aplicación de las IAS en la UE, de 19 de julio de 2002, relativo a la aplicación de Normas Internacionales de Contabilidad
	Mejora de la transparencia bancaria. Información pública e información supervisora para fomentar sistemas bancarios sólidos y seguros *Comité de Supervisión Bancaria de Basilea*
	Grupo de Trabajo Multidisciplinar para mejorar la Información Difundida
Número 4 – mayo 2006	Impacto de la Circular Contable 4/2004 sobre el balance y la cuenta de pérdidas y ganancias de las entidades de depósito españolas *Daniel Pérez*
Número 5 – diciembre 2006	El programa de evaluación del sector financiero del Fondo Monetario Internacional/Banco Mundial *Tomás J. T. Baliño*
	Preparación del FSAP en el Banco de España *Ignacio Garrido Sánchez*
	Evaluación del cumplimiento de los «Principios básicos para una supervisión bancaria efectiva» *Antonio Pancorbo de Rato*
	Transparencia en la supervisión bancaria española *Andrés García de la Riva*
	Evaluación del cumplimiento de estándares para sistemas de pago: principios básicos y transparencia de la vigilancia *Carlos Conesa Lareo*
	Análisis cuantitativo a través de las pruebas de resistencia *Roberto Blanco, Adolfo Rodríguez, Juan M. Ruiz y Carlos Trucharte*
	Normativa prudencial y estabilidad del sistema bancario español *Alfredo Martín Oliver y Jesús Saurina*
	Reflexiones finales sobre el Banco de España y el FSAP José Viñals

PUBLICACIONES DEL BANCO DE ESPAÑA

El Banco de España publica distintos tipos de documentos que proporcionan información sobre su actividad (informes económicos, información estadística, trabajos de investigación, etc.). La lista completa de las publicaciones del Banco de España se encuentra en su sitio web, en http://www.bde.es/webbde/Secciones/Publicaciones/Relacionados/Fic/cat_publ.pdf.

La mayor parte de estos documentos está disponible en formato pdf y se puede descargar gratuitamente en el sitio web del Banco de España, en http://www.bde.es/webbde/es/secciones/informes/. El resto puede solicitarse a publicaciones@bde.es.

SIGLAS, ABREVIATURAS Y SIGNOS UTILIZADOS

AAPP	Administraciones Públicas
AIAF	Asociación de Intermediarios de Activos Financieros
BCE	Banco Central Europeo
BCN	Bancos centrales nacionales
BE	Banco de España
BOE	Boletín Oficial del Estado
BPI	Banco de Pagos Internacionales
CBE	Circular del Banco de España
CCAA	Comunidades Autónomas
CCLL	Corporaciones Locales
CECA	Confederación Española de Cajas de Ahorros
CEM	Confederación Española de Mutualidades
CFEE	Cuentas Financieras de la Economía Española
CNAE	Clasificación Nacional de Actividades Económicas
CNE	Contabilidad Nacional de España
CNMV	Comisión Nacional del Mercado de Valores
CNTR	Contabilidad Nacional Trimestral de España
DEG	Derechos Especiales de Giro
DGSFP	Dirección General de Seguros y Fondos de Pensiones
DGT	Dirección General de Tráfico
DGTPF	Dirección General del Tesoro y Política Financiera
EC	Entidades de crédito
EFC	Establecimientos financieros de crédito
Eonia	Índice medio del tipo de interés del euro a un día *(Euro Overnight Index Average)*
Euríbor	Tipo de interés de oferta de los depósitos interbancarios en euros *(Euro Interbank Offered Rate)*
Eurostat	Oficina de Estadística de las Comunidades Europeas
EPA	Encuesta de población activa
FAAF	Fondo para la Adquisición de Activos Financieros
FFPP	Fondos de pensiones
FIAMM	Fondos de Inversión en activos del mercado monetario
FIM	Fondos de inversión mobiliaria
FMI	Fondo Monetario Internacional
FMM	Fondos del mercado monetario
FOGASA	Fondo de Garantía Salarial
FROB	Fondo de Reestructuración Ordenada Bancaria
IAPC	Índice armonizado de precios de consumo
ICO	Instituto de Crédito Oficial
IFM	Instituciones financieras monetarias
IGAE	Intervención General de la Administración del Estado
IIC	Instituciones de inversión colectiva
INE	Instituto Nacional de Estadística
INVERCO	Asociación de Instituciones de Inversión Colectiva y Fondos de Pensiones
IPC	Índice de precios de consumo
IPI	Índice de producción industrial
IPRI	Índice de precios industriales
IPSEBENE	Índice de precios de servicios y de bienes elaborados no energéticos
ISFLSH	Instituciones sin fines de lucro al servicio de los hogares
IVA	Impuesto sobre el valor añadido
NEDD	Normas especiales de distribución de datos del FMI
OBS	Obra benéfico-social
OCDE	Organización de Cooperación y Desarrollo Económicos
OIFM	Otras instituciones financieras monetarias
OM	Orden Ministerial
OOAA	Organismos Autónomos
OOAAPP	Otras Administraciones Públicas
OPEP	Organización de Países Exportadores de Petróleo
OSR	Otros sectores residentes
PDE	Protocolo de Déficit Excesivo
PEC	Pacto de Estabilidad y Crecimiento
PIB	Producto interior bruto
PIBpm	Producto interior bruto a precios de mercado
PNB	Producto nacional bruto
RD	Real Decreto
RM	Resto del mundo
SAREB	Sociedad de Gestión de Activos Procedentes de la Reestructuración Bancaria
SCLV	Sistema de Compensación y Liquidación de Valores
SEC	Sistema Europeo de Cuentas
SEPE	Servicio Público de Empleo Estatal
SICAV	Sociedad de Inversión de Capital Variable
SIFMI	Servicios de Intermediación Financiera Medidos Indirectamente
SME	Sistema Monetario Europeo
TAE	Tasa anual equivalente
TEDR	Tipo Efectivo Definición Restringida
UE	Unión Europea
UEM	Unión Económica y Monetaria
UE-15	Países componentes de la Unión Europea a 30.4.2004
UE-25	Países componentes de la Unión Europea desde 1.5.2004
UE-27	Países componentes de la Unión Europea desde 1.1.2007
VNA	Variación neta de activos
VNP	Variación neta de pasivos

SIGLAS DE PAÍSES Y MONEDAS

De acuerdo con la práctica de la UE, los países están ordenados según el orden alfabético de los idiomas nacionales.

BE	Bélgica	EUR (euro)
BG	Bulgaria	BGN (lev búlgaro)
CZ	República Checa	CZK (corona checa)
DK	Dinamarca	DKK (corona danesa)
DE	Alemania	EUR (euro)
EE	Estonia	EUR (euro)
IE	Irlanda	EUR (euro)
GR	Grecia	EUR (euro)
ES	España	EUR (euro)
FR	Francia	EUR (euro)
IT	Italia	EUR (euro)
CY	Chipre	EUR (euro)
LV	Letonia	LVL (lats letón)
LT	Lituania	LTL (litas lituano)
LU	Luxemburgo	EUR (euro)
HU	Hungría	HUF (forint húngaro)
MT	Malta	EUR (euro)
NL	Países Bajos	EUR (euro)
AT	Austria	EUR (euro)
PL	Polonia	PLN (zloty polaco)
PT	Portugal	EUR (euro)
RO	Rumanía	RON (nuevo leu rumano)
SI	Eslovenia	EUR (euro)
SK	Eslovaquia	EUR (euro)
FI	Finlandia	EUR (euro)
SE	Suecia	SEK (corona sueca)
UK	Reino Unido	GBP (libra esterlina)
JP	Japón	JPY (yen japonés)
US	Estados Unidos	USD (dólar estadounidense)

ABREVIATURAS Y SIGNOS

M1	Efectivo en manos del público + Depósitos a la vista.
M2	M1 + Depósitos disponibles con preaviso hasta tres meses + Depósitos a plazo hasta dos años.
M3	M2 + Cesiones temporales + Participaciones en fondos del mercado monetario e instrumentos del mercado monetario + Valores distintos de acciones emitidos hasta dos años.
m€/me	Millones de euros.
mm	Miles de millones.
A	Avance.
P	Puesta detrás de una fecha [ene (P)], indica que todas las cifras correspondientes son provisionales. Puesta detrás de una cifra, indica que únicamente esta es provisional.
SO	Serie original.
SD	Serie desestacionalizada.
T_j^i	Tasa de la media móvil de i términos, con j de desfase, convertida a tasa anual.
m_j	Tasa de crecimiento básico de período j.
M	Referido a datos anuales (1970 M) o trimestrales, indica que estos son medias de los datos mensuales del año o trimestre, y referido a series de datos mensuales, decenales o semanales, que estos son medias de los datos diarios de dichos períodos.
R	Referido a un año o mes (99 R), indica que existe una discontinuidad entre los datos de ese período y el siguiente.
...	Dato no disponible.
—	Cantidad igual a cero, inexistencia del fenómeno considerado o carencia de significado de una variación al expresarla en tasas de crecimiento.
0,0	Cantidad inferior a la mitad del último dígito indicado en la serie.