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# UNA PANORÁMICA DE LA UNIÓN BANCARIA

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La necesidad de complementar la unión monetaria con una mayor integración en la regulación, supervisión y resolución bancaria fue identificada mucho antes de la crisis financiera. Los acontecimientos habidos hasta mediados de 2012 facilitaron el consenso necesario para sentar las bases de lo que bien debe entenderse como la transformación más profunda en el ámbito financiero del área del euro desde el inicio de la moneda única: la unión bancaria. Una vez repasados estos antecedentes y acontecimientos, analizamos, desde una perspectiva normativa, el proyecto de unión bancaria para posteriormente detallar el conjunto de iniciativas, cambios regulatorios y de esquema institucional acordados y puestos en marcha. Concluimos con algunas consideraciones sobre distintos ámbitos a los que se deberá prestar especial atención en el futuro próximo: el uso del instrumento *bail-in,* la aplicación del principio de que ningún acreedor deberá quedar en peor posición en una resolución con respecto a una liquidación, la necesidad de cooperación entre instituciones, la problemática de los *backstops* y los esquemas de garantía de depósitos. Una unión bancaria como la diseñada probablemente no habría evitado una crisis como la experimentada, pero sin duda habría debilitado sustancialmente la espiral adversa entre bancos y soberanos, mantenido la confianza de los depositantes y atenuado las dificultades de financiación y liquidez observadas, disminuyendo así de forma muy notable sus costes.

## 1 Antecedentes de la unión bancaria

Desde el inicio del diseño de la Unión Económica y Monetaria (UEM) hasta la implementación del euro hubo un cierto consenso entre los economistas de que la moneda única nacía con un marco institucional y político con importantes limitaciones. Los denominados «criterios de Maastricht» contemplados en el Tratado trataban de alcanzar una cierta convergencia nominal previa al acceso de los Estados miembros a la moneda única, pero era común la idea de que probablemente estos no serían suficientes para asegurar un funcionamiento sin problemas de la unión monetaria.

Al consabido debate sobre la falta de una (cierta) política fiscal común, cuyos potenciales efectos negativos el Tratado intentó contener por la vía de la imposición de límites en los déficits públicos (el famoso 3 %), se unían aquellos que se interrogaban sobre un diseño que en el ámbito del sector bancario tenía la importante «novedad del abandono de la coincidencia entre el área de la jurisdicción de la política monetaria y el área de la jurisdicción de la supervisión bancaria. De la misma forma que no hay precedentes de ninguna moneda del tamaño del euro desconectada de los Estados, tampoco tenemos precedentes de la falta de coincidencia entre las dos funciones públicas de controlar la moneda y controlar los bancos» [Padoa-Schioppa (1999)][1].

Sin embargo, a pesar de todas estas deficiencias, la enorme magnitud del proyecto político puesto en marcha y el enorme capital, no solo político, invertido en el proceso, unidos a una situación macroeconómica relativamente favorable, ayudaron, afortunadamente, a que el euro fuera una realidad a principios de 1999.

Es más, en reconocimiento de que la falta de coincidencia entre la dimensión nacional de la supervisión de las entidades bancarias[2] y la dimensión del área del euro en lo que se

1 Véase también A. Belaisch *et al.* (2001) para una excelente panorámica de los retos a los que se enfrentaba el sistema bancario del área del euro a principios de la década, entre otros también en el ámbito de la supervisión.
2 Bancos, entidades bancarias o instituciones financieras son utilizados como sinónimos a lo largo de este artículo.

refiere a la política monetaria podría requerir cambios en un futuro, el propio Tratado contemplaba la posibilidad de que se pudieran transferir tareas de supervisión específicas al Banco Central Europeo (BCE). Para ello, se establecía un procedimiento simplificado que no requería un cambio del Tratado. Nada se decía, ciertamente, de la liquidación o resolución de bancos, pero parece evidente que cambios en el marco de la supervisión debieran ir acompañados también de cambios en la arquitectura de resolución de entidades en crisis.

A este contexto se añadía el compromiso del conjunto de los países de la Unión Europea (UE) —no solo de los del área del euro— de avanzar en la creación de un verdadero mercado único de servicios financieros. Así, el Plan de Acción de Servicios Financieros (PASF) de 1999 articulaba un conjunto muy ambicioso de iniciativas legislativas con el horizonte de 2005 en todos los ámbitos relacionados con la industria financiera, no solo la bancaria, iniciativas que fueron progresivamente implementadas.

De forma paralela, y como consecuencia del llamado *Informe Lamfalussy* [véase Lamfalussy (2000)], se modificó sustancialmente el procedimiento legislativo comunitario en el ámbito financiero a principios de 2001, reconociendo las particularidades del sector y la necesidad de acelerar la aprobación del marco regulatorio europeo para favorecer la integración financiera [véase, por ejemplo, Prodi (2002)]. Aunque tanto el PASF como el proceso de Lamfalussy implicaban a todos los Estados miembros de la UE y no solo a los del área del euro, sin duda la mayor velocidad de integración financiera de los países de la unión monetaria fue un acicate para alcanzar el compromiso necesario de los distintos países.

Incluso con los avances y particularidades mencionados, y como en otras tantas dimensiones del mercado único, se confiaba en un esquema general establecido por unas directivas comunitarias de mínimos que posteriormente eran incorporadas a las legislaciones nacionales, permitiendo alguna flexibilidad o excepciones en su trasposición.

En el ámbito de la regulación bancaria, en consecuencia, el marco institucional de la unión monetaria —mercado único más moneda única— previo a la crisis financiera era una construcción compuesta por dos bloques: competencia nacional y cooperación. En el ámbito de la competencia nacional, se aplica el principio de país de origen *(home country).* Es decir, los bancos tienen el derecho de operar en cualquier país del área usando su licencia única, bajo la supervisión y las reglas del país de origen; el llamado «pasaporte comunitario». Por lo que se refiere a la cooperación (entre supervisores), su necesidad fue reconocida desde el principio y contemplada en las directivas y en el *Informe Lamfalussy* dada la creciente importancia de la actividad transfronteriza, pero en ningún caso era de carácter obligatorio o vinculante ni tampoco se establecieron los esquemas institucionales adecuados, tampoco en el caso de los miembros del área del euro. No obstante, cabe reconocer que más que un fallo de diseño o una falsa ilusión de que la cooperación se articularía cuando fuera necesaria, lo que subyacía en este esquema era un lógico alineamiento entre los poderes y responsabilidades de las autoridades de supervisión y los de aquellas que, en caso de dificultades, cargarían con la responsabilidad de resolverlas —típicamente, los ministerios de Finanzas [véase García y Vegara (2009)]—.

Sobre la base de estos antecedentes, las páginas siguientes ofrecen una panorámica de los acontecimientos y decisiones que llevaron, desde el inicio de la crisis hasta finales de 2014, a sentar las bases de lo que bien debe entenderse como la transformación más profunda en el ámbito financiero del área del euro desde el inicio de la moneda única: la unión bancaria. Describimos en primer lugar (sección 2) los acontecimientos que finalmente llevaron en 2012 a los Gobiernos de los países del área del euro a tomar un conjunto de

medidas difícilmente imaginables antes de 2007: la creación de un mecanismo de apoyo financiero para los países del área del euro y el diseño, como consecuencia de las tensiones en los mercados, de una estrategia para la implementación de la unión bancaria. Previo a describir las medidas puestas en marcha, nos detenemos en la sección 3 a analizar, desde una perspectiva normativa, el proyecto de unión bancaria. La sección 4 resume el conjunto de iniciativas acordadas, los cambios regulatorios y el nuevo esquema institucional. Concluimos con un conjunto de consideraciones sobre distintos aspectos a los que se deberá prestar especial atención en el futuro próximo.

## 2 Crisis financiera, unión monetaria y la respuesta del área del euro

La crisis financiera cambió rápidamente la visión de que un esquema institucional basado en la competencia nacional y la cooperación podía responder adecuadamente a los efectos de la crisis. La literatura sobre sus causas y consecuencias es amplia, como lo es la referente a los altos costes que las crisis bancarias sistémicas suponen para las economías [véase, por ejemplo, L. Laeven y F. Valencia (2012)]. Cabe destacar aquí varios fenómenos o acontecimientos ocurridos a partir de 2007 y, en especial, a partir de mediados de 2012, que actuaron como catalizadores e influyeron de forma determinante en los desarrollos posteriores que llevaron a poner en marcha el proyecto de unión bancaria.

En primer lugar, cabe subrayar la relevancia del sector bancario en la financiación de la economía europea y en particular del área del euro, lo que lleva a un sector comparativamente mayor (con relación a Estados Unidos, por ejemplo) y, es más, de tamaño creciente hasta la crisis. Aproximadamente el 70 % de la financiación que reciben el conjunto de empresas y familias europeas es intermediado por el sector bancario, mientras que el 30 % restante lo es por los mercados de capitales. Estas cifras contrastan con las de la economía estadounidense, donde la situación es a la inversa: el 70 % de la financiación, vía mercados de capitales, y tan solo el 30 %, vía el sector bancario.

Los activos del sector bancario de la UE alcanzaron en 2013 el 334 % del PIB de la UE (274 % si no se incluyen las filiales de bancos no-UE), con una disminución con respecto a 2008 de alrededor del 10 %. Estos datos contrastan con los niveles de 192 % en Japón y 83 % en Estados Unidos. Esta importancia relativa es relevante porque el ciclo de crédito es uno de los conductores de los ciclos en las economías modernas, y existe evidencia de que el crecimiento del crédito bancario es más volátil que el crecimiento del *stock* de instrumentos de deuda de las empresas no financieras (financiación vía mercado de capitales).

Sin entrar a analizar las razones que hay detrás de estos datos [véase, por ejemplo, ESRB (2014)], estas cifras ponen de manifiesto que, dado su tamaño y relevancia en la intermediación financiera y en la financiación de la economía, lo que le ocurra al sector bancario es determinante para la economía europea. Un sector que, adicionalmente y dado este papel preponderante en la intermediación financiera, es tenedor de grandes carteras de deuda pública.

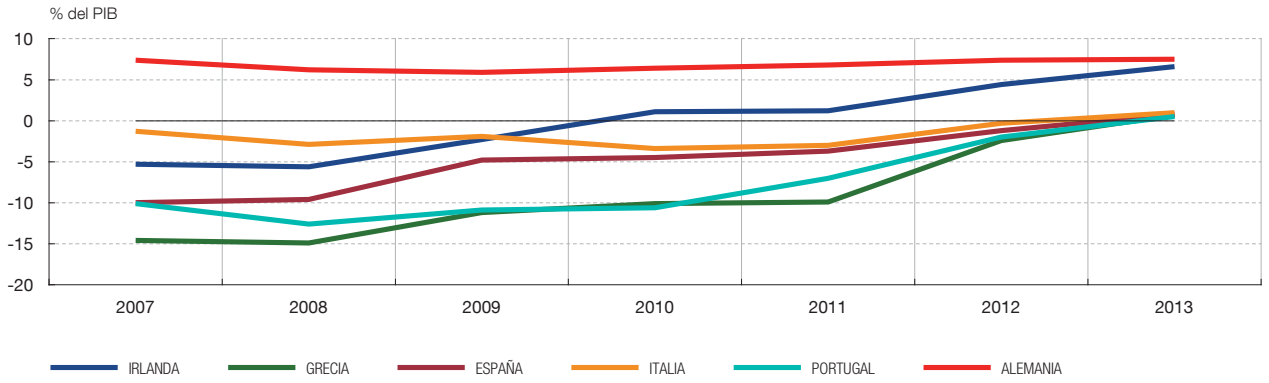
El sector bancario en la UE no es solo comparativamente grande, sino que ha crecido mucho en los últimos años. Así, mientras que en Estados Unidos el crédito bancario con relación al PIB se ha mantenido por debajo del 50 % desde principios de los años noventa, en la UE pasó de niveles cercanos al 75 % a superar el 100 % en 2008.

El segundo aspecto a destacar es que este crecimiento del sector bancario vino impulsado por el mercado único europeo y, en particular a partir del año 2000, por la moneda única, que eliminó el riesgo de tipo de cambio en las operaciones transfronterizas de los países del área del euro, impulsándolas de forma muy significativa. Este aumento de las operaciones

transfronterizas fue especialmente significativo en las operaciones entre entidades financieras (interbancarias), en un contexto en el que a la eliminación del riesgo cambiario se unió el comportamiento diferencial de las necesidades de financiación de la cuenta corriente de los distintos países del área del euro, con marcados déficits en la llamada «periferia» y abultados superávits en otros países.

DÉFICIT/SUPERÁVIT POR CUENTA CORRIENTE

GRÁFICO 1

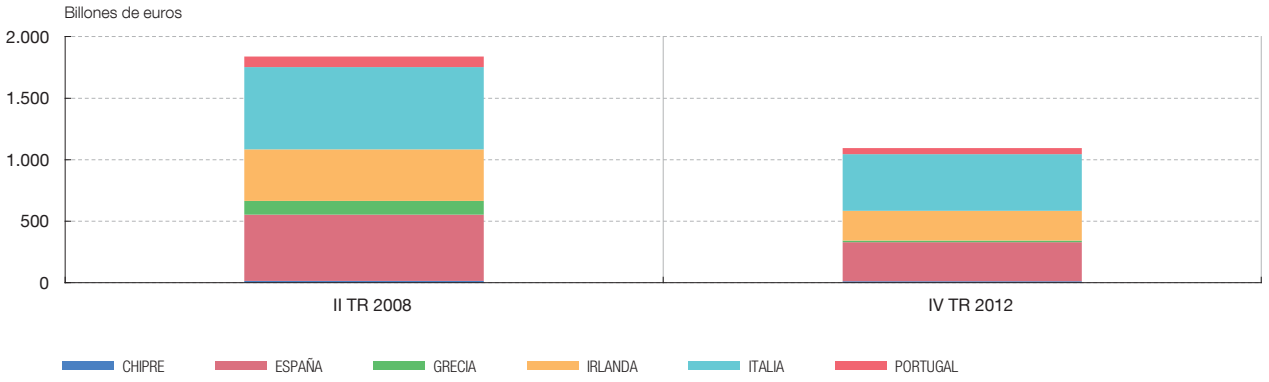



FUENTE: Eurostat.

Entre 2000 y 2008 la exposición transfronteriza intra-UE de los bancos de la UE se multiplicó por un factor superior a 2. En 2007, el 40 % del mercado interbancario reflejaba exposiciones a entidades financieras de otros países de la UE [véase M. Abascal *et al.* (2014)]. Estas exposiciones estaban especialmente concentradas en el área del euro y fueron paralelas, como es bien conocido, a una convergencia de los costes de financiación de las instituciones financieras y de remuneración de depósitos a lo largo de la geografía del euro, que se manifestó también en los rendimientos de los bonos públicos.

EXPOSICIÓN DE LOS BANCOS A DISTINTOS PAÍSES

GRÁFICO 2




FUENTES: Banco Internacional de Pagos (BIS). Bancos de Francia, Alemania, Reino Unido, Holanda, Bélgica, Estados Unidos y Japón. Datos en billones de euros.

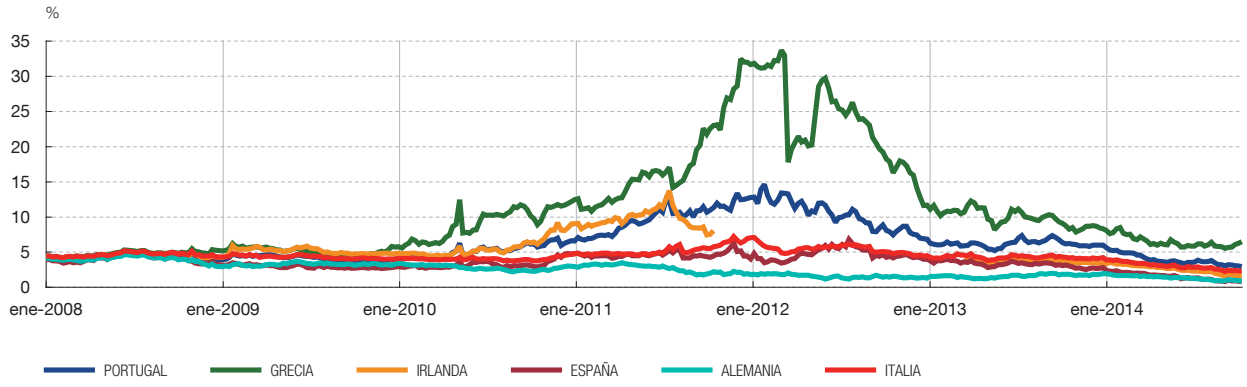
A partir de 2009, el aumento de la aversión al riesgo, consecuencia de las dificultades fiscales en algunos países y de las dudas sobre la situación de los sistemas financieros en otros, produjo una «renacionalización» de los mercados interbancarios y una paralización repentina de la financiación destinada hasta entonces a un conjunto de economías con elevados déficits por cuenta corriente, con efectos devastadores [véase P. Lane y G. M. Milesi-Ferretti (2010)]. Así, según datos del Banco de Pagos de Basilea (BIS), entre mediados de 2008 y finales de 2012, la exposición total de los bancos franceses, alemanes, holandeses,

de Estados Unidos y del Reino Unido en Portugal, Irlanda, Grecia, España, Chipre e Italia pasó de 1.840 billones de euros a 1.095 billones, un descenso del 40 % por un importe equivalente al 25 % del PIB agregado (en 2012) de estos últimos países. En Francia, Alemania y Holanda, mientras que los activos totales del sistema bancario en el período disminuyeron una media del 9 %, el descenso en la exposición a los países referidos fue del 48 %. La «renacionalización» de los mercados interbancarios y la paralización repentina de la financiación *(sudden-stop)* de un conjunto de economías con elevados déficits por cuenta corriente supusieron una crisis de balanza de pagos en toda regla. Un *sudden-stop* con la particularidad de que se producía en el marco de una unión monetaria.

El tercer fenómeno a destacar, relacionado con los anteriores, fue la aparición de lo que se ha denominado «circulo vicioso» o «espiral adversa» entre los riesgos soberanos y los riesgos bancarios. Dicho fenómeno se produce cuando países con posiciones fiscales débiles ven deteriorar adicionalmente su posición por las dificultades de sus bancos y las expectativas de que finalmente debieran salir en su rescate. Al mismo tiempo, la debilidad fiscal del soberano afecta a las perspectivas de los bancos, al ser estos, importantes inversores en deuda pública de sus respectivos países[3].

RENTABILIDAD DE LOS BONOS PÚBLICOS A DIEZ AÑOS

GRÁFICO 3




FUENTE: Bloomberg.

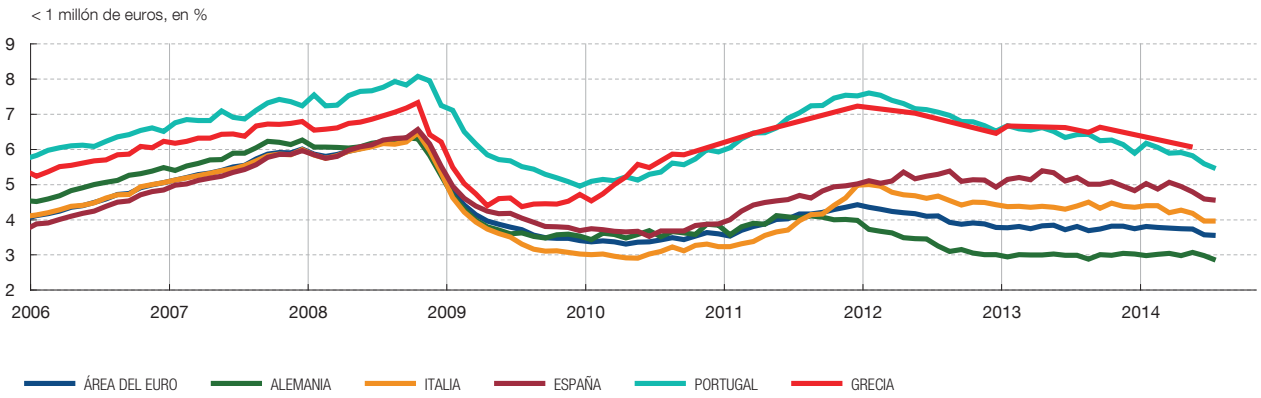
En definitiva, la crisis produjo un fenómeno de desintegración en una multiplicidad de mercados financieros: deuda pública, interbancario, deuda privada… Ello afectó gravemente al mecanismo de transmisión de la política monetaria y rompió el principio de que empresas y familias deberían enfrentarse a un tipo de interés único para toda el área del euro, con diferenciales sobre él que solo deberían reflejar el riesgo de crédito idiosincrático [véase Banco Central Europeo (2014), Comisión Europea (2014) o Sicilia *et al.* (2013)]. La facilidad de acceso al crédito de instituciones financieras, empresas y familias, así como su coste, pasaron a estar determinados en gran medida por el país de residencia.

La respuesta a la crisis por parte del conjunto de los países del área del euro fue de amplio alcance, abarcando tanto aspectos regulatorios y de supervisión como cambios institucionales y relativos a la creación de mecanismos de gestión de crisis y provisión de asistencia financiera a los países del área del euro.

Ya en 2009, el llamado *Informe De Larosière* sobre la supervisión financiera en la UE [véase De Larosière (2009)] identificaba una serie de recomendaciones para la mejora de la regulación

3 A. Alter e Y. Schüler (2012), por ejemplo, proporcionan evidencia de la interdependencia entre los riesgos soberanos y los riesgos de crédito bancario durante la crisis.

TIPO DE INTERÉS DE LOS PRÉSTAMOS A EMPRESAS NO FINANCIERAS GRÁFICO 4




FUENTE: BCE.

y la supervisión en todos los ámbitos de la industria financiera, no solo bancaria. Conscientes de la todavía fuerte oposición a cambios fundamentales en el reparto de los poderes y las responsabilidades en los Estados miembros, los expertos identificaban la necesidad de incrementar la colaboración y la homogenización de normas a nivel de la UE de forma significativa. Entre muchas otras propuestas, adoptadas poco después, se recomendaba el reforzamiento del papel de los comités de supervisores[4] para que tuvieran capacidad de coordinación y mediación entre supervisores, y el establecimiento del Consejo Europeo de Riesgo Sistémico *(European Systemic Risk Board,* ESRB) con responsabilidades en el área macroprudencial. Estos pasos constituirían la base del actual sistema europeo de supervisores financieros a nivel de la UE, que agrupa el ESRB y los tres supervisores sectoriales: EBA, EIOPA y ESMA.

Posteriormente, en 2010, el primer programa de ajuste macroeconómico, en Grecia, fue estructurado con una mayoría de recursos provenientes de préstamos bilaterales de los países del área del euro y la participación del Fondo Monetario Internacional (FMI). Ese mismo año se creó el Fondo Europeo de Estabilidad Financiera (FEEF), con el objetivo de salvaguardar la estabilidad financiera del área del euro proveyendo asistencia financiera a sus Estados miembros, con una capacidad de hasta 440.000 millones de euros.

El FEEF fue creado como una institución transitoria, pero en octubre de 2010 los países del euro decidieron crear el Mecanismo Europeo de Estabilidad (MEDE), una institución permanente que comenzó a operar en octubre de 2012 [véase Regling (2013)]. Ambos mecanismos han desembolsado hasta octubre de 2014 algo más de 230.000 millones de euros en financiación a largo plazo y a tipos de interés favorables a cinco países: Grecia, Irlanda, Portugal, España y Chipre.

Los mecanismos de resolución de crisis (MEDE y FEEF) complementaron las medidas tomadas por el BCE: provisión de liquidez a largo plazo y descenso de los tipos de interés oficiales, entre otras. Pero el punto álgido de la crisis fue a mediados de 2012, cuando las tensiones y la desconfianza de los inversores provocaron problemas generalizados en los mercados de deuda pública y de financiación bancaria que socavaron la confianza en el mismo futuro del euro. La respuesta vino, por un lado, por el contundente mensaje del

4 Los llamados tres comités de nivel tres de Lamfalussy fueron los antecesores de las actuales autoridades que agrupan a los supervisores a nivel de la UE: EBA, EIOPA y ESMA.

presidente del BCE en relación con la predisposición del banco central a tomar las medidas que fueran necesarias para preservar el euro *(whatever it takes)* y el anuncio posterior de la posibilidad de las *Outright Monetary Transactions* (OMT), o compras en los mercados secundarios de deuda soberana en el marco de un programa de ajuste macroeconómico con condicionalidad. Por otro lado, a finales de 2012, por el conocido como *Informe de los cuatro presidentes* [véase Van Rompuy (2012)], que, a iniciativa del Consejo Europeo que había tenido lugar a mediados de año, sentaba la hoja de ruta para la creación de una unión bancaria y para una mayor coordinación de las políticas fiscales de los Estados miembros.

Antes de analizar el conjunto de iniciativas acordadas y posteriormente implementadas en el *Informe de los cuatro presidentes,* es preciso detenernos en las razones por las que una unión bancaria se consideró en ese momento como el siguiente paso necesario para consolidar la unión monetaria.

## 3 Por qué una unión bancaria

El origen financiero de la crisis impulsó desde el primer momento cambios muy importantes en el panorama regulatorio y de supervisión del sistema bancario en el conjunto de los países desarrollados, y en la UE en particular. Ya a finales de 2008 el llamado Grupo de los Veinte (G-20) acordó impulsar un conjunto de iniciativas para abordar las principales debilidades identificadas. Tres eran los objetivos declarados de las reformas propuestas. En primer lugar, reducir la probabilidad de quiebra de las instituciones financieras aumentando sus requerimientos de solvencia (mayor capital y de mejor calidad) y liquidez y mejorando la supervisión. En segundo lugar, reducir los costes públicos cuando un banco quiebra y aumentar los costes soportados por los inversores privados, dado el elevado coste que la crisis estaba suponiendo para las arcas públicas en muchos países. En este campo, las iniciativas tenían como objetivo mejores marcos de resolución bancaria, dotando de poderes extraordinarios a las autoridades dadas las dificultades observadas en la utilización de los procedimientos de liquidación habituales en el caso de entidades financieras y reduciendo (cuando no excluyendo formalmente) la posibilidad de apelar al sector público por la vía de hacer recaer las posibles pérdidas en los inversores privados. Finalmente, se buscaba mejorar la estabilidad financiera reduciendo la complejidad de las instituciones.

Sobre la base de los objetivos anteriores, y en el contexto de la UEM, desde un enfoque normativo, la unión bancaria puede entenderse como un marco regulatorio, de supervisión y de resolución, común en toda el área del euro. Este esquema estaría apoyado por un sistema de garantía de depósitos también común y, al final, por un mecanismo de respaldo financiero que pudiera ser utilizado si fuera necesario.

La unión bancaria «plena» supondría, por tanto, un armazón que incluiría, por un lado, aspectos regulatorios, de supervisión, de resolución de entidades, de protección de los depositantes y de mecanismos de respaldo y, por otro, modificaciones fundamentales en el marco institucional a nivel del área del euro, al ser necesarias autoridades comunes en cada una de esas dimensiones. Un verdadero mercado único bancario en todas sus dimensiones, consecuencia de la necesidad de afrontar lo que Schoenmaker (2013) ha venido a proponer como el trilema financiero en el ámbito bancario: los países no pueden disfrutar simultáneamente de la estabilidad financiera, la integración financiera a través de sus fronteras, y la autonomía nacional en materia de política financiera.

La unión bancaria tendría fundamentalmente dos objetivos: romper la conexión entre el riesgo bancario y el riesgo soberano, y alinear los incentivos de las autoridades involucradas en la supervisión y en la gestión de entidades en crisis. Por la vía de constituir un

supervisor y una autoridad de resolución únicos, esta última convenientemente respaldada por un mecanismo financiero que dotara de credibilidad al esquema, la unión bancaria permitiría eliminar la conexión entre el riesgo bancario y el riesgo soberano. Limitaría los posibles efectos de la quiebra de una entidad sobre las cuentas públicas por la vía de obligar a los acreedores del banco a absorber pérdidas y de establecer un mecanismo de resolución creíble que pudiera hacer frente a los costes, evitando así apelar finalmente al presupuesto público del país en el que reside el banco que experimenta dificultades. Ello permitiría, además, asegurar el adecuado funcionamiento del mecanismo de transmisión de la política monetaria (o al menos contribuir a ello positivamente): rompería el vínculo entre entidad financiera y «país de origen» y disminuiría la fragmentación financiera, al facilitar la vuelta a un tipo de interés único para toda el área del euro.

En segundo lugar, la unión bancaria permitiría alinear los incentivos de las autoridades de supervisión y resolución con la realidad transfronteriza de las entidades financieras. En presencia de libertad de movimientos de capital y de importante actividad transfronteriza, las autoridades de supervisión o resolución nacionales pueden tener cierta tendencia a no considerar convenientemente las implicaciones de sus decisiones más allá de sus fronteras (los potenciales efectos desbordamiento o *spillovers)*. Ello puede producir resultados subóptimos o incluso indeseados, especialmente en momentos de crisis (recuérdense los casos Fortis y Dexia; véase, por ejemplo, Goyal *et al.* (2013)]. No se trata tanto de una cuestión de falta de una adecuada consideración de las potenciales externalidades negativas de ciertas decisiones, sino de aceptar que las limitaciones incorporadas a las legislaciones nacionales suelen tener, lógicamente, un enfoque nacional: las autoridades nacionales tienen como principal obligación resolver problemas nacionales, y no cabe subestimar la complejidad de incorporar externalidades y *spillovers* a otros países en los mandatos legales. La incorporación de dicho mandato a una autoridad central facilitaría, por ejemplo, una resolución más eficiente de entidades con una significativa actividad transfronteriza.

La regulación en la unión bancaria sentaría por tanto las reglas comunes que deben cumplir los bancos y el marco en el que los supervisores deben supervisar, sin margen para especificidades o interpretaciones nacionales. Un marco de resolución común establecería las reglas que permitirían resolver una entidad en dificultades, con un tratamiento equivalente de los costes asumidos por los inversores independientemente del país de origen de la entidad y la clarificación —para los inversores— de los métodos y procedimientos de resolución.

Si partimos de la consideración de que los poderes y las responsabilidades deben estar alineados, parece lógico que, si la regulación, la supervisión y los instrumentos que se van a utilizar en la resolución son comunes (los «poderes»), este cuerpo central también debería ser responsable final de las decisiones tomadas en el ejercicio de sus responsabilidades. Entramos de lleno entonces en el debate de la cobertura de los potenciales costes que se han de afrontar como consecuencia de la quiebra o caída de una entidad financiera.

En un sistema con presencia de fondos de garantía de depósitos (FGD), la resolución de entidades financieras en crisis lógicamente debe preservar en todo momento a los depositantes minoristas. Este es el caso de la Corporación Federal de Seguro de Depósitos estadounidense (US Federal Insurance Deposit Corporation, FDIC). En Estados Unidos, los potenciales costes de una resolución, así como el aseguramiento de los depósitos minoristas, recaen en la FDIC. Esta combina simultáneamente funciones de un fondo de resolución y funciones de un fondo de garantía de depósitos, y es financiada por la industria bancaria por la vía de las aportaciones anuales.

Incluso si el volumen de recursos acumulados en el fondo de garantía de depósitos y en el fondo de resolución es elevado, nada asegura que dicho importe será suficiente para cubrir los costes de resolución, particularmente en una crisis que afecte a diversas entidades de forma simultánea. Y ello incluso teniendo en cuenta las pérdidas que deberían soportar los acreedores bancarios. Algunos pasivos pueden estar simplemente exentos de contribuir a las pérdidas (por ejemplo, las cédulas hipotecarias o los *covered bonds,* respaldados por un determinado conjunto de activos del banco). Podría ser también el caso de que los depósitos minoristas sean ampliamente mayoritarios en el pasivo del banco. También podría ocurrir que las autoridades consideraran que la participación de ciertos inversores en las pérdidas de la entidad podría tener más costes que beneficios desde la perspectiva de la estabilidad financiera (por ejemplo, por la interconexión de la entidad en dificultades con otros bancos, que podría aumentar exponencialmente los costes agregados de resolver el problema).

Incluso en el caso, sin duda preferible, de articularse un mecanismo que permita apelar al resto de la industria bancaria para recuperar los costes incurridos en una determinada resolución, es decir, un mecanismo neutral desde el punto de vista fiscal, el candidato obvio para cubrir estos costes —aunque sea de forma transitoria— es el sector público si lo que está en riesgo es la estabilidad financiera.

Sin duda, el debate sobre el modo y la conveniencia de articular un sistema de respaldo financiero «de último recurso» *(backstop)* que pudiera utilizar recursos públicos es un debate complejo y en absoluto reciente, y no nos extenderemos en él. Un mecanismo de resolución efectivo requiere algún tipo de mecanismo de respaldo público [véase Obstfeld (2013) y Shoenmaker (2013)]. Este debería ser fiscalmente neutro para limitar los efectos del riesgo moral y de uso de recursos públicos, y así recuperar los costes incurridos de las aportaciones del conjunto de la industria bancaria en el futuro.

Un esquema de resolución que no prevea una salida a situaciones excepcionales no es un esquema creíble y, en consecuencia, bien podría amplificar los problemas a lo largo y ancho de todo el sistema bancario en tiempos de estrés. Por ello, la implementación de un esquema de resolución no elimina la necesidad de un *backstop.* Y no la elimina porque los recursos disponibles en los fondos de garantía de depósitos o en los fondos de resolución y la magnitud de las necesidades son, por definición, desconocidos de antemano.

Lo anterior nos lleva a concluir que, al final, la credibilidad del sistema de resolución y gestión de entidades en crisis depende de la credibilidad del instrumento de *bail-in,* pero también de la credibilidad del mecanismo último de respaldo o *backstop.* La fortaleza final del sistema bancario será entonces juzgada sobre la base de la fortaleza del sector público al final de la cadena, lo cual, en el contexto del debate sobre la unión bancaria, nos devuelve a la relación entre Gobiernos y bancos si finalmente el mecanismo último de respaldo es el soberano del país: volvemos al círculo vicioso. Lo que, además, nos llevaría de nuevo a una desconexión entre poderes y responsabilidades finales, puesto que los costes podrían ser finalmente soportados por el fisco del país cuando una parte muy importante de los poderes habría sido transferida a las autoridades comunes.

Como comenta Obstfeld (2013) al referirse a la posibilidad de un régimen global para bancos que alcanzan un tamaño tal que rescatarlos desbordaría las capacidades fiscales de sus Gobiernos, «un régimen de resolución global efectivo […] requeriría de un cierto grado de respaldo fiscal de los países miembros, y por lo tanto implicaría un elemento de cooperación fiscal internacional». En el área del euro, evidentemente, la pregunta es qué

tesoro o autoridad fiscal estará al final de la cadena de aquellos que afrontan las necesidades de financiación (transitorias o definitivas) en la quiebra de una entidad financiera.

Como veremos en la sección siguiente, los acuerdos alcanzados y las novedades legales e institucionales impulsadas para la construcción de la unión bancaria en el área del euro eran simplemente impensables pocos años atrás y suponen el paso integrador más importante después de la moneda única, complementándolo de forma muy conveniente. No constituyen una unión bancaria «plena», pero están cerca de ese objetivo.

## 4 La arquitectura de la unión bancaria

El *Informe de los cuatro presidentes* de 2012 (véase sección 2) definía los elementos fundamentales para la constitución de una unión bancaria. Preveía, a iniciativa del Consejo Europeo, un rápido acuerdo en un conjunto de iniciativas ya en marcha relativas a los requerimientos de capital, la directiva de resolución y recuperación bancaria y la directiva de esquemas de garantía de depósitos que conjuntamente constituían el nuevo armazón regulatorio europeo, e impulsó una frenética actividad legislativa que tan solo ha concluido recientemente. Desde el punto de vista institucional, el informe, siguiendo las indicaciones del Consejo Europeo, abogaba por la posibilidad de que el MEDE pudiera recapitalizar directamente instituciones financieras en dificultades (sin necesidad de prestar dinero a los Gobiernos) para romper de forma directa el círculo vicioso entre riesgos bancarios y riesgos soberanos. Puesto que se estarían utilizando, en ese caso, recursos aportados por el conjunto de los Estados miembros del euro, proponía la creación de un supervisor y un mecanismo de resolución únicos.

Estrictamente, los aspectos regulatorios constituyen la base sobre la que se asienta la arquitectura o marco institucional y, si bien son comunes a países de la UE fuera de la unión bancaria, los incorporamos a esta sección para ofrecer una visión más completa. Así, el proyecto de unión bancaria parte de un diseño de «geometría variable» [véase T. Huertas (2013)]: aunque la regulación continuará siendo de aplicación en todo el ámbito de la UE, la unión bancaria como tal solo involucrará a los Estados miembros del área del euro. Los Estados miembros fuera del euro no están obligados a participar en los mecanismos institucionales, pero pueden optar por incorporarse a ellos. Constituye, por tanto, un esquema que complementa el mercado único de servicios bancarios pero que afecta de forma directa únicamente a los países del euro y a aquellos que decidan adherirse.

### 4.1 REGULACIÓN MICROPRUDENCIAL, RESOLUCIÓN Y GARANTÍA DE DEPÓSITOS

El propósito fundamental de la reforma regulatoria de la UE fue introducir un conjunto de normas armonizadas, de acuerdo con los principios acordados en el marco del G-20 (véase sección anterior). Este marco —o reglamento único o unificado *(single rulebook)*— afecta a todas las instituciones financieras que operan en la UE con el ánimo de preservar el mercado único de servicios financieros, y limita la discrecionalidad en su aplicación usualmente admitida de las autoridades nacionales. Desde la perspectiva regulatoria, los tres hitos a destacar fueron la trasposición a la legislación europea de Basilea III, la nueva Directiva de recuperación y resolución bancaria y la actualización de la Directiva de sistemas de garantía de depósitos.

El tercer acuerdo de Basilea sobre regulación microprudencial (Basilea III) fue incorporado a la legislación europea en 2013 por la vía de la cuarta revisión de la Directiva de requerimientos de capital *(Capital Requirements Directive,* CRDIV) y por el Reglamento (como tal, directamente aplicable por los Estados miembros) sobre requerimientos de capital *(Capital Requirements Regulation,* CRR). Conjuntamente, ambas normas incrementan de forma significativa los requerimientos de capital y liquidez de las entidades financieras que operan en la UE e intentan, en consecuencia, limitar la probabilidad de quiebra de las entidades financieras por la vía de aumentar su capacidad de absorción de pérdidas en situaciones adversas.

Mientras que las novedades en materia de capital tienen por objetivo reducir la probabilidad de quiebra de los bancos, una segunda iniciativa tuvo como objetivo fundamental reducir los costes públicos en caso de dificultades y facilitar la resolución ordenada de las entidades financieras. En efecto, la Directiva de resolución y recuperación bancaria (DRRB, o BRRD en sus siglas en inglés), aprobada en 2014, establece el marco europeo para la recuperación y la resolución de bancos con el objetivo de minimizar el coste para los contribuyentes.

La crisis había puesto de manifiesto la inadecuación de los instrumentos de resolución bancaria, incrementando notablemente los costes una vez que se demostraba que las entidades financieras eran inviables o necesitaban ser rescatadas. Las autoridades nacionales no contaban con competencias ni instrumentos de resolución comunes y efectivos para afrontar las crisis bancarias en fases tempranas. Algunos Estados miembros aplicaban a las entidades los mismos procedimientos que aplican a otras empresas insolventes, adaptándolos en algunos casos; y existían considerables diferencias de fondo y de procedimiento entre las leyes, normas y disposiciones administrativas que regulan la insolvencia de las entidades en los distintos Estados miembros.

Adicionalmente, la crisis puso de manifiesto que los procedimientos generales en materia de insolvencia no son siempre apropiados para las entidades financieras, dado que no suelen garantizar una celeridad suficiente en la intervención, dificultan en algunos casos la continuidad de las funciones esenciales de las entidades y no consideran la necesidad de preservar un bien público como es la estabilidad financiera. La mejora de los mecanismos jurídicos e institucionales para la liquidación ordenada de las instituciones financieras era, por tanto, una verdadera necesidad.

El punto de partida de la DRRB fueron los atributos clave para regímenes de resolución identificados por el Financial Stabily Board [véase Financial Stability Board (2011)], y, en cierta medida, la UE venía a incorporar a la legislación comunitaria los procedimientos e instrumentos utilizados por la FDIC estadounidense, que utiliza estos instrumentos desde hace décadas[5].

La DRRB dota a las nuevas autoridades de resolución nacionales de una serie de instrumentos para poder intervenir con suficiente antelación y rapidez en una entidad con problemas de solvencia o inviable, a fin de garantizar la continuidad de sus funciones financieras y económicas esenciales, al tiempo que se minimiza el impacto de su inviabilidad en el conjunto de la economía.

La Directiva de resolución contempla, como paso previo a la resolución de la entidad, la activación de los denominados «planes de recuperación» cuando se identifican debilidades en ella. Dichos planes deberán haber sido desarrollados y aprobados previamente por el supervisor y deben establecer el conjunto de medidas que deben tomarse en caso de que surjan dificultades. Las autoridades supervisoras cuentan, además, con poderes de intervención temprana que les permiten intervenir antes de la fase de resolución de la entidad. Los planes de resolución constituyen el conjunto de iniciativas que asegurarían la continuidad de las funciones críticas de la entidad y los procedimientos para la resolución de la entidad o sus partes en caso de que los planes de recuperación no diesen los frutos esperados.

En caso de ser necesaria la resolución de la entidad, las nuevas autoridades nacionales de resolución contarán con un conjunto de instrumentos para asegurar que la resolución

5 Véase, por ejemplo, FDIC (2013) para un resumen del papel de esta institución en la resolución de entidades financieras durante la crisis.

sea ordenada. Entre las posibilidades de resolución están la facultad de vender el negocio o fusionarlo con otro banco, la creación de un «banco puente» temporal para operar las funciones críticas y separar los activos buenos de los malos para procurar que no sea necesario rescatar el banco y, finalmente, la capacidad de imponer pérdidas según sea necesario a los accionistas y los acreedores (el denominado *bail-in).* Las nuevas competencias de las autoridades de resolución permiten, por ejemplo, mantener un acceso ininterrumpido a los depósitos y a las operaciones de pago, así como vender partes viables de una entidad, cuando proceda, y asignar pérdidas de manera justa y previsible. La directiva define, por tanto, unas autoridades de resolución con amplios poderes.

El *bail-in* establece que los accionistas soportan en primer lugar las pérdidas y que los acreedores asumen las pérdidas después de los accionistas, siempre que ningún acreedor haya incurrido en pérdidas mayores de las que habría sufrido si la entidad hubiera sido liquidada con arreglo a los procedimientos de insolvencia ordinarios *(no creditor worse off principle).*

El instrumento *bail-in* supone una verdadera novedad en el ámbito comunitario, y solo entrará plenamente en funcionamiento en 2016. En la aplicación del *bail-in* se establece una jerarquía clara de pasivos que utilizar en la cobertura de las necesidades del banco en resolución, empezando por los instrumentos de capital y siguiendo con la deuda subordinada, la deuda sénior y los depósitos no asegurados de empresas (aquellos por encima de los 100.000 euros), y finalmente los depósitos de pymes y personas físicas que superen dicha cantidad. Los depósitos por debajo de los 100.000 euros estarán garantizados por los esquemas o fondos de garantía de depósitos.

La DRRB establece también que las autoridades nacionales de resolución constituirán un Fondo Nacional de Resolución (FNR) como mecanismo de respaldo financiero financiado vía contribuciones de las entidades bancarias con un volumen total final de al menos el 1 % de los depósitos asegurados del Estado miembro. Dichas contribuciones comenzarán en 2015 y deberán alcanzar el objetivo final en ocho años. Los FNR no tienen como objetivo reemplazar a los inversores privados en la absorción de las pérdidas y en la provisión de nuevo capital, sino preservar algunos pasivos determinados por la autoridad de resolución, si ello fuera necesario, y prestar ayuda financiera para asegurar la viabilidad del banco reestructurado.

Los FNR podrán así cubrir posibles costes de resolución de una entidad o entidades pero solo por un importe máximo equivalente al 5 % de los pasivos del banco en resolución, y únicamente después de que un mínimo del 8 % de los pasivos del banco en resolución haya sido utilizado para cubrir dichos costes *(bail-in).* Una vez agotado este límite del 5 %, los acreedores deberán seguir asumiendo pérdidas si ello fuera necesario y posible, y siempre de acuerdo con el orden de prelación establecido.

Como se ha comentado, en el nuevo esquema de resolución impera el deseo del legislador de limitar los costes para el sector público de la quiebra de un banco. No obstante, la nueva regulación prevé la posibilidad de que incluso utilizando todas las herramientas a disposición de la autoridad de resolución, estas no sean suficientes y deba recurrirse a fondos públicos. En este contexto, se contempla la posibilidad de utilizar mecanismos de respaldo públicos en casos de riesgo sistémico o de riesgos para la estabilidad financiera, pero siempre habiendo superado los mínimos descritos en el párrafo anterior. Dado el enfoque «nacional» de la directiva, se entiende que el mecanismo de respaldo nacional es el sector público del país.

Finalmente, en el ámbito regulatorio, se aprobó en 2014 la nueva Directiva de sistemas de garantías de depósitos. La anterior normativa a este respecto databa de 1994 y no se había modificado desde entonces. La directiva contempla una revisión completa de la norma anterior con el objetivo de mejorar la protección de los depósitos, mantener la confianza de los depositantes y fortalecer la red de seguridad. Se establece la cobertura de los depósitos hasta los 100.000 euros, y los sistemas de garantía de depósitos protegerán todos los depósitos de los particulares y las empresas independientemente de su tamaño. En caso de quiebra de una entidad, el plazo en el que los depositantes deberán recibir sus fondos se reduce paulatinamente desde los 20 días actuales hasta los 7 días hábiles a partir de 2024. La directiva también mejora la información que reciben los depositantes para asegurar que son conscientes de los aspectos fundamentales de la protección de sus depósitos.

La Directiva sobre sistemas de garantías de depósitos mantiene el carácter nacional de los sistemas de protección y de los fondos de garantía de depósitos y, ante la falta de acuerdo político, no avanza en el diseño de un sistema europeo de protección.

## 4.2 NUEVAS INSTITUCIONES PARA LA UNIÓN BANCARIA

En cuanto al diseño institucional, la unión bancaria se asienta sobre dos nuevas autoridades europeas que están llamadas a desempeñar un papel fundamental en el futuro y que responden respectivamente a la necesidad de disponer de una autoridad única de supervisión y una autoridad única de resolución: el Mecanismo Único de Supervisión (MUS) y el Mecanismo Único de Resolución (MUR). Seguidamente repasamos su principales funciones y responsabilidades, y concluimos la sección con una referencia a los mecanismos últimos de apoyo financiero *(backstops)* que se han previsto.

### 4.2.1 Mecanismo Único de Supervisión (MUS)

El MUS se constituyó en octubre de 2013 e inmediatamente inició los preparativos de un amplio examen de la situación de los balances y pruebas de estrés de las principales instituciones financieras del área del euro (alrededor de 130); está compuesto por el BCE y las autoridades nacionales de supervisión, siendo el primero el responsable de su funcionamiento general. Una vez concluido el análisis de los balances y las pruebas de estrés a finales de octubre de 2014, el BCE ejerce la supervisión directa de los bancos del área del euro, si bien de modo diferenciado y en estrecha colaboración con los supervisores nacionales.

El BCE supervisa de forma directa, desde noviembre de 2014, todos aquellos bancos considerados «significativos»: aquellos que superan los 30.000 millones de euros de balance o están en el grupo de las tres instituciones financieras más importantes en cada país. Estas aproximadamente 120 entidades agrupan más del 80 % de los activos bancarios del área del euro. La supervisión del resto de las entidades, hasta aproximadamente 3.500, estará delegada en las autoridades nacionales de supervisión, en estrecha colaboración con el BCE. No obstante, el BCE puede hacerse cargo de la supervisión directa de cualquier entidad financiera si lo considera oportuno.

De acuerdo con el enfoque de geometría variable sobre el que se ha diseñado la unión bancaria, los Estados que no forman parte del área del euro y deseen participar en el MUS pueden hacerlo concertando acuerdos de estrecha colaboración, aunque en octubre de 2014 no se había formalizado ninguna incorporación.

Las funciones monetarias del BCE quedan estrictamente separadas de sus funciones de supervisión, a fin de evitar los posibles conflictos de interés entre los objetivos de política monetaria y los de supervisión prudencial. A tal fin se ha creado, en el seno del BCE, un Consejo de Supervisión.

Los supervisores nacionales siguen encargándose de las funciones que no se hayan otorgado al BCE, por ejemplo las relacionadas con la protección de los consumidores, el blanqueo de capitales, los sistemas de pago y las filiales de bancos de terceros países. Por su parte, la EBA mantiene la responsabilidad de seguir desarrollando el código normativo único y de velar por la convergencia y la coherencia que debe haber en la práctica supervisora en todos los países de la UE.

La finalización del análisis de los balances y las pruebas de estrés en octubre de 2014 supuso un hito fundamental en la supervisión europea, pues permitió al BCE hacerse cargo formalmente de la supervisión directa de las principales instituciones financieras. Esta capacidad es, como consecuencia del acuerdo político alcanzado en su día, una condición necesaria para la aprobación final del instrumento de recapitalización directa de entidades financieras por parte del MEDE, aprobación que necesita el acuerdo unánime de los Estados del área del euro.

### 4.2.2 Mecanismo Único de Resolución (MUR)

El MUR parte de la constatación de que en la unión bancaria la supervisión y la resolución de entidades financieras deben ser ejercidas al mismo nivel de autoridad. Como reconocieron el Consejo Europeo y el *Informe de los cuatro presidentes,* no es posible tener un mecanismo o autoridad única que supervise los bancos y al mismo tiempo mantener la resolución de las entidades en manos de autoridades nacionales. La creación del MUR soslaya las posibles dificultades de coordinación y los conflictos a distintos niveles creando una autoridad única para los Estados miembros de la unión bancaria que se apoya en el marco regulatorio definido en la DRRB. Así, el MUR aplicará a los bancos de la unión bancaria las normas sustantivas de resolución y recuperación contempladas en la directiva.

El Consejo del MUR, constituido por una comisión ejecutiva y representantes de las autoridades de resolución nacionales, será directamente responsable de la resolución de todos los bancos en los Estados miembros que participan en la unión bancaria. Su estructura refleja la división de tareas diseñada en el marco del MUS, es decir, el MUR es directamente responsable de la planificación y resolución de entidades directamente supervisadas por el BCE (bancos significativos) y los grupos transfronterizos, mientras que las autoridades nacionales de resolución establecidas en la DRRB serán responsables de todas las demás entidades, salvo cuando una decisión de resolución prevea utilizar el Fondo Único de Resolución (FUR); en tal caso, el MUR pasa a ser competente para la resolución de la entidad en cuestión, independientemente de su tamaño.

El FUR, a semejanza de los fondos de resolución nacionales contemplados en la DRRB (véase sección 4.1), no tiene como objetivo reemplazar a los inversores privados en la absorción de las pérdidas y en la provisión de nuevo capital. Sus objetivos son preservar algunos pasivos determinados por la autoridad de resolución, si ello fuera necesario; prestar ayuda financiera, como garantías o préstamos a corto o medio plazo que ayuden a asegurar la viabilidad del banco reestructurado, y mantener aquellas funciones que sean críticas para la estabilidad financiera y la economía en general.

El objetivo final es que el FUR esté dotado con un volumen equivalente al 1 % de los depósitos asegurados de los Estados miembros que participan en la unión bancaria, lo que supondría un total aproximado de 55.000 millones de euros si se toma como base 2012. Se establece un período de ocho años para alcanzar dicho porcentaje, de forma lineal (comenzando en 2016), que podría ampliarse a doce si el fondo realizara desembolsos por encima del 50 % del objetivo final en los primeros ocho años.

En la fase inicial el fondo único se compone de la suma de «compartimientos nacionales», constituidos por los fondos de resolución nacionales y financiados con contribuciones de los distintos sectores bancarios nacionales. Esta incorporación comenzará en 2016. Dichos compartimientos nacionales se van fusionando en una parte mutualizada en el FUR de forma progresiva: 40 % en el primer año, 20 % en el segundo y un 6,7 % en cada uno de los seis años restantes. En consecuencia, al final de 2024 existirá un solo fondo mutualizado con el 100 % del importe, financiado por el sector privado.

Tras la notificación por parte del BCE de que un banco no está en condiciones de mantener su actividad o de que experimenta graves dificultades financieras y debe ser objeto de resolución, el MUR adoptará un esquema de resolución que incluya las herramientas de resolución oportunas y decidirá sobre cualquier uso del FUR. La determinación de si una institución debe cesar en su actividad será competencia del BCE. Sin embargo, el MUR tiene reservada la facultad de tomar esta decisión si, a petición de su Consejo, el BCE no lo hace. Una vez definidos los elementos de la resolución, serán las autoridades nacionales de resolución, bajo la supervisión del MUR, las encargadas de ejecutar el plan aprobado.

### 4.2.3 Mecanismos de respaldo financiero en la unión bancaria *(backstops)*

De acuerdo con lo previsto en la regulación del MUR, la mutualización total del FUR no llegará hasta ocho años después de su constitución. Hasta ese momento, cualquier necesidad financiera en una resolución no podrá superar el importe de la suma de la parte no mutualizada del fondo de resolución nacional y el conjunto de las partes mutualizadas hasta ese momento de los distintos fondos nacionales. La idea es que durante el período transitorio las resoluciones siguen teniendo un carácter «nacional», aunque —si fuera necesario— podrían disponer de los recursos acumulados a la fecha en la parte del FUR que ha sido mutualizada (siempre con el límite del 5 % de los pasivos del banco comentado anteriormente). Como consecuencia de esta aproximación, cualquier necesidad adicional de recursos que pasara por el sector público correría a cargo del Tesoro del país en cuestión. Es decir, el sector público del país sigue siendo en este diseño el mecanismo de respaldo financiero final *(backstop),* aunque con una participación creciente de la parte mutualizada del FUR, ya que esta va aumentando con el paso del tiempo.

Dado que la utilización del instrumento *bail-in* no es obligatoria hasta 2016 y la plena mutualización del fondo no se produce hasta ocho años después, cabe destacar tres períodos diferenciados en lo que se refiere a los esquemas o mecanismos de respaldo financiero final *(backstop)*:

**Antes de 2016:** *El bail-in* no es obligatorio antes de 2016 (aunque algunos países han anunciado su implementación antes de esa fecha), y el FUR no estará aún constituido. Si fueran necesarios recursos, se utilizarían los disponibles en el fondo de resolución nacional. Si hubiera algún tipo de apoyo público, este estaría sujeto a las actuales normas de ayudas de Estado de la Comisión Europea. Estas establecen que los accionistas (primero) y la deuda júnior o subordinada (después) contribuirían a absorber pérdidas con carácter previo a cualquier participación de recursos públicos. En caso de ser necesarios, los rescates públicos en los países del área del euro podrán ser financiados directamente por el Estado miembro o, en caso de dificultades macroeconómicas importantes o pérdida de acceso a los mercados de financiación, con apoyo del MEDE.

El apoyo del MEDE podría articularse mediante los distintos instrumentos a disposición de los países del euro. El MEDE podría realizar un préstamo al Gobierno en el marco de un programa de ajuste macroeconómico, en el que parte de la financiación se destinaría a la entidad o entidades bancarias en resolución. El país también podría acceder a un préstamo

del MEDE con el objeto exclusivo de realizar aportaciones a su sector financiero (la llamada «recapitalización indirecta»). Finalmente, cuando el instrumento sea aprobado por el Consejo de Gobernadores del MEDE, este podría, bajo las condiciones requeridas, adquirir instrumentos de capital de una (o parte de una) institución que se considere viable. En este caso, se rompería completamente el vínculo entre el riesgo del banco y el riesgo soberano, puesto que no se trataría de un préstamo al Gobierno[6].

**Entre 2016 y 2024:** En este período el instrumento *bail-in* deberá utilizarse obligatoriamente. Al 8 % del pasivo total de la entidad en resolución de *bail-in* mínimo obligatorio se le podrían sumar las aportaciones del fondo nacional de resolución (apoyado por la parte mutualizada del FUR) hasta un máximo del 5 %. En caso de ser necesarios recursos adicionales a ese 13 % del balance, seguirá utilizándose el *bail-in.* El apoyo público solo podrá articularse a partir de estos mínimos en caso de agotar los pasivos sujetos a *bail-in* o por razones de riesgo sistémico, por lo que será mucho menos probable. El potencial apoyo del MEDE al país se podría articular sobre la base de los mismos instrumentos descritos en el párrafo anterior.

**A partir de 2024:** Una vez que el FUR ha sido completamente mutualizado, se mantiene el esquema de *bail-in* descrito para el período 2016-2024. Pero es entonces cuando la conexión entre el banco de un país y el fisco del mismo país desaparece. Se entiende que el período transitorio ha permitido una efectiva transferencia de las responsabilidades desde el ámbito nacional al ámbito del MUS y del MUR y, por tanto, ya no debe existir la conexión con el sector público del país. La pregunta que surge, lógicamente, es qué institución desempeñará entonces el papel de *backstop.* La respuesta es que ante las dificultades políticas de responder a esa pregunta y el dilatado horizonte temporal (hasta 2024), los Estados miembros del área del euro decidieron reconocer su necesidad pero anunciar que dicho *backstop* se diseñaría en el futuro (lógicamente, antes de 2024).

## 5 Consideraciones finales

Los avances hacia la unión bancaria han sido más que notables. No obstante, cabe concluir estas páginas con algunas consideraciones sobre distintos ámbitos a los que, o bien se deberá prestar especial atención en el futuro próximo, o bien han quedado aparcados y deberían ser abordados sin falta antes de una nueva crisis. Nos referiremos al papel del instrumento *bail-in,* a la aplicación del principio de que ningún acreedor deberá quedar en peor posición en una resolución que en una liquidación, a la necesidad de que exista una cooperación entre instituciones, a la problemática de los *backstops* y, finalmente, a los esquemas de garantía de depósitos.

Los costes directos e indirectos de la crisis financiera para los contribuyentes europeos han sido muy elevados y la necesidad de contar con mecanismos que en el futuro limitarán la participación del sector público en la resolución o liquidación de entidades bancarias fue pronto identificada como uno de los objetivos fundamentales de los cambios regulatorios.

Los poderes otorgados a las autoridades de resolución en el marco de la DRRB suponen un cambio fundamental de aproximación a la resolución de bancos en la UE y, en este contexto, el instrumento *bail-in* constituye un cambio de paradigma con relación a quién hace frente a las pérdidas provocadas por la quiebra de una entidad y cómo debe hacerlo.

6 El acuerdo político para la utilización del instrumento de recapitalización directa establece un *bail-in* del 8 % en caso de su uso antes de 2016. Véase http://www.eurozone.europa.eu/media/436873/20130621-ESM-direct-recaps-main-features.pdf y http://www.eurozone.europa.eu/media/533095/20140610-eurogroup-president-direct-recapitalisation.pdf para los detalles del acuerdo político entre los ministros de Finanzas del área del euro en relación con el instrumento de recapitalización directa del MEDE.

Es, sin duda, un paso muy importante que debería dotar de mayor disciplina de mercado y obligar a los inversores a extremar el análisis y la diligencia previos a la toma de decisiones. La asunción de pérdidas por parte de tenedores de deuda bancaria y depositantes no cubiertos por los mecanismos de protección de depósitos fuera del marco legal tradicional de liquidación de entidades constituye, por tanto, una novedad a la que los inversores deberán hacer frente. Una novedad que tendrá consecuencias en la estructura de los pasivos bancarios, sus costes y su atractivo relativos.

Algunos estudios [Fondo Monetario Internacional (2014)] apuntan, no obstante, a que la subvención pública implícita a los bancos europeos no ha disminuido sustancialmente durante la crisis, ni con la inminente incorporación del *bail-in* en el conjunto de los instrumentos utilizados para la resolución. Ya ha habido un número importante de casos en los que los acreedores han sufrido fuertes pérdidas (como, por ejemplo, en Chipre). Pero solo una utilización firme del instrumento por parte de las autoridades de resolución permitirá que este gane la necesaria credibilidad y cumpla de forma efectiva la función para la que ha sido diseñado.

Aunque se han creado las condiciones necesarias para la efectiva utilización del instrumento *bail-in* en resoluciones futuras, las autoridades de resolución siempre tendrán el reto de gestionarlo en el marco de una crisis sistémica, en la que los efectos de desbordamiento y las interconexiones entre entidades pueden tener efectos muy negativos. El *bail-in* reparte las pérdidas a través del sistema y puede, en consecuencia, crear contagio. La principal razón detrás de las múltiples intervenciones de los sectores públicos durante la crisis en apoyo de instituciones financieras era, precisamente, evitar el contagio al resto de las entidades del sistema bancario.

En este contexto, cabe recordar que la asunción de pérdidas por parte de los acreedores ha sido un mecanismo utilizado profusamente durante la crisis en Estados Unidos. La FDIC ha resuelto desde 2007 más de 450 bancos [véase FDIC (2013)] utilizando los diversos instrumentos que tiene a su disposición. No obstante, las dificultades de algunos de los grandes bancos estadounidenses no fueron resueltas en el marco de la FDIC, puesto que estos fueron recapitalizados a través del fondo público TARP *(Troubled Asset Relief Program)*[7]. Si bien es cierto que también la legislación estadounidense ha evolucionado hasta el punto de dificultar enormemente la utilización de fondos públicos en los rescates bancarios, habrá que ver si en una nueva crisis sistémica los márgenes de flexibilidad contemplados son suficientes.

En todo caso, la incorporación del instrumento es, sin duda, una buena noticia, pues limitará los costes futuros asumidos por el sector público, dificultando su implicación en la resolución de crisis sobre la base de unas reglas claras *ex ante.*

También en el nuevo contexto de la resolución bancaria cabe una breve referencia a la aplicación del principio de que en un proceso de resolución ningún acreedor debe soportar costes o pérdidas mayores que las que experimentaría en un proceso de liquidación tradicional *(no creditor worse-off principle).* La utilización de los mecanismos de resolución de bancos y el uso del instrumento *bail-in* se justifican por la necesidad de que haya una mayor celeridad en la ejecución de las decisiones, en contraposición al tiempo necesario para un proceso de liquidación. Por ello, las autoridades de resolución tendrán el reto de

7 El TARP permitía al Departamento del Tesoro de Estados Unidos comprar o garantizar hasta 700.000 millones de dólares de activos definidos como «problemáticos». Además de las inyecciones de capital, posibilitaba la adquisición de hipotecas residenciales o comerciales y cualquier valor y obligaciones u otros instrumentos basados en tales hipotecas o relacionados con ellas, entre otros activos.

aplicar dicho principio de forma adecuada, limitando los efectos de las más que probables impugnaciones legales de sus actos.

La cooperación efectiva entre nuevas instituciones del área del euro y entre estas e instituciones nacionales (existentes o de nueva creación, como las autoridades nacionales de resolución) será fundamental para una buena supervisión de las entidades financieras y para la adopción de medidas en caso de que se manifiesten debilidades. Aunque desde el inicio de la moneda única el Sistema Europeo de Bancos Centrales ha funcionado muy bien, estamos ante un proyecto de envergadura parecida a nivel de supervisores, en un contexto además al que se unirán las nuevas autoridades de supervisión. Esta coordinación deberá darse también, lógicamente, entre las autoridades de resolución y las de supervisión. Bair (2012) explica las dificultades prácticas habidas en este ámbito en el caso estadounidense durante la crisis; un caso en el que la autoridad de resolución (FDIC) dispone de competencias en la supervisión de algunas entidades, lo que no sucederá en el caso del MUR.

Respecto a los mecanismos finales de respaldo financiero *(backstop),* como se ha comentado, las reformas para aumentar la calidad y cantidad de capital reducirán sin duda la probabilidad de quiebra de las entidades, mientras que el nuevo esquema de resolución, incluido el uso del *bail-in,* limitará su impacto si estas se producen. Ambas reformas deberán, por tanto, tener un impacto positivo, al reducir la necesidad y la probabilidad de uso de un mecanismo fiscal de respaldo. Pero, como hemos visto, no eliminan completamente su necesidad.

Los recursos disponibles en los fondos de resolución y la magnitud de las necesidades son, por definición, desconocidos. El diseño acordado en el MUR sigue de facto apoyándose durante el período transitorio en los Tesoros nacionales, y deja abierto el establecimiento del *backstop* una vez que termine el período transitorio. Desde esta perspectiva, no rompe completamente hasta 2024 con el círculo vicioso del riesgo bancario/riesgo soberano, excepto en el caso de que se cumplieran todas las condiciones para una recapitalización directa por parte del MEDE.

Las dificultades objetivas de diseñar un *backstop* en el marco de la unión bancaria surgen lógicamente de la falta de un Tesoro europeo (o de la zona del euro) que pudiera asumir dicha responsabilidad. Ello ha llevado a algunos autores a proponer que sea el propio MEDE el que asuma esta función [véase Schoenmaker (2014) y Van Roosebeke (2014)], lo que solo sería posible con un cambio del Tratado del MEDE. La razón estriba en que dicho tratado establece que la función del MEDE es proporcionar asistencia financiera a los Estados miembros del euro, no a instituciones europeas o del área del euro, como sería el caso del MUR y del FUR.

Finalmente, se ha destacado ya que la nueva Directiva sobre sistemas de garantías de depósitos mantiene el carácter nacional de los sistemas de protección y de los fondos de garantía de depósitos y no avanza en el diseño de un sistema europeo de protección. Ciertamente, el nuevo marco de resolución de entidades y el instrumento *bail-in* permiten anticipar que en el futuro se necesitarán menos fondos para compensar a los depositantes, por el propio diseño del esquema y por el hecho de que los depósitos cuentan con un trato favorable. En consecuencia, es probable que solo se haga uso de los fondos de garantía en casos realmente extremos [véase Asmussen (2013)].

Algunos autores [véase Huertas (2013)] dudan incluso de la posibilidad de establecer un verdadero fondo de garantía de depósitos común para los países de la unión bancaria. La razón es que dicho mecanismo debería asegurar el riesgo de pérdidas como resultado de

que un banco en resolución no pueda hacer frente al total de sus depósitos asegurados, pero no podría evitar correr riesgos relacionados con medidas que pudiera tomar el Gobierno del país en el que surge la necesidad de compensar a los depositantes: el riesgo de impago del Gobierno, el riesgo de que el Gobierno imponga, por ejemplo, un impuesto especial sobre los depósitos o incluso el riesgo de redenominación de la moneda. La conclusión es, pues, que muy probablemente el fondo de garantía de depósitos común deberá esperar a la unión política plena.

Los anteriores son, sin duda, argumentos de peso que justifican el haber iniciado la andadura de la unión bancaria sin un sistema de protección común de los depositantes. Pero, aunque sea solo en casos extremos, el diseño actual sigue manteniendo al final una conexión entre bancos y país de origen, también en la protección de los depositantes, que bien podría ponerse de manifiesto en el caso de que hubiera otra crisis sistémica. Sería conveniente, en consecuencia, utilizar el mismo período transitorio contemplado en el MUR para el diseño de un *backstop* común para avanzar en el sistema de garantía de depósitos que protegiera a todos los depositantes de la unión bancaria.

¿Una unión bancaria como la diseñada hubiera evitado una crisis como la experimentada? Probablemente no del todo, pues los desequilibrios fiscales y macroeconómicos acumulados tenían orígenes diversos. Los plazos previstos para su definitiva implementación son ciertamente dilatados; los recursos que el FUR alcanzará al final del proceso son relativamente pequeños comparados con los costes observados en la gestión de algunas de las grandes entidades en crisis, aunque bien es cierto que la utilización del *bail-in* supone un verdadero cambio de paradigma. Pero puede argumentarse que la unión bancaria en pleno funcionamiento podría haber debilitado sustancialmente la espiral adversa entre bancos y soberanos, haber mantenido la confianza de los depositantes y haber atenuado las dificultades de financiación y liquidez observadas, disminuyendo así de forma muy notable los costes de la crisis.

En definitiva, los avances acordados en el ámbito de la unión bancaria eran difícilmente imaginables pocos años atrás. Aunque el consenso técnico y político solo ha emergido en muchas ocasiones en situaciones críticas, debe reconocerse que el esquema o diseño final prefigura una integración en la supervisión y la resolución de entidades muy avanzada. La unión bancaria en marcha es, sin duda, el paso más importante en la integración de los sistemas bancarios del área del euro desde el inicio de la moneda única.

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# THE COUNTERCYCLICAL CAPITAL BUFFER IN SPAIN: AN EXPLORATORY ANALYSIS OF KEY GUIDING INDICATORS

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# THE COUNTERCYCLICAL CAPITAL BUFFER IN SPAIN: AN EXPLORATORY ANALYSIS OF KEY GUIDING INDICATORS

This paper describes the overall characteristics of the Basel III countercyclical capital buffer (CCB) framework, its implementation in the EU, and analyses a group of potential guiding indicators for Spain. Based on an empirical exploratory analysis of three stress events identified, we describe a number of practical and conceptual issues that may arise with the Basel benchmark buffer guide – the credit-to-GDP gap – and study a number of complementary indicators. We explore specifically some alternative specifications for the credit-to-GDP gap and additional indicators of credit developments where we propose a 'credit intensity' measure (the ratio of changes in credit to cumulated GDP). Further to this, we explore the performance of indicators of real estate property prices, external imbalances and private sector debt sustainability – including various transformations of the indicators when needed. In line with previous literature, we find that a broad but manageable set of indicators may help to improve decisions on the CCB.

## 1 Introduction

A number of macroprudential instruments have been proposed in the last few years. Most instruments thus far are based on banks' balance sheets, build on microprudential standards and are usually classified as structural or cyclical (time-varying). Among the latter, the countercyclical capital buffer (CCB) is perhaps the best known macroprudential instrument and one at a more advanced stage of operationalisation. Capital or liquidity requirements for systemic financial institutions are examples of structural instruments.[1]

The CCB's appearance in the international regulatory debate can be traced to the 2009 consultative paper on "Strengthening the Resilience of the Banking Sector" by the Basel Committee on Banking Supervision (BCBS). The BCBS proposes in this paper a series of measures to address procyclicality with four key objectives: i) dampen any excess cyclicality of the minimum capital requirement; ii) promote more forward looking provisions; iii) conserve capital to build buffers that can be used in stress; and iv) achieve the broader macroprudential goal of protecting the banking sector from periods of excess credit growth.

The third and fourth objectives above served as a basis for the creation of a 'conservation' and a 'countercyclical' capital buffer, respectively.[2] Subsequently, the Basel III framework introduced these two requirements together with an additional capital buffer or 'capital surcharge' for systemically important financial institutions (SIFIs). The conservation, countercyclical and SIFIs buffers are all capital-based requirements. The numerator is Common Equity Tier 1 (CET1) and the denominator is Risk Weighted Assets (RWAs).[3] Regarding the selection of capital-based requirements, the BCBS (2010) paper provides long-term estimates of the expected economic benefits (reductions in the probability of banking crises and its output loss) and costs (decline in steady-state output) of introducing higher capital and liquidity requirements.

1 Given practical difficulties to disentangle pure time varying vs. pure structural instruments, macroprudential instruments are also commonly classified according to the source of risk that they address (eg: excessive credit growth, maturity mismatches and market liquidity, concentration). This is the approach followed for example in the ESRB 2013 Recommendation on intermediate objectives and instruments of macroprudencial policy.

2 Drehmann *et al.* (2010) study different options for the design of countercyclical capital buffers also drawing on the experience with dynamic provisions (ie: the general loan loss provisions applied in Spain since mid-2000). Saurina (2009a, 2009b) and Trucharte and Saurina (2013) describe the Spanish dynamic provisions in detail and discuss their use for macroprudential policy.

3 BCBS (2011).

The implementation of the three requirements will be phased-in from January 2016 onwards, reaching their full effect in January 2019. Under these transitional arrangements the CCB can be activated at a maximum of 0.625% of RWAs from January 2016. After that, the maximum possible CCB level increases each year by 0.625 percentage points until reaching the level of 2.5% of RWAs on January 2019. National authorities can accelerate this period if their countries are experiencing excessive credit growth, and they can also choose to implement larger CCB requirements.[4] Authorities opting to activate or increase the CCB should make public their decision in advance by up to 12 months in order to give banks time to adjust their capital levels. Decisions to fully release or decrease the CCB, on the contrary, take effect immediately.

In addition to the Basel III framework, the BCBS (2010) "Guidance on operating the CCB" – a CCB specific companion document to Basel III – provides further information how the buffer is expected to work. The BCBS paper clarifies in particular the key aim of the regime, namely 'to ensure that the banking sector in aggregate has the capital on hand to help maintain the flow of credit in the economy without its solvency being questioned, when the broader financial system experiences stress after a period of excess credit growth'. The BCBS also sets out details for the calculations of a quantitative indicator – the credit-to-GDP gap – to be used as a common starting point when setting the buffer rates. Finally, the BCBS document provides for a set of principles to guide authorities in the use of judgement when taking buffer decisions.

Following the BCBS proposals, a number of countries have started to implement the CCB. In the EU, the new European legislation on banking regulation (CRR/CRDIV) introduces the CCB in Articles 130 and 135-140 of the CRDIV.[5] In addition, Article 135 asks the European Systemic Risk Board (ESRB) to provide guidance on a number of operational issues for the implementation of the CCB in EU countries. Backed by empirical work presented in its 2014 Occasional Paper, the ESRB recommendation on "Guidance to EU Member States for setting countercyclical buffer rates" achieves this task.[6, 7] The recommendation extends the Basel principles, assesses the adequacy of the Basel gap and benchmark rule to set buffer rates, and provides guidance on other indicators to signal the activation and deactivation of the buffer.

Using as a background the BCBS framework for the CCB, the aforementioned ESRB recommendation and the EU legislation on the subject, this paper takes a first step towards analysing the performance of a set of quantitative indicators to guide the CCB in Spain. In particular, we study a short-list of what we considered the more auspicious indicators following a pre-selection process drawing on relevant literature and ongoing experiences in other countries.

In this exercise we focus on exploring the indicators informative value during those periods when systemic risks stemming from excessive credit growth are building up when the CCB is supposed to accumulate. Some tentative observations on the indicators potential ability

4 In these cases, however, reciprocity arrangements are not mandatory where countries opt for additional amounts above 2.5% or earlier activations of the CCB.

5 CRR stands for Capital Requirements Regulation [i.e., Regulation (EU) No. 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No. 648/2012]. CRDIV stands for Capital Requirements Directive IV [i.e., Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms]. In Spain, Law 10/2014 of 26 June, on the organization, supervision and solvency of credit institutions, transposes the provisions in the CRR/CRDIV.

6 Detken *et al.* (2014).

7 ESRB (2014a).

to help guide the release of the CCB are made in a few cases, but a more comprehensive analysis on this area is left for future work.

This paper is organised as follows. Section 2 describes the overall characteristics of the CCB regime in Basel III and the key elements from the ESRB recommendation on the CCB. Section 3 explains the crisis events in Spain that we used to explore the performance of a set of indicators or 'sign posts' to help guide buffer decisions. Section 4 describes the set of indicators selected and explores their ability to identify periods of excessive credit growth in Spain. Section 5 extracts conclusions from the empirical exercise performed.

## 2 How does the CCB work?

The first thing that should be made clear-cut from the beginning is what the CCB is trying to achieve – and what it is not. Although its name may lead to different interpretations at first sight, the CCB's key aim is a narrow but important one. As explained in the introduction, the CCB is meant to ensure that the banking sector as a whole has an extra capital buffer which could be used to absorb losses in a downturn preceded by a period of excessive credit growth associated with the build up of systemic risks. Thus, the CCB aims to contribute to the broader objective of increasing resilience in the banking system and, in this manner, help to sustain the supply of credit to the economy in bad times.

The possible dampening of the build-up of excessive credit in boom times or the containment of exuberance are seen as potential positive side-effects but are not primary goals. In particular, the CCB has not been conceived as an instrument to manage economic cycles or asset prices. All the focus is on the credit cycle.[8] And all the emphasis is on resilience.

For this purpose the CCB should be accumulated during expansionary periods so that it can then be released when the downturn hits, allowing the capital buffer to absorb losses. A credible and enforceable release of the CCB is therefore as important as its accumulation. Failing to use the buffer when the systemic risks it is targeting materialise would reduce the CCB's effectiveness and increase procyclicality. Naturally, the release would only be possible if the CCB was correctly accumulated in anticipation to a downturn.

The countercyclical capital requirement is structured as an extension of the Basel conservation buffer. That is, both regulatory requirements have to be met jointly and are subject to the same conditions, eg: restrictions on dividend distributions during shortfalls. But whilst the minimum capital conservation buffer is constant, the minimum CCB level is allowed to vary over time.

The CCB is also a broad-based requirement. Its scope of action is aggregate domestic credit. This implies that the CCB targets system-wide cyclical risks stemming from credit exposures in a given banking sector. Yet, as banks from a given system may also be participating in other systems abroad, the bank-specific CCB rate is calculated as the weighted average of the CCB rates that apply in those countries where the relevant credit exposures of the bank are located.[9] Weights are given by the ratio of the capital requirements for credit risk in each country, divided by the bank's total requirement for credit risk.

The decisional framework for the activation and release of the CCB (i.e., usage of the CCB) follows what is known as a 'constrained' or 'guided discretion' approach. This framework comprises a common standardised quantitative indicator to be used as a benchmark (the

8 Related to this, Jiménez *et al.* (2013) provides empirical insights on the effects of countercyclical buffers on credit cycles both in good and in bad times.

9 EBA (2013).

credit-to-GDP gap) and a set of principles to guide judgement when taking buffer decisions. Trade-offs between rules and discretion are long known in economics. Rules tend to boost predictability, avoid time-inconsistencies [Kydland and Prescott (1977)] and contribute to ensure transparency and accountability. But rules are also less flexible and adaptable to different environments or unexpected events. A guided discretion approach could be seen as a middle-ground solution between a rules-based and a discretion-based approach.[10]

Regarding the credit-to-GDP gap (i.e., the baseline 'Basel gap' or, in regulatory jargon, the 'benchmark buffer guide'), it is also important to clarify upfront what is the expected role for this indicator in the Basel framework. As stated, the baseline gap is a benchmark or common starting point for the analysis and discussion on CCB levels. It is not an end point for the analysis. As such, the gap should serve as a basis to explain deviations from the baseline specification, the reasons why other indicators may work better in some countries, or why the gap may fail to explain and justify certain decisions in given circumstances.

Since the Basel gap is a common benchmark, its components are standardised and its calculation and reporting are mandatory. In addition, there is a benchmark rule associated with the gap linking CCB levels with gap values. This provides a 'guide' to help decide when to activate or deactivate the CCB. And all this should also help to establish a common ground for discussions on the CCB.

But the Basel gap is not necessarily the sole indicator that authorities should consider when taking and communicating decisions on the CCB. Other quantitative indicators can also be used. Nor is the gap the only source of information available to authorities. Qualitative information – for example from experts' judgements – is also relevant. In addition, although a rule to map different gap values to CCB levels is also provided in the Basel framework, this is not a mechanical rule but rather a reference, as is the baseline gap itself.[11]

## 2.1 PRINCIPLES

On the principles guiding judgement – the first leg in the guided discretion approach for the CCB –, the BCBS has suggested five. The principles expand on the objective of the CCB, the role of the credit-to-GDP gap, the use of additional indicators – including those that may help to signal the release phase –, and on the possible use of other macroprudential instruments. They are reproduced in Appendix 1.

The ESRB recommendation on the CCB, in turn, also provides for a set of principles. The first five principles in the recommendation are largely based on the Basel principles. Slight adjustments are introduced to reflect some EU specificities and provide some further information on technical details. For example, to reflect the observation that, as may be expected in other contexts, the Basel gap in the EU tends to perform better in the build-phase rather than in the release one. Moreover, having considered their importance for the effectiveness of the CCB, the ESRB recommendation introduces two new principles on communication and reciprocity. These two principles are included at the end of Appendix 1.

10 For a discussion on rules vs. discretion in macroprudential policy see Libertucci and Quagliarello (2010).

11 This expected role for the baseline gap is already anticipated on page 70 of the BCBS (2010) "Guidance on operating the CCB": 'The proposal [on the CCB] under development could not be implemented as a strict rules-based regime. Such an approach would require a high degree of confidence that the variables used would always, under all circumstances, perform as intended and would not send out false signals. This level of confidence will not be possible. Consequently, a benchmarking approach is being considered where the buffer generated is simply the starting point. The option will exist for authorities to increase or decrease the buffer as appropriate, taking into account the broader range of information which supervisors and central banks will be able to consider in the context of the circumstances which prevail at the time.' The same reasoning is then further developed under Principle 2 ("common reference guide") in the BCBS (2010) guiding document.

All these principles set common boundaries within which judgement can play a role when deciding on the buffer.

## 2.2 THE CREDIT-TO-GDP GAP

The credit-to-GDP gap – the quantitative indicator proposed as the benchmark buffer guide for the CCB – is calculated as the ratio of credit-to-GDP minus its long-term trend using the statistical method described below.

In line with the broad-based nature of the CCB, the credit metric for the numerator in credit-to-GDP ratio uses a broad definition of credit: total credit to the non-financial private sector (NFPS). This means that it comprises total credit to households and non-financial corporates, including credit from abroad. And it excludes exposures to other financial institutions (intra-financial lending) and public sector credit exposures. As the aim is to capture all sources of debt to the NFPS in a given banking system, credit from non-banks, debt securities issued to fund households and other non-financial private entities (including securitisations) is also included.

Having calculated the credit-to-GDP ratio first, the second step is largely mechanical. It consists in subtracting from the observed credit-to-GDP ratio its long-term trend calculated with a Hodrick-Prescott (HP) filter.[12] The HP filter is a statistical technique widely used by researchers and analysts to separate cyclical from long-run behaviours in economic series. The wide use of the HP filter is one of its main attractions. It is included in most commercial statistical packages – including add-ins for Excel – and is easy to calculate.

But why is it necessary to subtract the credit-to-GDP trend when constructing the Basel gap? This is because credit-to-GDP levels are likely to vary both between countries as well as within the same country at different points in time for structural reasons. As a result, different credit-to-GDP levels are hardly comparable without an anchor. This anchor is the trend.[13] Having this anchor is also useful when it is desired to calibrate reference values (or thresholds) for setting rules to determine the moment to increase or decrease the CCB. Conceptually, this means that there should be a sustainable or long-term credit-to-GDP level against which deviations from that level can be assessed empirically. These deviations are the 'imbalances' that may anticipate future materialisations of systemic risk.

Ideally, changes in the long-term sustainable level can be assessed by using a structural approach, where regression analysis is applied following specifications grounded in economic theory. As may be expected, this route is not free of obstacles either. Empirical and theoretical developments on macroprudential instruments are still in a quite early development stage. This also helps to illustrate the advantages of applying a widely used tool such as the HP filter which – though purely statistical – "has withstood the test of time and the fire of discussion remarkably well" [Ravn and Uhlig (2002)]. For the sake of comparability and for the purpose of the present analysis, we follow the same statistical approach when exploring guiding indicators for Spain in section 4.

Truly speaking, the HP filter defines a trend rather than extracting it from the data. The HP is based on an algorithm which seeks to minimise deviations of the actual series from their growth and changes in the trend growth rates. The weight of this second term in the minimisation depends on a positive and arbitrary parameter, lambda – a 'smoothing parameter' in the HP filter –. The value of lambda is set according to the data frequency.

12 Hodrick and Prescott (1980).

13 In statistical terms, the anchor helps to make the credit-to-GDP series stationary.

The larger the lambda, the smoother the trend obtained. As a result of these features, the HP, though popular, is not free from criticisms – also from a statistical point of view –.[14]

A simple way to illustrate some of these criticisms is as follows. Unless a given economic series has absolutely no variation (i.e., it is a straight line), the algorithm is always able to define a cycle in the series for suitable values of lambda – even if such a cycle may actually not exist based on economic grounds –.[15] Of course, there are common practices in the field to guide the values chosen for the lambda relative to the expected length of the cycle, and different adjustments can be introduced to improve the filter. In any case, as with any statistical or econometric tool, the quality of the empirical estimations is expected to improve substantially when they are well supported by economic analysis and tested against experts' experience.[16]

Finally, the credit-to-GDP gap is mapped into a CCB buffer rate (ie: the 'benchmark buffer rate') by means of a simple rule built around a lower and upper threshold of gap values. The CCB activates when the gap is above 2 percentage points (lower threshold), the point from where the CCB starts increasing linearly until reaching its 2.5% maximum when the gap is at 10 percentage points (upper threshold). Whilst this simple rule has also been supported by empirical cross-country analysis – as has the gap itself – the rule is also meant to be used as a starting guide to authorities responsible for deciding on the CCB.

### 2.3 GUIDING INDICATORS IN THE EU

The BCBS and the ESRB have followed an 'early warning approach' to assess the empirical properties of the Basel gap and other potential indicators used to guide decisions on the buffer [e.g., BCBS (2010); and in the EU context, Behn *et al.* (2013); and Detken *et al.* (2014)]. This means that – motivated by the CCB's objective – the empirical performance of the indicators has been assessed in terms of their ability to predict (or forecast) systemic banking crises.

As a result of this analysis, the credit-to-GDP gap has been proposed as the indicator to be taken as a starting reference point for assessing and setting appropriate buffer rates. But empirical analysis on the CCB has also shown that the baseline specification for the credit-to-GDP gap may not work in all cases and may benefit from some fine-tuning adjustments in certain contexts, and that the decisions on the CCB can be enhanced with other indicators and information.[17] Consequently, using additional quantitative indicators – including alternative specifications for the Basel gap – and qualitative information is also recommended. This is pointed out, for instance, in Principle 2 – "Common reference guide" – of the BCBS principles underpinning the role of judgement in the CCB decisional framework (see Appendix 1).

The ESRB own empirical work has shown that the credit-to-GDP gap is the best single indicator for the EU as a whole for signalling the activation of the CCB [ESRB (2014a); Detken *et al.* (2014)]. Yet, the ESRB have also found that the gap does not perform well in

14 Ahumada and Garegnani (1999).

15 Other common criticisms include 'end-point' problems (instability of the filter at the end of the sample) and the fact that it is not a fully forward-looking metric.

16 For further implications of using the HP filter for the credit-to-GDP calculations, see also Edge and Meisenzahl (2011).

17 Since the CCB was launched, a prolific stream of literature has emerged assessing the performance of the Basel gap and other indicators both at the country and EU level. For example, in addition to other empirical studies already mentioned for the EU, Kelly *et al.* (2013) examine the performance of the gap in Ireland; Kauko (2012) presents an analysis for Finland and a cross-section of EU countries; Bonfim and Monteiro (2013) for Portugal; Gerdrup *et al.* (2013) for Norway; Giese *et al.* (2014) for the UK; and Geršl and Seidler (2011) for a sample of central and eastern European countries, including the Czech Republic.

some countries for a number of reasons – as for instance, structural issues –. The ESRB recommendation on the CCB therefore suggests that, additionally to the Basel gap, some countries may also want to apply alternative methodologies or specifications for the gap calculations and for the rule to calculate buffer rates. The recommendation however does not provide guidance on these alternative methodologies as it explains that the empirical analysis is not sufficiently developed.

To facilitate communication with the public, national authorities should publish quarterly on their websites the 'standardised' credit-to-GDP gap and buffer rates (i.e., the Basel gap and buffer rates) alongside those alternative calculations of the credit-to-GDP gap and the corresponding buffer rate that best reflect their national specificities. This information will accompany the rest of the information required by the CRR/CRDIV for the announcement of the CCB rate each quarter – e.g., the date from which banks should apply any increases in the CCB rate –.[18]

Further to standardised gap and alternative specifications, the ESRB recommendation suggests another group of quantitative indicators which – in addition to qualitative information – may also help to guide the activation and release of the CCB. For the activation phase, the following indicators have been found informative for signalling the build-up of system-wide risks related to excessive credit growth:

- Measures of potential overvaluation of property prices. E.g., commercial and residential real estate price-to-income ratios, price gaps and growth rates.
- Measures of credit developments. E.g., real total credit or real bank credit growth, the deviation from trend in deflated M3.
- Measures of external imbalances. E.g., current account balances as a ratio to GDP.
- Measures of the strength of bank balance sheets. E.g., leverage ratios.
- Measures of private sector debt burden. E.g., debt-service to income ratios.
- Measures of potential mispricing of risk. E.g., real equity price growth.
- Measures derived from models that combine the credit-to-GDP gap and a selection of the above measures (i.e., combined or aggregated indicators).

On quantitative indicators for the release phase, ESRB empirical findings suggest that financial market prices are useful to indicate a prompt reduction or full release of the CCB when risks materialise. However, the ESRB recommendation explains that the empirical analysis of indicators for signalling the release phase has been less robust than for the activation phase due to data limitations – e.g., limited long-time series available –. The ESRB has also found it difficult to identify indicators to guide a progressive reduction of the CCB when risks from excessive credit growth do not materialise but gradually recede. As a result, the ESRB expects greater usage of judgement in the release phase of the CCB than during its activation phase. The ESRB suggests that this judgement could also be informed by market intelligence, supervisory assessments and stress tests.

18 Art. 136 (7) of the CRDIV.

Having considered all these issues, the ESRB suggests monitoring the following indicators when having to decide on maintaining, reducing or fully releasing the CCB:

— Measures of stress in bank funding markets. E.g., the LIBOR-OIS (overnight index swaps) spread, bank CDS (credit default swap) premia.

— Measures that indicate general systemic stress. E.g., a composite indicator measuring stress in the national or EU financial system such as the ECB CISS (Composite Indicator of Systemic Stress) indicator.[19]

The ESRB recommendation provides that if the aforementioned complementary indicators for the activation and release of the CCB are available and relevant in member states, national authorities should publish quarterly on their website at least one of the indicators for the activation phase and one for the release phase in addition to the rest of the information described above.

The deadline for the follow-up of the ESRB recommendation on the CCB is 30 June 2016. National authorities are requested by that time to send to the ESRB, the EU Council and the EU Commission a report explaining the measures taken to comply with the ESRB recommendation. If a country decides to activate the CCB ahead of that date, all the recommended measures should apply from the date by which the country requires its credit institutions to maintain a CCB.

## 3 Stress events: the late 70's crisis, the Banesto crisis and the recent crisis

The CCB requirement to work countercyclically implies that it should increase at the pace that risks to financial stability from excessive credit growth accumulate. This occurs during what is known as the activation, accumulation or build-up phase. Following this first phase the CCB should be promptly reduced in the case of a banking crisis, or be progressively released when risks to financial stability recede. This is the deactivation, disaccumulation or release phase. In this paper we explore the performance of a set of potential guiding indicators for the CCB in three periods of stress in the Spanish banking sector.[20] As mentioned before, the focus is on the build-up phase of excessive credit growth ahead of the identified events.

The first period (1978Q1-1985Q3) and the third period (2009Q2-2013Q4) that we considered correspond to two systemic crises episodes in the Spanish banking system. The second period (1993Q3-1994Q3), by contrast, corresponds to an idiosyncratic event coinciding with the intervention and subsequent resolution of one large bank in Spain at that time, Banco Español de Crédito (Banesto).

The 1978-1985 crisis (the 'late 70's crisis') was the longest banking crisis and with highest costs in terms of GDP foregone in Spanish history thus far. It followed the collapse of the Bretton Woods monetary system, the oil shock and the deep recessionary period which characterised the early 70s in western economies. In Spain, the crisis affected a very large part of its banking system, including both small and large institutions. Martín-Aceña *et al.* (2013) estimate that around 52% of Spanish institutions were affected by the crisis.

The second event (the 'Banesto crisis') that we use for the empirical analysis is a relatively short stress period between 1993 and 1994 when one of the oldest and larger Spanish

19 Holló *et al.* (2012).

20 For further details on the events considered see Martín-Aceña *et al.* (2013), Laeven and Valencia (2012), and Malo de Molina and Martín-Aceña (2011).

banks – Banesto – was put into resolution, recapitalised and then sold in a public offering. Though this episode cannot be considered strictly as a systemic banking crisis, i.e., it does not fulfil the commonly used criteria to define systemic banking crises in the literature, we include the Banesto crisis in the exercise as it may still be useful to analyse the performance of the indicators in different types of stress episodes. Furthermore, as suggested by Davis and Karim (2008), there is no unique variable to define banking crises and a degree of subjectivity is usually needed.[21]

Finally, the third stress event (the "recent crisis") corresponds to the latest financial crises which affected most of the financial systems around the world. As is well known by now, this financial crisis has been one of the deepest and most widespread in history. For the purpose of the empirical exercise, we date at mid-2009 the beginning of this third crisis period in Spain. This date coincides with the intervention of the Caja de Ahorros de Castilla-La Mancha (CCM) by the Banco de España. This was the first institution intervened during the recent crisis. Furthermore, the end-2013 reference point corresponds to the conclusion of the financial assistance programme agreed with the European authorities in 2012 for the recapitalisation of a portion of Spanish banks.[22]

## 4 Indicators to guide the CCB in Spain

Having defined three stress events, we explore in what follows the performance of a number of indicators to help guide buffer decisions. We divide the selected indicators into five categories: Basel gap, credit developments, real estate property prices, external imbalances, and private sector debt sustainability. We have selected these indicators based on their conceptual relevance and their empirical qualities.

Conceptually, all these indicators capture different aspects explaining the build-up of system-wide risks associated with credit expansions ahead of banking crises: relaxation of credit constraints, increased leverage of borrowers, appreciation of credit-financed assets and insufficient internal savings. In that sense, they are not necessarily specific to only one particular crisis. On the contrary, these are indicators – for example that for real estate – whose relevance has also been well documented in other banking crises in the past and in different countries. The indicators are sometimes related and can mutually reinforce each other, but they do not need to signal a warning simultaneously in all cases.

From an empirical perspective, given the exploratory nature of this paper and the focus on the build-up phase, the main broad features we would ideally require of the indicators if they are to be considered 'useful' complements to the Basel gap are twofold: i) indicators should peak only in advance of the stress events identified – otherwise, they would tend to send 'false signals' regarding potential stress events –; ii) the peaks should occur several quarters ahead of the stress event – to give enough time for the CCB to accumulate –.

In addition to the five abovementioned categories, the analysis of banks' balance sheet indicators can also be of interest from a macroprudential perspective. Preliminary work on this area (not reported in this paper) suggests that liquidity transformation metrics have good properties as potential leading indicators. Specifically, simple liquidity metrics – such for example a broad loan-to-deposit ratio – can provide useful information on the amount of liquidity transformation occurring ahead of stress events, potentially fuelling credit expansion at the aggregate level. However, this is still a developing area which is left for later work.

21 Some conventional crisis classifications which have widely used in the literature on early warning systems include Caprio and Klingebiel (1996), Demirgüç-Kunt and Detragiache (1998) and Kaminsky and Reinhart (1999).

22 Banco de España (2013).

Finally, indicators based on equity prices and credit risk premiums can also be used to study possible misalignments in risk pricing which boost asset prices with an effect on credit growth. Data for valuation indicators – such as price-to-earnings ratios and market credit risk premiums – are however not readily available for the first two stress events considered in Spain, and therefore further analysis is needed to construct these series.

### 4.1 BASEL GAP

As explained above, whilst authorities in the EU should also consider other quantitative indicators and qualitative information, the baseline credit-to-GDP gap proposed by Basel is the common starting point in guiding decisions on the CCB. The BCBS and the ESRB propose a broad credit definition for the numerator in the Basel gap. On that basis, we have constructed a long time-series of households and non-financial corporations' total debt in Spain starting from 1962.[23] Similarly, for the denominator, the most recent GDP estimates are extended backwards using historical growth rates from previous statistical GDP bases (see details in Appendix 2).

Chart 1 shows the resulting credit-to-GDP ratio for Spain and the one-sided Hodrick-Prescott trend (also known as recursive or real-time HP trend).[24] The difference between the ratio and the trend will thus deliver the 'real time' Basel gap. That is, the gap which should have been considered at each point in time in the past, had the current regulation been in place. The three stress events identified above (the two systemic crises and the idiosyncratic event), are also shown as shaded areas in the Chart.

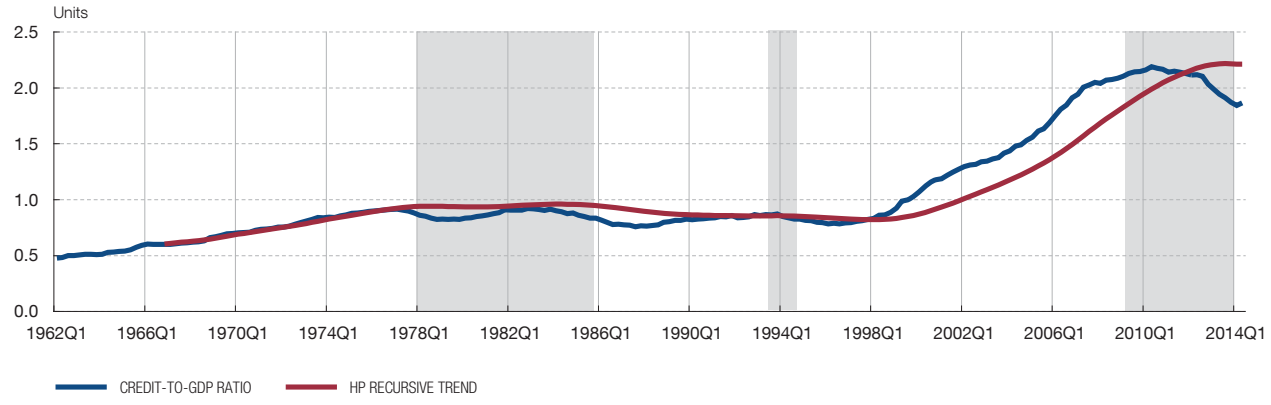
The credit-to-GDP ratio shows an upward trend before the three stress events. The Basel gap, however, would have failed to signal the first two events. This is clearer in Chart 2 which shows the Basel gap and the lower and upper thresholds. The CCB would have been zero (the gap is below the lower threshold) both in the run-up to the late 70s crisis and in the Banesto crisis. This means that, in the hypothetical case that the CCB were exclusively guided by the gap, the CCB would have not accumulated in the run-up to these two stress events. Alternative definitions of the debt-to-GDP gap do not alter this conclusion, although a gap in percentage terms (i.e., in deviations from the trend as a percentage of the trend), instead of in absolute differences, produces smaller fluctuations in the latter part of the sample, which seems desirable (see Appendix 3).

23 Although there is some debate on whether inter-company loans should be included or not, here we decided to include them. We did this in an attempt to simplify calculations and make the results more comparable across countries, as separate data on inter-company loans are not always available in other countries.

24 See Stock and Watson (1999).

CREDIT TO GDP IN SPAIN

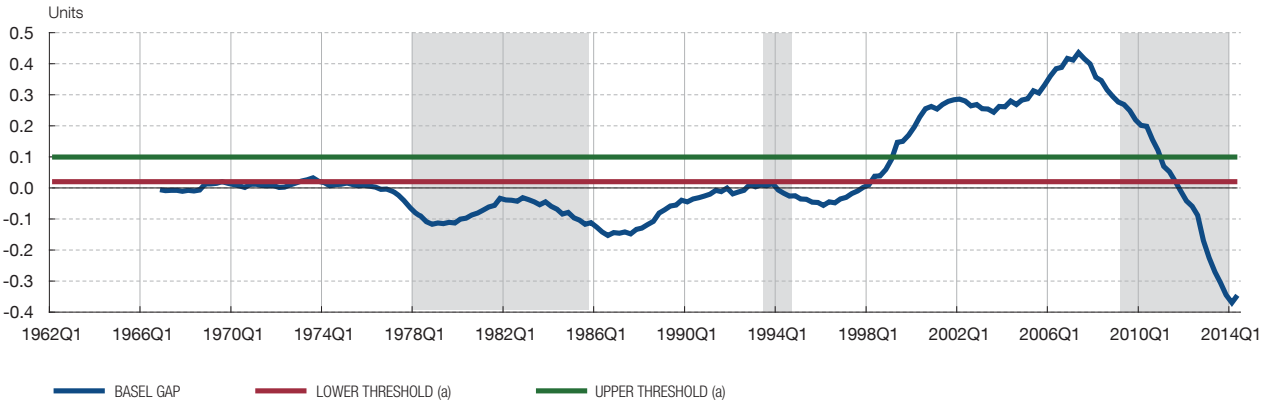
CHART 1




SOURCES: Banco de España, Instituto Nacional de Estadística and own calculations.

BASELINE BASEL GAP AND THRESHOLDS. APPLICATION TO SPAIN

CHART 2




SOURCES: Banco de España, Instituto Nacional de Estadística and own calculations.

**a** Banks have a one-year lag to comply with the required CCB when the gap exceeds the threshold.

The HP filter is a statistical procedure designed to analyse cyclical time-series with slowly changing long-term trends. It thus requires, first, at least one complete credit cycle to correctly identify the trend. And second – as with most statistical tools – the filter has problems in dealing with structural changes in the long-term trend or in the series level.

On the first of these issues (complete credit cycles), having used data for Spain since 1962 – which is already quite a long time span – it would be necessary to wait until around the mid-1980s to describe a full credit cycle. Over the years before the late-1970s banking crisis, the credit-to-GDP ratio almost doubled, suggesting a very fast pace of credit growth. Yet, due to the absence of historical data for the period before (and after) the expansionary phase, the one-sided HP gap did not signal this period as an unsustainable development associated with excessive credit growth.[25] Afterwards, during the 80s and 90s, the credit-to-GDP ratio stopped growing and even declined somewhat, but did not return to the early-1960s levels, indicating that part of the increase was structural or sustainable. As a consequence of the delayed reaction in the trend, the one-sided HP gap remained negative for a long period after the start of the 1978-1985 crisis. Thus, by the time of the next stress event (in 1993-1994), the trend was still too high, contributing to explain the absence of any warning signal in advance.

Regarding the second issue (structural changes), the evidence shows some sharp changes in the long-term trends by the end of the 90s in Spain. These changes create some hurdles for the functioning of the CCB ahead of the recent crisis. The trend for the Basel gap is backward looking. It thus only feeds on historical data and adjusts only very gradually to new structural developments, especially at high values of the smoothing parameter lambda. The Basel gap in this case would have started signalling symptoms of excessive credit growth since mid-1998 and it would have very rapidly implied a 2.5% CCB since

25 As during previous years there was a continuous upward trend in the ratio, the filter 'memory' assumes this trend will also continue in the future. Thus, a stabilisation in the ratio generates a negative gap during some years until the filter 'learns' there has been a change in the trend. Arguably, a two-sided HP filter augmented with forecasts may help to get more precise estimates of the trend and its possible changes [see Gerdrup *et al.* (2013)]. This is because a two-sided HP filter uses all available information – possibly also including forecasted data – rather than just vintage information as in the one-sided filter. However, this approach would rely on the ability to capture the underlying economic developments in the series. In general, purely statistical methods do not produce good forecasts when there is insufficient data or when facing structural changes.

end-1999 (see Chart 2). This is ten years in advance of the 2009-2013 banking crisis. Moreover, from mid-2004 the gap became really high (above 25), suggesting even higher CCB levels in the years immediately before the crisis. Thus, the doubts are as to whether the gap may have been sending signals far too early in this case.

On the one hand, this would have been the case if, for instance as a result of Spain joining the euro area, the 'sustainable' debt-to-GDP ratio had increased. The HP trend fails to fully assess what could be a sustainable or equilibrium credit-to-GDP. From this perspective, therefore, at least part of the credit growth observed from the mid-1990s to 2007 would not be seen as a signal of excessive credit supply, but rather as an adjustment to a new equilibrium (a structural change). Some support for this hypothesis can be found in the fact that the level of credit-to-GDP in Spain during the 80s and 90s (below 100%) was relatively low when compared to the level of financial intermediation in other advanced economies.

On the other hand, it should also be recognised that structural changes are difficult to assess in real time. Given the perils of underestimating procyclical risk during expansionary periods and in the absence of better a knowledge of the structural determinants of the debt-to-GDP ratio – or more generally on the sustainable size for different banking systems and business models – a carefully balanced policy is warranted.[26]

The type of dynamics just described may also be illustrative for other countries which did not suffer such a marked change in the credit-to-GDP trend as did Spain in the late 90s, but were still 'cycling', along their historical series, with a relatively steep credit-to-GDP trend beyond what could be considered as sustainable. When applied in these scenarios, the Basel gap is less likely to signal excessive credit growth processes – even though systemic risks may actually be hatching and developing underneath –. This can occur for the same reason as that responsible for the gap failing to send signals ahead of the late 70s crisis in Spain.

Similar situations may also occur in the coming years. But now because of the strong credit-to-GDP growth experienced ahead of the recent crisis. This difficulty is illustrated in Chart 3 using two arbitrary simulations of the future behaviour of the ratio. These simulations assume that part of the large increase observed in the first decade of this century was an overreaction. Consequently, the credit-to-GDP ratio would fluctuate in the future around a somewhat lower level. However, due to the 'memory' of the HP trend, it would take quite some time for it to adjust to the new equilibrium level, making it more difficult to identify potential future excesses in credit growth with the Basel gap. In the absence of other indicators – for example on the intensity of credit growth – or sound estimates of sustainable credit-to-GDP levels, a comparison of the two simulations shows that this kind of issues can impair to some extent the gap's ability to identify future expansionary periods – for example in a hypothetical and at the moment still unlikely scenario of a very intense credit expansion in the next few years –.[27]

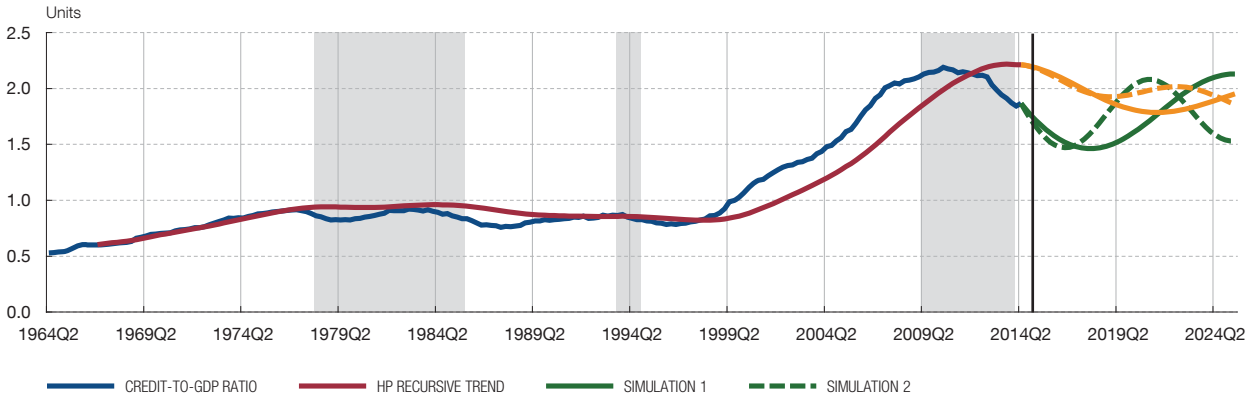
Solving these issues is challenging, but they are not new. For example, similar problems arise when estimating potential output to be used in output gap estimations. There are at least three strategies which could be followed to try to alleviate these problems. First, using a broad set of complementary indicators – as for example also suggested in Giese

26 ESRB (2014b) provides some first insights and discussion on the size of the European banking system, but further work in this very challenging area is much needed.

27 This would also be the case even if we assume there is not an overreaction in the credit-to-GDP growth observed in the first decade of this century. Simply a change in the trend, from the steep upward sloping one observed up to 2009 to a flatter one, would be enough to generate statistical problems for the one-sided HP gap.

ARBITRARY EXAMPLE OF SIMULATED CREDIT TO GDP GAP IN SPAIN

CHART 3




SOURCES: Banco de España, Instituto Nacional de Estadística and own calculations.

*et al.* (2014) – can help to unmask possible sources of systemic risk associated with excessive credit growth. These indicators include metrics on credit growth intensity such as the ratio of changes in credit to cumulated GDP proposed in the next section, which could complement metrics focused on the amount of excesses such as the Basel gap. Second, econometric estimations of long-term equilibrium levels for the credit-to-GDP ratio can help to inform on structural factors affecting credit developments. The econometric estimates, in turn, should benefit to a great extent from progress made in treating financial stability issues in general equilibrium models. Finally, other different methodologies and approaches – for example, stress-tests – can be also used to identify relevant endogenous and exogenous factors when guiding buffer decisions.

## 4.2 CREDIT DEVELOPMENTS

Given the CCB's objectives, it is clear that credit developments are crucial to guide the buffer. The relevant issue is to what extent they are important and informative beyond what is already included in the credit-to-GDP gap.

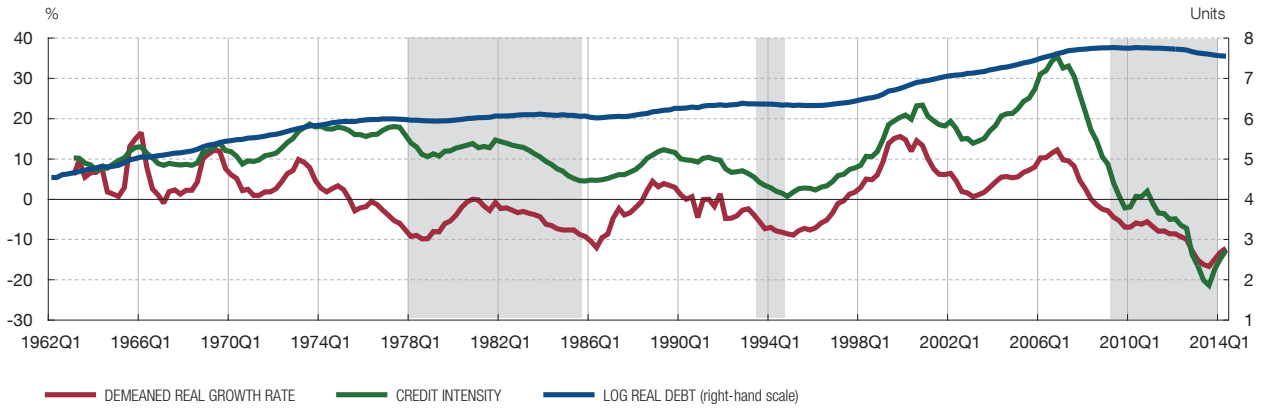
For example, Repullo and Saurina (2011) report a negative correlation between the Basel gap and GDP growth, which would make the gap questionable as a countercyclical indicator. As an alternative, therefore, they propose using credit growth as the macroeconomic variable driving the behaviour of the CCB.

The negative correlation between the gap and GDP growth is likely to be most relevant during recessions or following a crisis, when a fall in GDP typically materialises sooner than a fall in credit, making the credit-to-GDP a less effective indicator when deciding on the right moment to release the CCB [see Kauko (2012) and Drehmann and Tsatsaronis (2014)]. Consequently, as suggested in the BCBS (2010) and ESRB (2014a) guiding documents, complementary indicators to signal the release of the buffer may be needed. Although assessing indicators for the release phase is still a developing area and beyond the scope of this paper, GDP growth and 'fast moving' indicators such as equity prices or credit default swap (CDS) premiums have been found to be promising guiding indicators [see for example Detken *et al.* (2014)].

During credit booms, a general tendency for credit to grow faster than GDP would be expected. This makes the gap more likely to send the right activation signals during these periods when risks are building up. Nonetheless, possible conflicts between the business (GDP) and credit cycle may still arise. This is pointing in two directions in our view. First, in addition to monitoring the credit-to-GDP gap, there are reasons for tracking credit

TOTAL DEBT OF HOUSEHOLDS AND NON-FINANCIAL CORPORATIONS IN SPAIN

CHART 4




SOURCES: Banco de España, Instituto Nacional de Estadística and own calculations.

developments which can be captured by complementary credit-based indicators, such as for instance credit growth measures or the variant we propose further below, namely the ratio of changes in credit to cumulated GDP. And second, there is a need to not lose sight of the ongoing interrelationships between the credit and business cycles to guard against a conflict between them arising at some point.

Let us focus on the first point, additional credit-based indicators. For the construction of these additional indicators, we use as the credit metric the same metric as for the numerator of the credit-to-GDP ratio. This means we include total debt from households and non-financial corporations in Spain (see Chart 4).

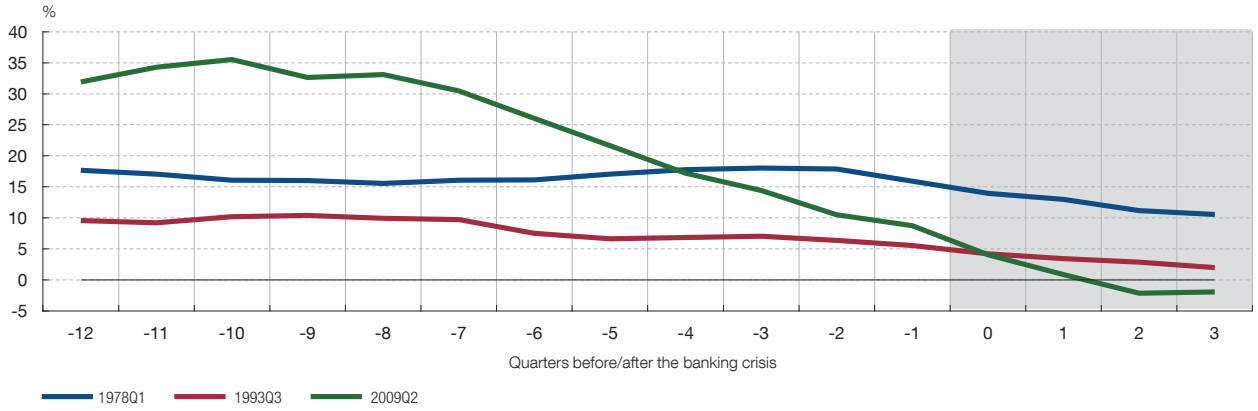
Real credit growth should be a good signal when lenders are underestimating risks and consequently credit is growing steadily and rapidly over time. In fact, in the three identified pre-crisis periods in Spain, the annual growth of debt was above its long-term average for at least some quarters. And this was more so in the cases of the two most serious crises (the first and third ones). However, this indicator shows too much volatility, which could be alleviated by some form of smoothing (e.g., moving average).

A possible alternative is what we have called a “credit intensity” indicator, defined as the annual change in non-financial private-sector debt divided by four-quarter cumulated GDP. This measure is included among the indicators to follow in the EU Macroeconomic Imbalance Procedure (MIP) and gives an idea to what extent expenditure in the economy is being supported by new credit. Therefore, a high value of the indicator should point to unsustainable expenditure levels. Also important, after the proposed transformations, both the numerator and the denominator of the ratio are now capturing annual flows.

More specifically, there is some conceptual attraction in combining credit-based indicators capturing ‘excess’ credit in terms of domestic economic resources (proxied by GDP) and long-term values (proxied by a trend), with credit-based indicators capturing the ‘intensity’ (or velocity) of the build-up of credit excesses – such as for example the ratio of changes in credit to cumulated GDP proposed above –. Note that – from an economic point of view – changes in credit could also be interpreted as a proxy for that part of consumption and investment that households and non-financial corporations are getting financed. Absent structural changes, this part should be a stable proportion of their income (GDP) in a model of balanced growth.

DEVELOPMENTS IN CREDIT INTENSITY AHEAD OF BANKING CRISES

CHART 5




SOURCES: Banco de España, Instituto Nacional de Estadística and own calculations.

Moreover, the suggested approach could help to detect rapid credit growth processes which may still not produce large deviations with respect to the trend; cases where excesses accumulate during long time periods, at a slow but steady pace; and more perilous cases where credit excesses accumulate very rapidly in few years.

Chart 4 shows that the 'credit intensity' indicator peaks well ahead of the three-identified events, with a very marked increase from the beginning of 2004. Although it is difficult to say with certainty, it appears there is no long-term trend in this measure (i.e., it is stationary) and therefore thresholds values for guiding the CCB accumulation could eventually be calibrated without using any statistical filter.[28] As an illustration, a 15% level was not exceeded in the period before the 1993-94 crisis, but it was ahead of the other two (from 1972Q3 and 1999Q2, respectively). A more conservative 10% level would have also signaled the intermediate crisis from 1988Q3. These insights are confirmed when zooming in at the three-year period prior to the stress events identified in Spain (Chart 5).

### 4.3 REAL ESTATE PROPERTY PRICES

It is well-known by now that a combination of strong growth in credit and in property prices is a clear early-warning signal of potential systemic banking crises [see for example, Borio and Drehmann (2009), Barrel *et al.* (2010) and Behn *et al.* (2013)]. Both variables tend to move in tandem because of the role of credit in supporting house purchases and the role of housing wealth (as collateral) in decisions on loan supply. Hence, unusually high property prices or rapid increases in them can be a signal confirming the existence of excessive credit growth. And, at the same time, they point to additional sources of systemic risks since those elevated property prices may be unsustainable.

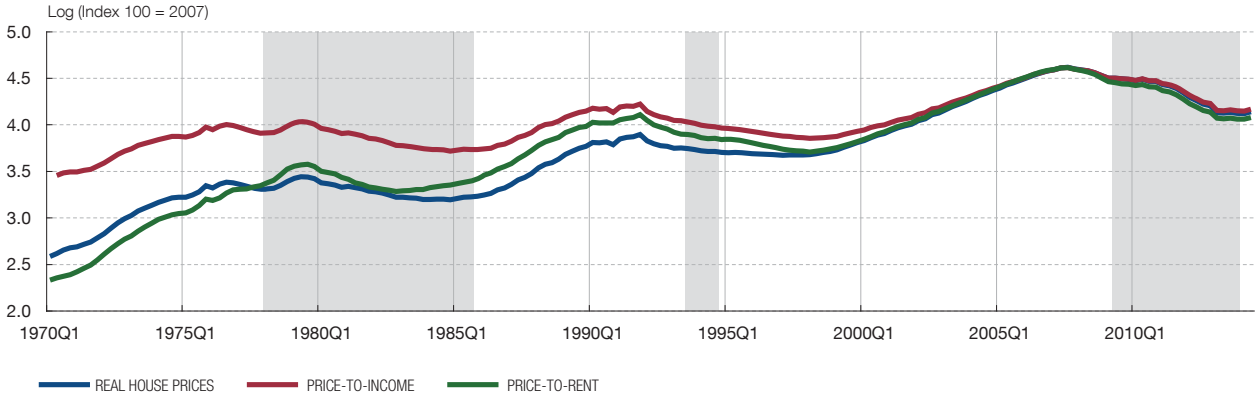
Chart 6 shows three potential indicators to assess developments in the real estate sector in Spain: real house prices, price-to-income ratio and price-to-rent ratio for Spain.

Real house prices grew strongly ahead of all the identified stress events and fell afterwards, suggesting this is an informative indicator for guiding CCB activation. However, they also show a long-term upward trend. This trend should thus be removed to get an appropriate signal for the CCB. Normalising house prices using housing rents as denominator is

28 Simplicity is always an advantage in regulation, as put it by Calomiris (2012): "Only simple rules can avoid dependence on regulatory discretion, which is subject to political manipulation; automatically enforced, transparent rules are incentive-robust for regulators".

HOUSE PRICE DEVELOPMENTS IN SPAIN

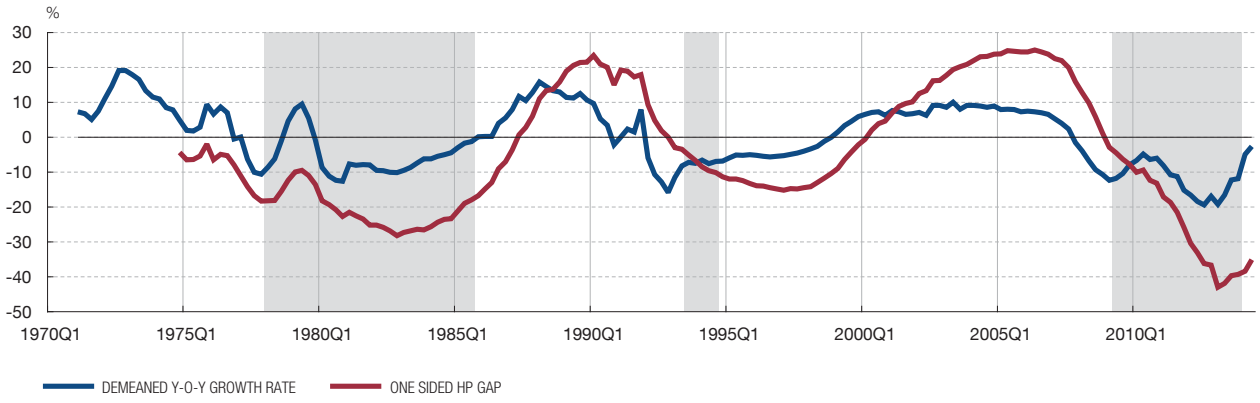
CHART 6




SOURCES: Banco de España, Instituto Nacional de Estadística, Ministerio de Fomento and own calculations.

REAL HOUSE PRICES IN SPAIN

CHART 7




SOURCES: Banco de España, Instituto Nacional de Estadística, Ministerio de Fomento and own calculations.

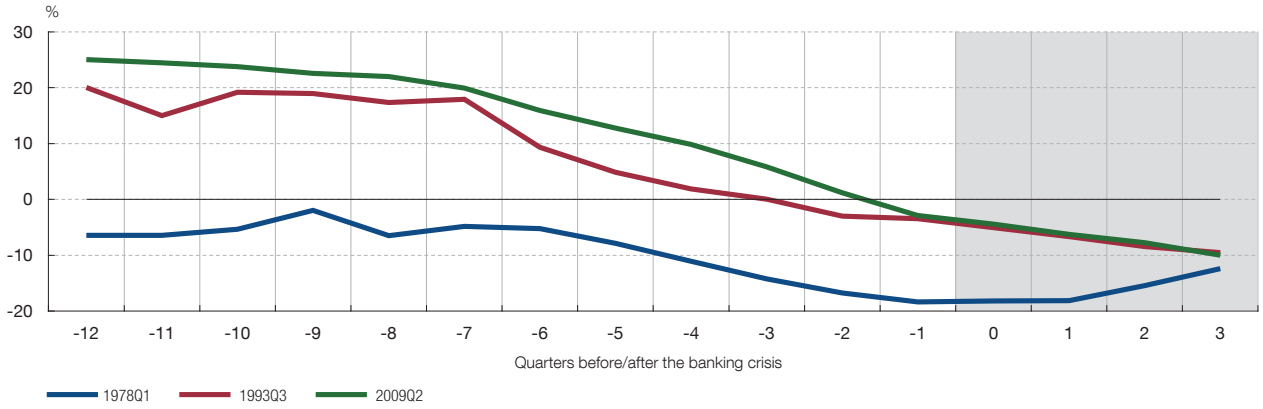
however not very useful in Spain as it fails to remove the observed trend (see the price-to-rent ratio in the Chart 6). This is probably because of the nature of the Spanish rental market, which is quite small and has been subject to important regulatory restrictions on prices.[29] All this makes housing rents a poor indicator of fundamental house prices.

The results are somewhat better when adjusting for potential GDP per capita (price-to-income ratio). Nonetheless, there is still an upward trend in prices, which suggests the existence of other fundamental factors (and/or structural changes) affecting the long-term sustainable price level. Ideally, a structural analysis could be carried out in order to obtain a more accurate indicator for the CCB. However, for the sake of comparison, we will follow the same non-structural approach we have already used for previous indicators. We thus use growth rates and detrended series with the HP filter (see Chart 7).

Gap measures tend to perform better than growth rates.[30] The latter are more volatile, go higher earlier in the expansion and decline sometimes well ahead of the actual crisis, making it difficult to extract a specific level above which the CCB could be activated.

29 For example, between 1970 and 1979, real rents fell by 33%, in a context of high inflation and regulated rents.
30 The growth rate is also demeaned by subtracting the average growth rate for the whole period.

REAL HOUSE PRICES ONE-SIDED HP GAP AHEAD OF BANKING CRISES CHART 8




SOURCES: Banco de España, Instituto Nacional de Estadística, Ministerio de Fomento and own calculations.

The one-sided HP gap (ie: the 'real time' gap) does not work in the first stress event, but this is mainly due to a lack of enough historical data for that period.[31] In the other two events it works properly. As an example, a 5% threshold would have resulted in an activation and gradual accumulation of the CCB by 1987Q4 and 2001Q1, respectively.[32] The same pattern is also clear in Chart 8.

An explanation for the better behavior of the HP filter in this case, compared to the credit-to-GDP analysis above, is that real house prices appear not to show abrupt changes in long-term trends (compare Charts 1 and 6). This makes it more likely that the procedure will also work in the future, although it cannot be ruled out that this will fail to hold if there are future structural changes. Structural models of house prices will also be needed in that case.

It is worth mentioning two additional aspects. First, real house prices, including their gap transformations, tend to decline ahead of the identified systemic banking crises, theoretically pointing to a release of the CCB. This may or may not be optimal, but it has to be analysed in the context of the indicators for the release of the CCB, which are distinct from those applicable to its build-up. Second, the house price gap fails to identify the severity of the subsequent crisis. The maximum level of the gap is similar ahead of the 1993-1994 and 2009-2013 stress events, whereas the severity of these two crises, in terms of financial sector turmoil and real sector implications, was quite different. Notice that, housing prices only are not able to capture other risks which can accumulate during expansions on the 'real side' – for example excessive growth in residential construction –. As such, indicators based on housing prices can be used to confirm or complement messages from other indicators capturing the real side of the expansionary period, as for example the gap itself. Yet again, as per other indicators, information from other sources of qualitative and quantitative information should help to get a complete picture of the issue.

Despite the limitations described above, real estate price indicators show very good qualities as a complement to the Basel gap. The real time gap estimations clearly pick up

31 This is confirmed when a two-sided HP filter is applied instead of the one-sided one in the gap calculation. The gap using a two-sided filter would also pick up the first stress-event. The two-sided filter, by using all available information rather than just vintage information as in the one-sided, overcomes the lack of data at the beginning of the series in this case. Yet, as explained before, the one-sided filter is used in this the paper as it simulates policy decisions when they would actually be made in real time.

32 With a 10% threshold those dates would have been 1988Q1 and 2001Q4.

the two stress-events identified for which enough data is available. The dynamics preceding the last two events were also similar to those observed in the run up to first stress event (i.e., rapid growth in house prices). This suggests that these indicators would have also sent correct informative signals during that period.

### 4.4 EXTERNAL IMBALANCES

The indicators analysed above capture directly the behaviour of credit or are closely linked to it. Other promising indicators for the purpose of signalling excessive credit growth periods are those that indirectly react to it. In that respect, it has been generally observed that when credit grows well above GDP, consumption and investment increase, and domestically generated savings are not enough to finance the credit expansion. As a result, resources have to be 'imported' from abroad and this is recorded in the balance of payments as a deficit in the current account. For this reason, the current account balance of the economy as a whole can be a useful leading indicator of financial distress, notably when deficits of a certain size are recorded over a sustained time period. Following this rationale, we include external imbalances and international capital flows in our analysis. Assessing these aspects is particularly important for a country like Spain, where most of these flows are intermediated by the banking sector.

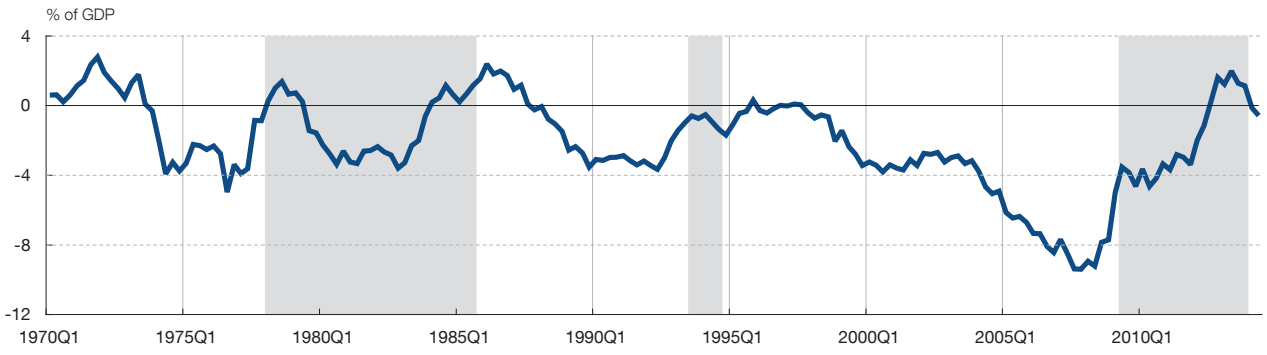
Chart 9 shows that taking into consideration external imbalance indicators is indeed relevant for Spain. The stress events identified were preceded by a sustained current account deficit of around 4% of GDP. It should be noted, besides, that this ratio fluctuates around a stable level, so, as with the credit intensity indicator, no statistical or economic transformation of the indicator is needed – at least in this first approach – to assess its usefulness as a complementary guiding indicator for the CCB.

There were other two periods when the current account deficit stood at 4% for a certain period of time (1980-1984 and 2000-2003). But during 1980-1984 the late 70s crisis was still ongoing. And in 2000-2003, the process ended up five years later in the recent crisis after having reached deficits at around 10% of GDP.

It should also be remarked that sources of the observed current account deficits were very different. In the 70s the oil price shocks played a leading role; in the 90s not enough saving was the key; and in the 2000s excessive investment in the real estate sector was at the heart of the observed events. Also, the commercial and financial openness in Spain was very different in each case. However, in all the cases considered a stress event was recorded some time later.

CURRENT ACCOUNT BALANCE IN SPAIN

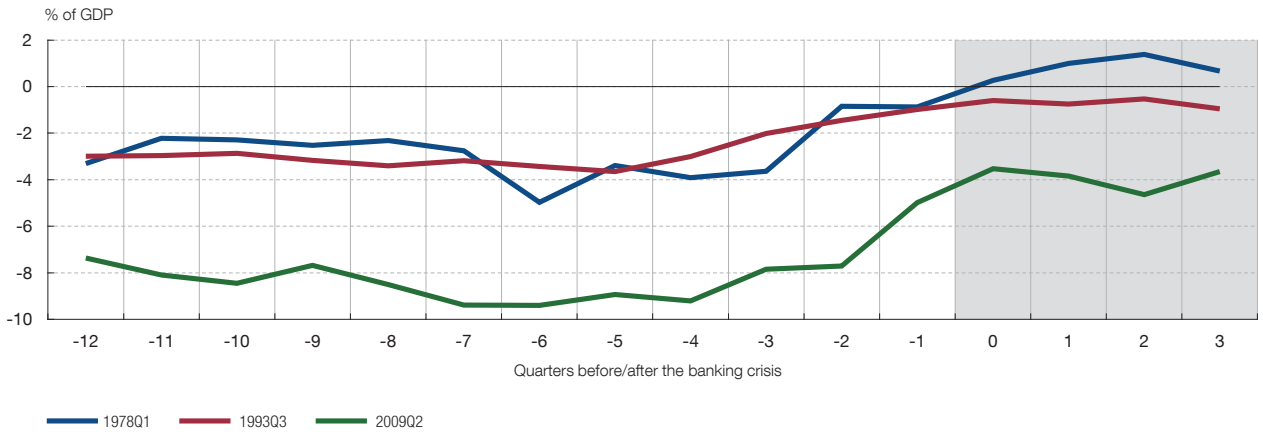
CHART 9




SOURCES: Banco de España, Mineco, Instituto Nacional de Estadística and own calculations.

CURRENT ACCOUNT BALANCE AHEAD OF BANKING CRISIS

CHART 10




SOURCES: Banco de España, Mineco, Instituto Nacional de Estadística and own calculations.

The aforementioned behavior of the current account balance around the the time of stress events identified is well reflected in Chart 10. Current account deficits over 4% are observed well in advance of the stress, and they remain in that mode for a sustained period. As a result, the current account balance sent informative signals ahead of the three stress-events identified and its dynamics are also consistent with the concepts underlying this indicator.

## 4.5 PRIVATE SECTOR DEBT SUSTAINABILITY

Borrowers' debt levels have been found to be pivotal factors explaining the recent financial crisis. For example, Mian and Sufi (2009, 2011) describe the importance of the household debt and household balance sheet channel in the US crisis. In this regard, metrics capturing excessive private sector debt – such as for instance the debt-to-income and debt service ratios – have also been widely supported in the recent literature on guiding indicators for the CCB [see for example, Drehmann and Juselius (2012, 2014); Detken *et al.* (2014); Giese *et al.* (2014)]. Consistently with these findings, the ESRB recommendation on the CCB includes a category on measures of private sector debt burden for authorities to be considered when assessing quantitative information for the build-up phase.

Measures of debt expenditures and income capture the burden imposed by higher debt in terms of available resources on the demand side of credit. Higher levels of these ratios are associated with less sustainable debt dynamics and thus higher probabilities of default. Different perceptions or estimations on these risk factors can in turn boost credit availability in good times and credit constraints in bad times. All told, fluctuations in real estate prices and different levels of private sector debt play an important role in the behaviour of credit.

The Basel gap has already embedded in its design some notions on credit sustainability. First, credit is assessed in terms of economic resources at a given point in time which is captured by the GDP. Second, the credit-to-GDP ratio is assessed in terms of its trend value. From this perspective, the indicators explored in this section can be seen as refinements to the information on credit sustainability embedded in the Basel gap. Key factors explaining credit sustainability are interest rates and debt maturity. These factors are jointly explored as part of a 'debt burden' ratio.[33]

33 On the usefulness of the debt service ratio as an early warning indicator of systemic banking crises, see Drehmann and Juselius (2012, 2014).

The Basel gap provides a view on the indebtedness of the non-financial private sector. However, while debt is an inter-temporal concept – in the sense that debt maturity is usually higher than one quarter – the GDP is the income generated in one quarter. In this respect, the ratio may miss some information on the income drain due to the debt load in a specific period. This drain could act as a default trigger.

The share of income devoted to debt reimbursements can be divided into two parts. The first is the payment of accrued interest; the second is the fraction of debt principal that is repaid. As debt burden metrics incorporate information on interest rate and debt maturity, they can be used as comprehensive indicators of agents' financial conditions. This is valuable information, as interest rate payments are a determinant of debt sustainability and, traditionally, lower maturity is associated with higher vulnerabilities.

To our knowledge, there are no official statistical sources on an aggregate basis containing this information; these indicators thus have to be constructed from partial metrics. In particular, we calculate a debt burden (db) as in the following expression:[34]

$$db_t = \frac{i_t}{[1 - (1 + i_t)^{-m_t}]} \frac{D_t}{(Y_t + i_t D_t)} \qquad [1]$$

Where i is the outstanding debt interest rate, D is the total credit analyzed before, m is the debt maturity and Y is private agents' disposable income. The numerator of the first term captures accrued interest and the denominator the debt principal repaid. The second term is just the debt-to-income ratio (including interest payments, since disposable income discounts these payments). These ratios are calculated separately for households and non-financial corporations, using their respective disposable incomes. When they are aggregated, the GDP is the denominator of the ratio. As Chart 11 shows, the debt burden for the non-financial private sector hovers around 14% of GDP until the mid-2000s. It then increases considerably before the recent banking crisis and diminishes afterwards – although it is still above the previous levels –. Notice that this indicator also rebounded before the mid-90s crisis, but not in the 70s crisis. In fact, unlike in the other two crises the debt burden increased during that crisis.

This general aggregate profile is repeated in the two sectors but with two major differences between households and non-financial firms. First, the debt burden level for firms is much higher than that for households. This is a consequence of assuming that the outstanding debt will be repaid using exclusively out of disposable income. However, debtors can also sell assets or refinance their debt. This is probably the case for non-financial firms, as debt not only finances investment projects but also day-to-day activities. The second difference is that households' burden debt presents more inertia, probably as a consequence of a higher debt maturity.

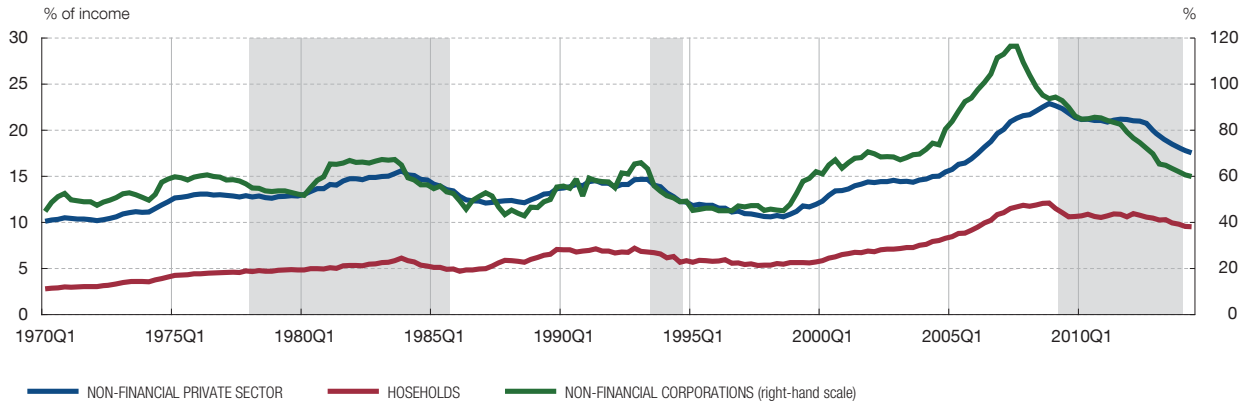
A difficulty with this indicator is that it is influenced by the business cycle through its effects on disposable income and interest rates.[35] Yet, as debt is an inter-temporal concept, we should consider a cyclically-free concept for income and interest rates. Besides, there is some evidence showing that business and credit cycles reinforce each other. We would thus favour calculating a debt service ratio based on potential disposable income (derived

34 This expression is slightly different from that of Drehmann and Juselius (2012) as the denominator of this expression also includes interest payments. Note that disposable income of households and non-financial corporations is net of these payments.

35 On the effects of monetary policy on risk taking and credit supply see Jiménez *et al.* (2012, 2014).

NON-FINANCIAL PRIVATE SECTOR DEBT BURDEN

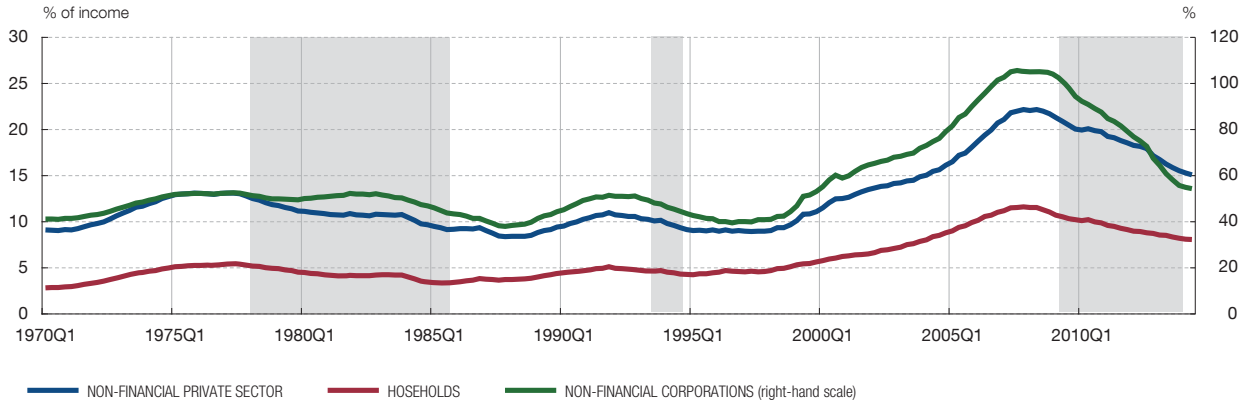
CHART 11




SOURCES: Banco de España, Instituto Nacional de Estadística and own calculations.

ALTERNATIVE NON-FINANCIAL PRIVATE SECTOR DEBT BURDEN

CHART 12




SOURCES: Banco de España, Instituto Nacional de Estadística and own calculations.

from potential GDP)[36] and natural interest rate.[37] Chart 12 shows the results when using these inputs.

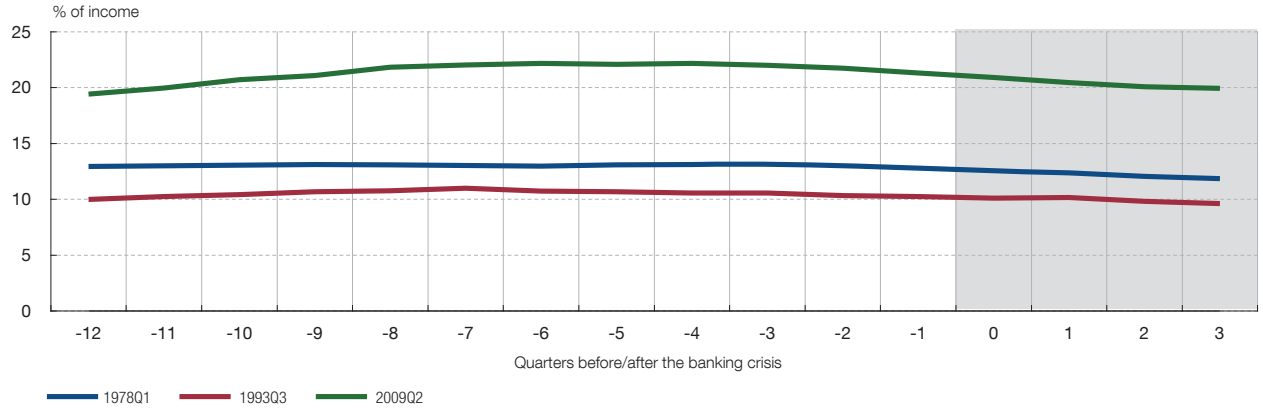
The indicators for all sectors are very similar to the previous ones assessed, but they also show some improvements. First, now the ratios tend to fluctuate more closely around a stable mean. Second, for the three sectors considered the indicator reached a peak before each of the three stress events. The observed increase before the nineties is a minor one, and in line with the non-systemic nature of this stress event. Finally, in all cases a decline is observed just before the stress event, which suggests these indicators may also be of some help for the release phase.

The informative value of the debt burden indicator can also be checked in Chart 13 for the non-financial private sector. The debt burden ratio is always above the level observed in the first quarter of the stress events, although only in the last crisis does the deviation appear to be of some size. All in all, as with the three previous categories of indicators

36 Potential disposable income is obtained smoothing the observed ratio of disposable income over GDP and multiplying by potential GDP.

37 Natural interest rate is obtained by adding potential growth to target inflation.

ALTERNATIVE NON-FINANCIAL PRIVATE SECTOR DEBT BURDEN AHEAD OF BANKING CRISIS CHART 13




SOURCES: Banco de España, Instituto Nacional de Estadística and own calculations.

considered (credit developments, property prices and external imbalances), the indicators of private debt sustainability peak ahead of the stress events identified and do not appear to be sending significant wrong signals.

## 5 Conclusions

Sound policy rules are very much needed to ensure predictability and avoid time inconsistency problems. Yet designing and implementing simple, comparable and effective countercyclical policy rules are not easy jobs. This has also been the case for fiscal and monetary policy for example. Macroprudential policy is not an exception, particularly given the still-incipient knowledge of this field.

EU legislation requires setting a countercyclical capital buffer starting on the basis of the credit-to-GDP gap (as defined in Basel) and complementing it with other specifications or indicators if needed. Drawing on empirical evidence in Spain we suggest a number of issues to be kept in mind when applying this benchmark guide. In particular, a fully automatic application of the credit-to-GDP gap has limitations when dealing with incomplete credit cycles and in the presence of structural changes in the data. The consequences of these issues can be observed when analysing how well the gap would have performed in the past. But these consequences are also relevant for the future as some simple simulations show. Further work on equilibrium estimations and more fleshed-out theoretical models, for example, should help to alleviate these issues in the future.

In the meantime, a broad but still manageable set of complementary indicators in conjunction with the credit-to-GDP gap can serve as useful 'sign posts' to guide buffer decisions. Conceptually, all the indicators analysed in this paper capture different factors explaining the build-up of system-wide risks associated with credit expansions ahead of banking crises (relaxation of credit constraints, increased leverage of borrowers, appreciation of credit-financed assets and insufficient internal savings), whose effects the CCB aims to alleviate. The selected indicators are sometimes related and can mutually reinforce each other, but they are not necessarily specific to just one particular crisis. From an empirical perspective, suitable indicators in all the categories considered sent informative signals ahead of the stress events identified in Spain. And their maximums tended to occur several quarters ahead of those events.

More specifically, we find that indicators of 'credit intensity', such as the one proposed in this paper – the ratio of changes in credit to cumulated GDP – can add informative value

to metrics capturing 'credit excesses'. Further, indicators of property prices (detrended real house prices), external imbalances (current account as a percentage of GDP) and private sector debt sustainability (debt burden ratio for the non-financial private sector) can also help to identify periods of excess credit growth associated with an increase in systemic risks. In the quest for simplicity, it is worth noting that no statistical transformation was needed for the credit intensity and the current account balance indicators.

We hope that, despite differences in countries' historical data and the very rapid developments in the financial sector, this analysis will also be useful in other contexts and in the future.

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## Appendix 1: Principles for the CCB

Basel principles:

— *Objective:* Buffer decisions should be guided by the objectives to be achieved by the buffer, namely to protect the banking system against potential future losses when excess credit growth is associated with an increase in system-wide risk.

— *Common reference guide:* The credit/GDP guide is a useful common reference point in taking buffer decisions. It does not need to play a dominant role in the information used by authorities to take and explain buffer decisions. Authorities should explain the information used, and how it is taken into account in formulating buffer decisions.

— *Risk of misleading signals:* Assessments of the information contained in the credit/GDP guide and any other guides should be mindful of the behaviour of the factors that can lead them to give misleading signals.

— *Prompt release:* Promptly releasing the buffer in times of stress can help to reduce the risk of the supply of credit being constrained by regulatory capital requirements.

— *Other macroprudential tools:* The buffer is an important instrument in a suite of macroprudential tools at the disposal of the authorities.

Additional principles suggested by the ESRB:

— *Communication:* A good communication strategy for the buffer decisions contributes to managing public expectations plays an important role in the coordination mechanism between designated authorities and is essential for the credibility, accountability and effectiveness of macro-prudential policy. Transparent, stable processes and well defined channels of communication between authorities and key stakeholders constitute the basis of a good communication strategy.

— *Reciprocity:* Designated authorities should recognise the buffer rates applied in other jurisdictions, where appropriate. Designated authorities should consider potential cross-border implications when not recognising a buffer rate for exposures to another Member State and when setting or not recognising a buffer rate for exposures to a third country. The relevant designated authorities and the ESRB should be notified of these decisions.

## Appendix 2: Database and sources

### Total debt of households and non-financial corporations

Since December 1994, it is total loans and debt securities of households and non-financial corporations, including inter-company loans, from the Spanish Financial Accounts according to SEC 2010. This data is extended backwards, up to March 1980, using growth rates of Financial Accounts according to SEC 1995, and up to March 1962, using growth rates of total bank loans to "other resident sectors".[38]

### Gross Domestic Product

We first construct annual series for nominal and real GDP compatible with the new definition of SEC-2010. The official series from the National Statistic Institute (1995-2013) are extended backwards using growth rates of GDP Base 2000.[39] Data for the years before 1970 is taken from the database BDMACRO from the Ministry of Finance.

Then quarterly series are obtained interpolating annual data using as indicators quarterly GDP Base 2000, up to 1970, and electric energy consumption and CPI, before 1970. Data for 2014Q1 and Q2 are extrapolated on the basis of quarterly GDP Base 2008.

Potential GDP is calculated as the simple average of: two-side HP filter with lambda 1600, two-side HP filter with lambda 20000, European Commission output gap and IMF output gap. The last two indicators are interpolated to obtain quarterly data using a two-sided HP filter with lambda 20000.

### House prices

Since 2007, it is the Housing Price Index produced by the National Statistics Institute (INE).[40] This data is extended backwards using growth rates of housing price statistics from the Ministerio de Fomento (up to 1987), house prices in the capital from Tecnigrama (up to 1977) and the residential investment deflator (up to 1970). Annual data series were

38 "Other resident sectors" include all residents except credit institutions and General Government.
39 Investment on R&D is estimated and added separately.
40 This is an hedonic index that adjust for changes in housing quality.

interpolated and adjustments were made to take into account the different variability of the various series considered.

### Housing rents

An index based on the housing rent component of CPI.

### Current account balance

Since 1989 it is obtained from the Spanish Balance of Payments (2000-2014, sixth edition of the IMF's *Balance of Payments Manual*; 1989-1999, fifth edition of the IMF's *Balance of Payments Manual)* and, between 1970 and 1988, from the old methodology of balance of payments.

### Average interest rate on households' and non-financial companies' debt

Since 2003, interest rates on outstanding amounts are taken from harmonized Eurosystem statistics (table 19.12 of the *Statistical Bulletin* of the Banco de España). Before that, they are derived from internal estimates of available measures on interest rates applied by banks on new loans.

### Average maturity of households' and non-financial companies' debt

Average maturity of households' and non-financial companies' debt is obtained from the breakdown of debt levels by maturity in the Spanish Financial Accounts. It is assumed that the average maturity of short-term debt is two quarters and in the case of long-term debt, 58 quarters for households and 46 quarters for non-financial companies. The latter difference reflects the fact that most long-term households' debt has a maturity of more than 5 years, whereas most long-term non-financial companies' debt has a maturity between 1 and 5 years. Up to 1980, average maturity is kept constant.

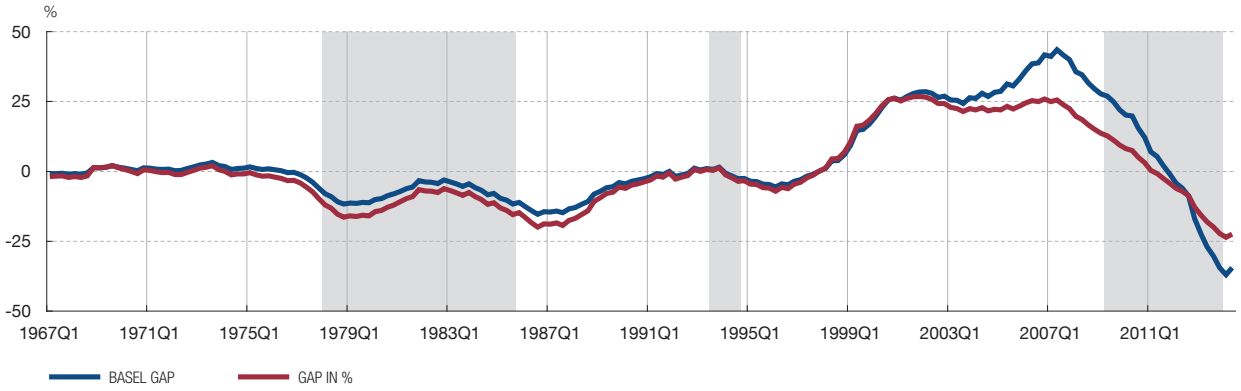
### Disposable income of households and non-financial companies

Since 1980, these variables are taken from the database of the Banco de España´s Quarterly Macroeconometric Model of the Spanish Economy and extended backwards, up to 1970, interpolating National Accounts annual data.

## Appendix 3: Alternative definitions of the credit-to-GDP gap

GAP IN PERCENTAGE OF CREDIT-TO-GDP

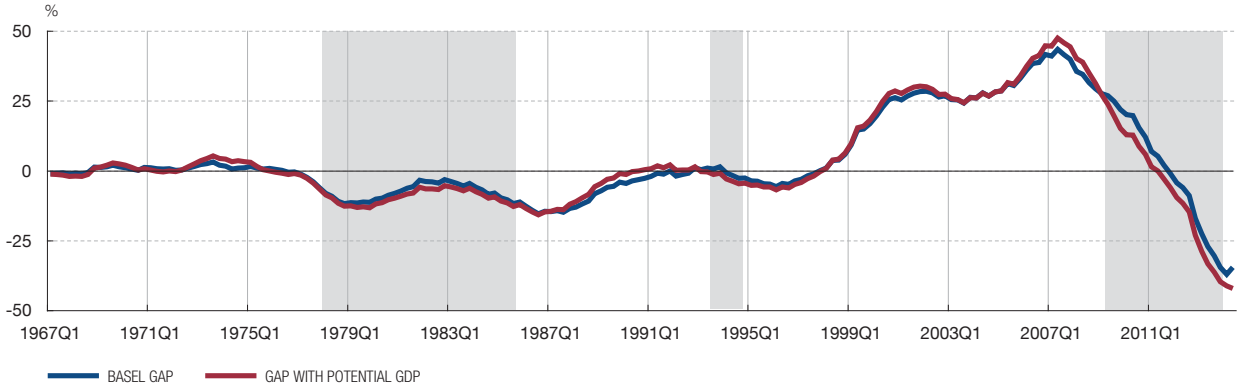
CHART A.3.1




SOURCES: Banco de España, Instituto Nacional de Estadística and own calculations.

GAP WITH POTENTIAL GDP

CHART A.3.2




SOURCES: Banco de España, Instituto Nacional de Estadística and own calculations.

# A MULTIPLE RESOLUTION SCHEME FOR SPANISH GLOBAL SYSTEMICALLY IMPORTANT BANKING GROUPS

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# A MULTIPLE RESOLUTION SCHEME FOR SPANISH GLOBAL SYSTEMICALLY IMPORTANT BANKING GROUPS

## 1 Introduction

The global financial crisis that broke in 2007 and the subsequent bail-outs of banks in different countries have underscored the need to have in place effective resolution arrangements. With their objective the preservation of financial stability, these arrangements would impose the cost of failure on a financial institution's shareholders and creditors, and not on taxpayers.

With this objective in mind, and in order to avoid the "moral hazard" problem that global systemically important financial institutions (G-SIFI) pose, the Heads of Government and State of the G-20 countries have endorsed different initiatives put forward by the Financial Stability Board (FSB), aimed at solving the conundrum of banks which are too big to fail (TBTF) by promoting effective resolution regimes across the different national jurisdictions.

At the European level, these initiatives have taken the form of the European Directive on Bank Recovery and Resolution (BRRD)[1] (see Box 1 for further details). In Spain, the support programme for the recapitalisation of Spanish banks required the enactment of Law 9/2012 of 14 November 2012 on the restructuring and resolution of credit institutions.

In July 2013 the FSB published its guidelines for the development of effective resolution strategies, where two non-excluding approaches to the selection of a preferred resolution strategy are foreseen. These approaches have been named "single point of entry" (SPE) and "multiple point of entry" (MPE) resolution. Choosing between them will be determined by the structures, the business model and the specific characteristics of each G-SIFI.

In Spain, the two largest banking groups with an international footprint have been designated as globally systemic (G-SIB), as per the methodology developed by the Basel Committee on Banking Supervision (BCBS).

In this context, the elements constituting an appropriate strategy for the orderly resolution of the international Spanish banks are identified on the basis of the main characteristics of their business models and of how they have expanded internationally. In this connection, the recommendations, regulatory guidance and the foreseeable contents of upcoming regulation on the matter, together with earlier statements by the Banco de España on good practices in respect of the international activity of Spanish banks, are taken into consideration.

It may be concluded from the analysis that the preferred strategy for multinational Spanish groups is resolution through multiple points of entry (or MPE), where resolution tools and powers are applied to the different parts of the group by one or more resolution authorities, acting in coordination.

1 Directive 2014/59/EU of 15 May 2014 establishing a framework for the recovery and resolution of credit institutions and investment firms, which has to be transposed by the Member States before 31 December 2014.

Many key matters relating to resolution are still to be settled. Those on which the FSB is currently working include most notably: the legal recognition locally of resolution action taken by foreign resolution authorities;[2] the effectiveness of loss absorption in resolution;[3] the effective valuation of assets in a resolution balance sheet; and the maintenance of operational support to the different legal entities in a group under resolution.

2 On 29 September 2014 the FSB published for consultation the document "Cross-border Recognition of Resolution Action", which proposes an initial solution based on a contractual approach to ensure the cross-border recognition of resolution actions (through a protocol for derivatives contracts, and through the inclusion of appropriate clauses in debt issuances); and a long-term solution based on the development of statutory mechanisms (see http://www.financialstabilityboard.org/2014/09/c_140929/).

3 On 10 November 2014 the FSB published for consultation the document "Adequacy of loss-absorbing capacity of global systemically important banks in resolution", which proposes a common international loss absorption capacity standard for G-SIBs (see http://www.financialstabilityboard.org/2014/11/adequacy-of-loss-absorbing-capacity-of-global-systemically-important-banks-in-resolution/).

THE EUROPEAN DIRECTIVE ON BANKING RECOVERY AND RESOLUTION BOX 1

The BRRD establishes that the aims of resolution are to maintain the continuity of essential functions; to avert significant adverse effects on financial stability; to safeguard public funds by minimising reliance on extraordinary public financial support; and to protectdepositors and investors covered by guarantee schemes. So as not to arrive at this situation, the Directive sets out several preventive measures and grants powers to the resolution authorities to reduce the potential impact of resolution for an institution.

**Planning and early intervention**

First, institutions have to plan the recovery measures – the Recovery Plan – they could take given a significant deterioration of their financial position, in terms of capital and liquidity, owing to idiosyncratic or systemic reasons, or a combination of the two. These plans are assessed by the supervisory authorities and, if not satisfactory, a series of mitigating measures may be implemented ranging from simple changes and improvements to the plan to more intrusive measures such as recapitalisation, strategic reviews or changes in the governance of the institution.

If the financial deterioration materialises and the institution has not activated its Recovery Plan, or the measures in it are considered insufficient, the authorities can take "early intervention measures", which are highly intrusive, including the removal of senior management and/or the management body or the appointment of a temporary administrator.

As for resolution, the Directive requires a planning phase – the Resolution Plan – that has to be drafted by the resolution authorities in collaboration with the supervisory authorities. The effectiveness of this plan has to be assessed by the authorities and, if material barriers to resolvability are identified, the authorities can impose organisational measures, de-risking measures and/or recapitalisation measures, among others, to remove such barriers to resolution.

**Resolution powers and tools**

Another matter is the assignment to the resolution authorities of the power to activate resolution powers and tools in order to bring about an orderly resolution of any bank that has failed or is about to fail, when no private sector solution is at hand, and when its failure may destabilise the financial system. The resolution tools available to the authorities are: the sale of business tool, the bridge bank tool, the asset separation tool and the bail-in tool.

For the last of these tools – bail-in – to be effective, the Directive imposes a minimum requirement of own funds and eligible liabilities (MREL) with which the institutions, based on their characteristics and systemic footprint, have to comply. This requirement will be calculated as a percentage of own funds and total liabilities in the form of eligible own funds and senior debt with qualifying characteristics that make them suitable to absorb losses and provide effectively and credibly for recapitalisation. .

**Changes in creditor hierarchy**

It is also worth mentioning that, for resolution and insolvency purposes, the Directive introduces material changes to the creditor hierarchy regime, giving a super-preference, in the current ordinary creditor category, to deposits covered by the Deposit Guarantee Fund (DGF), and a preference – with respect to other ordinary creditors – to deposits from natural persons and micro, small and medium-sized enterprises that exceed the coverage level provided by the DGS.

## 2 Global systemically important financial institutions

### 2.1 RISKS TO FINANCIAL STABILITY. *TOO BIG TO FAIL*

The 2007-2011 financial crisis, through its impact on large international financial institutions, highlighted the risk that these institutions pose given their capacity to destabilise the real economies of the countries in which they run their businesses. The effects are not only local. Given globalisation and the interconnectedness of institutions and financial markets, together with the interdependence of national economies, the effects spilled over from one country to another, and the financial crisis became the Great Recession.

These negative effects on the economy and the potential consequences forced the authorities to allocate huge financial resources to bailing out failing institutions. Hence, the actions taken in the United States (mainly through the TARP) and in Europe (through the assistance programmes set up by the different national governments) meant the allocation of a significant portion of government budgets to shore up national financial systems.

These are the more visible and better quantifiable consequences of the crisis. But the uncertainty prompted on financial markets, where doubts over the solvency of banks grew exponentially, took the form of an unprecedented liquidity crisis, with banks shutting down funding channels among themselves. This prompted a fire sale of assets and portfolios, which exacerbated banks' solvency problems, and almost brought to a halt the provision of credit to the real economy, thereby significantly affecting growth prospects.

This fall in economic activity adversely impacted tax revenues for governments and, together with the cost of the bail-outs, put significant stress on the credibility and sustainability of the different countries' public finances. Those countries with the weakest economies and fiscal balances experienced what was known as "the sovereign risk crisis". The adjustment that followed in public spending and investment, to recover the lost confidence, made the consequences of the crisis even worse.

The systemic institutions – those which, given their size and characteristics, play a leading role in the international financial system – pose, in this context, particular problems. The general perception among the public (clients and investors) is that, given the systemic impact that these banks' failure will have, they will always be supported by governments and, therefore, they are "too big to fail". This gives them competitive advantages over less significant institutions, especially in funding costs, which fuel their growth even further. Eliminating this distortion to fair competition has been one of the aims of the FSB programme to tackle the TBTF challenge. The political and economic authorities of the G-20 countries have endorsed the initiatives derived from the programme. These initiatives are analysed in the following sub-section.

### 2.2 REGULATORY RESPONSE TO THE TBTF[4] CHALLENGE

The April 2009 (London) G-20 Summit changed the Financial Stability Forum, which was until then a consultative body, into an advisory body – the Financial Stability Board (FSB) – for the G-20 Heads of State and Government. Also, in order to provide the authorities with better tools to be able to face the TBTF challenge, the G-20 mandated the FSB to prepare a reform programme so that the cost of future crises would not be borne by taxpayers.

As a result, in 2010 the FSB proposed a set of recommendations, endorsed by the Seoul summit, which are set out in the document *Reducing the moral hazard posed by systemically important financial institutions* [see FSB (2010)] and which cover four main areas:

4 A thorough discussion of the international debate on the financial crisis and systemic institutions and the changes in international regulation can be seen in Iglesias-Sarria and Vargas (2010 and 2012).

— Strengthening of institutions' loss-absorbing capacity, and of G-SIFIs especially. In the banking domain, this has led to the new Basel III requirements set by the BCBS, which in Europe have taken the form of the recently approved CRD IV-CRR package.[5] These regulatory packages include, along with a general strengthening of the regulatory own resources of banks, a scheme for capital buffers for systemic banks (G-SIB), given the systemic risk they pose, and which, on one hand, compensates the competitive advantage mentioned in sub-section 2.1 and, on the other, makes the possibility of insolvency more remote.

— More intense and intrusive supervisory mechanisms and processes in the different jurisdictions. The 2012 review of the *Core Principles* of the BCBS is part of this, together with home-grown initiatives in the different jurisdictions, which have likewise contributed. In this connection, the United States have enacted the Dodd-Frank Act and, in the European Union, banking regulation has been centralised in the European Banking Authority (EBA) while in the Eurozone banking supervision has been assigned to the European Central Bank through the Single Supervisory Mechanism (SSM), with a view to making regulation and supervisory practices uniform.

— Identification and proposal of legal changes to be made in the different jurisdictions in order to implement resolution regimes for failing institutions that are more effective and capable of bringing about an orderly resolution of systemic institutions, separate from ordinary insolvency proceedings. The authorities are empowered to take control of institutions and allocate losses through an administrative procedure; a requirement for the *ex-ante* planning of the response to crisis situations is established through the drawing-up of recovery plans and resolution plans by institutions and the authorities, respectively; and the bail-in tool is introduced. All these aspects are included in the European BRRD.[6]

— Finally, a reinforcement of financial market infrastructures (FMIs), bolstering central counterparty clearing institutions to help reduce the potential contagion effect of direct interconnectedness among institutions and the lack of clarity and transparency in the levels of counterparty risk derived from the complex financial relationships among them.

### 2.3 RESOLUTION STRATEGIES UNDER THE FSB SCHEME

The FSB document *Key Attributes of Effective Resolution Regimes for Financial Institutions*[7] [see FSB (2014)] sets out the basic elements for implementing effective resolution regimes. The objective is to promote a legal and operational framework that provides for the orderly restructuring or resolution of financial institutions by the authorities, without exposing the taxpayer to the absorption of losses as a consequence of the financial support provided, and ensuring the continuity of the institution's critical economic functions.

5 Directive 2013/36/UE of the European Parliament and of the Council, of 26 June 2013, on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms; and Regulation (EU) No. 575/2013 of the European Parliament and of the Council, of 26 June 2013, on prudential requirements for credit institutions and investment firms.

6 In the BRRD framework, the conditions for the establishment of financing arrangements (resolution funds) have been included. Also, Regulation (EU) 806/2014 of 15 July 2014 has established a Single Resolution Mechanism and a common resolution fund in the Eurozone.

7 The document was first published in November 2011 and recently updated in October 2014 to include sectoral annexes, without changes to the twelve general principles.

The *Key Attributes* focus on the cross-border resolution of global systemic institutions, meaning cooperation among authorities is pivotal when implementing effective planning for recovery and resolution. The *Key Attributes* 8, 9 and 11 specifically address the creation of Crisis Management Groups[8] (CMG), the identification of the elements that make for a sound Cross-Border Cooperation Agreement (CoAg) and the drafting of recovery plans (RecPlan) and resolution plans (ResPlan).

As for resolution planning, this is organised around a yearly process with the following elements:

— Identification of a High Level Resolution Strategy (HLRS) that requires agreement by the authorities in the CMG on the main guiding principles to address the resolution of a TBTF institution in a crisis.

— This strategy is conducive to agreements by the authorities to that end, namely the Cross-Border Cooperation Agreement.

— On the basis of these two agreements – the Resolution Strategy and the Cross-Border Cooperation Agreement – the authorities should be able to draw up Operational Resolution Plans.

— Finally, the authorities in the CMG would have to judge the feasibility ("can it be done?") and the credibility ("will it be done?") of the Resolution Plan for the institution as part of a Resolvability Assessment (RessAss) exercise. Its main objective is to identify the potential barriers to an orderly resolution and to implement effective supervisory or resolution action to eliminate or mitigate them. This may involve requiring changes to legal frameworks and to legal and organisational structures, or to the businesses or risk levels of the systemic institutions.

The High Level Resolution Strategy aims to identify the broad courses of action the authorities may take in applying the resolution tools available to them. Selection will be based on the specific characteristics of the institutions, including, among others: their business strategies; the geographical distribution of their activities; their degree of centralisation in decision-making; the organisation of the supporting functions of the businesses; and the distribution of capital and liquidity among the different units in the group.

In the FSB framework and analyses, these High Level Resolution Strategies have been categorised as single point of entry (SPE) or multiple point of entry (MPE) strategies [see FSB (2013)].

Under an SPE approach, the resolution authorities agree on an implementation of resolution decisions by the consolidated authorities in their jurisdictions, and the extension of the effects of the resolution measures, though suitable mechanisms, to the different parts of the group that need them. An initial analysis considers that this kind of strategy is most appropriate for institutions whose key characteristics are the following:

8 The Crisis Management Groups are formed by the authorities in the jurisdiction of the parent bank of a Group together with the authorities of the jurisdictions in which the Group has significant activities. Their objective is to promote readiness and to facilitate the resolution of a cross-border crisis at an institution. Potential members of CMGs are supervisors, central banks, resolution authorities, ministries of finance and deposit guarantee schemes. The CMGs could be placed on an equal footing with the Resolution Colleges established by the BRRD.

— A significant weight of business segments with a a global and centralised approach, such as investment and wholesale banking, or asset management.

— A concentration of their business in a limited number of geographical locations, typically large international financial centres.

— Centralised management of capital and liquidity.

— Strong internal connectedness, financially and operationally, where some units support others in the provision of financial and operational services.

The greater weight of of global business segments and the significant interdependencies among units make it advisable that resolution actions be taken from the jurisdiction of the parent in the group and that the resources to make them effective be contributed by investors in capital and debt issued by the parent. Although, in principle, this strategy could be implemented with any combination of resolution tools (asset transfers, asset management vehicles, bridge bank, bail-in), only the latter, with an adequate structuring of intra-group liabilities, seems feasible from an SPE point of view, in order to absorb losses and recapitalise the institution by the amounts needed. All the other tools, appropriate for the later restructuring phase, would require the active cooperation of the local authorities, as they would need implementation according to the local legal regimes, making it *de facto* an MPE strategy. As a consequence, the SPE model requires very solid guarantees from the consolidating authorities that the necessary resources will be available at the local level, so the local authorities can be confident that, in a crisis situation, their responsibilities will be adequately covered.

At the root of the MPE strategy is the recognition that the international legal framework is fragmented, and that the local authorities are responsible in their respective legal regimes regarding the legal entities established in their countries, including the subsidiaries of international financial groups.[9] On this basis, resolution will be implemented in a coordinated fashion by the authorities of the different jurisdictions, in step with their respective legal regimes and with how developed and adapted their legislation is to the *Key Attributes.* The authorities would apply the resolution tools they consider most appropriate, or those that are available, to the legal entities in their jurisdictions. The usual characteristics of institutions most liable to be subject to an MPE resolution are:

— High importance of the businesses that require adaptation to the specific conditions of local markets; in general, these are retail and commercial banking activities. The critical economic functions are of a local nature.

— Presence in a large number of countries, typically with a significant market shares.

— The activities in each jurisdiction are conducted by the local legal entities, which have autonomous and sufficient management teams and are accountable to the local supervisory, financial and resolution authorities.

9 Currently, few countries have a recognised *Key Attributes* framework. More detail is provided in the FSB report "Thematic Review on Resolution Regimes. Peer Review Report" (April 2013) and in the document "Towards full implementation of the FSB Key Attributes of Effective Resolution Regimes" submitted to the G-20 Summit of November 2014.

— The capital is distributed across the different jurisdictions and legal entities, complying with local requirements on the basis of the risk levels borne by each.

— A markedly autonomous activity-funding policy in each jurisdiction, with balance sheets that are mainly funded by local deposits and with a credit gap, if any, financed under the conditions prevailing in the local capital markets. The group to which the subsidiary belongs does not act as a structural provider of funds for local activities, except for the investment in capital.

— The operational inter-dependencies among group banking and financial subsidiaries are non-existent, or very limited. This is either because each subsidiary has its own operational capabilities, or because the group operations are arranged through non-banking operational subsidiaries, whose sole purpose is the provision of services (back office, information technology, accounting, facilities management, procurement payments, payroll, taxes, buying centre, etc.).

In principle, the MPE model allows for greater flexibility in using the tools available in each jurisdiction. As resolution is planned on the basis of local implementation, the local authorities may use any tool they consider effective and that is available under their legislation. In that way, it would be possible to implement an asset transfer in one jurisdiction, a bail-in in another and a bridge bank in a third one. The MPE strategy requires a high degree of belief on the authorities' side that each unit in the group has a sound capacity to operate on its own, as a result of their prior analyses of the organisational strategies and policies of the group, and it provides for control by the resolution authorities over the resolution process in their respective jurisdictions.

Undoubtedly, the SPE and MPE models are ideal models that have to be applied to specific institutions with business and organisational practices spread along a business continuum, with different weightings for each business, different levels of centralisation-decentralisation, and different organisational practices in the provision of services. Also, future crises will be so diverse and so different from the past that they will make it impossible to anticipate the characteristics of the next crisis and how it will impact each institution. There is, then, foreseeably a need to implement mixed or intermediate strategies, depending on the specific circumstances of the crisis. As usual, there are rarely simple solutions for complex problems and the no-one-size-fits-all principle is fully applicable to resolution strategies.

## 3 The Spanish global systemically important banking groups

### 3.1 THE GENERAL SUPERVISORY APPROACH IN SPAIN

In order to fully understand the organisational and business practices that Spanish banking groups with an international presence have followed, which will to a large extent determine the choices that the authorities make in the area of resolution, it is necessary to review the supervisory approach followed by the Banco de España when supervising these groups on a consolidated basis.

This approach was enunciated in the *Report on Banking Supervision in Spain, 2001* [see Banco de España (2002), pp. 81-83]. It is based on the experience of supervising institutions that commenced their international expansion in the 1990s, mainly in Latin America, in countries that they already knew well, having long operated in them on a smaller scale. It should be considered, moreover, that during that decade the various Latin American countries went through a significant number of financial crises, which continued to occur during the early years of the current century.[10]

10 Mexico (1994-1995), Argentina (1995), Brazil (1998-1999), Argentina (2001-2002) and Uruguay (2002).

This process of internationalisation brought about a change in the risk profile of the two largest banking groups (Santander and BBVA), which developed from being domestically focused banks to having businesses spread across different countries, with different levels of economic and financial development and with different economic policies. This caused the institutions to organise their businesses, and the Banco de España to require the appropriate measures, in order to mitigate the potential impact that a systemic or idiosyncratic crisis might have on the Spanish parent banks and on the country's financial stability.

The general approach of the Banco de España, derived from its own practice and from the practice of Spanish banks, was based on:

— Group culture and information management. The parent bank has to manage its subsidiaries effectively, with information systems that allow for the monitoring of activities, the harmonisation of the consolidated accounting information, the analysis of businesses and the control of risks at the individual and consolidated level alike. A strong Internal Audit function, at local and corporate levels, is key to compliance with the internal control policies, rules and procedures throughout the group. The board of directors of the parent bank is responsible for implementation of the appropriate policies. The local boards of directors and management teams are accountable to the local supervisory authorities.

— Prudent and harmonised accounting policies, with adequate provisions to cover unforeseen future losses.

— Group solvency and individual solvency. Strengthening the amount and quality of the group's own funds. The own funds must be distributed among the different countries according to the risks in each and must be sufficient to allow for growth of the business and to comply with local requirements.

— Ownership chart. The structure of shareholdings among the different group companies must be straightforward and public.

— Financial autonomy. Banking subsidiaries must be financially independent of the parent bank or other units in the group. Their funding and liquidity must be managed independently, based on the prevailing conditions in their local markets and subject to the risk premiums applicable to them. Intra-group transactions, except when on a commercial basis, must be exceptional and at market prices.

— Liquidity control. Each banking subsidiary must have its own systems to constantly monitor liquidity in the different currencies in which it operates, and also have access to mechanisms for ordinary liquidity management and contingency plans for stressed situations.

In short, the strength of the consolidated financial statements should be based on the strength of the individual financial statements of each component of the group. The aim is the implementation of efficient corporate policies in the management of subsidiaries in diverse local environments that enable adequate risk control and limit the potential for contagion among entities in crisis situations.

## 3.2 THE BUSINESS MODEL OF THE SPANISH G-SIBs

The two major Spanish banking groups that have been designated as G-SIBs[11] have a number of similarities in the way they conduct their business:

— Businesses are organised on a geographical basis in the different jurisdictions in which they operate.

— Subsidiaries attempt to attain large shares of the main markets in which they operate. Therefore they tend to be locally systemic, which allows them to achieve economies of scale and scope when developing their businesses and commercial activity. Being locally systemic, however, means that a crisis in a subsidiary would have a significant impact on the financial stability of the country in which it operates. Whether a subsidiary is identified as being locally systemic depends on the criteria of the local authorities, which may differ from one jurisdiction to another.

— Local vision and management, as a result of the model of expansion based on financially autonomous subsidiaries. Each subsidiary accesses markets with its own rating.

— The business is focused on commercial banking.

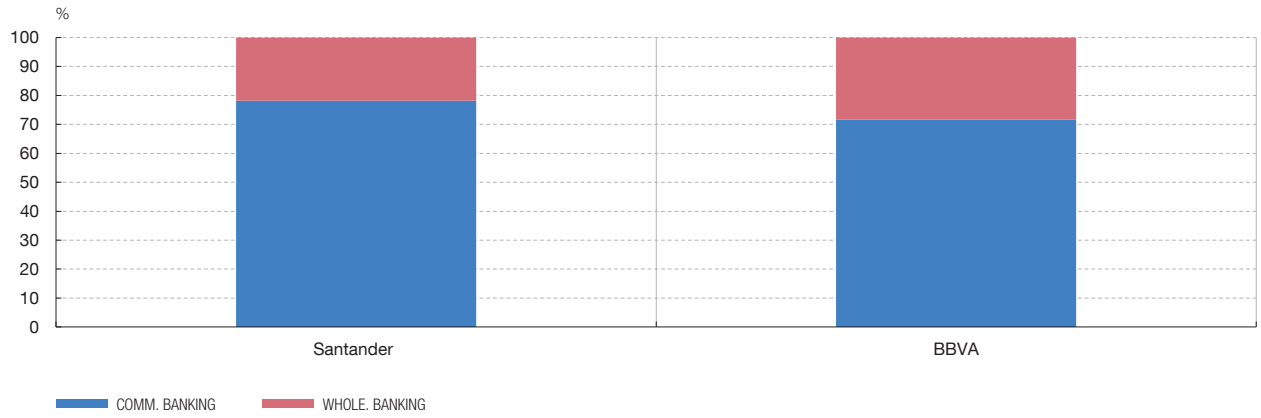
— High levels of operational efficiency, as reflected in the cost-to-income ratio.

The information in the annual and quarterly reports is broken down by primary segments of a geographical nature. In the case of the Santander Group, the ten main jurisdictions in which it conducts business [see Banco Santander (2014)]; and, for the BBVA Group, the five geographical areas in which it operates [see BBVA (2014a)].

The activity and profit breakdowns provided in the above-mentioned reports highlight the fact that commercial banking, i.e. retail banking for individuals and SMEs, is core to their businesses, representing around three quarters of the attributable profit of all business segments. Wholesale banking, in financial markets and for large corporations, together

11 Santander Group was designated a G-SIB in accordance with the BCBS methodology in 2011, while BBVA Group was so designated by a supervisory decision in 2012.

CONTRIBUTION TO ATTRIBUTABLE PROFIT OF BUSINESS AREAS CHART 1




SOURCE: Author's calculations based on the 2013 annual reports of the institutions.

with asset management and insurance, account for around a quarter of turnover and profit, as seen in Chart 1. This ratio has remained stable over time.

3.2.1 Autonomy and operational efficiency

Although it may be thought, a priori, that the autonomous management of different subgroups operating in different geographical locations will lead to inefficiency in the management of resources, capital and liquidity, the fact is that Spanish banks consistently have cost-to-income ratios that compare favourably with their international competitors (Chart 2). Admittedly, this can be attributed to the fact that the Spanish groups participate in emerging markets with large interest margins (Latin America, Turkey, etc.). But it is also true that the cost-to-income ratios for their activity in the European and US markets are also generally competitive in the local market.

An important element in the optimal management of operations is the continuous policy, in each Spanish group with its own particular characteristics, of aiming to "outsource" to specialised operational subsidiaries[12] all the back office and information technology (IT) functions that support the purely financial businesses (software development, data centre operation, back office management, facilities management, procurement management, etc.) [see Banco Santander (2014), p. 36, and BBVA (2014b), pp. 40-41]. This policy thus takes the form of a process that has been referred to as "operational subsidiarisation" or "in-sourcing", in contrast to the outsourcing of services to true third parties.

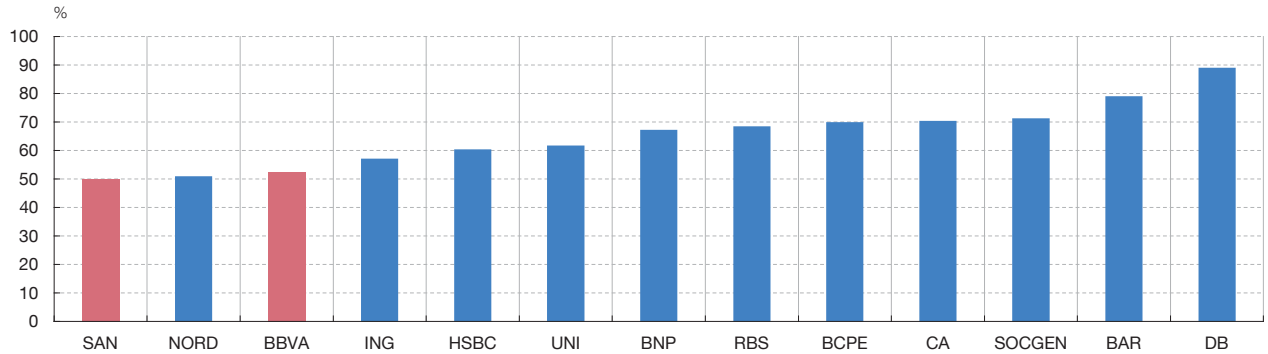
Operational efficiency is achieved through the economies of scale generated in these support functions; the large number of "internal clients" provides a critical mass that allows costs to be optimised. Of no less importance is the improvement in the operational risk management entailed by the centralised adoption of international standards and best practices in these areas for the whole group.

Also, and particularly from the point of view of dealing with a crisis situation that could lead to resolution, the fact that these support functions are "external" to the banks, and not provided by the banks of the group themselves, ensures the continuity of the businesses as the critical support services are provided by specialised independent units that invoice their "customer" at market based prices.

12 Legal entities (limited companies, etc.), typically 100% owned by the banking group (usually the parent entity), that have no financial activity, but provide IT, back office and similar support services to the banks in the group. In a resolution scenario, these companies continue to provide their services to the different banks and countries since, as long as their bills continue to be paid, they will not be affected by a capital or liquidity crisis in the group. The Group or resolution authorities may decide, in a crisis situation, to sell these companies to specialised third party firms, to recover the capital invested and, also, to ensure continuity in the future provision of services.

COST-TO-INCOME EUROPEAN G-SIBs

CHART 2




SOURCE: Based on the Anual Report 2013 of the institutions.

### 3.2.2 Autonomy and legal structure

From the point of view of the legal structure of the group, the policies followed by Spanish banks are based on the principles of clarity and hierarchy. The head of the group is the parent bank in Spain, which is also the holding company for the equity interests in the parent subsidiaries in the different countries, as well as the specialised Spanish subsidiaries (asset management companies, broker-dealers insurance companies, securities issuance vehicles…). In some countries, as a result of local legislation and requirements or owing to the historical chain of acquisitions, there is a holding company with a subsidiary local bank, which performs the main business activity, and other specialised subsidiaries. There are no material cross-holdings among business entities in the local sub-group, or among different sub-groups in different countries.

The branches, located in the main international financial centres (London, New York, etc.), are not material in relation to the whole group and play a complementary role to the main business lines. For a description of its subsidiaries model see Banco Santander (2014), p. 33.

In conclusion, it may be appropriate to designate the large Spanish banking groups as multi-national instead of international.

## 3.3 CHARACTERISATION OF THE BUSINESS MODEL OF THE SPANISH G-SIBs

An interesting approach to the characterisation of the Spanish banks is provided by Merck *et al.* (2012), who classify international banks according to two dimensions: the type of business (commercial or investment), and the degree of diversification (specialised or diversified). Under this approach the Spanish banks are included in the category of diversified commercial (or universal) banks,[13] whose main characteristics are [see Merck *et al.* (2012), pp. 102]:

- "A funding structure dominated by customer deposits, although with a more diversified profile than in the case of specialised commercial banks".
- "A finance structure with low exposure to trading and derivatives".
- "An asset structure with a relatively low contribution from trading activities".
- "The activities of customer lending and customer deposit funding (retail/wholesale) are more important than in diversified investment banks".

It is also worth mentioning the characterisation by Gambacorta and Van Rixtel [see Gambacorta and Van Rixtel (2013), p. 15], as regards the different lending and funding strategies of global banks, when defining business models. The Spanish banks are characterised by lending activity that is described as being "strongly multinational", as more than 70% of their lending activity outside Spain is done locally, in the country in which the subsidiary is domiciled. Also their deposit funding activity is described as "strongly decentralised", given that local funding accounts for more than 70% of the liabilities outside Spain.

However, perhaps the most interesting way of analysing the characteristics of the business of the Spanish banks, is implicit in the methodological work of the BCBS [see BCBS (2013)] relating to the identification of G-SIBs.

13 In this category they include JP Morgan Chase, Citigroup, Dexia, Commerzbank, Nordea, Bank of America, HSBC, ING Bank, Banque Populaire CDE, Lloyds Banking Group, Unicredit Group, BBVA and Santander.

The BCBS methodology generates a score for a set of twelve individual indicators which are grouped into the categories cross-border activity, size, interconnectedness, substitutability, and complexity. The categories as well as the individual indicators are weighted equally when determining the overall score. On the basis of this overall score, each entity is placed into one of five buckets, each of which has a different surcharge assigned to it under the capital requirements.[14]

For the Spanish G-SIBs, the most important factor in determining their overall score is the cross-border activity category, which is because of the large number of jurisdictions in which they are present and the fact that their subsidiaries tend to be systemic from a local perspective. Their scores in the other categories are well below their final scores.

For example, in the complexity category the Spanish institutions have extremely low scores as it is associated with indicators of market activity (notional value of derivatives, level 3 assets, size of the trading and available for sale portfolios). The Spanish groups, with their focus on commercial banking, have very limited wholesale banking activity, which is normally linked to relationship banking for corporate customers, rather than to market making and proprietary trading.

Finally, it is worth analysing the details of the cross-border activity category, as considered by the BCBS methodology. This category is assessed on the basis of two indicators: cross-border lending and cross-border deposits. The underlying idea is that the international impact of the failure of a global bank will be determined by the size of the loan and deposit books and by the fact that the larger these cross-border activities the more difficult it will be to coordinate resolution and the more extensive the associated contagion effects.

In this regard, the recent literature has been building a new consensus around the fact that decentralised funding policies, where each jurisdiction funds its activities according the conditions of the local markets, without significant cross-border funding, as historically has been the practice of the Spanish institutions, have been a factor of stability during the recent financial crisis [see De Haas and Van Lelyveld (2014), pp. 345-347].

In short, the Spanish globally systemic institutions are characterised by a business model which is highly focussed on commercial banking, with a decentralised organisation that seeks to adjust to the local regulatory framework the local developments in economic activity and the credit cycle, and to the funding conditions and level of development of the local capital market.

## 4 Resolution strategies for the Spanish G-SIBs

An effective resolution strategy depends on environmental variables and by variables internal to the institution for which the strategy is designed.

The environmental variables depend on the jurisdictions in which the banking groups perform their activities, the legal and supervisory frameworks to which they are subject and the general macroeconomic and financial situation.

The internal characteristics of the institutions basically relate to their business model, risk profile, organisational and operational policies, funding policies, etc.

14 From 1% to 3.5% of risk-weighted assets in CET1 instruments.

Despite the efforts of the FSB, whose proposals have been endorsed by the G-20 at the international level, and, in the European context, the approval of the BRRD for the implementation at national level of homogeneous legal frameworks to facilitate the orderly resolution of G-SIBs, large banking groups perform their activities in an international setting characterised by:

— National legal frameworks, the modification of which depends on the national parliaments.

— Supervisory and resolution authorities that are accountable to their governments and national parliaments for the stability of their banks and financial system.

— Political cycles in the different countries that are independent and uncoordinated, and follow their own rhythm.

All these elements introduce a high degree of complexity into the search for harmonised and homogeneous solutions at the international level. For evidence of this one only needs to consider the different responses of different jurisdictions to the need to limit the impact of crises at TBTF institutions through the adoption of structural reforms:

— The United States has, among other measures, introduced the Volcker rule, which prohibits proprietary trading by banks and imposes limits on their relations with certain customers (hedge funds, private equity funds, etc.). Also, the rules applicable to Foreign Bank Organisations (FBOs) have recently been published, which require the establishment of local banking holding structures and compliance with stricter capital and liquidity requirements.

— The United Kingdom has opted for the separation of activities and the protection of deposit commercial banking activities (the Vickers reforms), under a local holding structure.

— The European Union is considering a proposal for a Regulation prohibiting proprietary activities, with the separation of wholesale activities beyond a certain threshold.

All these reforms respond in a heterogeneous way to common problems and, in some cases (FBO, Vickers), seek to ring-fence the local business of international groups, isolating them from potential contagion from the rest of the group, and thereby protecting the country's domestic financial stability. Time is, then, of the essence in generating mutual confidence and in identifying global international solutions, as the improvements in these legal and regulatory areas can only take shape gradually and in the long term.

As for the specific characteristics of the Spanish G-SIBs, we have already described them briefly in Sections 3.2 and 3.3 above. Basically these banking groups share:

— A risk profile corresponding to commercial banking in each country in which they operate.

— A structure organised around a local bank with specialised local subsidiaries (asset management companies, broker-dealers, consumer finance companies, etc.).

— Levels of regulatory capital sufficient to comply with the local requirements, with room to provide for business development and capital planning needs.

— Funding at the local level mainly in the form of local deposits in the local currency, with the protection provided by the local DGF, or is obtained on the local capital markets. There is no material structural funding provided by the group.

— Operationally, the local units are supported by specialised IT and operations companies that are owned by the group itself. There is no material provision of services among the different banking and financial institutions of the group.

— The local banking sub-groups are managed under the control of boards of directors that comply with all the governance requirements imposed by local legislation, and have their own full management teams. All of them are accountable, in the local corporate legal framework, for their management decisions, and are fully supervised by the local authorities.

— The corporate centre/parent bank provides the guidelines for corporate management policies for all the units in the group. These policies are adopted at the local level after any adaptation that may be deemed necessary to the local requirements, which may be legal or regulatory, but also commercial or business requirements.

— The local units are, generally, systemic at the domestic level (D-SIBs) and, thus, significant for the local authorities responsible for regulation and supervision.

Consequently, when designing a resolution strategy for the international Spanish institutions, we are dealing with highly heterogeneous legal, regulatory and political frameworks; in countries with different levels of economic and financial development; and, with institutions that focus mainly on the local commercial banking segment and that are organised autonomously and are financially self-sufficient.

### 4.1 THE SPE STRATEGY AND THE SPANISH G-SIBs

Given the above analysis, the choice of a resolution strategy based on the single point of entry (SPE) approach is difficult to reconcile with the environmental and organisational conditions described. As mentioned in Section 2.3, this approach is appropriate for centrally organised banking groups, with a large amount of shared resources, in which the funding available to absorb losses and recapitalise is raised from the markets centrally and distributed to the different units in the group through internal intra-group funding mechanisms.

The main reasons why the SPE approach is not appropriate for the Spanish G-SIBs are:

— When the parent/holding company of the group is incorporated in a jurisdiction outside the large international financial centres, the significant amount of issuance required usually takes place under the legislation of those international financial centres in order to gain access to a wide investor base. This real need to issue under foreign legislation generallymakes any resolution decision by the consolidating resolution authority ineffective insofar as creditors' property rights are concerned. Currently, most local legislation and case law does not recognise the resolution actions taken by foreign administrative authorities

and, even when resolution is ordered by the local authority, the creditors affected have the right to challenge that decision with a high probability of success in the jurisdiction in which the financial instruments have been issued,[15] rendering the resolution actions ineffective.

— When banking groups have a presence in a large number of markets/jurisdictions, a SPE strategy imposes the losses and resolution costs on the investors in the parent bank, regardless of the specific circumstances which originated the losses in each jurisdiction, be they managerial, macroeconomic or political. In that regard, the SPE strategy could lack feasibility if the support to the foreign subsidiaries were to undermine the viability of the parent bank and the rest of the group.

— The SPE strategy does not promote strong and active local supervision and regulation contributing to instil discipline in the management of local subsidiaries and in risk-taking at local level. As the loss absorption capacity is provided from the centre, the authorities have less incentive to improve local financial markets and their regulation, so as to contribute to that absorption of losses. It would be enough for them to require, at local level, the loss absorption capacity they consider adequate, which would be provided through subordinated debt or an equivalent from the parent.

— Finally, from an operational point of view, the SPE strategy, since it transfers automatically the losses to the parent bank and assigns the resolution decision to a single authority, could be more effective. It should also be easier to implement because the resolution process resides mainly with the consolidating authority. But in order to achieve these practical effects the local authorities have to rely on, and trust, the consolidating authority. This trust may be difficult to achieve, especially when the subsidiary is locally systemic and is basically funded with local deposits.

### 4.2 THE MPE STRATEGY AND THE SPANISH G-SIBs

Taking into consideration what has been said above, the environmental conditions in which the large Spanish banking groups have to operate and, above all, the internal characteristics of their business models, it seems appropriate to conclude that a strategy based on a multiple point of entry (MPE) would be the right one in a resolution scenario. Let us have a look at why this is so:

— Under strategies, each authority in the relevant jurisdiction would take the resolution decision that was suitable, as provided for in the local regulation, when the losses cannot be fully absorbed by the subsidiary's own resources and the parent company is not in a position to support it. This minimises the contagion effect among the different units in the group.

— The parent bank is considered as a local institution, in this case, under Spanish jurisdiction. Besides the recapitalisation tools available, the group and the

15 This is unquestionably an issue of the highest importance. The FSB, through its Legal Experts Group, is working on the characteristics of a scheme for mutual recognition of resolution actions taken by resolution authorities. The process of structural reforms on these matters is anticipated to be slow and difficult. In the short term, in order to alleviate this problem, and as far as loss absorption and recapitalisation are concerned (bail-in of financial instruments), it is necessary to opt for contractual solutions in the documents supporting those instruments (issuance programmes, brochures, financial contracts, etc.).

Spanish authorities also have the option of recovering capital through the total or partial sale of those subsidiaries not affected by the losses, through procedures that could be activated in an early phase of the crisis, as they require time and administrative authorisations derived from change of control issues in those subsidiaries.

— This strategy allows for the drafting of the resolution plans in consonance with the legal tools and powers that exist in each jurisdiction and for the adaptation of those plans to the evolution of the legislation itself. The resolution strategy in each entry point could change progressively as the local legislation evolves and at a pace be determined by the local authorities.

— The local authorities are fully involved in both the ordinary supervisory process and the resolution planning process of the subsidiary and they are also responsible for ensuring that the appropriate measures are taken at local level so there is an adequate level of loss absorption capacity in the institutions under their jurisdictions. From a different angle, the local management in the subsidiary – Board of Directors and executive team – have to comply with this requirement, *i.e.,* to have enough absorption capacity, as per the local regulation and the local financial market. Corporate discipline is reinforced at all levels in the group.

— Undoubtedly, a MPE strategy requires a high degree of coordination among the authorities of the material parts of the banking group. There is a certain risk of a "race to resolution", although the decentralised structure of Spanish groups would make this "race" almost futile, given that the capital resources are already distributed in the subsidiaries.

— An important barrier to resolution in a MPE strategy is the operational interconnectedness of banks. Logically, a banking group requires complex and specialised operational support and back office services. How would the detachment of the new recapitalised and independent bank from the old banking group affect its operational capabilities? As for the Spanish international banks, we think that this impact is manageable. We have described how operational support is organised through specialised companies that provide technological and operational services. These services are provided through contractual Service Level Agreements at market prices. This means that the new independent bank would be able to receive the same level of services as if it were under an outsourcing agreement, for so long as the new owners consider that agreement necessary and renegotiate it with the "surviving" banking group.

  It is critical, then, that the supervisory and resolution authorities, when drafting the resolution plan and signing the supporting cooperation agreements, reach a common view to ensure a peaceful transition in the provision of operational services, when a part of the group moves towards independence after the resolution actions.

### 4.3 LOSS ABSORPTION CAPACITY IN THE MPE STRATEGY

As mentioned at the beginning, one of the main objectives of the new international resolution framework is that the taxpayer should not be forced in the future to bear the cost of banking crises, and that these costs be borne by the shareholders and creditors. This requires G-SIBs to have liabilities that, in a credible way, could be subject to bail-in.

An instrument that seems to meet this requirement is the issuance of senior debt, whether at the parent level (SPE strategy) or at different entry points (MPE strategy).

The possibility of issuance in the jurisdictions in which the banking group operates is dependent on the degree of development of the local financial markets and has two main effects. The first relates to the cost of issuance, which will be determined by the local conditions. This means that the carry trade implicit in centralised issuance under a SPE strategy disappears and financial discipline is reinforced. Second, since issuance takes place in each unit and not centrally, the need to turn to the large international centres is reduced, and the above-mentioned legal uncertainty regarding resolution actions is avoided.

The investor base affected by a resolution action in a MPE strategy is smaller because resolution actions would only be implemented in the jurisdictions that so require. Although reputational risk is always present, healthy subsidiaries and their creditors would not be affected by resolution actions taken in other jurisdictions. The same goes for the parent bank, as only its direct investment in the subsidiary would be affected, provided that the intra-group exposures are small, as is the case with Spanish institutions. If the crisis hits the local business of the parent bank, this could always replenish capital by selling businesses not impacted by the crisis, or by recapitalisation drawing on its own base of investorsin qualifying debt (hybrids, subordinated debt, or senior "bail-inable" debt). There is still reputational risk, but this is not greater than in institutions with centralised management and operations, more suited to a SPE strategy.

The MPE resolution strategy requires the break-up of the banking group at those entry points at which the authorities decide to act, as the subsidiary cannot be recapitalised by the parent bank. In this case, the recapitalisation would be funded by investors in bail-inable debt,[16] who would become the new owners of the subsidiary subjected to a local resolution process.

## 5 Implementation of a potential resolution of a G-SIB

In Spain, the resolution of banks is regulated by Law 9/2012, which gives effect to the main elements of the international resolution framework set forth in the *Key Attributes,* and which is basically in line with the then draft BRRD.

Under this Law, the Banco de España, and specifically its Executive Commission, is in charge or determining when an institution has reached the point of non-viability (PONV).[17]

Once a bank is deemed to be at the PONV, the *Fondo de Reestructuración Ordenada Bancaria* (Fund for the Orderly Restructuring of the Banking Sector, "FROB" by its Spanish abbreviation)[18] takes control of it, usually through the appointment of a temporary administrator and assesses the situation from the point of view of the systemic risk that the institution under resolution represents for the Spanish financial markets and economy. If that risk is non-existent or low, the FROB would be expected to wind up the institution. If this is not the case, the FROB will submit for approval to the Banco de España a resolution

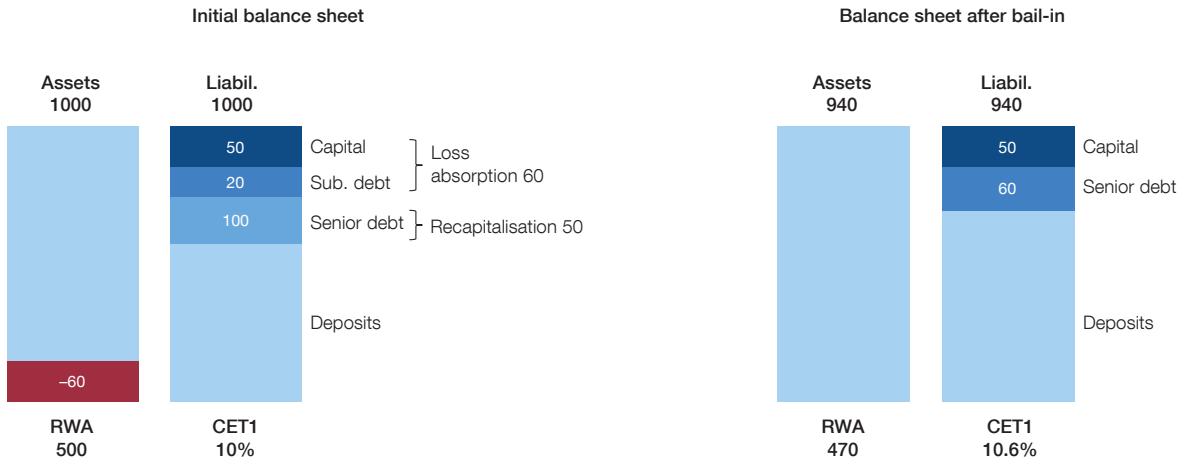
16 The local authority could also apply the general insolvency regime and wind up the subsidiary, or could apply other resolution tools if the bail-in option is not available.

17 The PONV is defined in Law 9/2012 and in the BRRD (point 81 of the Preamble), as "the point at which the relevant authority determines that the institution meets the conditions for resolution or the point at which the authority decides that the institution would cease to be viable if those capital instruments [AT1 and T2] were not written down or converted", that is, they absorb losses or are converted into capital.

18 This is a public law entity with legal personality and full public and private legal capacity to pursue its objects. The purpose of the FROB is to manage the restructuring and resolution processes of banks in crisis.

BASIC BAIL-IN SCHEME

CHART 3




SOURCE: Authors' elaboration.

plan in which the appropriate recapitalisation and financial support measures are identified, together with the compulsory restructuring plan.

Law 9/2012 is a provisional instrument until the BRRD is transposed into nationallaw. Currently the loss absorption and recapitalisation exercise (bail-in) that can be implemented in Spain is limited to capital instruments (shares, preference shares, AT1 instruments and subordinated debt). Therefore, if these instruments were not sufficient, there would be a need to resort to public support, which would have to comply with the European Union regime for government aid.

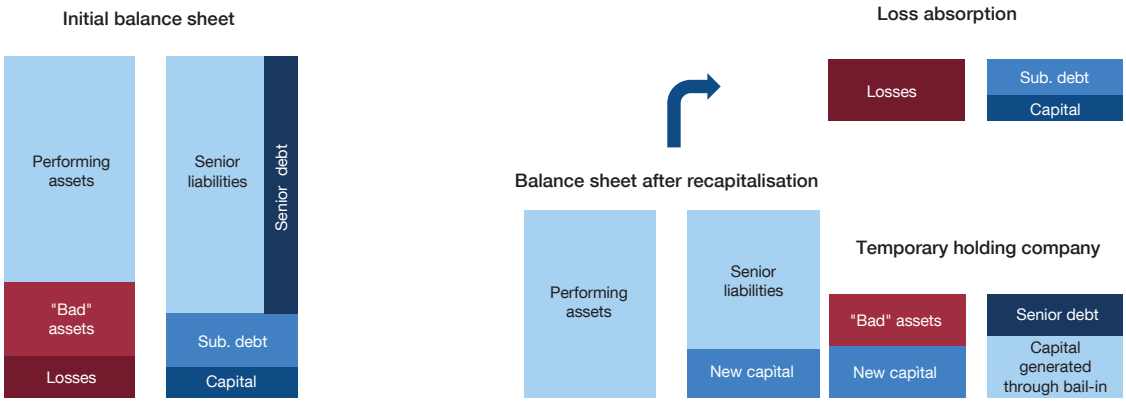
Once the European directive is transposed, the Banco de España and the FROB (or whatever new authorities may be established in the Single Resolution Mechanism), will have all the powers and tools defined in the BRRD: declaration of resolution; transfer of assets and liabilities; bridge bank; asset separation tool; and bail-in.

Given the size and complexity of G-SIBs, it seems clear that the initial step in resolution would be loss absorption and recapitalisation. To that end, following the creditor hierarchy, capital would be written down in order to absorb losses, fully if needed; next, preference shares would be affected; then, additional capital instruments and subordinated debt; and finally, other senior liabilities according to their eligibility and order in the hierarchy. Chart 3 shows a basic bail-in scheme, with a recapitalisation sufficient to restore market confidence. In the example, the losses (–60) are absorbed, first, by the shareholders (50), and then by subordinated debt (10), which incurs a write down of 50% of its nominal value. The recapitalisation needed (50) is provided by the remaining subordinated debt (10) plus the conversion into capital (40) of senior debt. The surviving bank after the bail-in has 50 in capital and a CET1 ratio of 10.6%.

Under the BRRD, the amount of losses is determined in a valuation exercise regulated in Article 36. The details of this exercise will be made explicit in Guidelines to be developed by the EBA. No doubt, this is one of the most open items in the process given the challenges posed by the lack of clear market prices for many of the assets in a bank's balance sheet, as is the case of loan portfolios in the banking book or level 2 and 3 instruments in the trading book.

RECAPITALISATION SCHEME THROUGH A BRIDGE BANK

CHART 4




SOURCE: Adapted from Melaschenko and Reynolds (2013).

To deal with the problem of asset valuation, some alternative proposals have been put forward which combine the resolution tools and putting off the loss absorption exercise until the end of the resolution/restructuring process. An example of this is the proposal of Melaschenko and Reynolds (2013), which suggests a recapitalisation mechanism that uses, basically, the bridge bank tool to create a bank to which the healthy assets, associated liabilities, and liabilities not affected by potential losses pending identification would be transferred. The bank under resolution would retain the losses and impaired and difficult-to-value assets, which would be funded by the resources of shareholders, investors in capital instruments and investors in bail-inable instruments, in the amount required.

This bank under resolution could convert into an "asset management company" that does not require a banking license because it would only have assets in liquidation (Chart 4).

Under this scheme, the bridge bank would be floated as soon as conditions allow, at a price determined under market conditions. If a total Initial Public Offering (IPO) were not possible, a partial one would provide for a starting market valuation of the bank. Based on that initial market valuation, the remaining shares could be offered to the creditors left behind in the original bank (now a temporary holding company/asset management holding company), following the creditor hierarchy (inversely), and within the liquidation process of this vehicle.

A similar scheme is implicit in the US Dodd-Frank legislation, which does not envisage a bail-in tool, since the FDIC, under the authority granted by OLA-Title II, can apply a bridge bank scheme to its systemic banks in order to recapitalise the legal vehicles in which the critical economic functions reside. Left behind in the resolved bank are the assets in liquidation, the original capital and the eligible liabilities, which will provide the loss absorption and recapitalisation capacity.

Finally, in implementing resolution actions – especially in systemic institutions with a potentially high impact on the markets and the economy – it is vital to take prompt and effective measures. The markets require clarity in order to determine the fair value of the cash flows generated by any business; and the capacity to generate cash flows is achieved by dispelling doubts as to the quality of a bank's assets and, above all, by consistent publication of reliable quarterly results. If the authorities act quickly (time is of the essence) and effectively, by identifying and isolating – if they cannot ensure proper valuation – the

impaired assets or the difficult-to-value ones, experience shows that the markets recover confidence rapidly, providing once again the funding needed for banks to keep providing their critical economic functions on an ongoing basis.

## 6 Conclusions

The Spanish G-SIBs are characterised by a business model in which commercial banking (retail and businesses) is the main activity. Investment banking, asset management and insurance play a complementary role, very much linked to the needs of commercial banking customers.

In their international expansion,Spanish banks have adopted a subsidiaries model based on the principle of self-sufficiency in capital and funding, adapted to local regulations and market conditions. The corporate centre provides the required capital and establishes the business model and the corporate policies to be adopted in the different business units. This includes dual control of risks, at both the centralised and the subsidiary level. The local board of directors and managers are accountable to the shareholders/corporate centre, but also to the local supervisory authorities. At the consolidated level, the Banco de España (and currently the SSM) supervises the whole group, so there is a double layer of control over the subsidiaries in the group.

The critical operational support needed by the banks in the group is provided through specialised subsidiaries whose sole purpose is to provide services (software development, data centres, back office, etc) to the different units in the group.

Unlike other large international banking groups, Spanish groups are usually systemic in the jurisdictions in which they operate. They generally have leadership positions in the national rankings, so a crisis in any local subsidiary could have amajor negative impact in the local jurisdiction. For this reason, the local authorities have to be closely involved in the planning and implementation of any resolution actions.

The legal and regulatory environments in which the subsidiaries of the Spanish groups operate are diverse. Specifically, in resolution matters, the legal frameworks are fragmented and incomplete and it will take years for homogeneous international standards to be set in place. Also, even with homogeneous legislation, national authorities will remain responsible to their parliaments, governments and citizens for effectively carrying out their mandate as regards preserving the strength of their financial institutions and the stability of their economies.

For these reasons, some environmental and some idiosyncratic, any resolution strategy should focus on a loss absorption and recapitalisation of local subsidiaries which, in the planning phase, has to be independent in case the group is not in a position to assist the subsidiaries and has to be flexiblee so that the local authorities feel confident that they will have at their disposal the tools and capabilities needed to safeguard the interests of their economies and citizens.

A multiple point of entry strategy, with an adequate distribution of the loss absorption and recapitalisation capacity of the material units in the banking group, is the option best suited to these environmental and idiosyncratic variables. The MPE strategy limits contagion from the impaired units of the group to the healthy ones. In that regard, cross-border coordination among authorities is vital for reducing reputational risk and preventing a loss of value in the healthy parts of the group. Also, it is the most appropriate way to strengthen the key objectives of public policy, such as discipline in management of

subsidiaries and clarity in assigning responsibility among authorities for the different parts of an international banking group.

The practical implementation of resolution still poses many unresolved issues, although the legal reforms in the different jurisdictions have made progress in this respect. For MPE resolution strategy the most important ones are:

— Coordination among authorities, which could be achieved through cross-border cooperation agreements providing for information exchange and through the coordination of decision-making so as to follow a common strategy.

— The existence of sufficient loss absorption and recapitalisation capacity at each entry point; which is dependent in the local legislation and the depth and level of development of the local financial markets.

— Operational support after resolution, which the Spanish institutions seem to have addressed satisfactorily through their policies to "subsidiarise" the provision of operational services to banks.

— And, of course, the problems common to both SPE and MPE strategies, such as the fair valuation of assets in resolution; the lack of resolution tools for imposing losses on shareholders and investors; and the cross-border recognition of resolution actions, where in the short run the only feasible way forward seems to be contractual solutions in the financial instruments.

All these are the issues which are focusing the efforts of the FSB and its working and expert groups, in order to prepare proposals for regulatory policies to be endorsed by the G-20 members. All international processes are complex, but without any doubt the authorities will find appropriate answers to these challenges. In the years to come, major advances will continue to be seen, born of the practical experience of authorities engaged in realising the political objective of solving the "too big to fail" problem.

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# TWO ILLUSIONS: CONSOLIDATION AND CAPITAL (*)

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# TWO ILLUSIONS: CONSOLIDATION AND CAPITAL

**"Is it possible for what is not to be? No. But, you see,**
**it is something, despite its not being".**

*On Sophistical Refutations*

ARISTOTLE
(384 b.C.-322 b.C.)

The objective of this paper is to examine some current practices in the assessment of banks' solvency, under the lens of accounting theory. More specifically, the paper questions the totipotent vision of consolidation as a generalized tool in the assessment of the solvency of banking groups, and proposes a measure of bank solvency that complements accounting data with stock market prices, where available.

The paper argues that, despite their widespread use, solely relying on the consolidated statements to assess the financial position, solvency and liquidity of a bank provides a distorted view of the legal, financial, and economic reality of banks, thus adding limited value, generating illusion and inviting confusion. In addition, the measurement of banks' regulatory capital on the basis of consolidated accounting statements can result in a sound picture of solvency where other more conventional measures may show otherwise.

## 1 Introduction

Coping with the issue of banks' financial stability requires dealing with institutions of growing complexity, as well as with a constant update on the sophisticated financial transactions they undertake (including their balance sheet valuation). The general approach that bases regulatory capital requirements on consolidated figures can tackle one part of the problem. However, it can also stimulate the structuring of transactions outside the regulatory scope, and is burdened by limitations and inconsistencies that should not be overlooked. Describing the relevance of those limitations, and suggesting possible solutions, is the reason behind one part of this paper.

Moreover, the calculation of regulatory capital is highly vulnerable. First, it is based on the internal models designed by banks themselves; second, accounting figures are subject to risk weights and adjustments that make comparison among banks extremely difficult. Many market players claim for simple capital requirements that are less prone to manipulation. Limiting the distortions among banks by means of easy and transparent algorithms would improve the functioning of markets while avoiding the permanent need for specific training on regulatory capital calculations. The second reason for drafting this paper is to suggest an alternative way of estimating regulatory capital that enhances transparency and comparability helping market participants to assess the strength of bank balance sheets. This would in turn improve market discipline and would represent an additional tool for supervisors to require demonstrable strengthening of a bank's capital base.

The rest of the paper is organized as follows. Section two presents a general overview of the consolidation practice in financial statements of banks for capital regulatory purposes. Section three extends the practical approaches to the analysis of the accounting theories that support them. Section four goes through a detailed exposition of the limitations of consolidated accounting statements in general, while section five examines in detail the limitations in the measurement of regulatory capital and solvency ratios. Sections six and

seven contain new proposals on how to use accounting statements in capital regulation of banks. Finally the conclusions of the paper provide a summary of the main points raised.

## 2 Overview on the practice of consolidation of financial statements

The consolidated financial statements are today an accepted formula to present and disseminate financial information to capital markets. Investors worldwide use raw and elaborated data from consolidated accounting statements, with little questioning on the conventions used for their preparation. However, accounting consolidation has not always been a generally accepted criterion among accountants. Instead, its adoption, like almost any accounting practice, was the consequence of a specific economic period and a consensus that never provided "irrefutable answers" or "universal truths". In continental Europe and Japan the introduction of accounting consolidation progressed slowly. In the US and UK, pioneers in this practice, its formal adoption, well into the 20th-century, was preceded by over forty years of extensive disputes among academics, professionals, and banking and capital market regulators.

The high development and relevance of capital markets in countries like the US and UK has fostered the development of a regulatory framework aimed at protecting investors against fraud and market manipulations. However, the attitudes around the consolidation of financial statements were different in each country. While in the US consolidated statements were initially published as a unique vehicle for providing financial information of parent (holding) companies of economic groups, in the UK they were conceived as a way of expanding the information contained in the individual financial statements of the parent company.

We can place the origin of consolidated financial statements in the mid-19th century with the emergence of the earliest forms of financial corporations or groups first in the UK, and later in the US.[1] Until then, the preparation of financial statements was dominated by historical cost. In the last decade of the century a new framework for the valuation of assets on the balance sheets began to be developed. The new framework assumed that assets should be divided into two groups: Fixed and Current assets. Fixed assets would be those with which the business is carried out and current assets would be those traded by the entity. The valuation rule for current assets was "the lower of cost or market", while recognition of gains required the prior existence of a critical and documented event *(v.g.* sale). The registering of "unrealized gains" was then seen as an absolutely unacceptable practice. On the other hand, fixed assets continued being measured in the balance sheet at historical cost, less depreciation and impairments. Institutions widely adopted these rules of valuation. Investments of the parent company in the subsidiaries were registered at their historical costs, since they were considered a fixed asset. Consequently the only returns from these assets accounted for by the parent company were dividends received from the subsidiaries.

The usefulness and relevance of measuring investments in the capital of subsidiaries at historical cost began to be questioned before the First World War. While the use of holding companies was seen as a useful way of creating big economic groups, the limitations of historical cost made them less attractive; the economic gains of subsidiaries (besides dividends) could not be registered by parent companies and intragroup loans distorted the liquidity position of the conglomerate. Some large corporations began to prepare consolidated statements at the end of the 19th century, but it was not until 1902 when an entity's annual accounts were accompanied by a consolidated balance sheet for the first time.[2]

1 Walter (1978).

2 In 1901, the US Steel Corporation was created, representing the largest business combination to date. The first annual accounts were closed in November and in February 1902 the financial statements were presented including a consolidated balance sheet. Walter, *op. cit.*

The scarce usefulness of valuing equity investments in subsidiaries at historical cost, along with recognizing just income in the form of dividends, stimulated accounting solutions for the financial statements of the holding entities. In an era in which the recognition of "unrealized gains" was considered an unacceptable accounting practice, applying the equity method to the valuation of investments in subsidiaries was not considered a valid solution. On the contrary, the consolidated statements of a group controlled by a holding company were seen as the appropriate response to the limited usefulness of historical cost as the basis for the recognition and valuation of equity investments in subsidiaries: first in the US[3] (1933) and later in UK[4] (1939).

## 3 Consolidation Theories

Accounting deals with the quantitative valuation and recognition of economic and financial phenomena in order to provide relevant and useful information for investors, creditors and society in general. This function is performed at two levels; a mechanical level, basically consisting in the recording of transactions *(v.g.* bookkeeping), and a judgmental, more complex level, subject to professional discrepancies, about the valuation of assets and liabilities *(v.g*. accounting). The Accounting doctrine is in permanent evolution, subject to constants changes and attempts of improvement, in many cases based on experience. To meet its objectives, accounting must answer two questions:

a) Who are financial statements prepared for?

b) Which point of view should be adopted in the treatment of a transaction?

Over time, accounting theory and practice has provided rules and principles for answering these questions. These can be summarized in three main theories: the property Theory, the Entity Theory and the Control Theory, with some variations within each of them.[5] According to their underlying assumptions, each of these theories offer a consistent base to prepare consolidated financial statements.

Conventionally, the arguments to prepare consolidated statements are based on the idea that subsidiaries "essentially" are "branches" *(v.g.* divisions or departments of a single legal entity) rather than "subsidiaries" (separated legal entities). The consolidation technique involves adding the respective financial statements to subsequently eliminate "reciprocal balances" between entities belonging to the same group, that is, balances resulting from intercompany transactions. The objective when preparing consolidated statements is to show the profits and net equity as if all the assets and liabilities would have been under a single legal entity.

When the parent company controls the subsidiaries but there are also other *minority interests,* the consolidation process must address accounting problems related to the elimination of inter-company transactions, the calculation of *minority interests,* and the treatment of changes in the group's control over the subsidiary. In the consolidated financial statements minority interests represent the equity holdings of stockholders external to the group. As shareholders, the *minority interests* do not receive fixed payments, neither can they claim repayment of principal. In other words, they cannot be considered debt holders, but third-party claimants over a part of the group's *net assets.*

3 Securities Act of 1933. Section 19 a).

4 In 1939 the *Committee of The London Stock Exchange* started requiring new issuers to file consolidated statements. From 1948, the *Companies Act made* that requirement general for all economic groups.

5 Like for instance the "Fund Theory", "Commander Theory", "Investor Theory", or "Enterprise Theory".

The expansion of economic groups often takes place through the acquisition of independent firms or firms controlled by other groups. Occasionally, the structuring of these transactions involves the acquiring entity paying in excess of the market value of the assets received net of liabilities assumed. In the consolidated statements, such excess is recognized as an "indeterminate" asset called *Goodwill*, the mechanical calculation of which offers few keys to its true economic value. Very often, the excess paid in return for acquiring other companies is based on "opinions" about the future, and is therefore an imaginary figure that can give scope for abuse and lax interpretations. In practice, there is no accurate way to assess whether the amounts recorded in consolidated balance sheets as *Goodwill* in fact represent some economic value, or rather a dumping ground for costs of all kinds, still outside of the income statement, that result from the purchase of a company.

Returning to the different answers to the two main questions referred to above, the following subsections provide an overview of the resulting accounting theories.

### 3.1 PARENT COMPANY THEORY OR PROPRIETARY THEORY

This Theory supports its position in the expression:

$$\sum A - \sum L = \text{Stockholders}$$

Under the Parent Theory, the owner shareholder is the stakeholder for whom financial statements are prepared.[6] All concepts, procedures, rules and formulations are geared to responding to the information needs of the owner. For the preparation of consolidated statements, this theory emphasizes the legal concept of "property" to control an entity, and therefore considers that the objective of consolidated statements must be to inform decisions by the parent's stockholders. Consequently, this theory considers that consolidated statements are not relevant for minority stockholders, who are considered as quasi - creditors, or even in some of its variants (proportionate consolidation) are removed in order for the consolidated statements to show just the subsidiary's assets and liabilities that (in percentage) correspond to the parent company.

Under the Parent Theory, the consolidated financial statements are thus considered an extension of the parent's financial statements. As a result, in the accounting books of the parent company, the investment in the subsidiary is replaced by the subsidiary's individual assets and liabilities.

### 3.2 ENTITY THEORY

The Entity Theory is based on the expression:

$$\text{Economic Resources} = \text{Financial Resources}$$

Or,

$$\sum A = \sum L + \text{Stockholders}$$

The Entity Theory is based on the idea that a company is a separate entity with its own identity, different from that of the shareholders owners. The theory goes beyond the pure convention which separates company and personal business. In this theory, the assets and liabilities belong to the company (legal entity) and not to its owners. The preparation of consolidated statements focuses on the existence of the group, on the idea of "economic unit", rather than contemplating the group through the perspective of the parent company.

6 Vatter (1947).

The consolidated entity is seen as a self-standing economic entity with its own life, while the parent, minority stockholders, and creditors, are seen as mere contributors to its funding. The Entity Theory focuses on economic resources controlled by the firm as a legal entity, and therefore the nature of the investor (owners or creditors) is a secondary issue.

Consequently, the theory does not award special treatment to different types of owners (majority / minority), and transactions between them are seen as internal operations. The view is that there are two types of owners: majority (the dominant) and minority.

According to Entity Theory, the main difference between creditors and stockholders (whether majority or minority) is that the valuation of the rights of creditors can be estimated independently from other evaluations, when the company is solvent, while the rights of the stockholders are measured by the valuation of assets net of liabilities. The rights of stockholders are to receive dividends and share in the liquidation value of the firm; they are holders of rights as holders of shares, but not as owners of the assets of the entity or the group.

### 3.3 CONTROL THEORY

In the 90s of the past century, a new concept was developed to prepare consolidated financial statements: *control*, which, in fact, can be considered as a variant or an extension of the Entity Theory. The concept of *control* comes from the idea that the stockholders of the parent company need information not just about the group as a whole, but also about the distinction between the part that they own, and that owned by minority shareholders. Under this theory, minority stockholders are seen as part of the group, because they are part of the controlled entity. Conversely, when the property is considered to be more important than the control, the minorities are treated as external to the group and seen as a liability.

#### 3.3.1 Comparison between the three theories

The distinction between the three theories can be illustrated by this example:

*ABC Bank acquires 60% of company Z for 12,000 euro. The book value of Z's net assets is 8,000 euro while their fair value is 10,000 euro. The effects of this transaction on ABC's consolidated balance sheet would be the following, according to each of the three theories:*

| | Theory (a) | | |
|---|---|---|---|
| | Entity | Parent | Control |
| Net assets of Z in ABC Consolidated balance sheet | 10,000 | 9,200 | 10,000 |
| Goodwill | 10,000 | 6,000 | 6,000 |
| Majority | 6,000 | 6,000 | 6,000 |
| Minority | 4,000 | — | — |
| **Total of Z in Assets of ABC Consolidated balance sheet** | **20,000** | **15,200** | **16,000** |
| Minority interest | 8,000 | 3,200 | 4,000 |
| Cost of investment in Z | 12,000 | 12,000 | 12,000 |

**a** Under the Entity Theory, the net worth of Z and goodwill are incorporated at their total of fair value (starting from the price paid by ABC). Total goodwill that reveals itself after the purchase of ABC is of [10,000 = (12,000 – 10,000 × 60%) / 60%] of which 6,000 (12,000 – 10,000 × 60%) belong to ABC. Moreover, minority interests are presented at fair value starting from the price paid by ABC in exchange for 60% of Z: [= 8,000 (12,000 / 60%) × 40%].
Under the Parent Theory, assets and liabilities controlled are shown at their fair value and those of the minority interest, not being affected by the transaction, are measured at their carrying value on the entity Z: 9,200 = 60% × 10,000 + 40% × 8,000. Only the goodwill of the parent is reflected in the consolidated balance sheet: 6,000. The minority will appear on the liabilities side at their value in Z: 3,200 = 40% × 8,000.
Under the Control Theory, the assets and liabilities of Z are recorded at their fair value: 10,000, and only goodwill paid by ABC is recognized: 6,000. The minority interests are recognized at their fair value: 4,000 = 40% × 10,000.

Originally, dominant accounting principles were based on the Parent Theory. The Entity Theory was developed with the appearance of large financial conglomerates at the beginning of the 20th century. A strict interpretation of the Property Theory can lead to conflict with Entity Theory. Many heated accounting debates are often the consequence of confronting both theories. In general, the Property Theory is linked to "historical cost", while Entity Theory assumes that entities must try to maximize the value of their assets, with stockholders and creditors normally distant from day to day management of the business, and thus being more inclined to *fair value* because knowing the current value of the assets is essential for them to adopt correct decisions. That is why, in general terms, the Parent Theory is best suited for small businesses, where ownership and management is usually the same, while the Entity Theory (and its variant Control Theory) is more appropriate for large corporations, where the life of the entity is independent from that of its stockholders.

## 4 Limitations of consolidated statements

As currently conceived, the financial statements of the parent company alone cannot satisfy the information needs for investors or supervisors. The balance sheet of a parent company in which assets consist essentially of shares of subsidiaries can rarely be considered as an adequate indicator of the financial position of the parent if it is not complemented with information about what kind of assets and liabilities support each of the investments.

The same is true for the income statement. A parent company that only considers gains resulting from the dividends received from its subsidiaries will reflect income from a "legal" point of view but not from an economic standpoint. Even when dividends received are the only returns from subsidiaries shown as income in the parent's income statements, the accompanying notes should give full results of each subsidiary.

Consolidated financial statements were invented in order to provide an overview of the financial situation and the performance of a group of entities, creating a single picture out of the individual statements of each group entity without forcing the reader to review and examine each and every one of those financial statements. For this purpose, the consolidated statements may have certain real utility. In this sense, they represent a success of the Entity Theory over the Property Theory, such direct application of economic substance over legal form. But consolidated statements are not the solution to financial information problems of economic groups, because they hide as much as they are supposed to show.

The observed increase of the preponderance of consolidated information in the financial statements of the parent companies of economic groups, along with its recognition by bank and insurance supervisors as an instrument of prudential capital regulation, indicates that consolidated statements have to be considered as fundamental financial statements. However, it is essential to identify their virtues and limitations.

Since their invention in the early 20th century, consolidated statements have reached a status of maximum excellence within the financial information of large global corporations. In fact, it is common to listen to or read expressions stating that, "consolidated, rather than individual, are the relevant financial statements"; or "consolidated statements reflect an economic group's business", and other similar assertions. As we will see later, these types of claims can be highly misleading.

No one has yet convincingly explained why conventional financial statements *(v.g.* the individual or legally required statements) are unimportant and should be replaced by

consolidated financial statements, or why they are better. It is usually held that "consolidated statements represent a group of entities as if they were a single entity". This proposition, sufficiently vague and misty, was a stepping stone for consolidated statements. However, the use of the analogy ("as if") to prepare consolidated statements is troublesome since it results in showing the financial statements of a "group of entities" when, in fact, each transaction is made with individual entities; the shares traded on capital markets are those of individual entities; and the results and dividends are from individual entities, and not from the group. Consolidated statements may be considered a certain form of presenting financial information of a set of related entities, but this does not mean they are useful to the different user groups to whom they are supposedly directed: stockholders, creditors, and supervisors.

It is true that the individual balance sheet of a parent company *(v.g.* a holding company) shows the equity investment in the subsidiaries, but it provides limited insight regarding the nature of the assets of these subsidiaries, and this regardless of the bases used to value those assets. From the information provided by the individual financial statements of the parent, readers cannot work out whether those investments are supported by financial assets, tangible or intangible assets, cash or a combination thereof. In this sense, it seems reasonable to provide stakeholders of the parent company with information about the legal assets (financial, property, etc.) of subsidiaries in which resources of the parent company are invested.

A solution could have been to annex the financial statements of the subsidiaries to those of the parent. Obviously, this could lead to serious and heavy information overload, especially for parent companies with many subsidiaries. And it also would impose a heavy burden on naive readers trying to guess, from the financial statements of subsidiaries, how the interests of parent stockholders are affected.

The preferred solution was the preparation of consolidated statements, in which intercompany transactions and results thereof are eliminated, giving rise, on almost all occasions, to "minority interests" and "goodwill". However, this is a way of approaching the problem that confuses some issues and does not clarify others.

On the one hand, assets only make sense in relation to a legal entity entitled to acquire them and incur obligations to fund them. The combination of assets and liabilities of a parent company with the assets and liabilities of its subsidiaries does not represent that type of entity. Assuming this is making the financial information dependent on fiction, this seems an invitation to confusion.

On the other hand, the consolidated balance sheets and income statements are not balance sheets and income statements in the sense that ordinary people understand them. Using the same expressions *(v.g.* accounts or balance sheet formats, etc.) in two types of different information (one with a legal form and another without it) again represents an invitation to confusion. The use of the same words predisposes users to make the same type of economic and financial inferences from the consolidated statements, as if they were the financial statements of a legal independent entity; but such inferences are clearly incorrect.

Without simply denying the usefulness of consolidated statements, the most serious concern with the consolidated financial information is the risk of creating *an illusion* to unwary readers. Without intention to be exhaustive, some of the weaknesses of consolidated statements are highlighted below:

i. *The consolidated balance sheet provides a false impression. Creditors of the parent only have rights over the assets of the parent, and creditors of the subsidiary only have rights over the assets of the subsidiary. Stockholders of the parent, have rights over the subsidiary only with respect to their investment*

The rights of creditors are not adequately shown in a consolidated balance sheet. Let us imagine that the parent pledged a subsidiary's stocks as collateral for funding received. Faced with this situation, the *net assets* of the subsidiary do not constitute the same potential source for the payment of debts of all creditors of the parent. This is because the consolidated balance sheet does not identify the assets of the subsidiary affected by the collateral granted by the parent, or the liabilities of the subsidiary that have priority over the liabilities of the parent who has taken the stocks of the subsidiary in return for financing granted to the parent. Reporting this in the notes to the financial statements is clearly not enough.

ii. *Creditors of subsidiaries and minority shareholders may not find the consolidated statements of much use*

Minority stockholders and creditors of the subsidiaries get very little useful and valuable information from the consolidated statements, given that they do not give details assets, liabilities, expenses or income of the subsidiaries. Furthermore, the minority shareholders and those creditors will naturally be interested in information concerning the volume of transactions with the parent and other group entities, since the continuation or cessation of this business is under the control of the parent, and therefore decisions can be made from the standpoint of the parent and to the detriment of the subsidiary.

iii. *Financial ratios* (v.g. *solvency) could mislead creditors of the parent*

In general terms, the creditors of an entity in particular are interested in the financial position and the performance of that entity. It is obvious that the creditors of a subsidiary are unable to obtain from consolidated statements the information they need about that subsidiary. It is perhaps less evident, but also true, that the creditors of the parent do not obtain adequate information from the consolidated statements. For example, information on the aggregate value of assets in the consolidated balance sheet does not reveal specific availability to meet the aggregate liabilities of all entities included in the consolidated balance sheet. For this reason, the financial ratios calculated from the consolidated financial statements may be meaningless. This conclusion applies also to the solvency ratios of banks calculated for regulatory purposes *(v.g.* BIS ratio): the assets of subsidiaries cannot be used to meet the liabilities of another entity of the group, unless a new liability is created.

iv. *The consolidated statements can show a false sense of the group's liquidity position*

From the point of view of the "group", the liquidity position shown in the consolidated financial statements is the sum of liquidity positions of the various entities included in the consolidation scope. However, those positions cannot be presented or analyzed on a "net" basis because they are individual positions, and not those of the group.

In addition, the consolidated statements show no restrictions on the use of the liquidity of each of the entities. Nor do they show cash flows between the entities included in

the consolidation, or restrictions thereof. Accordingly the consolidation ends up obscuring the link between the liquidity of assets and the liabilities for which they are actually available.

The same can be said of deferred tax assets and liabilities shown in the consolidated balance sheet. They are from individual entities, and not from the group; any analysis trying to assess the group's net position against tax authorities would be reaching misleading conclusions.

v. *The consolidated statements introduce confusion regarding relevant financial indicators*

Creditors often trust the protection offered by specific clauses in loan contracts or assets taken as collateral. In order to grant the right to intervene from the initial stage, all loan contracts define breach of contract and the rights that assist the lender when that occurs. Usually, the prospectuses of securities, bonds, syndicated loan contracts, etc., include clauses (covenants) such as a maximum debt ratio, a minimum liquidity ratio, or limitations to dividend payments, together with the corresponding penalties when they are broken (among them early repayment of the bonds, interest rate step-ups, etc.). For the most part, these clauses are intended to alert bondholders and lenders about the financial deterioration of the issuer or borrower.

The consolidated balance sheet does not offer investors of individual entities information enabling them to determine if these requirements are being fulfilled, or whether some company is in danger of breaching them. Therefore, consolidated statements do not permit the functioning of surveillance and monitoring mechanisms on the financial position of an entity with long-term liabilities.

vi. *The recognition of income from subsidiaries within the consolidated income statement is not always right*

Consolidation is based on the assumption that each monetary unit earned by a subsidiary has the same value as a monetary unit earned by the parent. Aside from possible tax effects on the parent from profits obtained by the subsidiary, this monetary equivalence cannot be taken for granted. There are various reasons for this. For example, the subsidiary may be subject to a public supervisory regime with the capacity to intervene in its dividend policy; or it could operate in a country subject to capital controls; or there may be contractual restrictions *(v.g.* covenants) to the payment of dividends referred to in the subsidiary's bond issuances; or a stable minority stockholder of the subsidiary may reduce the ability of the parent to set the dividend policy.

vii. *Consolidated statements hide the financial effects of subordinated bonds and preferred shares issued by subsidiaries*

When there are subordinated bonds or preferred shares issues by the subsidiaries, investors are interested in the profits of these entities and the amounts needed to meet the return of these securities. At the same time, ordinary stockholders will be interested in knowing the profits that remain free to distribute (including the parent). Consolidated statements do not provide that information. Furthermore, the income of the subsidiary deliverable to the parent company depends on whether the remuneration of bonds and preferred shares of subsidiaries have been previously settled or not.

viii. *Consolidated information can conceal relevant financial information relative to some group companies*

A weak subsidiary can be a real source of danger; an economic group may be able to support it, but the strength of the group increases when each subsidiary is self-sustaining. Since the consolidated statements are the aggregation of financial statements of a set of entities, the weakness of an entity may today be compensated by the strength of another; that is why the consolidated balance sheet cannot be considered to provide an accurate image of the parent's financial position. These types of information are extremely important, not only from the point of view of the minority shareholders, but also from that of the parent. Imagine for instance that a subsidiary essential to the group's operations is running on losses and has issued preferred shares. Control over this subsidiary is through ownership of shares since the preferred shareholders do not have voting rights as long as their remuneration is being paid. But there is a risk that the subsidiary falls into the hands of the preferred shareholders, and therefore the integrated operations of the group are obviously at risk.

ix. *The effects of exchange rates on the consolidated statements may lead to misleading conclusions*

In the case of groups with subsidiaries in different countries with different currencies, when the subsidiaries represent a relevant proportion of the total consolidation, readers of the financial statements can reach misleading conclusions if the consolidated balance sheet includes liquidity positions subject to highly volatile exchange rates, monetary tightening or capital controls.

On the other hand, changes in the exchange rate between the currency of the parent and the currency of the subsidiary produce variations in the consolidated equity of the subsidiary, even if the subsidiary's net assets have not changed. An appreciation in the exchange rate of the subsidiary against the currency of the parent company strengthens consolidated equity, and depreciation reduces it. However, these modifications of consolidated equity are not motivated by a generation of cash flows by the subsidiary, neither can they be considered as distributable to the parent company.

## 5 Consolidation and regulatory capital of banks

This section addresses, with greater detail, the implications of consolidation for the prudential regulation of banks.

### 5.1 CONSOLIDATION

The Basel Committee on Banking Supervision (BCBS) accepted from the outset consolidation as the basis of measurement of a banking group's regulatory capital. The scope of application of Basel II states that:[7]

> "This Framework will be applied on a consolidated basis to internationally active banks. This is the best means to preserve the integrity of capital in banks with subsidiaries by eliminating double gearing."

This interaction between the regulatory scheme of banks' capital and accounting consolidation is only apparent. The substantial problem with this decision of the BCBS is that the claim is highly questionable, given that, as we pointed out in previous sections,

7 Basel Committee on Banking Supervision (2006), Paragraph 20.

assets displayed on a consolidated balance sheet are not fully available to meet liabilities. In addition, when these assets are located in a variety of countries, they are subject to different legal jurisdictions, and therefore protection of liabilities can introduce incentives in favor of certain structures *(v.g.* subsidiaries vs. branches) creating false realities that can increase the vulnerability of some entities within the banking group.

In this sense, together with the general difficulties caused by the use of consolidated statements, there are inherent problems in the supervision scheme "on a consolidated basis" resulting in added difficulties. Ignoring the legal and regulatory differences between countries is not a trivial matter when, for example, against the minimum requirement of capital required by Basel (8%) there are countries with higher requirements *(v.g.* 10-12%). Furthermore, Basel III could introduce more differences as a consequence of so-called "counter-cyclical buffers" at the national level, the supplements of capital for systemically important institutions, as well as the "liquidity coefficients" and "leverage ratios".[8]

But there are more difficulties and complications in the use of consolidated financial statements as the input for banking supervision. During the crisis, trying to tackle the problems of mistrust of banks, some countries carried out different exercises for the evaluation of capital, which often tend to be referred to as *stress test exercises*.[9] The idea was to try to assess how a bank's capital would evolve in case of a severe recession. Banks perform the stress tests on a consolidated basis, using data and flows of capital and liquidity within the group ignoring the possibility that, either the country of the parent (host) or subsidiary (home) impose partial or total obstructions to financial flows between companies of the group. The potential impact of these measures is not trivial, and indeed during the crisis there has been evidence of the establishment of regulatory barriers to limit the transfer of resources among companies within the same group.[10]

An additional element of uncertainty is the divergence between the accounting consolidation (required by capital markets) and the regulatory consolidation (necessary for estimating regulatory capital). While the first is based on the idea of "control" of a parent entity (dominant) over other entities (dependent or subsidiaries), the scope of consolidation chosen by bank regulators is limited to only a few of them: banks and regulated *(v.g.* securities) or non-regulated financial activities. Therefore, all dependent commercial and industrial entities, as well as insurance companies fall outside the "regulatory consolidation, with a peculiar system of deduction from the amount of regulatory capital being applied".[11] No one has clearly explained the economic and financial foundations for these exclusions and deductions when it comes to estimating the capital needs of banks.

There are more differences. The "regulatory consolidated assets" are not those obtained after exclusions and deductions stemming from non-banking subsidiaries, as the reader might interpret. With the idea that assets have different "levels of risk" (and that this risk is not captured by their book value) each asset is weighted by a risk-factor ranging from 0%

8 Basel Committee on Banking Supervission (2011).

9 The first took place in US in April 2009 and was done on the 19 largest banking groups in that country.

10 The establishment of regulatory barriers to limit transfers of resources from a subsidiary bank to its parent bank ("ring fencing") was not through the traditional way of capital controls but rather using macro prudential tools *(v.g.* limits on loan/deposits), more stringent liquidity requirements for certain subsidiaries, or even measures of moral suasion, obviously hard to prove.

11 All the subsidiary's assets and liabilities are removed from the consolidated balance sheet. Equity investments in insurance subsidiaries are deducted from regulatory capital, while those in commercial and industrial subsidiaries are also de ducted from capital, when they exceed certain levels. Basel II, paragraphs 30 to 35.

for “loans granted to sovereign states” to 150% for financial assets qualified as dubious (more than 90 days past due).[12] This process results in a *Risk Weighted Assets* figure which is shown by banks in their financial information, and used in the calculation of their capital requirements.

Finally, certain assets within the consolidated balance sheet are directly deducted from capital: Goodwill, Intangible assets and Tax assets. We acknowledge our sympathy with the deduction of goodwill given the few clues that companies usually provide with respect to its true economic value. Therefore, goodwill is not viewed as an asset (as accounting regulators do)[13] but rather as a “loss” which accrues over a future, long and infinite period. Consequently, it is presented as a capital deduction instead of a year loss. On the contrary, no sound arguments are provided on why intangible assets owned and controlled by the firm *(v.g.* licenses of use, editing permissions, computer programs, etc.), as well as deferred tax assets that will reduce tax-related future cash outflows, must both be wholly funded with equity *(v.g.* fully deducted).

By providing this different asset figure, readers of a bank’s “consolidated regulatory” information may erroneously believe such information to be more reliable than information in the financial statements. The truth is they are actually confronted with complex data and aggregation of assets owned by various banks within a group, with risk factors being applied presumably with the purpose of equalizing their different levels of “risk”.

### 5.2 THE REGULATORY CAPITAL

The Capital Accord states that capital is the main tool for protection of bank depositors. Thus, Basel II maintains that:[14]

> “Further, as one of the principal objectives of supervision is the protection of depositors, it is essential to ensure that capital recognised in capital adequacy measures is readily available for those depositors”.

The first difficulty arises because, in accounting, the concept of “capital”,[15] or more generically “net worth”, refers to the amount by which the assets of an entity exceed its liabilities, at a certain point of time. Therefore, capital is a residual amount. In other words, assets are economic resources and liabilities are financial obligations, and therefore capital represents the excess of the former over the latter. There is capital only if there are assets and, therefore, in this sense, capital, as financial resource isolated from assets and liabilities, simply does not exist. This is frequently ignored, and the concept of capital is treated as if it were something tangible, available, and something that can be used if things go wrong, etc. Entities and individuals have capital only to the extent that they have assets.

Even if accounting net equity is defined as a residual amount of assets over liabilities, its presentation on the balance sheet can be disaggregated. For example, the balance sheet of a stock company *(v.g.* a corporation) the net equity can be broken down into resources contributed by owners *(v.g.* capital stock), the retained earnings *(v.g.* surplus, reserves),

12 This methodology is referred to as the “Standard method” in Basel II. Another possibility is for the bank itself to estimate the degree of risk of each asset (“Internal ratings-based approach”: IRB).

13 IASB: IFRS 3, paragraph 32; and FASB: ASC 805-30-30-1.

14 Basel II, paragraph 23.

15 We refer here to the financial not to the “legal” concept, and nor to a specific item of balance. In economics, the concept “capital” sometimes refers to “financial assets” used to produce “wealth”, but most often use capital with a content similar to the accounting: “Capital is the sum of the money equivalent of all assets minus the sum of the money equivalent of all liabilities as dedicated at a definite date to the conduct of the operations of a definite business unit” [Von Mises (1949)].

other profits from maintenance gains *(v.g.* value adjustments), etc. This classification is usually done because it is useful for the readers of financial information, especially when there are legal restrictions on the distribution of equity; or because there are different types of stock with different rights to distribution; and also because it is sometimes required by legislation *(v.g.* commercial, markets, etc.). In any case, the figure of "accounting net worth" depends exclusively on the assessment of assets and liabilities. Of course, it will be pure coincidence if this number equals the market value of listed shares, or the price that would be obtained from selling all of the company's stock.

The outstanding feature of an entity's net equity is not having the right to contractual pay out, nor an amortization schedule. In this way, in accordance with accounting regulation, when a financial liability can be settled at the option of the investor, or it has some kind of guaranteed yield, it is not capital but a liability of the issuer. From the point of view of stability and exposure to the risk of bankruptcy of a bank (or any company) the relevant feature of capital is it does not contain mandatory payment requirements and its loss does not necessarily threaten the ability of the entity to meet liabilities. For stockholders, the existence of liabilities is a risk of loss of their investment, which is balanced with the potential for high yields provided by financial leverage. Creditors and banking regulators prefer a capital base as wide as possible, as a "buffer" that protects the bank against losses that may arise from risky assets. The smaller the accounting capital base, the lower the buffer and, consequently the greater risk of bankruptcy.

And here appears the second difficulty regarding financial statements and bank regulation. While the accounting capital is a unique number (the excess of the value of assets over liabilities on a specific date) the regulatory capital concept is threefold:

i. Tier 1 Capital:

   a) Common Equity Tier 1.

   b) Additional Tier 1.

ii. Tier 2 Capital.

iii. Total Capital: i + ii.

The idea of Common Equity Tier 1 resembles the accounting own funds. However, so called *Regulatory adjustments* distort this approximation. In addition to the deductions of assets already mentioned *(v.g.* goodwill, intangibles, tax assets) another tool, referred as *filters,* allows removal of the gains but not the losses (such as in cash flow hedges) or to deduct assets but not liabilities (defined-benefit pension plans). In the first case, this treatment is justified by the alleged artificial volatility introduced in capital; however, if the same transaction (usually a derivative) was not given hedge accounting treatment, the results would not be filtered. In addition to the asymmetry of some of these filters (which is not sufficiently backed) it would seem as if the Capital Accord ignored the requirements to recognize assets and liabilities on a bank's balance sheet and instead of requiring rigorous valuations, opted for such mechanical additions or deductions that alter the meaning of those elements without bringing clarity to capital.

Finally, the elements that can be included as Additional Tier 1 Capital or Tier 2 Capital are perpetual debentures with option of cancellation for the issuer and discretion of the bank

for the payment of interest (Additional Tier 1) or with a minimum maturity (5 years) and required payment of interest (Tier 2). The former tend to be called preferred stock, a name that may create confusion as it relates to an instrument that combines the limitations of creditors with the risks of the stockholders. Subordinated bonds are titles with defined amortization schedule and interest payments and, in the event of insolvency, are the last creditors to be paid. According to general accounting rules, banks issuing such products must present them as liabilities on their balance sheet.

### 5.3 THE REGULATORY CAPITAL RATIO (BIS)

Financial ratios are an analytical tool that is relatively easy to understand. However, one must be careful to determine the elements involved in the calculation, because there is no unique interpretation. Readers of a bank's financial information should be aware that the popular name of a ratio may not accurately convey its meaning, nor the method for its calculation.

Basel III requires three capital ratios from banks, each of which having to reach a minimum:

| Regulatory capital ratio | | Minimum |
|---|---|---|
| Common Equity Tier 1 | Accounting Net Equity - Regulatory Adjustments / Risk Weighted Assets | 4.5% |
| Tier 1 | Accounting Net Equity - Regulatory Adjustments + Preferred Shares / Risk Weighted Assets | 6.0% |
| Total Capital | Accounting Net Equity - Regulatory Adjustments + Preferred Shares + Subordinated Debt / Risk Weighted Assets | 8.0% |

Regulatory Adjustments = Goodwill + Intangibles + Deferred Tax Assets + Defined Benefit Pension Plan Assets + Cash Flow Hedge Gains + -------

The Capital Accord leaves it for national authorities to adopt the standards in their respective jurisdictions. This includes both the scheme of the "risk weighted assets", and the deduction or filtering of items from the net worth, which generates inconsistencies in the regulatory capital figure of banks in different countries.

From this point *the illusion* is created that a bank that meets the highest levels of regulatory capital ratios is well capitalized. The reality is that a more conventional accounting measure of this ratio *(v.g.* accounting equity / total tangible assets) would provide a very different perception of the level of solvency of banks, even after deducting goodwill, intangibles and tax assets. In fact, quite a few big banks with a regulatory capital ratio well above the minimum of Basel (8%) show a more conventional capital ratio (accounting equity / total tangible assets) of 3 to 4%.[16] This means that the regulatory capital ratio can create confusion and illusion to readers of a bank's financial information, and make them rely on the relative strength of a bank, when in fact it does not have it.

The financial crisis of 2007 showed the seriousness of this illusion. Many entities that had been judged by supervisors as adequately capitalized, very soon after were intervened by

16 http://www.fdic.gov/about/learn/board/hoenig/capitalizationratios.pdf. The "tangible accounting asset" concept used here is equal to total assets less goodwill, intangible assets and deferred tax assets.

the authorities; the examples are well known on both sides of the Atlantic. Few listened to market calls demanding more capital for the largest banks in the world, as was reflected in stock market capitalization values well below their book values (with no recovery to date, the average remains at about 0.8).

Since it is the shareholders, and certain creditors, which have their capital at risk at the bank, it does not seem appropriate to suggest complex solvency measures, perhaps more targeted to other needs. The evaluation of creditworthiness is of the utmost interest to creditors and shareholders of a bank; if the information extracted from a bank's balance sheet is not adequate, or even worse, is illusory, that information is clearly wrong.

The absence of a conceptual framework of banking regulation that defines concepts, needs, goals, etc., has generated a real industry around regulatory capital and the estimation of bank solvency, which creates barriers and confusion rather than helping users of a bank's financial information. The security which appears to be offered by sophisticated and complex terminology along with elegant mathematical formulae is not justified, and sometimes the resulting figures are certainly illusory, as the crisis in 2007 evidenced.

There is a risk associated with the blind confidence of supervisors, creditors and investors in those figures; a danger that theoretical abstraction and the so-called statistical behaviors downgrade and relax the thorough and detailed analysis of figures shown in the balance sheet of a bank, as well as the market's opinion of those figures. It would seem as if information obtained directly from the financial statements of a bank did not provide stockholders, creditors and supervisors with enough evidence to evaluate its solvency. If this were so, clearly those financial statements would be wrong. The fact that losses in banks are not distributed evenly over time, but instead tend to be concentrated in certain periods, the crises makes bank failure an exceptional risk and, therefore, similar to the risk of an epidemic in estimating the life insurance premium: exceptional and thus inestimable. Therefore, it is very doubtful that mathematics based on data from the past and "normal" statistical behaviors is of any use to shareholders and creditors of a bank.

## 6 An alternative to consolidation and regulatory capital requirements

When analyzing the difficulties of using the consolidated statements we pointed out the confusion that a simplistic interpretation could induce in unwary readers. It is obvious that this use is more widespread than could be expected, including among important international organizations. If the objective of financial statements is to provide useful, relevant, consistent and reliable information, these same qualities must be required of consolidated statements. It seems obvious that stockholders, creditors and banking supervisors need financial information allowing them to calculate, in addition to indicators of solvency and performance, the capabilities of net assets of a banking group's parent to generate cash flow in the future, and that can in no way be obtained from consolidated statements.

As we have argued in this paper, accounting consolidation is a highly artificial practice, and its most undesired consequence is to produce a false sense with regard to the reality and the legality of what it purports to represent. Furthermore, the fact that numbers from different entities that use a wide range of valuation methodologies are added into a single number makes consolidation a pure arithmetical exercise with limited financial meaning. A portfolio of bonds may be measured at amortized cost by one entity and at fair value by another, without it being clear what economic meaning can be given to those figures when added in a consolidated balance sheet. The addition of these figures is wrong, but so is making adjustments in order to follow a common approach (because it is simply unreal).

Let us now look at an alternative proposal to consolidation.[17] For the sake of simplicity, it is assumed that the parent is a bank holding company whose only assets are investments in its subsidiaries, and that there is only one type of equity instruments: stocks. In summary, the consolidated balance sheet of that bank holding company, broken down by measurement base, could be the following:

Consolidated balance sheet

| Assets | Liabilies and capital |
|---|---|
| Assets from Subsidiaries (HC) (a) | Parent´s Liabilities (HC) |
| Assets from Subsidiaries (FV) | Liabilities from the Subsidiaries (HC) |
| Goodwill (HC) | Minority Interest |
| | Parent Net Equity and Reserve |

NOTE: HC = Historical cost, FV = Fair value.

**a** These asset´s historical cost would be that corresponding to the date of the subsidiary´s creation or either fair value upon acquisition by the parent.

Now, let us assume that instead of consolidating the banking group all assets and liabilities were measured at *fair value*.[18] The individual balance sheet of the parent and the subsidiaries would look as follows:

Parent balance sheet

| Assets | Liabilies and capital |
|---|---|
| Invesments in Subsidiaries (FV) | Parent Liabilities (FV) |
| | Parent Net Equity |

Subsidiary balance sheet

| Assets | Liabilities and capital |
|---|---|
| Subsidiary Assets (FV) | Subsidiary Liabilities (FV) |
| | Subsidiary Net Equity |

Any assets of a subsidiary would be registered in the parent bank's statements at its fair value. The difference between the sum of the fair values of all investments of the parent bank, and the values of liabilities would be the best estimate of the equity of the stockholders of the parent bank. Only if this difference (the net worth valuation) is used in the calculations related to the balance sheet and performance of the bank, could the results of those calculations be considered significant regarding the parent bank's capacity to generate cash flows. As a result, the parent bank's balance sheet would present its equity investments in subsidiaries measured at an amount equal to the subsidiary's net equity, which would be precisely the same amount shown in the subsidiary's balance sheet resulting from the fair value measurement of its assets and liabilities.

17 This proposal is a continuation of work done in 1968 by Professor Raymond J. Chambers based on the inappropriateness of consolidated statements and their replacement by a current prices measurement *(current cash equivalent)* ["Consolidated Statements are not really necessary", *The Australian Account,* February, 1968].

18 Accounting regulations contain a generally accepted definition of "fair value". "It is the amount that could be paid in exchange for an asset or to cancel a liability, between independent interested parties, properly informed about the profitability and risk of the element object of exchange" IFRS 13. At every moment, fair value is a uniform and relevant representation of cash flow expectations for an asset in the market. Accounting measurement at fair value levels the market conditions applicable to all assets at the time of measurement. The financial significance of fair value in a balance sheet is in line with the purchasing power attributed to an asset. "A man does not value money for its own sake, but for its Purchasing Power, that is to say, for what it will buy. Therefore, his demand is not for units of money as such, but for units of purchasing power. Since, however, there is no means of holding general purchasing power except in the form of money, his demand for purchasing power translates itself into a demand for a "equivalent" quantity of money" [Keynes (1930)].

In addition, the solution of measuring the assets and liabilities of subsidiaries at fair value would avoid the need to eliminate the results of intra-group transactions. If assets were measured at fair value, any transactions at prices above or below the fair value as of the balance sheet date would be automatically corrected. In fact, transactions carried out at conditions outside the market, in order to enhance (or damage) the position of a subsidiary, would be automatically eliminated. And of course, goodwill would no longer represent a problem since payments above fair value would be adjusted as of the purchase date against the acquirer's net equity.

Using of market prices, when available, in the valuation of assets and liabilities generally constitutes a better practice in the assessment of solvency of banks. By providing a more realistic measure, fair value accounting proves useful to overcome many of the inconsistencies found in the consolidation of financial statements, thus resulting in increased confidence in the derived figures and ratios, and in reliable measures of buffers of "assets" which the depositors and creditors can count on.

In addition, it would be extremely useful for supervisors to use net worth at market value as a complement to the measurement at fair value of assets and liabilities. Since equity is equal to the value of assets net of the value of liabilities, the financial statements of the bank (fair value thereof) may provide a value of equity far away from the value calculated using the market price of the shares.

A method to overcome this, especially for some ratios considered specially relevant *(v.g.* BIS ratios) would be to update net equity replacing it by the stock's market value as at the date of measurement, or either at the average market price during a given time period. Since market values reflect expectations on the bank's ability to generate future cash flows, they could possibly be used to calculate a supplementary capital ratio. Banking supervisors may consider taking this market based capital ratio as a synthetic measure of "Market Discipline" on which to rely when claiming more capital *(v.g.* Pilar II). When net worth (book value of equity) is above market valuation, it should be interpreted as a sign of financial weakness of the bank, while the opposite should be deemed as a true "buffer" for depositors.

A relevant critique to the measurement of capital from stock market prices is that, occasionally, prices are very volatile, with strong fluctuations, and possibly far from fundamental values in periods of financial panic or high speculation. However, this criticism could always be countered with the superiority of the market's opinion as compared to data extracted from valuation models.

**7 What would fair value provide?**

Currently, information provided in bank financial statements is a mix of historical cost, amortized cost, fair value and in-house estimates. These valuation criteria generate differences arising from the different and particular conventions each of them is based upon. This creates difficulties in comparing the financial statements of two banks and in comparing the financial statements of a bank over time. From a perspective of its usefulness, relevance and consistency, the advantage of fair value over historical cost is indisputable. Historical cost is easier to verify than fair value, whose measurement is much more dependent on estimates. Historical cost would be the most appropriate valuation approach if the purpose of accounting were a mere exhibition of figures easily verifiable with a high degree of objectivity. Even so, this objectivity is in itself controversial since it violates an essential component of any theory of economic value that purports to be considered appropriate: that the value of any asset must inevitably be linked to the circumstances at a particular the moment of measurement. Moreover, the estimation of a

specific value is point in time, and therefore an unstable figure. Awarding continuity to the accounting valuation as at a given moment in time represents a very strong restriction and could only be justified when no indication to the contrary was in place, or better information was not available.

Thus, the historical cost-based information is, at best, historical, and, at worst, irrelevant. At reporting date, the historical cost is simply a problem of history. The price of a building, a bond or a stock ten years ago, has the same relevance today as the hypothetical price within twenty years from now. Since the price of an asset can change over time with the purchasing power of money remaining unchanged, and vice versa, it is not possible to infer the historical price from its current value. For each asset, its estimate of value, for the purpose of evaluating its possibilities *(v.g.* buy, sell, hold), is a "point in time" assessment, under the circumstances prevailing at that point in time, even when the process of estimation itself requires some time. Therefore, the measure of a bank's equity on the basis of historical cost cannot provide a meaningful indication of its solvency. Neither does it represent a good measure of its performance since it makes the bank's results depend on documentary and legal bases (critical events such as purchases or sales), leaving aside results from management decisions on the allocation of assets that are managed.

In general, the biggest concern regarding fair value is its reliability when prices of assets and liabilities are not readily available in an active market. These concerns are in most cases generic and do not differ from those that can arise from estimates based on historical cost, such as estimates of asset impairment, estimates of liabilities for pension plans, etc. In the case of financial instruments (the most important elements on the balance sheets of banks), advances in financial valuation techniques over the last forty years, the same that banks actively use in trading and risk management, allow one to obtain reasonable estimates of fair value that would be close to the price of the asset in arm's length transactions once market conditions are incorporated. In any case, the fair values of financial instruments can be better relied upon than valuations for tangible or intangible assets conducted by appraisers or valuation professionals. The level of standardization and normalization of financial products compared, for instance, with the heterogeneity of real estate products, makes it relatively easy to reach a consensus regarding their valuation. On the contrary, the huge real estate boom experienced in recent years was largely possible because all the money necessary to finance investment in these assets could be obtained from banks by means of real estate appraisals. A lack of financial soundness, and of the most basic common sense, enabled this kind of assessments to be conducted on liberal bases of valuation rather than on construction costs. At the same time, the scarce discrimination by banks on the basis of borrower risk made it easy for developers to keep on building without bearing any risk.

Historical cost can neither reflect the real situation of a bank with respect to other banks. Such problem of comparison is relevant for banking regulators and investors alike. Fair value provides consistency and comparability between assets acquired in the past and those more recently acquired by the same bank, and also between the assets of two different banks. It could be argued that fair value is not a perfect measure, but it is the way in which real business takes place. The business decision-making process is essentially based on the current value of assets and liabilities, and the financial statements of a bank must be consistent with that behavior. Accounting is a real phenomenon or, in other words, accounting information must be evidenced by the way in which assets and liabilities are managed by banks, away from theoretical assumptions, beliefs or personal convictions, if it is to be consistent and useful. In this regard, information not based on the fair value of

assets and liabilities alone is less useful than information based on a mix of historical cost and fair value.

## 8 Conclusions

The aim of this paper is to contribute to a reflection on the accounting theoretical approach adopted by regulation to evaluate bank solvency. More specifically, the paper proposes an alternative approach to solvency analysis that breaks with the view of consolidation of financial statements as a totipotent methodology to analyze banking groups, by proposing a measure of bank solvency directly linked to the information, including market prices, that is used by capital market participants.

The publication of consolidated financial statements was the result of a long process of compromise at a time when mergers and acquisitions were new phenomena in the business scene. In that environment, the preparation of financial statements gravitated around the historical cost. The idea of *risk* at that time was nothing more than a dialectical concept, found in any investment, but there was not a number that identified it. The evolution of financial theory during the latter part of the 20th century created a formal structure for financial assessment that provides banks and other firms with a platform from which to manage and hedge their financial risks without relying on intuition.[19] This same formal conceptual structure serves as the foundation to estimate the fair value of financial assets and liabilities on the balance sheets of banks. The use of derivatives in the 90's caused the crisis of historical cost and, with unusual regulatory consensus, the need for "fair value" as a criterion of accounting valuation, due to its greater utility, consistency and relevance with regard to financial instruments. No doubt it may seem challenging, but today the effects of corporate concentration are coupled with progress in valuation techniques that were not available for the first large conglomerates of the early 20th century.

Consolidation is a highly artificial accounting exercise that creates a false illusion regarding the legality of the picture portrayed. The adding of assets and liabilities of entities belonging to the same banking group can be accepted as a way of presenting information, but this does not imply it is of real help since consolidated financial statements hide as much as they purport to show. Furthermore, to infer economic and financial conclusions based on the figures of the consolidated statements as if it were a legal entity is clearly inappropriate. In order to fully understand the situation of each entity within a banking group, the financial information of each separate entity must be examined separately. Of course, when faced with this analysis, the restrictions are not only those having to do with limited liability, but also those related to the group's reputational risk.

Consolidated statements have been accepted by the financial community for nearly 100 years, despite the fact that their justification requires, without doubt, an exercise of abstraction from very important legal and economic facts. It may not be easy to accept the suggestion to replace consolidation statements by individual statements with assets and liabilities measured at fair value. Neither is it easy to estimate regulatory capital requirements on the basis of measuring all assets and liabilities of banks at fair value, especially when this criterion, despite the lack of evidence, is pointed to by uninformed sources as one of the drivers of the current financial crisis.[20]

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19 Based on the seminal work of Bachelier (1900), pp. 21-86; relevant authors in this field from this period include: Samuelson (1955); Markowitz (1959); Samuelson (1965), pp. 13-39; Black and Scholes (1973), pp. 637-654, and Merton (1973), pp. 141-183.

20 In October 2008, the SEC was commissioned to study the impact of fair value on the banking crisis in US. The study showed that fair value did not play any relevant role in bank collapses. At the same time, it evidences the support of investors for fair value as a more useful, relevant, and reliable measurement criterion that facilitates their financial decisions and the proper price formation. United States Securities and Exchange Commission (2008).

An implicit problem in the agreement around "Capital" is that by not requiring all financial assets to be measured at fair value for estimating capital needs, these are based preferably on static past events (historical cost) therefore ignoring what the market thinks about the relative risks of the different assets of banks. In addition, introducing different weightings to the various types of assets leads to artificially favoring some financial assets with respect to others. In this way, the regulation of capital, by not requiring fair value for all assets of banks, unintentionally stimulates and encourages some assets with respect to others, with maybe an unintended result of global over-investment. The effect of all this is an increase in the vulnerability of individual banks, of the banking sector and of the economy as a whole.

Since the first Capital Agreement was published in 1988, all look back to the past when assigning risk weightings into the future. It is difficult for this to work. Capital regulation should be a source of strength for the unexpected, not a way of trying to guess the future. This is what characterizes the capital of any entity, whether a bank or any other firm. What is unexpected is uncertainty surrounding any business, and uncertainty, as opposed to risk, is not measurable. Risk is linked to situations where it is possible to assign probabilities within a random reality; in that context gains cannot exist. Uncertainty, on the contrary, is the essence of the entrepreneurial spirit under real competition, and, thus, forms the basis of one of the theories about economic profit.[21] Even the Bank for International Settlements warned in 2007 on what could be expected of models and mathematical predictions in finance and economy:

> "Economics is not a science, at least not in the sense that repeated experiments always produce the same results. Thus, economic forecasts are often widely off the mark, particularly at cyclical turning points, with inadequate data, deficient models and random shocks often conspiring to produce unsatisfactory outcomes. Even trickier is the task of assigning probabilities to the risks surrounding forecasts. Indeed, this is so difficult that it is scarcely an exaggeration to say that we face a fundamentally uncertain world – one in which probabilities cannot be calculated – rather than simply a risky one".[22]

To provide an example, in 2006 there was substantial agreement among banks and authorities that banks were well capitalized and had developed robust risk management practices which they allegedly used in their day-to-day management of risks, and could therefore be used to estimate regulatory capital, such as mathematical models for the measurement of credit risk. The result was that investors judged their investments in banks as at low risk of default, and banks benefited from low financing costs. As was later shown, this general belief led to a wrong perception on how banking activity was actually being developed in many countries. Perhaps the high degree of agreement was indicative of a low uncertainty state that influenced everyone's behaviour. Therefore, regulation should perhaps abandon its concern for finding optimal rules and try to concentrate on common sense rules, which are easy to implement, easy to review by supervisors, easy to understand by investors, and most importantly, directly linked to reality.

Supervisors could choose another way to judge the appropriateness of a bank's capital. First of all, abandoning the consolidation requirement and instead, asking for individual financial statements. Secondly, by demanding that all financial assets and liabilities (the greater part of a bank's balance sheet) be measured at fair value as at the date in which

21 An interpretation of the distinction between risk (measurable) and uncertainty (not measurable) as used in economics can be found in Knight (1921), Keynes (1920), and Keynes (1936).

22 Bank for International Settlements, *Annual Report 2007*.

capital needs are estimated. Finally, by using a solvency ratio that takes accounting net worth (assets less liabilities) as numerator, and total assets as denominator, possibly after deducting certain tax assets and intangible assets.

Almost 25 years ago a regulatory framework for banks took off within an economic and financial environment characterized by low interest rates and a low perception of risk. Regulatory capital requirements allowed banks to expand their business without their accounting equity base growing proportionately, which facilitated huge growth of their balance sheets. Perhaps it is time to review some of the banking regulatory practices particularly thinking of their link to financial stability. The crisis has shown that regulatory capital is not in itself a guarantee for financial stability and that financial excesses are best prevented with a solid base of accounting capital.

Of course, neither accounting nor capital regulation are exact sciences, and, like human invention, they are imperfect. Often the financial world wants to belief the illusion that it deals with "precision", which really does not exist in the sense that ordinary people use this term; but not even an alternative exits. Accounting is essentially a process of measurement and any measurement is a process of approximation; wondering about the degree of approximation, or conversely, the degree of error, is therefore very relevant. The obligation of banking supervisors is to regulate entities that are essential for the proper functioning of the economy, and thus it is crucial that they choose the best practices in order to contribute to financial stability.

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# FIRMS' FINANCIAL SOUNDNESS AND ACCESS TO CAPITAL MARKETS

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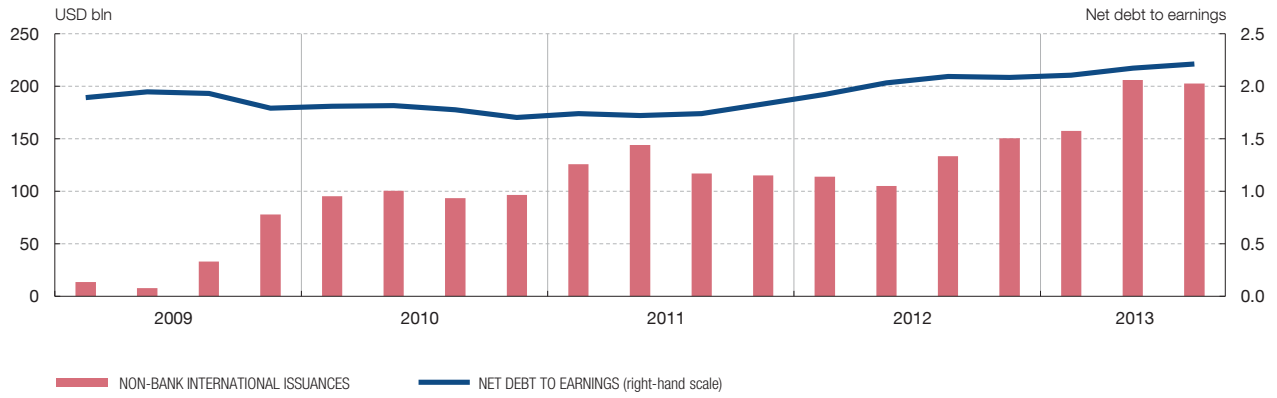
We investigate if firms' tapping international markets show more vulnerable balance-sheets than historical records. Building on descriptive evidence, and a non-parametric analysis, we conclude that firms' balance-sheets are not more overstretched. Firms' leverage is similar than in past. Although firms are less profitable, they have improved their liquidity profile, and show higher debt-service capacity. Though, firms' access to international capital markets is easier, since yields have compressed, and maturities lengthened. Overall, firms' ability to tap markets does not seem to derive from an improvement in their balance-sheets. Beyond this big picture, we identify tail risks. The volume issued by more overstretched firms has increased. There are also severe data gaps, and there is substantially less information for non-listed firms. To investigate these issues, we construct a novel data set containing information on bond issuances and firms' balance-sheets for the period 2000-2013.

## 1 Introduction

The growth of market-based financing is probably the most defining feature of the post-crisis financial markets.[1] The easy access to capital markets by emerging economies' non-financial corporations is deemed particularly noticeable. However, there is considerable uncertainty about most of its features, including its actual size. Non-financial corporations' debt issuances at international capital markets, according to the BIS nationality measure, amounted for 100 US bn in 2013, well ahead, of the 31 US bn back in 2007. Since this criterion classifies deals according to the nationality of the parent company, it accounts for issuances when companies use non-financial subsidiaries incorporated overseas [McCauley *et al.* (2013), Turner (2014), or Shin (2013, 2014)]. However, non-financial firms' actual issuances could be somewhat higher, since they might use financial vehicles to tap international markets. The upper bound of their issuances is given by private non-banks' debt issuances, which hovered around 200 US bn in 2013, and could reach similar numbers 2014 – as shown in Chart 1 –.

1 The process can reflect financial disintermediation, driven by global banks' deleveraging [BIS (2013), Serena Garralda (2014)], probably fostered by low returns in traditional assets and search for yield [Lo Luca *et al.* (2014)].

FINANCIAL DESINTERMEDIATION AND LEVERAGE (a) CHART 1




SOURCES: Chui *et al.* (2014); and BIS Debt Securities by Nationality.

a Net debt to earnings is obtained from Chui *et al.* (2014). It is defined as net debt (total debt-cash) to earnings; simple average of seven emerging economies (obtained with firm-level data from S&P IQ). International debt issuances by nationality, of all emerging economies, sum of the last four quarters. Non-bank internacional issuances include issuances of non-financial corporations and other financial corporations. This is an upper bound of non-financial corporations issuances, as it takes into account issuances by financial vehicles incorporated overseas.

Large international debt issuances have been often a telltale sign of mounting balance-sheet risks. Unsurprisingly, the process has attracted considerable attention, not least since emerging economies' non-financial corporations' soundness is worsening in parallel. Chart 1 shows how net debt to earnings – a popular measure of debt-service capacity – has increased in a number of emerging economies. There are also signs of increasing leverage, exhaustion of debt-service capacity, and lacking room to withstand financial shocks [IMF (2014a, 2014c), Chui *et al.* (2014), CGFS-FSB-SCAV (2014)]. More specific, regional, analyses have identified similar patterns of rising corporate leverage and risks, in Asia and Latin America [IMF (2014B), IADB (2014)].

But, in spite of this seeming relation, no link between the build-up of firms' vulnerabilities and the broad-based access to international capital markets has been established. Firms' leverage can be fuelled by other factors. Local capital markets are experiencing also a strong development, and to some extent are attracting large inflows of foreign investors. Domestic credit remains a dominant source of financing, and credit has grown strongly [Morgan Stanley (2014)].

As a consequence, large international debt issuances are not necessarily a sign of lacking market discipline in international capital markets, or mounting risks in emerging markets' corporations. In fact, there is substantial uncertainty on the soundness of firms tapping international markets. Many questions remain open. Do large bond issuances reflect a relaxation in credit standards, so that even overstretched firms can tap markets? Or, on the contrary, does this trend reflect a genuine deepening in international capital markets, and only sound firms are able to issue corporate bonds?

Answering these questions is key. If firms able to tap international markets are not more vulnerable than in past, large international debt issuances are probably a sign of transition towards a more market-based corporate financing. The process can reflect a substitution of global banks by alternative, less traditional lenders, making instrumental the understanding of their investment strategies. The analysis of firms' balance-sheets turns crucial not only to determine whether market discipline has changed over time, but also to assess whether firms have become more susceptible to shocks.

In this paper, we aim to shed light on these issues, by investigating if firms' tapping international bond markets show more vulnerable balance sheets than historical records. To address these questions, we delve into a number of balance-sheet metrics, and also on bonds features. We focus on leverage, debt-service capacity, profitability, and liquidity, and also on maturities and yields. Building on descriptive evidence, and a non-parametric analysis, we find that firms tapping markets are not more leveraged than in past. They are, however, less profitable, they have improved their liquidity profile, and show higher debt-service capacity. Moreover, firms are able to tap international capital markets at better conditions, since yields have compressed, and maturities lengthened. Beyond this big picture, we identify tail risks. Measured in absolute terms, issuances by more overstretched firms have increased. There are also severe data gaps, since there is substantially less information for non-listed firms. According to most metrics, these firms are less sound. We identify as well pockets of vulnerability, since highly-leveraged firms are also those with less debt-service capacity and low profitability. For comparison purposes, we investigate also developments in local capital markets. Firms tapping local markets have better balance-sheets than in past. Their financial conditions have become similar to firms issuing bonds overseas.

By investigating these issues, our paper is making two contributions. First, we construct a novel database, which contains information on bond issuances and firms' balance-sheets. A key feature of our database is that, to gather non-financial corporations' bond issuances, we use the country and sector of the company in which ultimately the risk lies – this need not be the ultimate parent company –. This way we are able to track non-financial corporations' issuances also if they use financial affiliates incorporated overseas. A second attractive feature is that it comprises information on firm´s balance sheet characteristics. The data covers the period 2000-2013, and the initial sample includes 13,199 bonds issued from 2,773 companies, and includes both domestic and international issuances. Second, we are contributing to the research investigating the risks stemming from disintermediation in international markets. Previous research had focused on bonds features, and the entry of new investors in emerging economies fixed-income markets. Existing evidence suggests that bond maturities are longer, which supports that firms have an easier access to capital markets [Shin (2014)]. Also, recent analyses have shown that US dollar bonds still overshadow issuances denominated in domestic currencies [Gruic and Wooldridge (2013)].[2] By delving into firms' soundness, we are shedding light on demand factors. Overall, we find that borrowers' fundamentals have not improved. The ability to tap markets, at long tenors and low prices, does not seem to derive from an improvement on firms' balance-sheets. Accordingly, it probably stems from global factors, such as very low interest rates in advanced economies and the larger presence of institutional investors (insurance companies and pension funds). Our results suggest that credit risk might remain subdued, but the lengthening of maturities can pose significant market risks. From the perspective of firms, their access to markets can be curtailed in case of changes in risk appetitive, or a rise in long-term interest rates.

The rest of the paper is structured as follows. In section 2 we discuss the main features of our database, and how it compares with alternative sources of information. In section 3, we investigate the main features of firms' tapping international capital markets. We provide descriptive evidence, and a non-parametric analysis. In section 4, we compare the evolution with local capital markets. Finally, in section 6 we present the main conclusion.

## 2 Measuring bond issuances and firms' balance sheets. Data issues

To investigate firm's access to capital markets, it is instrumental to have joint information on non-financial corporations' bond issuances and their balance-sheet characteristics. We collect this information in two steps. Firstly, we obtain bond-level information on non-financial corporations' issuances in local and international markets. Secondly, for each company tapping capital markets, we get its balance-sheet information, if it is available. As we discuss below, the coverage is uneven and there are important data gaps. All in all, our initial sample includes 13,199 bonds issued by 2,773 firms of 36 emerging economies.[3]

### 2.1 MEASURING BOND ISSUANCES ON AN ULTIMATE RISK BASIS

Collecting information on non-financial corporations' bond issuances is challenging, in particular for international deals, and requires a number of methodological decisions. Most of the problems stem from the fact that firms can carry out operations which, in spite of having similar economic implications in terms of risk and liquidity, have very different structures. Firms can carry out deals using affiliates in different locations, which even have different sectors of activity. For instance, some large firms tap international markets through

2 Although some emerging markets firms are tapping international markets in their domestic currency.

3 Latin America includes Argentina, Brazil, Chile, Colombia, Ecuador, Mexico, Peru, and Venezuela; Emerging Europe includes Bulgaria, Belarus, Bosnia, Croatia, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Russia, Serbia, Slovakia, Slovenia, Turkey, Ukraine; Africa & Middle East includes Egypt, Morocco, Nigeria, Saudi Arabia, South Africa, UAE. Asia includes India, Indonesia, Malaysia, Philippines, Thailand, South Korea.

affiliates (i.e. subsidiaries, or special investment vehicles) incorporated overseas. As stressed by Shin (2013) and Turner (2014), classifying these deals according to the direct issuer's nationality would be misleading, since they are issuing debt on behalf of their parent company. This problem is often overcome using the ultimate parent company nationality – the BIS nationality criterion –, which is becoming standard. A similar problem arises with the sector classification. If non-financial corporations use financial affiliates (for instance, a special investment vehicle) to issue bonds, classifying deals according to the affiliate's sector would underestimate non-financial bond issuances.

In short, using information on the direct issuer to identify these deals is troublesome – in particular, as previously said, for international issuances, since firms can use complex ways of carrying out deals –. Accordingly, our decision consists in identifying deals according to the country and sector of the company in which, at the end of the day, the risk lies. This need not lie in the ultimate parent company, as we discuss below. It can be considered as a measure on an "ultimate risk basis". To identify these deals, we delve into the country of risk, which is identified by Bloomberg using four factors. Listed in order of importance, these factors are the management location; country of primary listing; country of revenue, and the reporting currency of the issuer.

Using this criterion, we obtain bond-level information for non-financial companies operating in Emerging Asia, Latin America, Emerging Europe, and Africa and Middle East. Table 1 provides some descriptive statistics: the number of bonds issued in the four geographic areas, the total volume issued, and the average size of the deal. We expect these numbers to be very close to the full universe of corporate bonds. Latin America and Asia are by far the regions where firms are more active in international markets, both in terms of firms and bonds. Local markets are of similar size, although there are more firms active – and bonds are, on average, smaller –[4]. The development of local markets is higher in Asia.

4 We show as well the number of firms which have tapped markets in the period under analysis. The number of bonds issued is, by construction, at least equal to the number of firms, since some companies have tapped markets in several years. If a company taps markets several times in a year, we group the issuances into a single deal. The size is the sum of the volumes issued that year, and for bond's features (maturity, rating, coupon), we keep the average of the deals.

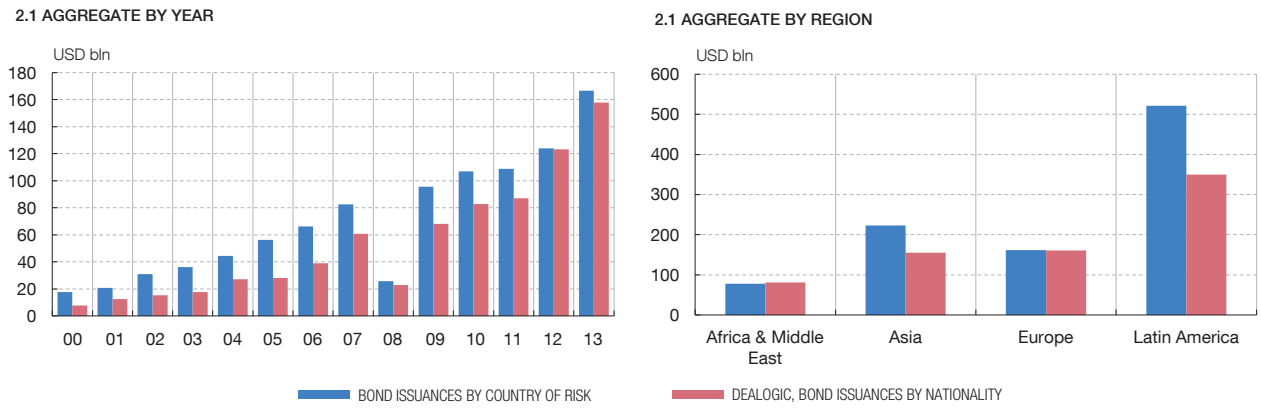
BOND ISSUANCES. STYLIZED FACTS (a) TABLE 1

| | Bonds | | | Fiirms |
|---|---|---|---|---|
| | Number | Volume | Average deal | |
| Bonds at international markets | | | | |
| Total | 2,391 | 971,281 | 406 | 890 |
| Latin America | 1,037 | 518,104 | 500 | 301 |
| Africa & Middle East | 121 | 77,447 | 640 | 55 |
| Emerging Europe | 328 | 161,178 | 491 | 157 |
| Asia | 905 | 214,552 | 237 | 377 |
| Bonds at local markets | | | | |
| Total | 10,808 | 1,259,770 | 117 | 1883 |
| Latin America | 1,559 | 265,518 | 170 | 551 |
| Africa & Middle East | 317 | 64,297 | 203 | 81 |
| Emerging Europe | 950 | 146,992 | 155 | 427 |
| Asia | 7,982 | 782,963 | 98 | 824 |

SOURCES: Bloomberg and own elaboration.

a Latin America includes Argentina, Brazil, Chile, Colombia, Ecuador, Mexico, Peru, and Venezuela; Emerging Europe includes Bulgaria, Belarus, Bosnia, Croatia, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Russia, Serbia, Slovakia, Slovenia, Turkey, Ukraine; Africa & Middle East includes Egypt, Morocco, Nigeria, Saudi Arabia, South Africa, UAE. Asia includes India, Indonesia, Malaysia, Philippines, Thailand, South Korea.

DEBT ISSUANCES OF NON-FINANCIAL CORPORATIONS, MEASUREMENT ISSUES (a) CHART 2




SOURCES: Bloomberg and Dealogic.

a The chart depicts Dealogic data (gross international bond issuances by nationality), and our data sample, gathered using Bloomberg. There are methodological differences between the series. Bloomberg data identifies the country and sector delving into the company which ultimately holds the risk.

EXAMPLES OF BONDS ISSUED BY FINANCIAL SPECIAL PURPOSE VEHICLES TABLE 2

| Company Name | Parent Company | Country of Incorporation | Country of Risk | CUSIP | Amount (USD bln) |
|---|---|---|---|---|---|
| Petrobras Global Finance BV | PETROBRAS - PETROLEO BRAS-PR | Netherlands | Brazil | 71647NAF6 | 3.5 |
| Lukoil International Finance BV | LUKOIL OAO | Netherlands | Russia | EJ6431419 | 1.5 |
| Gazprom Neft OAO Via GPN Capital SA | GAZPROM NEFT OAO-CLS | Luxemburg | Russia | EJ9515473 | 1.5 |
| Russian Railways via RZD Capital PLC | RUSSIAN RAILWAYS JSC | Ireland | Russia | EJ6158582 | 1.3 |
| AngloGold Ashanti Holdings PLC | ANGLOGOLD ASHANTI LTD | Isle of Man | South Africa | 03512TAD3 | 1.3 |
| Metalloinvest Finance Ltd | METALLOINVEST HOLDING CO OAO | Ireland | Russia | EJ8456547 | 1.0 |
| SABIC Capital II BV | SAUDI BASIC INDUSTRIES CORP | Netherland | Saudi Arabia | EJ8456547 | 1.0 |

SOURCE: Bloomberg.

Chart 2 depicts the historical evolution of bond issuances, for the period 2000-2013. Bond issuances, measured with our data, show an upward trend, consistently with other sources of information. The volume issued is higher than the volume issued obtained by Dealogic. This gap can stem from some methodological differences and coverage, which make them not entirely comparable.

For instance, the criterion we use to identify non-financial corporations issuances is fairly close to the nationality classification, but with two differences. On the one hand, if a parent company does not support or guarantee explicitly an affiliate, we classify the latter's issuances with its own country and sector. We aim to reflects that the ultimate risk is retained by this affiliate. On the other hand, the sectoral classification is always that of the company in which the risk ultimately lies. This way we track non-financial corporations' issuances also when they carry out deals using affiliated financial vehicles incorporated overseas. Table 2 shows some examples of these types of deals. Appendix 1 provides more information on data issues.

## 2.2 FIRMS' BALANCE SHEETS

The next step to assess the soundness of firms tapping capital markets is to gather their balance-sheets, and select a number of relevant indicators. Ideally, we would like to obtain full balance-sheet information for every company tapping capital markets. In practice, the coverage is uneven, and there are important data gaps, which we discuss below.

BALANCE-SHEET SOUNDNESS. METRICS (a) TABLE 3

| Concept | Variable | Observations | |
|---|---|---|---|
| | | Firms | As % of amount issued |
| Leverage | Total assets to common equity (leverage) | 1,001 | 73.33 |
| Profitability | Return on Assets | 868 | 65.82 |
| Debt service capacity | Interest Coverage Ratio | 1,010 | 74.68 |
| Long-term prospects | CAPEX-capital expenditures | 724 | 57.77 |
| Solvency | Debt to EBITDA | 1,037 | 77.80 |
| Liquidity | Current ratio | 1,052 | 77.32 |

SOURCES: Bloomberg and own elaboration.

**a** For firms tapping international capital markets. Issuances of the same firm in different years are counted as different observations.

To choose these metrics, we leverage on previous research, and follow recent analyses on firms' vulnerabilities [IMF (2014a, 2014b)]. We end up choosing six indicators to analyze different and specific features of firms' soundness: leverage, debt service capacity, solvency, liquidity, and current and prospective profitability. To assess leverage, we use total assets to common equity (for shortness, we refer to it as leverage). As a solvency measure, we include the debt to EBITDA. It assesses the size of debt relative to current earnings (its fluctuations often have to do with sharp changes in benefits, more than swings in debt). To assess the risks of short-term financial problems, we include the interest coverage ratio, which is a popular measure of the ability to service debt. It measures earnings relative interest payments. We use two measures of profitability. The return on assets (ROA) allows assessing current profitability. To grasp long-term prospects, we look at capital expenditures growth (CAPEX growth). Firms investing are expected to have brighter prospects. Finally, to gauge liquidity, we include the current ratio. It is defined as the ratio of liquid assets to short-term liabilities. It allows grasping if a firm can disinvest in order to pay its short-term obligations. Table 3 shows the metrics chosen, and the number of firms for which we have information.[5]

Our balance-sheet information is, at first glance, rather informative. The number of firms with information hovers around 700-1,000, depending on their indicator. The volume issued by these firms represents around 55%-80% of the total volume of bonds. However, the coverage is uneven. To this regard, a key dimension is a firm's market status. Unlike traditional data sources, our data set contains information on non-listed firms. However, the coverage is much better for listed than for non-listed firms. Appendix 1 discusses this issue, providing further information on our balance-sheet data, and how it compares with other data sources.

## 3 Firms' vulnerabilities and access to international capital markets

### 3.1 FRAMEWORK FOR ANALYSIS

To investigate firms' access to international markets, we analyze their balance sheets, and the main features of their bonds issuances. Both are relevant to understand how market discipline and financing conditions have evolved over time. The four dimensions of the firm´s financial health we look at are leverage, profitability, solvency and liquidity. To gauge bonds features, we look at coupon and maturity.

We proceed in four steps. Firstly, we provide some preliminary evidence. Second, we use a non-parametric analysis to investigate if distributions have shifted over time. Third, we

5 As described in note 4, we are grouping all bond issuances within a year into a single deal. Hence, we have only one observation (balance-sheet information) for each year in which the firm taps markets (even if the firm carries out several issuances). We drop bonds with volumes lower than 30 US million to avoid a large bias towards small issuers. These bonds represent just 1.3% of total amount issued.

investigate tail risks, which we define as the volume issued by weak firms, according to the metrics analyzed (leverage, profitability, solvency, liquidity). Finally, we analyze jointly all variables, to fully grasp firms' financial conditions.

Overall, firms' balance-sheets are not significantly worse than pre-crisis levels, although they have changed. We find that firms are less profitable, they have a better liquidity profile, more ability to service debt, and similar leverage. At the same time bonds coupons have decreased and maturities have lengthened, improving corporate financing conditions. These findings may be in line with a change towards more market-based corporate financing, although it is not clear that this trend will continue after global interest rates return to normalized levels. Moreover, the sheer increase in total issuances implies that the volume issued by weak firms is on the rise.

## 3.2 DESCRIPTIVE ANALYSIS

In Chart 3 we show the historical evolution of a number descriptive statistics for each of the balance-sheet metrics under analysis. We include the median, and the interquartile range. All these statistics are computed on a yearly basis, for all firms issuing bonds overseas. Therefore, each graph shows how firms tapping international markets in a given year compare, in the dimension under analysis, with firms acceding markets in other periods of time. These statistics are robust to outliers, in particular in the latest years, when the number of firm is fairly large.

The evolution of leverage is shown in Chart 3.1. Leverage is defined as the ratio of total assets to common equity, so larger values indicate that the firm is relying more on debt (instead of raising common equity) to meet its financing needs. Highly leveraged firms may be more likely to suffer from financial stress under adverse scenarios (fall in profits, decreasing liquidity…) due to their larger debt servicing costs. Leverage has remained broadly constant over time, in spite of the large issuances of the last years. Indeed, during the last two years we observe a slight reduction.

We find, however, that firms tapping international markets are less profitable than before the global financial crisis. In Chart 3.2 we assess the profitability of firms tapping international markets by delving into the return on assets, or ROA. In the last years the ROA remains stable around 4%, at much lower levels than before the crisis.[6]

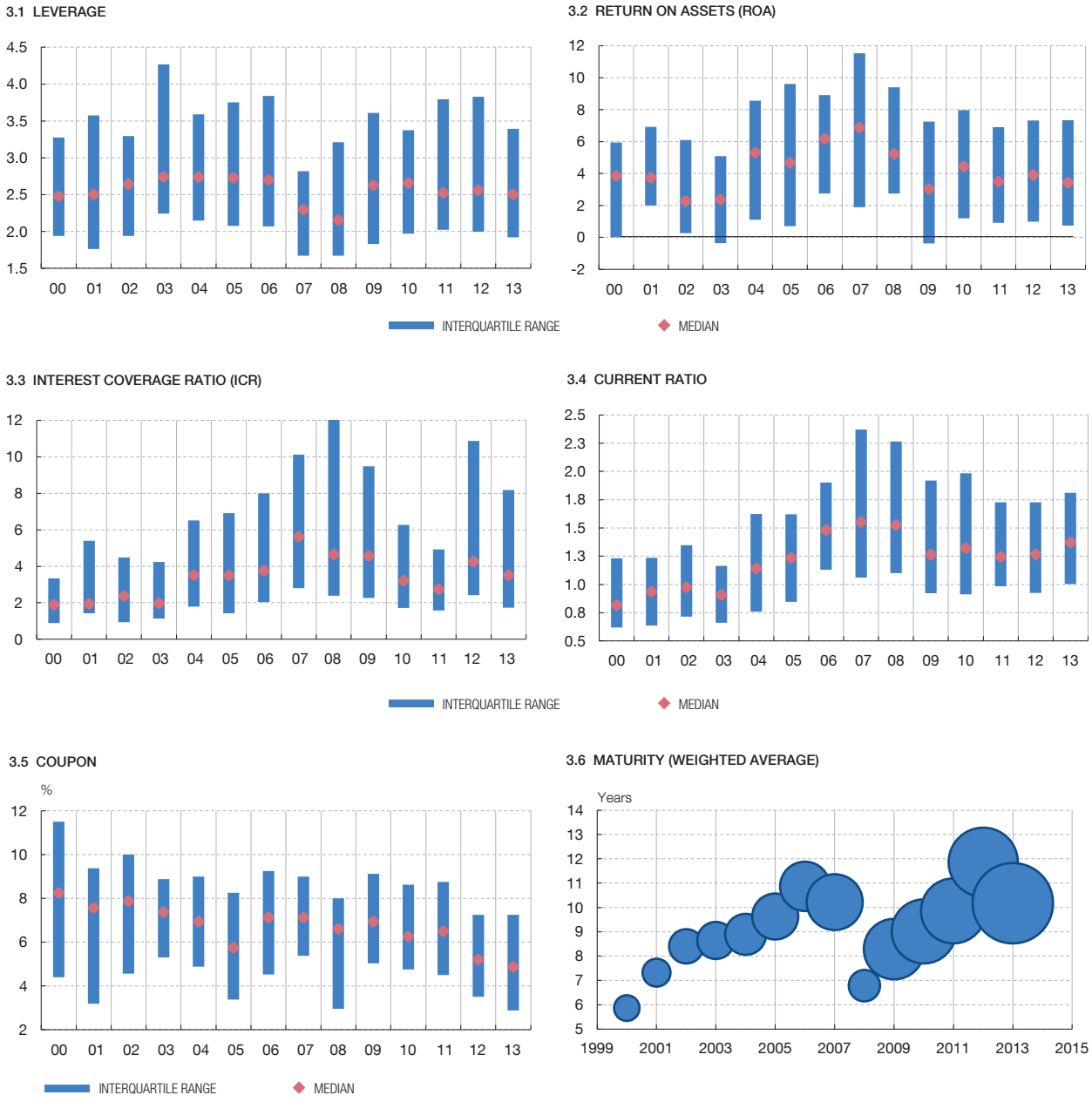
On the contrary, the solvency of firms issuing bonds overseas does not seem compromised. We gauge the solvency of firms, in Chart 3.3, using interest coverage ratio, or ICR. The ratio is defined as earnings before interest and taxes to total interest expenses. Abnormally low levels of ICR (below one) put firms under stress and compromise their future viability. The interest coverage ratio was lower in the immediate aftermath of the global financial crisis, driven by a contraction in profits, but has recovered since then. In 2013, it is similar to the pre-crisis levels.[7]

Finally, we find as well an improvement in liquidity. To study firms' liquidity we use the current ratio (current assets/current liabilities). Current assets are defined as all assets that are reasonably expected to be converted into cash within one year. Current liabilities are

6 The ROA is also related to economic growth. Since there has been a worldwide economic slowdown, it is not rare that firms issuing bonds in international markets show lower profitability. In other words, we are not looking at their relative profitability, compared with advanced economies firms.

7 These results are robust when we use, as an alternative measure of financial solvency, the debt to earnings ratio. This measure shows how many years would take to repay current debt at the present level of EBITDA (earnings before interest, taxes, depreciation and amortization). This variable has shown a similar behaviour than the ICR over time, with a large deterioration after 2009 and some recovery during the last two years.

BALANCE-SHEET METRICS AND BOND FEATURES (a) CHART 3




SOURCE: Bloomberg.

a Leverage is defined as total assets to common equity.Interest coverage rate is defined as EBITDA to total interest expenses. Current ratio is defined as current assets to current liabilities (assets that can be converted into cash and liabilities due within one year). Charts show interquartile range and median values for the different variables of interest. Chart 3.6 shows the weighted average of bond´s maturity by amount issued. Bubble size represents volumes issued.

those liabilities due within one year. The main trend, depicted in Chart 3.4, is an overall increase in firms' liquidity in the last years, after the large contraction experienced during the global financial crisis. Liquidity has improved since 2009 and it is on the rise. This may be due, in part, to the longer maturities of corporate bonds issued during the last years.

Overall, balance-sheet metrics do not show a general deterioration with respect to the pre-crisis levels. However, access to markets is easier. A telltale indicator is the increase in volumes issued. But also maturities have lengthened and coupons have fallen, reducing roll-over risk and debt servicing costs. Chart 3.5 shows how the coupon has fallen over time, reaching in 2013 an all-time low. This in stark contrast with the evolution of spreads

– a measure of risk appetite – which have increased compared to pre-crisis levels (see Appendix 1 for details).[8] Maturities have also increased. In Chart 3.6 we show the weighted-average maturity (since maturity is a very discrete measure, it is a better statistics than the median). Tenors have increased over time, consistently with previous research [Shin (2014)].

## 3.3 NON-PARAMETRIC ANALYSIS

So far we have used the median and the interquartile range to characterize the balance-sheet indicators and bond´s features. These statistics provide a partial picture of their main features, which are fully characterized by the density function. To better understand how firms' financial conditions have evolved over time and study the distribution of our selected variables, we perform a non-parametric analysis by carrying out a kernel density estimation.

The simplest and one of the oldest non-parametric estimators of the density function is the histogram. Although it is a useful tool, it has the drawbacks of being discontinuous and too "rough". In more general density estimates, intervals are allowed to overlap and a kernel density estimator assigns a weight to each observation (the function determining these weights is called kernel). Among various methods of density estimation the kernel estimator is better developed, both with respect to its numerical calculations and known analytical properties.

The kernel density estimator $\hat{f}(x)$ off can be written as:

$$\hat{f}(x) = \frac{1}{nh}\sum_{i=1}^{n} K\left(\frac{x_i - x}{h}\right) = \frac{1}{n}\sum_{i=1}^{n} w_i$$

Where K is the kernel function, h is the window width, and $w_i$ is the weight function, which depends on the distance of $x_i$ from x and the sample size through h. According to this definition the density function f will be estimated at a point x using the observations $x_1,\ldots,x_n$ from f. It is well known that the choice of kernel is a minor issue but the selection of the window width h is crucial. We use in our estimation the "optimal" width, the one that minimizes the mean integrated square error[9] (MISE) $E\{\int[\hat{f}(x)-f(x)]^2\,dx\}$.

We estimate density functions for the period before the financial crisis (2000-2007), after the crisis (20010-2013), and for the year 2013 alone.[10] Chart 4 depicts those estimated densities for the main variables of interest. Overall the results draw similar conclusions than those obtained from the descriptive statistics.

Leverage does not show relevant changes over time while the distribution of current ratio and interest-coverage ratio has improved with respect to pre-crisis levels. The ROA displays a clear worsening, with more weight assigned to lower values for the periods after the crisis. It does not seem to be an overall deterioration of the balance-sheet fundamentals compared to the conditions before the crisis, especially if we compare the distribution for year 2013.

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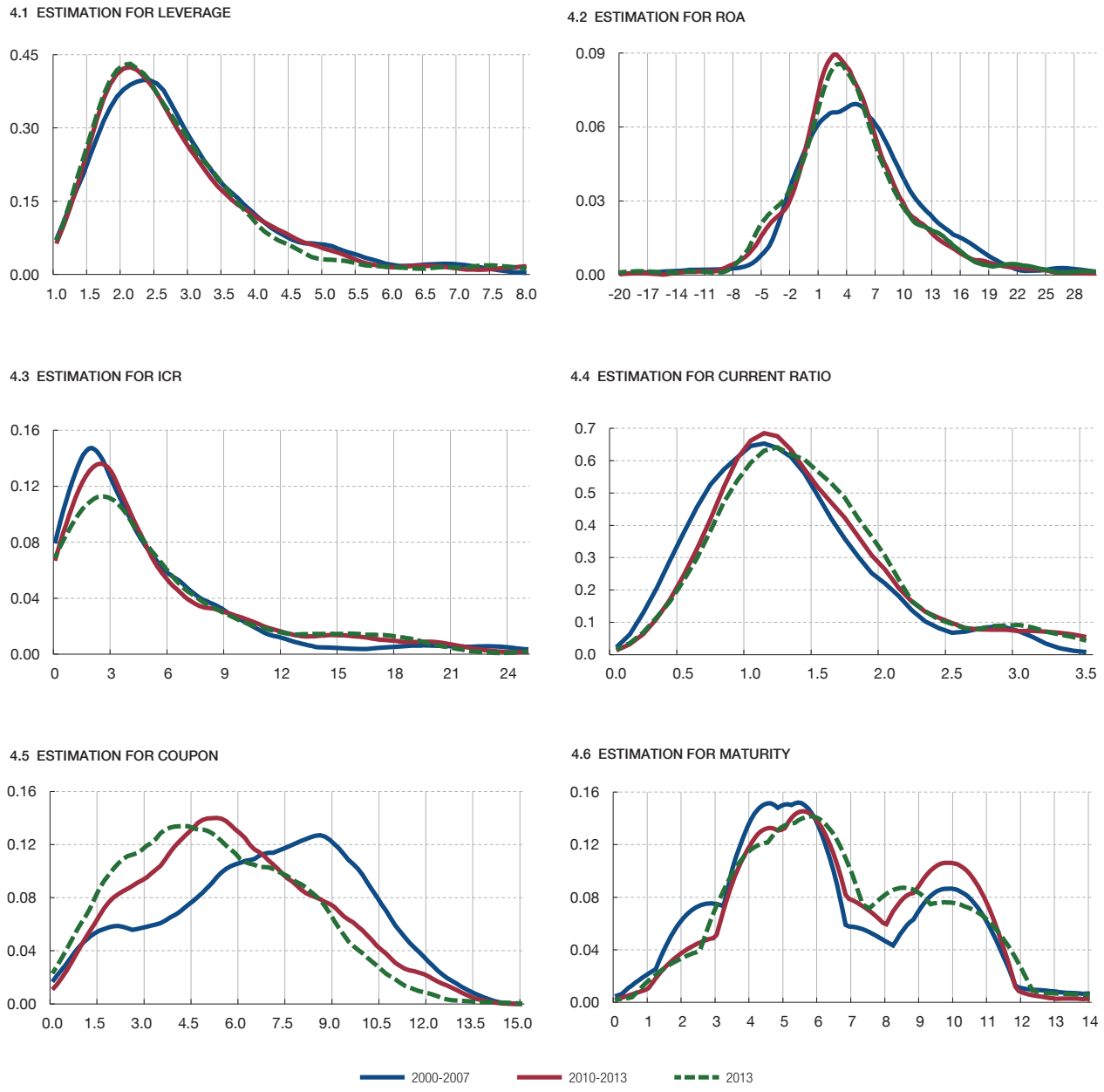
8 We compute the difference between coupons and Treasury rates for bonds denominated in dollars. Spreads show the lowest values over the period 2005-2007, experiencing an increase afterwards.

9 For highly skewed densities this optimal width is usually too wide and oversmooths the density. We perform some robustness checks using other widths to deal with this problem, obtaining similar results. show the lowest values over the period 2005-2007, experiencing an increase afterwards.

10 Macroeconomic developments (ie, global economic growth) may be important drivers of some variables evolution. To check this we compute the density functions using 2000-2005 as our base period (we remove years 2006 and 2007, of abnormally high global economic growth). Our results are qualitatively similar to the ones depicted from the density functions estimated over 2000-2007. The main difference comes from the density of ROA, which shows a similar shape over the periods 2000-2005 and 2013. To that extent, if we use 2000-2005 as our base period we do not observe a deterioration of ROA.

KERNEL DENSITY FUNCTION ESTIMATION (a) CHART 4




SOURCE: Own calculations.

a Charts show estimated kernel density functions for different periods. We use the "Epanechnikov" kernel function and the "optimal" window width (the one that minimizes the mean integrated square error). Robustness checks using different kernel functions and window widths show similar qualitative results. To control for the potential influence of outliers, we exclude observations in the 1% from upper and lower tails of the distribution.

With respect to bonds features, coupons and terms show the same patterns we have already documented. Kernel density estimations show more weight on lower coupons compared to pre-crisis levels. They also show more weight on longer maturities. This is in line with our previous results and supports the view of a change towards easier access to capital markets without an overall improvement of balance-sheet fundamentals.

## 3.4 TAIL RISKS

Tail risks can be defined as those stemming from the volume issued by overstretched firms. Weak firms are those which, in absolute terms, have worrisome balance-sheet metrics. The evidence shown so far suggests that tail risks could be on the rise. The sheer increase in debt issuances implies that, everything else equal, issuances by vulnerable firms could be

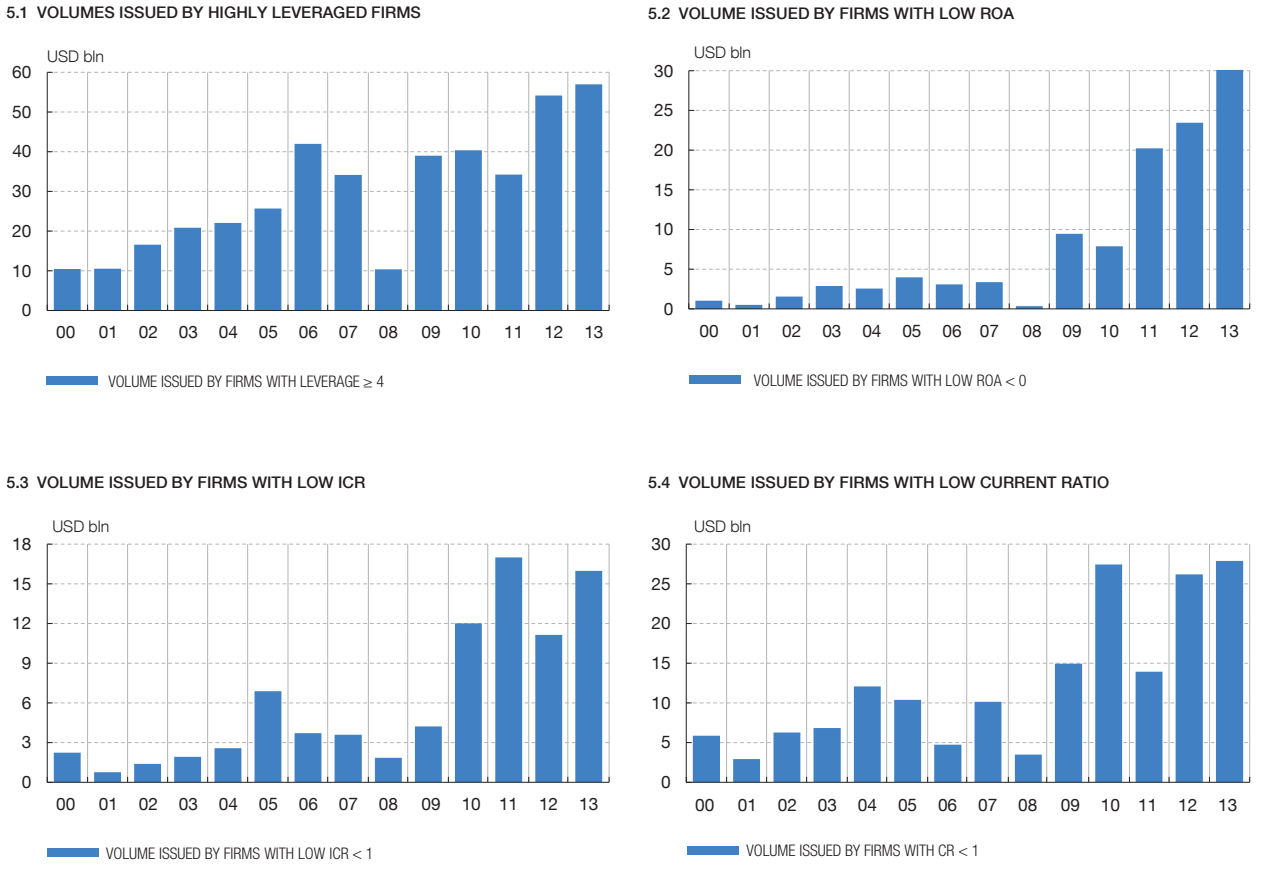
increasing in absolute terms. Moreover, tail risks fluctuate with the type of firms acceding international markets. Accordingly, a shift towards a riskier distribution – i.e., weaker firms acceding markets – is associated with more risks on the tails, and the non-parametric analysis has shown some shifts in the distributions, which are worrisome in terms of profitability (ROA).

To investigate tail risks, we identify weak firms defining, for each variable, three thresholds, which we choose following IMF (2014b). Firms are then classified in four buckets according to their balance-sheet soundness. As in our previous analyses, we look at leverage, ROA, interest coverage ratio, and the current ratio.

In Chart 5 we depict the volume of issuances by firms with high leverage, low profitability, low solvency, and low liquidity. It is apparent that tail risks – the volume issued by weak firms – are on the rise, although not at the same speed in all dimensions. The increase in issuances by low profitable firms, depicted in Chart 5.2, is particularly remarkable. Firms with negative profits have issued more than 30 US bn in 2013, a fourfold increase with respect to 2010. This reflects that low profitable firms are increasingly tapping international markets.

There is also a substantial increase in the volume issued by firms with low interest coverage ratio (Chart 5.3). Their issuances amounted for more than 10 US bn in every year after the crisis, in stark contrast with the pre-crisis period, when they were negligible. Chart 7.1

TAIL RISK, VOLUMES ISSUED BY WEAK FIRMS (a) CHART 5




SOURCE: Bloomberg.

**a** Charts show volumes of bonds issued in international markets by weak firms. Overall, amounts issued have increased over time.

shows that highly leveraged firms (those with leverage over 4) have issued bonds amounting for 60 US bn in 2013. This number is very large in absolute terms, and it is three times higher than the pre-crisis numbers. Similarly, issuances by firms with low liquidity have increased in absolute size, and already amount for 30 US bn. Overall, issuances by firms which are weak, in absolute terms, have increased. This suggests that, beyond the average developments, some risks are building up in the tails.

To further investigate the build-up of tail risks, in Chart 6 we break down the volume issued by corporations, according to firms' level of soundness. Red bars represent the proportion of issuances which are due for weak firms, while green bars represent issuances of sound firms. It is apparent that the risks are building up more sharply in profitability. In 2013, issuances by firms with negative profits amounted for close to 20% of the total. In parallel, the volume issued by highly profitable firms has decreased, so that in 2013 it accounted for 30% of the total. This is by far the lowest proportion in our sample. The picture does not seem either bright enough for solvency – measured by the interest coverage ratio –. It is apparent in Chart 6.3 that issuances by firms with low ICR amounted for 10% of the total. Still, issuances by firms with high ICR (above 10) accounted for more than 50% of the volume issued in 2013. Although this is not a high number, compared with pre-crisis levels, it implies a correction with respect to 2011, when they were as low as 20% of the total.

RISK ASSESMENT. DISTRIBUTION OF ISSUANCES BY LEVELS OF BALANCE-SHEET VARIABLES (a) CHART 6


SOURCE: Bloomberg.

a Charts show the distribution of total amount issued in international markets by the different levels of the issuers' balance-sheet variables. Red represents the proportion issued by weak firms; green represents issuances by sound firms. Orange and yellow represent issuances by weak-medium, and medium-sound firms. Buckets are defined following IMF (2014b). Leverage is defined as total assets to common equity.ROA is the return on assets. Interest coverage rate is defined as EBITDA to total interest expenses. Current ratio is defined as current assets to current liabilities (assets that can be converted into cash and liabilities due within one year).

In contrast, the proportion of debt issued by firms with high leverage or low liquidity has decreased over time. Issuances by firms with leverage over 4 – the threshold to classify high-leveraged firms – represent a decreasing proportion of the total. A similar mild assessment emerges when we analyze the distribution of the volume of issuances according to firms' liquidity, in Chart 6.4. Issuances by highly liquid firms (green bars) have decreased, but in benefit of medium-to-high liquid firms (yellow bars). Both types of firms accounted for 55% of total issuances in 2013, a high number for historical standards.

## 3.5 HOW VULNERABLE ARE, OVERALL, FIRMS TAPPING INTERNATIONAL MARKETS?

Next we perform a joint assessment of firms' vulnerabilities. In Chart 7.1 we display the values of all the balance-sheet metrics in 2013, after normalizing its values. This way we can compare them, at the same time, with the existing values in the period before the crisis (2000-2007). The closer are these values to the outer line, the better the current situation, compared to historical records.

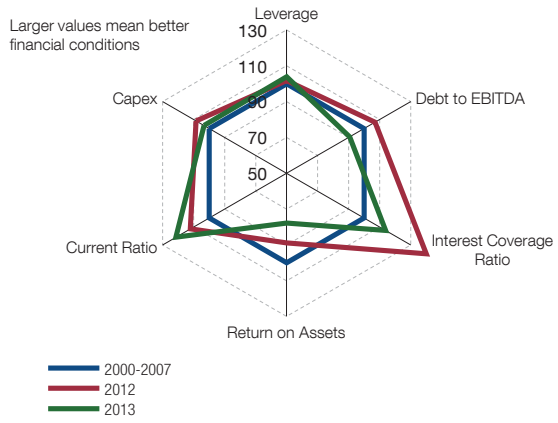
The chart shows additional information though, as we add two more variables: debt to EBITDA and the ratio of capital expenditure to total assets. The debt to EBITDA, refers to the long-term solvency prospects of the firm, complementing somehow the interest coverage ratio, which refers more to the short-term (debt to EBITDA is also commonly used as an indicator of leverage). In addition, capital expenditure adds another perspective to firms' profitability, being an indicator of expected future returns.

Overall we derive similar conclusions as those coming from the previous sections: we find similar levels of leverage, a fall in profitability and some improvement on the liquidity profile and solvency. Debt to EBIDTDA has not changed significantly compared to the pre-crisis period, experiencing some deterioration during 2013. CAPEX growth has improved slightly over time, mitigating to some extent the poor performance of the return on assets.

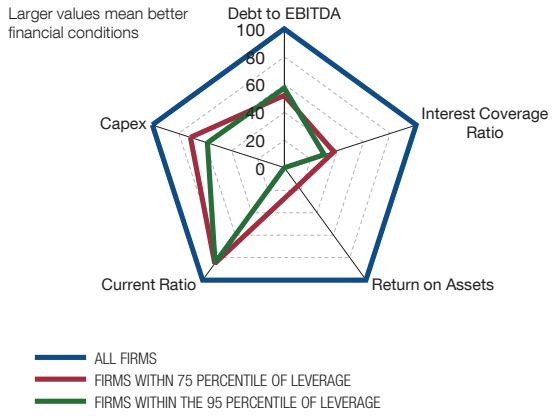
These findings reinforce that there is not an overall deterioration of balance-sheet soundness. However, previous analysis of tail risk displayed an increase in the volumes of corporate bonds issued by overstretched firms. Accordingly, in Chart 7.2 we conduct a

**JOINT ANALYSIS OF FINANCIAL CONDITIONS** (a) **CHART 7**

7.1 FINANCIAL CONDITIONS RELATIVE TO PRECRISIS LEVELS (a)




7.2 FINANCIAL CONDITIONS OF HIGHLY LEVERAGED FIRMS (b)




SOURCE: Bloomberg.

**a** Blue line represents standarized values (100) for the median of each variable over the period 2000-2007 (averages of the median across years). Overall, financial conditions have improved, with Debt to EBITDA and ROA showing the worst performance. Capex is defined as the ratio of capital expenditure to total assets.

**b** Blue line represents standarized values (100) for the median of each variable in 2013. Red (green) line shows median values for each variable among those firms within the 75 (95) percentile of leverage. Values for ROA turn out to be negative within the 95 percentile of leverage and we have assigned a standarized value of zero.

similar analysis for firms with the largest levels of leverage in 2013. We analyze firms within the 75 (95)-percentile of leverage, corresponding to levels of leverage greater than 3.4 (10.1). The closer these values are to the outer line, the more similar highly-leveraged firms are to the full population of firms.

It is apparent the worsening of balance-sheet indicators among these firms, since these firms' balance-sheet metrics are far from the outer line. The evolution of the interest coverage ratio and return on assets are especially worrisome, not even reaching half of the level achieved by the total sample of firms. Moreover, the return on assets turns negative for those firms within the 95-percentile of leverage.

All in all, highly leveraged corporations seem to be hiding a "pocket of risk" which it is not apparent at the aggregate level. These firms are also in a weaker situation, in other dimensions. The tightening of financing conditions may put under pressure these highly leveraged firms, since debt service costs would increase. This may create feed-back loops resulting in further erosion of profits and more difficulties to pay interest expenses. Moreover, a contraction of risk appetite by international investors may result in re-financing problems for these firms. The next section further develops on other potential "pockets of risk".

## 4 Data gaps and pockets of risk

Our general findings can mask pockets of risks, and data gaps can be particularly severe in some segments. Hence, in this section we study some groups of firms that deserve further attention: non-listed firms and new issuers. Moreover, we investigate developments in local markets. This is interesting for comparison purposes, since issuances in local markets have also increased rapidly in the last years.

### 4.1 NON-LISTED COMPANIES

Non-listed firms account for a large proportion of international issuances.[11] These firms face fewer requirements to publicly release their balance-sheet information, being more difficult to assess their financial health. Given the large amount of issuances made by these firms, there is an important "data gap" on non-listed corporations, since standard sources of information fail to cover these firms. Our data set includes some information for non-listed companies, although it is far less comprehensive. This is apparent in Chart 8.1, which shows the balance-sheet data coverage and volumes of international issuances by market status.[12] For the period 2010-2013 there is, on average, balance-sheet information available for 69% for non-listed firms, in contrast with the coverage of 97 percent of the total volume issued by listed firms.

The data gap is severe, so we cannot provide conclusions on the financial conditions of non-listed firms. However, in Chart 8.2 we compare the balance-sheet indicators of listed and non-listed firms. The results have to be assessed with caution, but overall non-listed firms show weaker conditions in 2013, with the return on assets being half of that for listed corporations. The situation is even worse for highly leveraged non-listed firms, which show worrisome levels of profitability (negative ROA) and solvency. This suggests that vulnerabilities can be building up in non-listed firms.

### 4.2 FIRST-TIME ISSUERS

We next analyze the balance-sheet soundness of those firms tapping international capital markets for the first time.[13] Lower creditworthiness of these firms could be a sign of a more

11 During 2013 non-listed firms' issuances reached $69.6 billion (42% of total issuances).

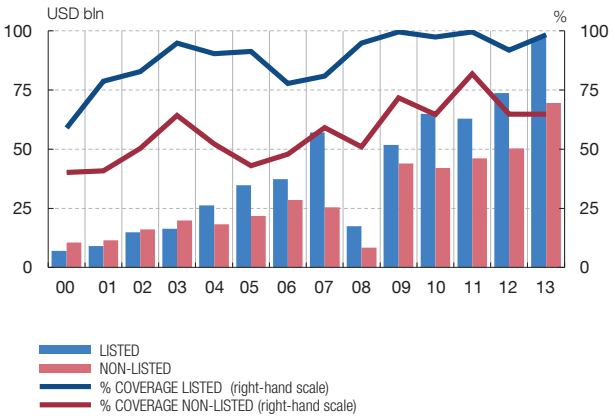
12 Bloomberg only reports current market status such that the classification corresponds to 2014 independently of the issue date.

13 We do not have issuance records before the year 2000 such that new issuers in a given years are those firms which had not issued bonds, at least, since the year 2000.

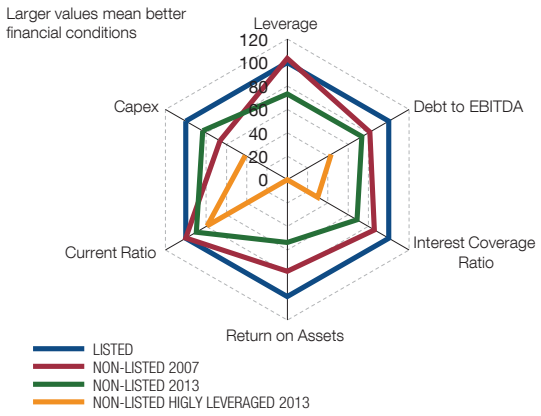
## NON-LISTED FIRMS: COVERAGE AND FINANCIAL CONDITIONS

CHART 8

8.1 BALANCE-SHEET DATA COVERAGE BY MARKET STATUS (a)




8.2 RELATIVE FINANCIAL CONDITIONS OF NON-LISTED FIRMS (b)




SOURCE: Bloomberg.

**a** Market status in 2014.

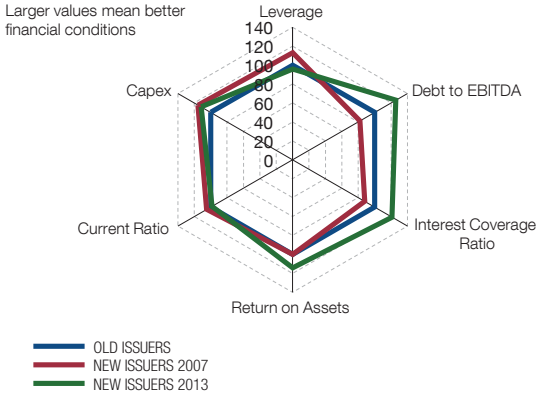
**b** Blue line represents standarized values (100) for the median of each variable for listed firms. Red (green) line shows values for each variable of non-listed firms, relative to the standarized values of listed firms in 2007 (2013). Orange line shows values for each variable for highly leverage non-listed firms, those within the 75 percentile of leverage. Non-listed firms show weaker financial conditions both in 2007 and 2013, and those highly leveraged present even weaker financial soundness. Values for ROA turn out to be negative within the 75 percentile of leverage and we have assinged a standarized value of zero.

## NEW ISSUERS: COVERAGE AND FINANCIAL CONDITIONS

CHART 9

9.1 NEW ISSUERS OF INTERNATIONAL BONDS (a)


9.2 RELATIVE FINANCIAL CONDITIONS OF NEW ISSUERS (b)




SOURCE: Bloomberg.

**a** New issuers within our sample (2000-2013). Red bars show the average amount issued every year (total amount issued by new issuers/number of new issuers).

**b** Blue line represents standarized values (100) for the median of each variable for firms that have previously issued international bonds. Red (green) line shows values for new issuers of international bonds relative to the standarized values for old issuers in 2007 (2013). New issuers show similar financial conditions than old issuers, especially in 2013, displaying even better levels of ICR, ROA and debt to EBITDA.

relaxed market discipline and the presence of another potential "pocket of risk". The number of firms issuing bonds for the first time experienced a large fall in 2008, and it has recovered during 2013 (see Chart 9.1).

At the same time, average volumes issued by firms have increased since 2008, reaching a record high in 2013. Chart 9.2 shows that new issuers have similar financial conditions as those firms previously tapping international capital markets, displaying even better levels of debt to EBITDA, interest coverage ratio and ROA in 2013. As new issuers are at least as sound as previous issuers, it seems that investors are being able to keep credit standards

at the same level to those firms with previous reputation as issuers in international capital markets. Moreover, as we find that new issuers have slightly better financial conditions, it may be the case that these firms need to have sounder balance-sheets in order to access capital markets.

### 4.3 LOCAL MARKETS

Domestic capital markets have also experienced a strong development during the last decade. Volumes issued have grown steadily over time, without suffering the large contraction documented on international issuances during 2008 (see Chart 10.1). Besides, total amounts issued have surpassed those in international markets every year.

These developments are mainly due to the deepening of Asian markets,[14] although the other regions have also followed similar trends. Balance-sheet data coverage is uneven as there is less information for firms tapping local markets, mainly due to the larger proportion of non-listed firms.

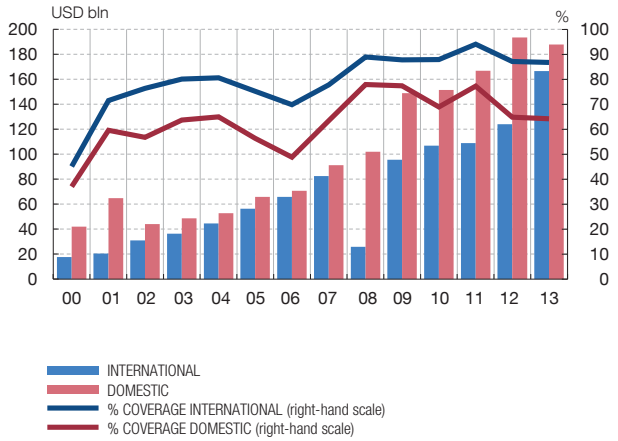
Chart 10.2 shows balance-sheet information on domestic issuers relative to that of international issuers. We find similar financial conditions between both groups of firms during 2013, although domestic issuers show weaker current ratios and lower levels of capital expenditure. On the other hand, figures in 2007 reveal that financial conditions were much weaker for domestic firms at that time. Interestingly, levels of leverage have barely changed. Finally, we also assess the financial soundness of more leveraged firms and non-listed firms. As we previously found with international issuers, non-listed and more leveraged corporations show weaker financial conditions, resulting in a similar "pocket of risk" that the one documented on firms tapping international capital markets.

Summarizing, credit risk do not seem to be much larger for domestic issuers, and local capital markets have been a more reliable source of funding during the height of the

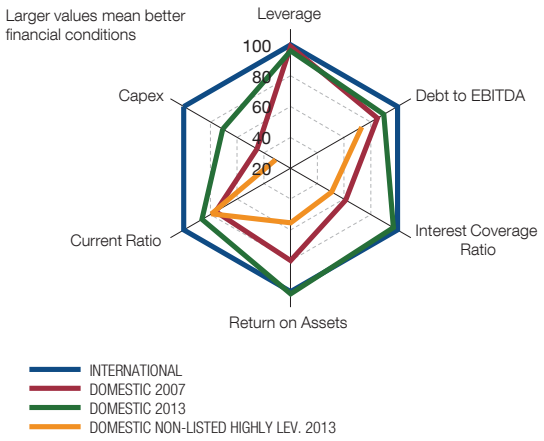
14 Asian capital markets accounted for 50% of total volume issued in domestic markets during 2013.

DOMESTIC ISSUERS: COVERAGE AND FINANCIAL CONDITIONS — CHART 10

10.1 BALANCE-SHEET DATA COVERAGE OF DOMESTIC ISSUERS (a)




10.2 RELATIVE FINANCIAL CONDITIONS OF DOMESTIC ISSUERS (b)




SOURCE: Bloomberg.

a Market status in 2014.
b Blue line represents standarized values (100) for the median of each variable for international issuers. Red (green) line shows values for each variable for firms issuing bonds only in domestic markets relative to the standarized values of firms tapping international capital markets in 2007 (2013). Orange line shows values for each variable for highly leveraged (those in the 75 percentile of leverage) non-listed firms issuing bonds only in domestic markets. Domestic issuers seem to have weaker financial conditions, especially those highly leveraged and non-listed.

financial crisis. On the other hand, financing conditions are tougher, with domestic issuers paying larger coupons and facing shorter maturities.

## 5 Conclusions

In this paper we investigate if firms' tapping international markets show more vulnerable balance sheets than historical records, using a novel data set constructed with Bloomberg, which contains information on bond issuances and firms' balance-sheets for the period 2000-2013.

We document a large increase in bond issuances, as it is observed in research using other data sets. Our analyses suggest that, in spite of these large issuances, firms' tapping markets are not weaker than in past. Though, their access to international capital markets is easier, since yields have compressed, and maturities lengthened. We identify as well a build-up of tail risks, since the volume issued by more overstretched firms has increased. There are also severe data gaps, particularly among non-listed companies.

These findings raise several unknowns, which are key to assess risks for financial stability. A major issue is the possible existence of cross-country or regional heterogeneity. Identifying sectoral patterns is also relevant, since access to corporate capital markets is deemed to carry more risks for firms of the non-tradable sector. Overall, our general findings can mask pockets of risks, and data gaps can be particularly severe in some segments.

Our paper also poses questions on the drivers and risks of the process. Our results imply that the development of international capital markets does not seem to derive from an improvement on firms' balance-sheets. Accordingly, global factors probably have a relevant role. The lengthening of maturities suggests that institutional investors, with longer-term investment strategies, can be entering the market. Though, this requires to be investigated. As for the risks, our findings suggest that investors are not acquiring more credit risk, but they are becoming exposed to significant market risk. Large issuances coincide with longer tenors, implying longer durations of their fixed-income portfolios. Additionally, investors face a period of abnormal low market liquidity in emerging markets fixed-income. Finally, it turns crucial to investigate if the distinction between local and international markets is becoming blurred, in the current context of ample liquidity. We provide preliminary results suggesting that firms' tapping in local and international markets have more similar balance-sheets than in past. The issue requires, however, a more in-depth analysis.

From the perspective of borrowers, it is also crucial to identify how investor´s appetite towards emerging markets could be affected by increases in interest rates in developed markets, or volatility, since balance-sheet characteristics do not seem to be driving the rise in corporate issuances, or justify the improvement in bonds features. If global investors decrease their portfolio share on emerging markets, firms may find difficult to obtain financing at current conditions.

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## Appendix 1: Data Issues

### Classifying bond issuances

In order to collect non-financial corporations' bond issuances, it is important to choose a sound criterion to identify the sector and country of the issuer. This is required to separate non-financial corporations' deals from those carried out by financial corporations. It is important also to account for all emerging corporations' issuances, even if they use affiliates incorporated overseas.

In this paper, we have identified their deals according to the country and sector of the company in which, at the end of the day, the risk lies. This need not lie in the ultimate parent company, and it can be considered as a measure on an "ultimate risk basis". To identify such way the deals, we have used the country of risk, identified by Bloomberg using

BALANCE-SHEET SOUNDNESS. METRICS (a) TABLE A.1

| Operation | Headquarters of the Company X [non-financial corporation] | Affiliate | | Classification | | |
|---|---|---|---|---|---|---|
| | | Location | Status | Company ultimately holding the risk | Country of risk | Sector |
| 1 | Country A | — | — | Company X | A | NFC |
| 2 | Country A | Country B | Financial vehicle | Company X | A | NFC |
| 3 | Country A | Country B | Unlisted | Company X | A | NFC |
| 4 | Country A | Country B | Listed and explicit support/ guarantee from the parent | Company X | A | NFC |
| 5 | Country A | Country B | Listed company (independent from its parent) | Affiliate in country B | B | Sector of the affiliate |

SOURCE: Own elaboration.

a Operations 1 to 4 differ in its structure. The direct issuer can be the company X, as in (1), or an affiliate, as in 2-4; this affiliate can be either a financial vehicle (2), an unlisted affiliate (3), or a listed affiliate with explicit support from its parent (4). Operations 1 to 4 have in common that the ultimate risk lies in the company X. This is why our criterion classifies them equally. We consider them fundamentally different from operation 5, in which the affiliate is a listed company, with no support from its parent, which retains the risk. Therefore, our criterion classifies this deal differently, using the affiliate information.

four factors. Listed in order of importance, these factors are the management location; country of primary listing; country of revenue, and the reporting currency of the issuer.

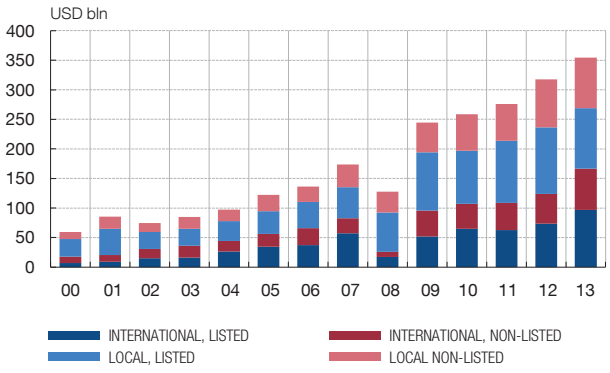
To show how our criterion works, we present in table A.1 four operations (1 to 4) which, in spite of being structured in four different ways, have the same economic implications (in terms of risk and liquidity) for the non-financial corporation (i.e., "company X"). In the first way of structuring the operation, the company X issues directly the bond from the country in which the parent company headquartered. Alternatively, it can tap markets using a non-resident financial vehicle (2), an unlisted affiliate (3), or a listed affiliate which has explicit support/guarantee from its parent (4). Our decision is to classify them all using the country of incorporation and sector of the "company X", since ultimately it is where the risk and liquidity lie. This criterion is, therefore, robust to different ways of structuring operations. Table 1 shows as well an operation carried out by an affiliate which is a listed company, with no explicit support (5). Our criterion assumes it is a different operation, since the risk remains outside the company X. Henceforth, the deal is classified according to the affiliate's nationality and sector. This is an example of an operation in which the parent company does not hold ultimately the risk.

### Balance-sheet coverage

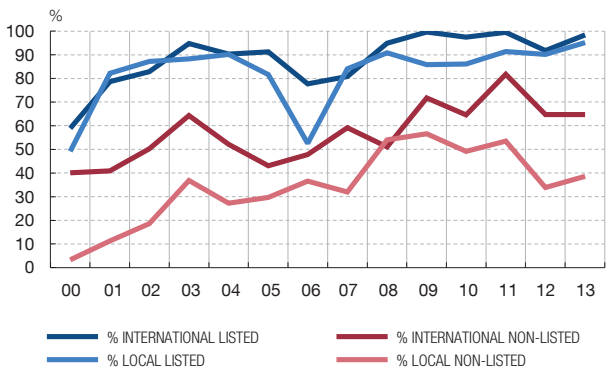
Chart A.1 shows the volume issued by listed and non-listed firms at international and local markets. It is apparent that non-listed firms account for a significant fraction of bond issuances, in particular at local markets. The coverage for listed companies is extremely high. It amounts for the 100% in the case of international issuances, and it is fairly close in local issuances. Information is much scarcer for non-listed companies. In the case of local markets, our balance-sheet information identifies less than 30% of the total volume issued. Moreover, the coverage has decreased in spite of the large growth in this type of issuances. Since Bloomberg provides only current information on market status, we have classified firms as listed if they are currently actively traded in an exchange and non-listed if they are not (non-listed firms include those acquired, delisted, private, unlisted, etc.).

FIRMS' BOND ISSUANCES. BY MARKET OF ISSUANCE AND MARKET STATUS — CHART A.1

A.1.A VOLUME ISSUED. BY MARKET STATUS (a)




A.1.B BALANCE-SHEET COVERAGE (% OF TOTAL VOLUME) (b)




SOURCES: Bloomberg and own elaboration.

a Market status in 2014.
b Balance-sheet coverage of our database. The coverage is measured relative to the total volume issued. It is apparent how information is more scarce for non-listed companies. Data gaps are particularly severe for their issuances at local markets.

### Other sources for balance-sheet analyses

Our information has strong similarities with some traditional data sources for the analysis of non-financial corporations' balance-sheets, such Thomson Reuters WorldScope and S&P Capital IQ's Compustat Global. These databases cover between 90%-95% of global market capitalization and they also provide historical data on inactive publicly held companies (those which have merged, liquidated or become privately held). They have been used in a number of recent studies on firms' soundness [for instance, IMF (2014a, 2014b, 2014c), Morgan Stanley (2014)].

However, they are not suited to delve into global investors' discipline. They include firms acceding capital markets in a given year, with those which have not been active, or get funding from other lenders. Moreover, they focus on listed companies, offering almost no information on unlisted firms. This is an important caveat as the majority of non-listed firms do not report financial information, being difficult to assess their financial soundness. Unlike these traditional data sources, our balance-sheet information includes some non-listed firms, filling a data gap on previous studies. Although, Bloomberg does not report either balance-sheet information for all these companies, it provides partial information, which allows depicting a partial picture of non-listed firms´ financial vulnerabilities.

### Bond spreads on international issuances

Chart A.2 shows the historical evolution of the spreads of corporate bond issuances in the primary market. Spreads reached their lowest levels during the period 2005-2007, signaling a possible undervaluation of risk by international investors over those years. This is in contrast with yields, which reached their all-time low in 2013. We interpret that the steady fall on coupons over the last years it is not related to lower credit risk but to global factors (low interest rates on advanced economies). As for credit risk, measured as the bond spread, it remains at similar levels than the average over the years before the financial crisis (2000-2007). This is consistent with a non overall deterioration of issuers' financial conditions, something we have found analyzing the balance sheet variables.

BOND SPREAD FOR INTERNATIONAL ISSUANCES DENOMINATED IN USD (a) CHART A.2


SOURCES: Bloomberg and own elaboration.

a Spread is the difference between the bonds' coupon and treasury rates. Amount issued by international bonds denominated in USD represents 81% of total issuances.

# LOAN-LOSS RECOGNITION BY BANKS: PUMPS IN THE REAR-VIEW, BUMPS AHEAD

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Retail lending is still at the core of the banking business, and obviously accepting and managing credit risk represents a critical function of banks. Recognition of loan losses is a crucial part of that exercise, due to the high sensitivity of a bank's financial position to changes in the value of loans. However, neither managerial attitude nor accounting standards have facilitated market discipline in this domain up to now: a strict interpretation of IAS 39 has been used as an excuse by banks to avoid recognizing the impact of risks stemming from lenient practices and undue growth strategies.

In order to provide users of financial statements with useful and reliable information on the financial impact of retail lending exposures, the peculiarities of the banking business have to be considered. This article looks at current practices in the area of retail lending, and analyzes how those practices affect the estimation of loan losses. It then attempts to bring clarity on some common beliefs that have traditionally affected loan-loss accounting.

With all the arguments at hand, a suggested framework for the production of useful and relevant loan-loss information is presented. The framework is based on the assumption that loan losses accrue as credit risk builds up in respect of a loan or a group of loans. In the context of retail lending by banks, this means losses not only respond to credit quality deterioration, but also to the way loans are granted.

## 1 Introduction. Pumps in the rear-view mirror

London, summer of 1854. The Soho District was then a vastly populated neighborhood lacking the most basic sanitary services to cater for the flow of waste. In the lack of a sewerage system for the area many houses got rid of their debris by means of cesspits that were easily overrun, so authorities decided to dump the waste into the Thames.

By that time, Asian cholera was well known by Londoners, and it was a general belief that it spread through aerial means. However, evidence led Dr. John Snow, an anesthesiologist interested in the study of diseases, to locate the source of that summer's outbreak at the water pump on Broad Street. Though microscopic examination of a water sample was not conclusive, his analysis of the epidemic's pattern, including a mapping of cases showing high concentration in the pump's surroundings, convinced local authorities to seal the well pump.

The outbreak took away more than 600 lives and raised the mortality rate to nearly 13% in some parts of London, but it clearly represented a turning point in the investigation of epidemics and its causes, influencing public health measures throughout the world.[1]

Very much like cholera did with the water supplies credit risk contaminates cash flows. Banks carry out an important social function by accepting, pricing and transforming credit risk, which can be generally described as "the possibility that the borrower will fail to repay as promised".[2] Owing to their substantial leverage, inadequate estimation of this risk's

1 See Johnson (2006).

2 See for instance Walter (1991).

impact can have damaging consequences, since even small punches involving unforeseen losses on credit exposures could potentially knock any big bank down.[3]

As a result, adequately estimating how the exposure to credit risk affects the value of loans, and therefore the bank's financial position, should be at the forefront of priorities both for its managers and users of financial statements. In turn, it is the role of prudential authorities to ensure the adequate foundations for such estimation, which should be framed within the bank's credit risk management and thus be a natural consequence of how bank managers:

a) *identify* the credit risk in the bank's transactions or activities; and

b) *price* the related instruments based on the initially estimated impact of such risk.

When this process is followed, loan losses accrue in response to both changes in such initial estimate and inadequate consideration of risk factors. In this case, the impact of credit risk responds not only to credit quality deterioration, but also inadequate *identification* or *pricing.*

Existing accounting standards require the loss to be evidenced by an event in order to report it on the financial statements. A word-by-word interpretation of such requirement has led banks to recognizing credit losses solely in response to credit quality deterioration owing to borrower creditworthiness concerns or general economic circumstances affecting repayment prospects. The financial crisis brought the issue to the attention of G20 leaders, which in 2009 called on accounting standard setters to replace such "incurred loss" framework by a model that incorporated a wider range of information and thus avoided "too little" loss estimation and "too late" loss recognition. However, conceptual disagreement has affected such endeavor by the International Accounting Standards Board (IASB) and the Financial Accounting Standards Board (FASB).[4] The result is an "expected loss" model which may still be subject to substantial interpretive concerns.

In this context, the aim of this article is threefold:

1 Analyzing the peculiarities of retail lending by banks.

2 Based on that analysis, dismantling some of the widespread assumptions that traditionally have surrounded the issue of loan-loss provisioning.

3 Backed by the findings in such exercise, presenting a framework for the estimation and recognition of loan losses by banks that: a) considers the referred peculiarities; and b) is consistent with the fundamental concepts of accounting.

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3 According to Hoenig (2013), most of the world's largest "systemic" banks operate under extreme leverage, as shown by their capital ratios if calculated on the basis of accounting, rather than risk-based figures. Building on his analysis, the three banks which at end-2012 showed the highest Tier 1 Capital Ratio (average 16.61%) showed a bare 2.46% "Adjusted Accounting Capital" ratio, the calculation of which eliminates the risk-weighting of assets in the ratio's denominator and includes all loss-absorbing resources in the numerator (by subtracting goodwill, other intangibles and deferred tax assets from Total Equity and Total Assets). The ratio was even lower in the preceding years, bordering a nearly gaseous state at end-2008 (average 0.84%, meaning that each euro of the total assets for those three banks was funded with less than a cent of risk capital). This has been the common picture for large banks, and it implies that loss-absorbing resources would only endure a small write-down of their retail loan portfolios (again looking at the three above, adjusted Total Equity at end-2012 would only have been capable of sustaining a 5.90% to 12.20% adjustment on their net loans to customers).

4 Examples of such disagreement are found all throughout the process of replacing the incurred loss framework. See for instance International Accounting Standards Board (2013a), pp. 7-9. For a snapshot on the final clash between both Boards, refer to Financial Accounting Foundation (2012).

The application of the proposed framework would arguably enhance transparency on the value of loans. Although investors are designated by both the IASB and FASB as the primary addressees of financial information, their main concerns ("delayed recognition of losses", "systematic under-reserving… of the expected losses", or "inability… to use forward looking information to recognize expected credit losses")[5] are shared by other stakeholders, mainly prudential authorities. In this sense, the framework would not only facilitate the adoption of decisions by investors, but also guide the efforts of those authorities in providing bank managers with sound criteria for the estimation and recognition of loan losses.[6]

Starting from a succinct description of how banks account for loan losses in Section 2, Section 3 develops the first of the objectives presented above.

Sections 4 to 8 tackle the second objective, with the following detail:

— Section 4 addresses how loans are priced by banks, while Section 5 discusses the connected issue of an individual loan's fair value upon initial recognition when that loan is managed on a portfolio basis.

— Section 6 analyzes the timing of loss recognition in the context of existing assumptions by accountants.

— Section 7 counters the traditional arguments on the pro-cyclicality of loan-loss accounting, alongside other macroeconomic implications.

— Section 8 presents the shortcomings of extensive use of data and statistics for loss estimation purposes.

Section 9 builds on the arguments in the article to present the suggested framework as described in the third objective above, while Section 10 provides the main conclusions and current prospects for loan-loss accounting.

## 2 Accounting for loan losses by banks. A basic primer

Like any other asset, the estimation of a loan's value depends on its lifetime expected cash flows. In the case of loans, those cash flows are particularly influenced by credit risk so in the end a loan's value is basically dependent on the expected cash shortfalls to the contractual amounts due. Accordingly, adequate information on a bank's financial position should include an appropriate estimation of those shortfalls and their discounted value.

Obviously this involves a substantial degree of management estimation. The allowance for loan losses deals with future cash shortfalls arising from current exposure. Accordingly, recognizing credit losses implies accruing the foreseen effects of events that affect an exposure, which means correcting the book value of the financial asset.[7]

While a substantial degree of discretion is unavoidable in estimating loan losses and determining when they accrue, most of the balance sheet of traditional banks is made up

5 See Financial Accounting Standards Board (2013).

6 These criteria should be part of wider efforts by prudential authorities regarding the full credit risk management process. In this regard, many prudential authorities already provide guidance on loan-loss estimation and recognition in the current incurred-loss environment. Moreover, as of the writing of this article the Basel Committee's Accounting Experts Group is updating its own guidance in the context of the new accounting standards for loan-loss provisioning.

7 In turn, final confirmation of the shortfall involves the asset's write-off (which however does not imply legal surrender of the claim against the borrower).

of large groups of small, homogeneous loans (such as consumer or residential mortgage loans) representative of the bank's retail lending business. These assets are managed on a group basis, rather than individually. In trying to estimate their credit losses Dr. Snow's analysis of the viral process described in the introduction is illustrative. Like in the 1854 epidemics, where the outbreak's pattern evidenced a concentration of events in the vicinity of Broad Street, historical information for groups of loans similar to the group being assessed can be enlightening on the trends and behavioral patterns that led to observed defaults and the resulting cash shortfalls of borrowers therein.

The collection and analysis of such information for similar portfolios provides the stepping stone for the estimation of loan losses. In the context of an increased use of mathematical tools in finance there may be a temptation to rely exclusively on that type of information for undisputable answers, very much like some kind of Delphic oracle. But in reality, even the most granular set of data, filtered by the most sophisticated statistical model, might be useless in predicting what is yet to come. All relevant information must be considered, and every indicator has to be carefully assessed.

Obviously banks have an incentive to limit the range of information being considered on top of historically evidenced patterns. Discretion in determining the loan-loss allowance levels incentivizes its use as a "smoothing" mechanism to manage earnings through the overstatement or understatement of such allowance. The linking of loss recognition to a narrow, interpretive set of trigger events as per the incurred loss framework has facilitated this.[8]

On the contrary, users of financial statements adjust estimates based on historical figures with a wide range of available information (on portfolio characteristics, borrower performance, and economic circumstances) to take account of both current and foreseen events and circumstances that are thought to impact payment behavior.[9]

So accounting for loan losses currently follows either a *preparer* or a *user* approach.[10] This speaks of a debate that revolves around an expected, rather than incurred loss notion.

While both approaches involve a high degree of judgment in substantiating such notion, the use of discretion by managers should be avoided if merely aimed at attaining their own goals at the expense of depositors. This is not a task for the accounting standard setters, but rather for prudential authorities in steering the credit risk management process. Regulation and supervision should provide banks with the correct incentives for the identification of risks, the pricing of loans commensurate with initially estimated losses, and the subsequent estimation and recognition of loan losses, whether they stem from changes in initial estimates, or inadequate identification of credit risk or loan pricing.

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8 Inconsistent application of IAS 39 requirements for the estimation and recognition of loan losses, coupled with inadequate revision and enforcement, are considered determining factors in its use by banks to postpone losses. See for instance International Accounting Standards Board (2014).

9 This is systematically confirmed by investors when questioned on their analysis of bank loan-loss allowances. Outreach by the Financial Accounting Standards Board (2013) gathered views noting that investors "spend vast amounts of time analyzing the allowance for credit losses, in conjunction with information about the credit quality of the portfolio", and that their analyses "aim to adjust the reported amounts for the analyst's forecast of all the… expected credit losses".

10 A similar classification can be found in Wall and Koch (2000), who distinguish an *economic* view capturing expected losses, an *accounting* perspective that excludes the expected effect of future events, and a *regulatory* approach which considers the allowance as a buffer built during good times to absorb losses during bad times. While the accounting perspective matches the *preparer* approach, the *user* approach would encompass the needs of anyone interested in estimating the value of loan portfolios, including regulators.

## 3 *En masse, prêt-a-porter.* Why banks are different

There is still no consensus on how financial statements should depict credit losses that affect the value of loans and the bank's performance. As discussed, the debate between users and preparers revolves around the notion of "expected credit losses", which can be described as "estimated losses on a loan portfolio over the life of the loans".[11] It is fair to say that a general state of confusion surrounds both the notion's meaning and the extent to which expected losses (whatever their estimate amounts to) are to be recognized on the financial statements.

In any case, when dealing with expected losses it has to be clear that a bank's exposure to credit risk stemming from its retail lending business cannot be compared to the exposures linked to other types of businesses. This differentiation affects the whole process of credit risk management, from loan underwriting practices to credit risk identification, initial loss estimation and the resulting pricing of loans, to the monitoring of payment capacity, collection efforts, and ensuing loan-loss recognition. It also explains the title to this section.

If we focus on their retail lending activity, it is clear that banks operate within a mature industry selling a plain, non-distinguishable product such as credit. Obtaining the loan from one bank or another makes no difference to a borrower, so bank managers faced with high competitive pressure have a natural incentive to sacrifice margin in order not to lose a borrower (and the prospects for cross-selling of products) to another bank. This makes bank earnings essentially dependent on volume. Bluntly, the nature of their product and the characteristics of their business force banks to grant loans inattentively of individual borrower repayment prospects.[12]

That simple fact is often disregarded by advocates of the *preparer* approach when considering how credit risk builds up and evolves. But the way in which a bank originates a consumer or residential real-estate mortgage loan cannot be put on a level with how other companies grant credit or purchase financial assets. Neither can it be compared with other lending activities conducted by the bank itself, such as corporate lending.

The reason for this difference has already been discussed: assets comprising a bank's retail lending business are small, homogeneous loans originated and managed on a portfolio basis.[13] In order to decide on each loan application, borrowers are scored on the basis of a series of general criteria that try to capture their common expected behavior. Ideally, the scoring model should explore a wide range of performance characteristics concerning what is usually referred to as the "five Cs": character, capacity, capital, conditions, and collateral.[14] But as stated by Henderson (2009), credit scoring models are not devised as tools to discern individual borrower creditworthiness, but rather "as tools to rank order the performance characteristics of the population" in order to facilitate "automated decision mechanisms".

Detailed borrower analysis on an individual basis is simply ruled out in order to facilitate the lending decision. This has contributed to "dramatic" loan growth based on the underwriting of products with standardized conditions.[15] It might be assumed banks have

11 See Basel Committee on Banking Supervision (2009).

12 Commercial bank advertising campaigns provide evidence of such behavior: a quick browse through the web pages of many big banks leads to useful tools that find the best-suited, plain product with pre-specified terms based solely on the property appraised value and the requested amount.

13 According to the International Accounting Standards Board (2011a), "portfolios" can be defined as a "grouping of financial assets with similar characteristics that are managed by a reporting entity on a collective basis". Bank portfolios can be described as "open", because "assets are added to the portfolio through its life by origination or purchase, and removed through its life by write-offs, transfer to other portfolios, sales and repayment".

14 However, as indicated in footnote 12, the initial filter is usually focused on the last "C", and more particularly on loan-to-appraised value (LTV).

15 See Henderson (2009).

leeway to adjust for initial concerns on a particular borrower's creditworthiness by requiring a higher compensation, tightening the loan's conditions, or simply rejecting the application. But because retail lending is based on offering credit *en masse,* the loan will normally be granted as long as the applicant meets the group's inclusion criteria (i.e., the minimum score). That loan's conditions (e.g., its amortization period, repayment schedule, collateral type and requirements, down payments, or the loan's price) are not tailored to each individual borrower's credit status, but rather standardized on the basis of the risk characteristics that are common to borrowers in the group.[16]

This basic feature of the retail lending business does not mean credit risk is ignored. Indeed the group's overall repayment prospects are considered, and contractual returns on loan portfolios should be commensurate with the identified credit risk. At least theoretically, when considered within a group the cash flows from borrowers expected to meet contractual payments compensate cash shortfalls from those expected to fail in honoring their obligations.

However, the tendency of banks to underestimate or underprice credit risk makes such compensation unlikely in practice. This has been repeatedly pointed out by the US Office of the Comptroller of the Currency (OCC),[17] and follows from a natural incentive of bank managers to game the referred theoretical balance in the search for increased profits. As already explained, the profitability of a bank's retail lending business depends basically on volume, so banks accept the risk of incorporating bad borrowers as a side effect of standardized, *prêt-a-porter* lending intended to boost profits.

With all banks engaged in retail lending being subject to the same incentive, a degree of competition is unavoidable. Banks compete for share, so they have to differentiate somehow in order to attract borrowers to their non-distinguishable product. So called "asset wars" are usually based on interest rate cuts. But relaxing loan conditions represents an alternative to directly sacrificing margin. This is particularly frequent during upturns, where borrower repayment prospects are overestimated.

The paradigmatic example of this practice is very recent and cruel: in the years preceding the crisis, newspapers were covered in adds offering loans subject to scarce or no verification of income sources, imaginative means of stretching borrower income, and based on the mantra that collateral appraisal values would stand for any difficulty in a context of ever-rising prices. Still today it is not infrequent to find loans being granted with substantial deferrals of principal repayment, flexible amortization schedules, no down payments, or excessive commitments with respect to the price of the financed asset. Concessions and refinancing, which were once useful tools to ease the difficulties of otherwise solvent borrowers, seem to be now devised as mere leaps in the dark.[18]

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16 In practice, the only way a bank adjusts for a particular borrower's riskiness is by means of requiring additional collateral or guarantees. But absolute limitations in a borrower's encumbrance capacity (either through property to pledge or valid guarantors) might tempt managers to overshoot the value of collateral backing the loan. Favorable economic conditions are the perfect setting for these questionable valuation practices, which specially affect collateral subject to independent appraisals, such as real-estate that backs mortgage loans.

17 As a matter of fact, it represents an essential criterion for its supervision of US national banks and thrift institutions, which is embedded in its "Comptroller Handbooks". For a more detailed explanation, see Office of the Comptroller of the Currency (1998), pp. 15-17.

18 HSBC (2014) reports how it offers "a wide range of mortgage products designed to meet customer needs, including capital repayment, interest-only, affordability and offset mortgages". It also explains how, although LTV thresholds and debt-to-income ratios "must comply with Group policy, strategy and risk appetite… they differ in the various locations in which we operate to reflect the local economic and housing market conditions, regulations, portfolio performance, pricing and other product features".

— *Lacking or inadequate verification of borrower income.* Even if automated systems are used to initially grade loan applications on the basis of simple parameters, the final lending decision should avail of some basic information aimed at verifying the borrower's *capacity.* Until very recently income verification has not been generally required, and origination of "low-doc" or "no-doc" loans has been usual in some jurisdictions.[1] As an alternative to these, "Alt-A" loans were characterized by less than full documentation, lower credit scores, higher LTV, or the pledge of additional collateral.

— *Inadequate debt service coverage.* Banks should ensure the borrower has enough discretionary, recurring income to face payments and standard living expenses. However, loans are typically granted based on the loan-to-income (LTI) ratio,[2] rather than net available income. Furthermore the decisions are based on past and current, rather than expected income, so banks are confronted with borrowers who were considered to withstand huge leverage but became unable to face loan payments upon the turn of the tide.

— *Unrealistic mortgage installments.* Instead of defining reasonable terms taking into account the borrower's repayment capacity, products can be designed with the sole aim of stretching affordability. Examples are loans granted with relieved repayment schedules, interest-only payments, or even flexible payment options giving way to negative amortization (such as adjustable-rate-mortgages, "ARMs").

— *Excessive reliance on collateral and collateral valuation.* Equity buffers tend to vanish precisely as a bank's incentives to foreclose on the pledged assets rise, so collateral should never be considered a primary source of repayment, nor drive lending decisions. In this connection, LTV caps are not effective tools for risk mitigation, particularly within favorable economic environments.[3] Originating loans at excessive LTVs (which even exceeded 100% in the run-up to the crisis) eliminates any eventual buffer and discourages repayment.

  Additionally, home equity lines of credit ("HELOCs") are granted based on the borrower's equity in a previously financed property, or either on the basis of a foreseen house price appreciation.

— *Multiple layering of risks.* Some banks go a step beyond by originating products that combine two or more of the above features (e.g., interest-only loans with reduced documentation, ARMs at 100% LTV, or first lien mortgage loans to high LTI borrowers combined with simultaneous HELOCs or second liens).[4]

— *Inappropriate use of mortgage insurance.* The transfer of credit risk from lenders to mortgage insurers provides additional financing flexibility and can prove useful in risk mitigation if coupled with a prudent assessment of both the borrower and the insurer's creditworthiness. However, it has also been used as a tool to dodge sound underwriting.[5]

1 A market for low-doc ("non-conforming") mortgage loans existed in the US and UK whereby borrowers were willing to compensate for the higher risk of not documenting income sources. However, in the run-up to the financial crisis many banks were broadly originating those loans with no compensation, both as an interim step to ensuing securitization, or with an aim to holding them for collection. As an example, a few banks originated and purchased non-conforming first and second lien real-estate secured loans, some of which were sourced by independent mortgage brokers.

2 LTI measures loan servicing requirements as a percentage of income available to repay the loan.

3 Regardless of that fact, raising the bar is typically considered acceptable if the appraised value (or the long-term economic value) of collateral caters for the expected cash shortfall (refer to footnote 16).

4 See US Regulatory Agencies (2006).

5 See Joint Forum (2013).

A review of typical mortgage loan underwriting practices which follow patterns like those described above is provided by the Financial Stability Board (2011). Box 1 attempts at establishing a basic classification of those practices.

So *en masse* and *prêt-a-porter* define the retail lending business of banks, leading to an increase in their risk profile. This equates to failure in risk identification, loan pricing, or both, and inevitably has a consequence in terms of loan-loss information and the depiction of a bank's financial position.

By promoting sound underwriting standards and trying to steer the way banks define their credit policies, prudential authorities have long sought to mitigate the harmful incentives leading to such failure.[19] But with management compensation still being based

19 One of the most prominent examples can be found in guidance by the Financial Stability Board (2012). Also the Basel Committee on Banking Supervision (2006) has attempted to drive sound credit risk management policies.

fundamentally on short-term performance, the main problem lays not so much on increased risk but rather failure to show its consequences on the face of the financial statements. Arguably a transparent depiction of a bank's expected credit losses and the resulting impact on its financial position would enhance market discipline and indirectly force banks towards a more prudent stance to loan underwriting.

Where this link between loan origination, pricing, and the booking of losses is not considered by accounting standards, it should also be the subject of guidelines by prudential authorities. As explained in the introduction, the ultimate purpose of this article is precisely to present a framework that can guide those initiatives, or more generally the approach to loan-loss estimation and recognition by preparers and users of bank financial statements.[20]

In any case, being aware of the peculiarities described in this section is key to understanding how credit risk affects a bank's financial position, and accordingly how it should be shown on its financial statements. It also allows a revision of some of the myths in which the area of credit risk, and particularly loan-loss accounting, seems to be shrouded.

## 4 The "magic" of loan pricing

As described in the introductory section, the estimation and recognition of loan losses should follow a process that starts with the identification of credit risk inherent in loan exposures and the pricing of those exposures based on the initially estimated impact of risk identified. The first of widespread beliefs that can be dismantled precisely refers to the adequacy of loan pricing.

The Oxford Dictionary of British and World English defines the noun "price" as "the amount of money expected, required, or given in payment for something", while the verb "price" means: a) "to decide the amount required as payment for something offered for sale"; or alternatively b) "to discover or establish the price of something for sale".

Banks are assumed to adequately price financial assets, including loans. According to the above definitions of the verb "price", that would imply they are either successful in "price discovery" [meaning b)], or in "product pricing" [meaning a)]. While price discovery for actively traded financial assets (such as equities or debt securities) is straightforward and reliant only on market depth,[21] it is not at all easy to find out the amount of money a borrower would be willing to give in payment for a loan (i.e., the loan's price). Accordingly, when granting loans managers focus on deciding the amount required as payment (i.e., product pricing) rather than trying to discover a loan's price which both themselves and the borrower would consider appropriate.

When the priced product is credit itself, as is the case for loans and financial assets in general, the amount required in payment is called "interest", so in this context pricing is about determining interest charged in exchange for the amount lent. That should not be difficult if a company's lending activities are subordinate to its main business, like in the case of a manufacturer granting payment deferral to a client: interest charged (i.e., the price for the deferral) is based on thoughtful analysis of the client's payment capacity, in turn rooted in an adequate understanding of its business, even enhanced by data on payment history in cases of ongoing affairs.

20 More detail is presented in Section 9.

21 As stated by the Committee on Capital Markets Regulation (2013), debt securities have readily determinable fair values which reflect "the market's estimate of credit losses".

A simple example can illustrate how the deferral would be priced. Imagine a company sold industrial equipment and allowed a well-known customer to defer a 1,000€ payment one year. History shows an average 3% cash shortfall for similar transactions, and the company expects to earn a 60€ return (covering time value of money, funding costs and overheads, plus a profit margin). Accordingly the price for the deferral is set at 90€, which includes 30€ of estimated cash shortfall. In other words, although the sole *contractual* cash flow due in one year is established at 1,090€, the *expected* cash flow is 1,060€.

Things change when exposure to the credit risk of wide groups of retail borrowers represents the core of a company's business, as is the case for banks. Expectations of cash shortfalls for the group as a whole are indeed considered when underwriting the loans that comprise it. However, the described peculiarities of the banking business make it difficult to assume that the price of any particular loan within the group is fully reflective of individual creditworthiness concerns. In fact banks themselves recognize that loan pricing cannot be perfect, and not surprisingly evidence shows they tend to misprice credit risk.[22]

We may use the numbers in the example above for a group of homogeneous loans. If diversification benefits from pooling the risk of individual borrowers resulted in an average 3% cash shortfall expected for the portfolio as a whole, this would imply keeping the price at 90€ despite higher shortfall expectations being possible for any particular borrower. The sole contractual cash flow would still be 1,090€ even if cash shortfalls in excess of the 30€ priced were expected. For instance, if the expected cash shortfall for a single loan climbed to 70€, its return would be cut to 20€, but overall the bank would still be expecting a 6% return on the portfolio because, in average, cash shortfalls on worst-performing loans would be theoretically compensated by cash flows on the performing (i.e., borrowers that repaid 1,090€, or at least above 1,060€).

As explained in the previous section, just lending to borrowers initially expected to perform would mean losing clients and thus prospects for product cross-selling and further engagement. So a bank typically risks adverse selection for the sake of market share.

This example shows that the price for a single, risky loan within the portfolio is not adjusted, thus leading to underpriced risk for that loan. But how is that price arrived at? What can we say about the process for pricing retail loans?

As indicated, the price for an individual loan should cover time value of money, funding costs and overheads, plus a margin encompassing the risk premium. Funding costs are readily observable and can easily be incorporated into the price, while overheads present more difficulties because usually banks do not have strong cost accounting systems.[23] This leaves risk as the key to the pricing dilemma and margin as the lever banks use to compete. Their natural incentive to venture into new business and relax conditions in order to gain market share leads to a narrowing of margins.[24] As indicated by the Office of the Comptroller of the

22 Research by Barclays has found that banks systematically miscalculate the riskiness of loans they originate [see Masters (2013)].

23 See Office of the Comptroller of the Currency (1998).

24 Examples of this can be found in different jurisdictions and for different products. Nawaz and Khan (2014) report a steady fall in US auto loan rates "as auto lenders aggressively compete for business". One of the CEOs of banks involved justifies their raid into the business despite it involving "lousier collateral and less quality customers". Crespo (2014) reports how the incipient economic recovery in Spain is spurring competition among banks for market share, which is making loans to households and small and medium-sized companies cheaper. With solvent demand for credit still being limited, bank managers are concerned about the likely hit on their income statements, but they accept the price cut as an unavoidable requirement to remain in the market.

Currency (1998), loan pricing is still "clouded" by banks incorporating other benefits "attributed to the lending relationship into the loan pricing decision", despite developments in credit risk management. Goldman Sachs (2008) affirms to "have experienced, due to competitive factors, pressure to extend and price credit at levels that may not always fully compensate us for the risks we take".

In his renowned study on asymmetric information, Akerlof (1970) explained how "the bad cars tend to drive out the good, in much the same way that bad money drives out the good". Adverse borrower selection, which is inherent to the banking business, is increased even further during upturns owing to the relaxed underwriting standards and underestimated risks.

This may seem at odds with the argument by Stiglitz and Weiss (1981) that banks respond to adverse selection through credit rationing. However, it has to be observed that such argument is based on the bank's ability to discriminate high-risk borrowers.[25] While it may be valid for corporate lending where borrowers are indeed analyzed individually, scoring systems used in the retail business cannot provide information at the borrower level that is sufficiently detailed to drive rejection of applications, or any kind of compensation through a tightening of other loan conditions (e.g., higher down payments or reduced terms).[26]

## 5 Matching the fair value

Accounting standards define fair value as "the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date".[27] Just as banks are assumed to adequately price loans, a second, complementary, widespread belief is that the amount lent equals the loan's fair value at origination.

However, as explained in the previous section, it is very difficult to find out the amount of money on which the borrower and the bank would be willing to come to terms regarding the loan. So in fact lending at the exact fair value is as utopian as accurately pricing loan losses. It would require considering all circumstances that affect future cash flows but, recalling the described pricing process, it happens to be the case that:

a) the loan's price is not tailored to each borrower's credit status, but instead reflects general loss expectations for the group of loans considered as a whole; and

b) owing to the nature of the retail lending business commercial considerations tend to outweigh prudence to the extent that final return might even fall short of that capturing initial credit risk expectations for the group.

Using the example in Section 4, the contractual 9% rate incorporates a 3% risk premium reflective of the expected 30€ cash shortfall included in each loan's price. Fair value would thus result from discounting the expected cash flow at a 6% rate which excludes the initially priced-in risk.

In other words, the fair value of any individual loan within the portfolio would reflect expected cash shortfalls and discount them at the original, risk-free effective interest rate,

25 Despite recognizing that such discrimination may be accomplished through a variety of "screening devices", Stiglitz and Weiss focus on the potential borrower's willingness to pay higher interest rates.

26 The credit rationing argument may also be valid for a bank's retail business at times when the incentives to gain volume are not so pressing. For instance, during economic downturns potential borrowers are screened more closely, and indicators like the one studied by Stiglitz and Weiss may drive a bank's decision to reject an application.

27 IFRS 13, paragraph 9.

with any difference between the amount lent and fair value corresponding to the discounted extra shortfalls which had not been included in the loan's price. In the example, those shortfalls make the expected cash flow descend to 1,020€ for a particular risky loan within the portfolio (1,090€ contractual cash flow, reduced by the 70€ expected cash shortfall), so that its fair value of 962€ reflects the 40 € extra shortfalls (70€ shortfall for the particular risky borrower, in excess of the 30€, priced-in shortfall) discounted at the 6% rate.

$$\text{Fair value} = 1{,}020€ \times a_{\overline{1}|6\%} \approx 962€$$

$$\text{Amount lent} - \text{Fair value} = 1{,}000€ - 962€ = 40€ \times a_{\overline{1}|6\%} = 38€$$

Straightforward as it may seem, many struggle with the apparent contradiction: Why would anyone be willing to give up yield? Why would a bank make extra losses at inception of the loan? This question is especially puzzling for accountants, who require fair value as the initial measurement basis for any financial asset.[28] However, application of IAS 39 and US GAAP shows that even within the incurred loss framework it has not been unusual to see losses being recognized upon origination for assets added to an open portfolio (either in the form of "general" provisions, or as so called "incurred but not reported" losses). Recalling that fact, while revising the loan-loss accounting model the IASB Staff recommended that the allowance balance incorporates "expected losses which have not yet materialized" for assets "on which no meaningful deterioration has occurred", even at inception of the loan.[29]

Furthermore, when competitive pressure results in risk premia falling short of those required to cover initially expected losses, the cash flows from performing loans no longer suffice to compensate shortfalls expected on the non-performing. Does that couple with fair value equaling the amount lent for every single loan within a portfolio? A value adjustment would also be justified reflecting the un-priced features affecting the performance of loans. How does this match with the assumption by accountants?

There is no need digging deep to solve the riddle. Besides the definition included at the beginning of this section, IFRS clearly state that the fair value of a financial instrument at initial recognition is "normally" the transaction price meaning that, for instance, when a loan is granted at below market interest rates its fair value reflects "the prevailing market rate" with any additional amount lent being treated as "an expense or a reduction of income unless it qualifies for recognition as some other type of asset".[30] Though no active market generally exists for retail loans, their fair value would respond to initial credit risk expectations for the group of loans, while the remaining up to the amount lent would be the day-one loss resulting from lending at a premium falling short of that required to cover those expectations.

The rational explanation for such behavior typically observed in banks is that part of the amount lent is in fact consideration for keeping up with competitors in terms of share. In other words, the "prevailing market rate" should in this case be referred as a "required entry" rate. This must have an impact on day one.

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28 According to the American Institute of Certified Public Accountants (2013), the economics of the lending business collide with recognizing loan losses on "day one". Also the IASB's Chairman Hans Hoogervorst (2012b) has stressed that "when a loan is made on market terms, at inception a loss is not suffered" and that recognizing "lifetime losses on day one could bring the book value of a loan (significantly) below its economic value".

29 See International Accounting Standards Board (2011b).

30 IAS 39, paragraph AG64, and IFRS 9, paragraph B5.1.1.

Day-one losses being the sum of all un-priced, discounted expected shortfalls, their consideration indeed allows recognition of the loan's "lifetime losses" as estimated at inception. Some argue that frontloading those losses goes against the "matching" concept whereby "expenses are recognized in the income statement on the basis of a direct association between the costs incurred and the earning of specific items of income".[31] However, as opposed to interest income which accrues ratably for a group of loans considered as a whole, credit losses tend to materialize "all at once" for individual loans within the portfolio, following some kind of pattern in response to the group's behavioral characteristics and environmental factors.[32]

More generally, useful information to users of financial statements requires the financial performance of any reporting entity to be reflected by "accrual accounting". Application of the "accrual" concept to the business of retail lending, and more generally informational objectives demanded of a bank's financial statements, represent another myth whose analysis belongs in the following section.

## 6 "Good-old" accounting

Many accountants and accounting standard setters argue that only by reflecting credit deterioration of assets in a portfolio can loan-loss recognition be considered "proper" accounting.[33] Once again, the nature of retail lending counters that belief.

One of the lessons from the financial crisis is risks can build up in portfolios way ahead of their formal acknowledgment by management, enforcers, or even prudential authorities. Failure to promptly recognize their expected impact can lead to important hits on the income statement. Concentration of exposure to cyclical sectors, such as the development and construction industries, irrational growth strategies, or lenient underwriting practices, are but a few examples of situations where loss information is available well before credit deterioration is evidenced. Making use of that information to appropriately depict the impact of such exposures appears essential if the bank's financial position is to be conveyed.

Obviously this means broadening the scope of data used, including information on current and expected conditions affecting the factors that determine expected cash shortfalls. Such exercise of incorporating "forward-looking information" may lead to estimates that turn out to be even more subjective than those under the present, incurred loss model, and some may consider it inadequate due to the potential for earnings management.[34] As discussed in Section 2, in recognizing loan losses earnings can be managed by either their deferral or anticipation (understatement or overstatement of the allowance). The best tool accountants can use to avoid either is accrual accounting, which "depicts the effects of transactions and other events and circumstances on a reporting entity's economic resources and claims in the periods in which those effects occur, even if the resulting cash receipts and payments occur in a different period".[35]

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31 See the IASB Conceptual Framework for Financial Reporting, Paragraph 4.50. According to the American Institute of Certified Public Accountants (2013), interest revenue is recognized only as time passes, while not all credit losses occur at inception.

32 According to the Financial Accounting Standards Board (2013), credit losses for retail loans are often "very low shortly after origination, rise rapidly in the early years of a loan, and then taper to a lower rate until maturity".

33 See American Institute of Certified Public Accountants (2013) and International Accounting Standards Board (2013b).

34 Recommendation 1.4 of the Report of the Financial Crisis Advisory Group (2009) underscored the need to avoid fostering earnings management if an expected loss model was pursued in replacement of the incurred loss framework.

35 IASB Conceptual Framework for Financial Reporting, Paragraph OB17.

Credit losses are indeed evidenced following a transaction or event, so in order to avoid earnings management they must be recognized when they occur, irrespective of cash shortfalls that are finally confirmed. But determining the moment in which loan losses accrue requires considering the nature of the causal transaction or event. Could it be the case that a bank was completely unaware of circumstances affecting repayment prospects for a loan or portfolio of loans until default? With default being usually defined on the basis of a borrower's delinquency during a specified period of time (e.g., 90 days), that would certainly seem strange, except probably in the absence of any process for the identification and ongoing monitoring of credit risk.

If default cannot be considered the causal event, it is the likelihood of an event resulting in default and ensuing cash shortfalls that matters. So called "loss events" in the incurred loss framework provide such link. They include delinquency, but also the borrower's financial difficulty, or the granting of concessions.[36] However, despite their connection with eventual cash shortfalls, those events cannot be considered cause of the loss, but rather the consequence of an advanced stage of deterioration resulting from previous causing transactions or events. Such evidence of deterioration allows reliable estimation of future shortfalls, but as mentioned above risks can build up in a portfolio well before any particular borrower misses a single payment (delinquency, and eventual default) or shows any sign of alert (other loss events). And in many of those situations information is available allowing adequate estimation of losses. So how early can losses be recognized? Could it even reach the moment of loan origination?

When determining the range of "events and circumstances" capable of triggering losses banks should pay attention to the peculiarities of their retail lending business, as described in the previous sections. This means considering not only factors that affect particular borrowers or the effect of macroeconomic variables, but also circumstances specific to the entity (such as one-off growth strategies aimed at gaining volume) or the transaction (like the existence of terms that artificially stretch borrower affordability, for instance by deferring payment of principal). In both cases, there is in fact a risk that bad borrowers are attracted, so loan origination in itself represents the loss event.[37]

However, those are not the kind of factors bank managers tend to look at when estimating loan losses. The fact they are not considered despite their potentially huge, estimable impact alerts on the need for something to be changed. It may well be the approach to when a loss is incurred,[38] but accountants seem to be tied to a conceptual link between credit quality deterioration and the suffering of the loss.

The alternative is moving past the loss event notion as currently interpreted. Instead of telling readers of financial statements when the loss is incurred, accrual would be responding to a mere expectation of a loss event taking place in the future likely resulting in currently estimable cash shortfalls. In other words, even if the origination of loans under

36 See IAS 39, paragraph 59.

37 A growing concern of investors is that loan-loss allowances are only responsive to credit quality deterioration. The Financial Accounting Standards Board (2013) has echoed analysts suggesting that reserves are "built as volume grows, not just as things deteriorate". This concern is backed by the results of empirical studies suggesting that loan growth represents an important driver of bank risk. An example can be found in Foos, Norden and Weber (2007).

38 Concerns on the "too little, too late" loss recognition and the need to incorporate a broader range of information may well have been appeased within the current incurred loss model by considering factors like those mentioned above when estimating and recognizing loan losses. This opens the question whether a real need existed to replace the framework. After all loss accrual would still be responding to an event, even if it turned out to be mere loan origination based on certain conditions.

particular circumstances is not assumed to be a loss event in itself, there is no doubt it has a likely financial impact that can be estimated, so losses would be recognized because they would in fact accrue.

In any case, if the informational needs of investors are to be met the impact of risks that build up in a portfolio must be adequately recognized even before any sign of credit deterioration shows off. Clearly some common situations that drive the performance of retail exposures are not being considered as loss events, so revising the traditional notion of when a loss accrues turns crucial in the context of retail lending.

## 7 Good times, bad times

Previous sections try to demonstrate how the special features of a bank's retail lending business drive risk accumulation, affecting pricing and loan-loss provisioning. A number of factors can lead bank managers to disregard prudent underwriting, and obviously the resulting risk buildup has to be translated into financial statements.

The mechanics whereby credit risk affects a banking institution are straightforward:

1 Upon origination or purchase of a financial asset, a bank accepts credit risk and its exposure to credit losses increases; in turn, repayments reduce such exposure.

2 The loss estimate is a function of both the probability of an event or events resulting in cash shortfalls, and the extent of those shortfalls.

3 In turn the probability of such events occurring depends on the factors that are determined to affect repayment prospects.

Things get more complex when considering the economic context within which loans are underwritten. During good times repayment prospects look bright, risks are underestimated and banks sacrifice prudence on the hands of volume: bad loans are originated. Later on borrowers start missing payments and managers are left no option but to recognize losses that were built up in the wake of such euphoria: income statements are hit, and even a sound bank can go under if the market understands that bad loans are eating up capital.

Instead of figuring out the factors behind that behavior, many blame current accounting standards of being pro-cyclical. By requiring an event to trigger the loss, they delay its recognition fueling further loan growth and adverse selection in good times, and forcing managers to lift up the carpet at bad times, thus jeopardizing the bank's financial position and discouraging lending. This belief has translated into calls for loan-loss provisioning to act as a countercyclical mechanism.[39]

Investors make use of available information to determine bank expected losses. It is clear that borrower payment capacity is overestimated during upturns, and some prudential authorities have sought to make that apparent in the financial statements even within the incurred loss framework.[40] Financial stability concerns are the common reason used to justify this regulatory requirement. However, arguments presented in the previous section make it clear that the link between credit growth and loan-loss accrual needs to be made explicit on the face of financial statements. The mere idea of pursuing any kind of economic

39 Wall and Koch (2000) described this as the regulatory approach to loan-loss accounting.
40 It is the case of the Spanish "dynamic provisioning" mechanism.

result through biased use of accounting standards collides with information needs of investors, but recognizing the impact of lenient practices observed during upturns is connected with adequate accrual accounting and not with the will to ensure a buffer.[41]

Advocates of the *preparer* approach to loan-loss accounting have also raised arguments based on alleged macroeconomic implications of the *user* approach. In their view, forcing to recognize expected losses would impose an excessive burden on banks and may have the effect of discouraging long-term lending. The need to anticipate the recognition of losses that may be expected to materialize far-off in the future could tempt banks to concentrate on the shorter horizons, especially during good times, fueling the pro-cyclicality of their lending business.

It is true that an eventual new player in the banking industry could be discouraged to embark in long-term finance if forced to recognize losses based on mere peer data or theoretical assumptions. However, as described in Section 3 banking is a mature industry with severe entry restrictions. Owing to its peculiarities, the retail business is especially dominated by big, traditional banks, precisely those whose managers make the argument on possible restrictions to long-term finance. Those "century-old" institutions are in fact conducting analyses to infer economic losses for the purpose of determining capital requirements, and the referred arguments seem to forget expected losses could actually be close to nil if loans are prudently underwritten or priced commensurate to risks taken.

Clearly lifetime-loss recognition would affect the growth model pursued during the last decades, but is long-term lending to be guaranteed at the expense of loose underwriting standards, adverse selection, and an overall increase in leverage levels of households and companies with no reflection in the financial statements of banks?

In any case, the debate does not affect the bottom line that knowing the portfolio's economic value is useful for investors.

## 8 Information shortfalls

Going back to the introduction, the accursed summer of 1854 laid down the foundations for a new approach to the study of diseases, based on analysis of that outbreak's pattern. Inconclusive evidence out of samples pumped out was complemented by the fact that a vast number of cases of contagion packed in the pump's vicinity, indicating an obvious correlation and thus establishing an indirect, yet effective method for determining the causes of the epidemic.

The same sort of indirect method is applied to the estimation of loan losses. Such estimation has traditionally been based on elaborate statistical models that measure the effect of credit risk through probabilities of default (PDs), credit ratings, or loan classifications. The models not only examine levels for those measures, but also the probabilities of those levels migrating favorably or unfavorably over time.[42] For instance, loss estimates will likely be higher for a portfolio showing higher probability of performing loans moving to a delinquent status.

Credit risk modeling frameworks for retail loan portfolios include scorecard, roll-rate and vintage methods,[43] as well as loss-rate methods and provision matrixes.[44] If based on

41 The proposed framework in Section 9 develops this idea.
42 An explanation of the rationale behind such models can be found in Ryan (2007), pp. 95-97.
43 See Henderson (2009).
44 See Financial Accounting Standards Board (2013).

quality inputs, they are assumed to provide reliable estimates for loan losses. Is this another myth?

Those statistical models are conceptually based on solid (close to 1) "coefficients of multiple correlation", which in this case measure how well expected losses can be predicted using a linear function of a set of variables such as PDs or the likelihood of loans migrating from performing to non-performing status. For the method of multiple correlation to be useful in predicting any kind of economic outcome it must be based on extensive populations of complete, measurable, and independent historical data. Moreover, the qualitative character of the causal relations must be clear before arriving at quantitative conclusions.[45]

Some of those conditions are not met by historical data (e.g., on actual cash shortfalls or write-offs) from which PDs, credit ratings or migration probabilities are derived. Those inputs are but a partial selection of all factors affecting repayment, merely capable of reflecting the historical propensity to repay of borrowers comprising the portfolio, as opposed to their current and future ability to perform. Additionally, whereas those inputs can readily and objectively be measured, shortfalls are not independent of one another: a borrower incapable of meeting payments on a loan is most likely to default on the remaining, and defaults within a group of loans tend to be driven by the same factors (e.g., unemployment).

On the other hand, it is seldom that extensive data populations can be found. Fortunately, borrowers normally meet their obligations, so the variables used to infer expected losses have to be put together out of scarce, incomplete, interdependent data. Contrary to the widespread confidence in statistical models, this is very likely bound to unreliable outcomes.

As regards the qualitative aspects of the underlying causal relationships, it is very difficult to grasp many of the links at work. For instance, historical cash shortfalls may have arisen due to "life events" (e.g., death, illness, or divorce), or may reflect an unaffordable lifestyle facilitated by instrument-driven incentives.[46] While the latter can be used to infer future shortfalls, life events cannot be captured by an automated system and translated into a quantitative measure, except probably if the objective was to measure the actuarial risk.

Moreover, individual assessments that consider any of those factors necessarily result in late recognition of losses. This makes it necessary for banks to collectively analyze borrowers on the basis of factors that drive directionally consistent responses for similar groupings of loans. In any case professional judgment is required to adjust for any kind of qualitative factor, whether it affects individual borrowers or groups thereof.

Considering all those hurdles, it seems clear that statistical models can only do so much. When available, historical experience should be considered a starting point to inform the loss estimate. Even if conclusive on the trends and behavioral patterns leading to observed defaults of borrowers comprising a loan portfolio, the data have to be complemented with borrower-related, transaction-specific and environmental information, both current and forward-looking.[47]

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45 References to such requirements date back to Keynes (1940).

46 See Financial Stability Board (2011).

47 As stressed by Pérez Ramírez (2011), p. 294, "the regulatory framework ensuing Bretton Woods reduced volatility in interest and exchange rates in such a way that banking activity became essentially devoted to the assessment of credit risk", and therefore "linked to a qualitative analysis of a borrower's personal qualities rather than theoretical quantitative models".

Met with all such information, sound management judgment is crucial to qualify and determine how each factor affects expected performance. Does it mean the numbers pumped out of statistical models are necessarily unreliable? Not at all. Estimations are inherent to financial information, so banks should devote every effort to arrive at estimates for expected losses without using the lack of quality data as an excuse in such endeavor. In fact, as already mentioned many resources are currently invested in inferring capital requirements for credit risk exposures, irrespective of the questionable effectiveness of statistics in estimating the impact of credit risk, and even if capital is meant to absorb the unexpected losses, which are by definition the statistical outliers of a loss distribution.

The lack of comparability cannot be argued as a setback for those estimations either. On the contrary, knowing not only the differing allowance amounts of different banks, but also how they get to the numbers can prove very useful to investors and prudential authorities, by providing an insight to each bank's business model and the different ways of managing credit risk. Notes to the financial statements and management reports are suitable channels to convey such information and thus contribute in enhancing transparency.

## 9 A suggested framework for loan-loss recognition

Challenges to common beliefs presented in the previous sections provide the grounds for a solid loan-loss recognition framework that enhances transparency on the value of loans and facilitates the adoption of decisions.

As advanced in the introduction to this article, the framework would not only facilitate decision-making by investors. Management would also benefit from more transparent information on the bank's financial position in adopting the decisions best suited to deal with troubled assets. But most importantly, this framework would contribute in guiding the assessments leading to corrective action by prudential authorities.

The framework revolves around the *underlying assumption* that *loan losses accrue as credit risk builds up in respect of a loan or a group of loans.* This assumption follows from a rational interpretation of the accrual principle in the context of the retail lending business of banks, and leads to the following components of the framework:

**Component 1**

The impact of credit risk needs to be recognized as soon as reasonable and supportable information on borrower ability and willingness to pay is available, and as long as such information allows the reliable estimation of such impact.

Loan losses are best depicted if estimated and recognized based on the fundamentals of accounting. The needs of investors, management and prudential authorities are covered if information is focused on the estimation of asset values, in turn based on expected cash flows. In the case of loans, the amount and timing of those cash flows are dependent on the borrower's ability and willingness to pay, so useful information should incorporate the estimated impact of every factor affecting repayment.

In this connection, loan impairment should no longer be triggered by loss events but rather the mere expectation that an event will result in measurable cash shortfalls.

**Component 2**

Credit risk is monitored, and resulting losses are estimated, based on evidence that risk factors will result in future events likely leading to the shortfall.

Representing decreases in economic benefits, the estimated impact referred to above is to be regarded as a loss resulting from the bank's expected inability to recover the whole of the amount lent plus interest.

Relevant factors are those capable of affecting repayment prospects (as judged by borrower capacity, capital or character) either individually or collectively for a group of similar loans.

**Component 3**

When available, historical experience provides the basis for identifying risk factors…

Behavioral patterns and trends surface the events and circumstances that eventually lead to cash shortfalls, as well as the process for such translation. This is valid both for individual loans and groups thereof.

**Component 4**

… based on adequate portfolio segmentation in order not to delay loss recognition…

However, in determining when to recognize loan losses on their retail loans, some banks claim to only be capable of monitoring credit risk by tracking the past-due status of individual borrowers. This is due to difficulties in establishing causal relationships between qualitative factors affecting repayment and cash shortfalls.[48] In effect, it amounts to recognizing losses upon each borrower's default.

As described in Section 6, being based mainly on individual borrower delinquency, default represents a lagging indicator of problems in a loan portfolio. This means bank managers should not rely on loan-loss measures based on default to get rid of bad assets or adopt risk transformation strategies. Neither should prudential authorities wait until evidence of delinquency to adopt corrective actions. Moreover, with loan losses being based on default the disciplinary role of market prices would have no impact on the efficient allocation of resources among different banks. In fact, it would benefit banks with a more lenient stance towards credit risk management.

The question then arises how to estimate, and when to recognize losses if delinquency cannot be used as a practical simplification. It is precisely in those cases when the collective assessment of historical information, in a way similar to Dr. Snow's analysis of the epidemic's pattern, best serves the purpose. Management should be able to segment borrowers subject to similar capacity, capital and character and, based on the historical trends and patterns of such groupings identify the factors more relevant to the eventual default and resulting cash shortfalls of borrowers within.

**Component 5**

… and subject to loan-loss estimates incorporating the impact of current and expected conditions.

In order not to restrict the estimation to factors representative of the historical propensity to pay, judgment should be exercised to adequately incorporate the effect of current and

48 Considerations on the qualities of the information set used for the estimation of loan losses have been discussed in Section 8.

expected conditions on the mechanisms for the translation of identified risk factors into final cash shortfalls. This is what the revised standards of the IASB and FASB refer to as "forward-looking information".

**Component 6**

Estimating loan losses requires looking beyond priced-in loss expectations to determine how the quirks of retail lending affect the value of loans.

Among current and expected conditions referred to above, a prominent role should be reserved to underwriting practices that steer the features of loans within the group.

It follows from the discussion on pricing and fair value in sections 4 and 5 that the nature of retail lending prevents the particular features of a transaction from being considered when estimating loan losses. Although banks may be looking at *character, capacity* and *capital* when categorizing borrowers, it would seem odd if they took loan conditions into account. Otherwise they would be reducing the amount lent to compensate for risks introduced by features intentionally built into the transactions to compete for share.[49]

This means that, irrespective of a bank's risk appetite, it is unlikely that the estimated impact of dubious terms in the transactions is priced into the loans through the appropriate premium. The same would be true of undue growth strategies, which have historically evidenced a strong correlation with ensuing cash shortfalls.

So in effect, many of those transaction-related characteristics linked to commercial goals have no reflection in the financial statements despite their impact on borrower incentives to perform, and thus on expected cash flows and the loan's fair value.

Accounting cannot be expected to solve or mitigate the harmful consequences of imprudent lending, but it must put them forward to the markets. Accordingly, all those conditions should be considered in estimating loan losses.

The approach described up to now can better be understood through a practical example.

49 Valid exceptions to this would be cases in which market for loans incorporating those features existed.

INITIAL LOSS ESTIMATION BASED ON COMPONENTS 1-6. AN EXAMPLE BOX 2

**Fact pattern**

— Bank A is focused on retail lending. It embarks into a new consumer lending business.

— Part of that business is conducted in a specific rural area.

— Considering the trend in government policies for the region, the economic outlook looks favorable.

— Many banks and lenders are embarked in a similar business in the region, which is driving margins down. Bank A cannot compete through price (more specifically, it cannot set the interest rate below 3%), so management decides to relax the conditions for new consumer loans by increasing LTV caps to 90% from the general 70% set at the level of the whole consumer-loan portfolio, and offering a standardized 15-year, amortizing loan at a 3.5% interest rate.

**Initial loan-loss estimation**

Faced with the described fact pattern, what elements would management consider when estimating loan losses?

Step 1. *Loan segmentation*

The scores for consumer-loan borrowers in the region show a high degree of commonality in their repayment capacity, and very little

capital. As a result, management understands that defaults, and ensuing cash shortfalls, should respond similarly to a common range of credit risk factors.

Based on that understanding, the region's consumer-loan business is defined as a segment for risk-assessment and loss-estimation purposes.

Step 2. *Reference portfolio*

This business being new, management must determine whether any existing portfolio can be used as reference. The reference portfolio should be characterized by credit risk factors similar to those expected to affect the analyzed segment.

The bank identifies an existing auto-loan portfolio in that same region. The reduced equity buffer provided by the attached collateral (motor vehicles) makes cash shortfalls on that portfolio highly correlated to borrower defaults. Accordingly, the portfolio is considered a valid reference for the analysis of consumer loans in the region (which by definition are not collateralized).

Step 3. *Identification of credit risk factors*

A clear pattern in the reference portfolio is identified whereby borrower defaults leading to historical cash shortfalls basically respond to government cuts in subsidies to agricultural output. This is due to the fact that the payment capacity of auto-loan borrowers (most of which are closely linked to farming activity) is highly dependent on those subsidies due to the low productivity of farm land.

Accordingly those subsidies are identified as the sole determinant factor in the eventual occurrence of defaults and the resulting cash shortfalls.

Step 4. *Historical data as a starting point for the estimation of loan losses*

Data on cash shortfalls for 10 year auto loans are available for a period spanning the last 20 years. They show cash shortfall rates averaging a yearly 4% during the first 3 years of a loan's life, and raising to 8% from year 4 onwards.

Step 5. *Adjustment to current conditions*

On average, the bank has been capping LTV on consumer loans to 70%. Increasing the cap to 90% is likely to increase borrower incentives to default, so the historical loss rate is adjusted proportionally to arrive at foreseen cash shortfalls.

As a result, a yearly 5.14% rate of cash shortfalls [4%×(0.90/0.70)] is projected three years onto the future, while a 10.29% rate [8%×(0.90/0.70)] is projected for years 4 to 8. The 4% rate is used for the remainder of the loan's life, since the bank is unable to reasonably forecast repayment for loans that far onto the future based on available information.

Step 6. *Judgmental overlay*

Management considers prospects for increased subsidies to invite non-trustworthy individuals asking for loans. The related impact on character is considered to compensate enhanced capacity stemming from the increase, so the rates determined in step 5 are not adjusted further.

Step 7. *Initially expected loan losses (= 4 + 5 + 6)*

As a result of the previous steps, a 5.14% annual rate is applied to years 1 to 3, with a 10.29% rate for years 4 to 8, and 4% being applied from year 9 to 15.

These initially expected losses should feed directly into the price of loans through the appropriate risk premium. Otherwise a day-one loss should be recognized to adjust the value of loans accordingly.

But even if neither action was adopted by management, knowing how credit risk is identified, and the mechanics through which risk factors lead to ensuing cash shortfalls facilitates the external monitoring of credit risk and verification of the allowance level by auditors, investors and supervisors. It therefore allows early adoption of corrective action and forces managers to improve their credit risk management and internal control frameworks.

As described in the example's fact pattern, Bank A cannot compete through price, but the situation forces its managers to raise the bar on LTVs and set a 3.5% rate. Would that price cover initial loss expectations? If not, what would be the adequate pricing? How could the value adjustment be determined, either at day one or as soon as information on the mispricing was available?

The seven steps of the example in Box 2 lead to the determination of initially expected loan losses. An adequate risk management policy would ensure those losses were correctly priced.

Step 8. *Determination of minimum annual cash flows required to meet the expected yield*

According to management, Bank A would not be able to set the price for its consumer loans in the region below 3% if it were to compensate for the time value of money, funding costs, and overheads. As indicated above, this prevents it from competing via price, and forces a relaxation in other loan conditions.

For an average 10,000€ loan with a 15-year term, the 3% yield is used to calculate annual cash flows that the bank would expect to obtain, at a minimum, from each loan in the group. However, those cash flows would in no case cover loss expectations.

$10{,}000€ = \text{Minimum annual cash flow} \times a_{\overline{15}|3\%}$

$\text{Minimum annual cash flow} \approx 838€$

Step 9. *Grossing-up of cash flows*

The foreseen cash shortfalls shown in step 7 (Box 2) are projected for each appropriate period of the loan's life and added to the minimum required cash flows, resulting in grossed-up amounts.

$\text{Adjusted annual cash flow (years 1-3)} = 838€ / (1-0.0514) = 883€$

$\text{Adjusted annual cash flow (years 4-8)} = 838€ / (1-0.1029) = 934€$

$\text{Adjusted annual cash flow (years 9-15)} = 838€ / (1-0.04) = 873€$

Step 10. *Determination of the adjusted yield (theoretical pricing)*

Using those cash flows, the adjusted yield is calculated, representing an internal rate of return that adequately incorporates initial loss expectations for the group of loans considered as a whole.

$10{,}000€ = [883€ \times a_{\overline{3}|i}] + [(1+i)^{-3} \times 934€ \times a_{\overline{5}|i}] + [(1+i)^{-8} \times 873€ \times a_{\overline{7}|i}]$

$i \approx 3.96\%$

In other words, an approximate 0,96% risk premium would have to be priced into each originated loan for the bank to break even in terms of initial loss expectations.

Step 11. *Equivalent annual constant installment*

A constant installment can be calculated based on the adjusted yield.

$10{,}000€ = \text{Annual constant installment} \times a_{\overline{15}|3.96\%}$

$\text{Annual constant installment} \approx 897€$

Such installment would cover loss expectations so that the net cash flows provide the expected 3% return. Theoretically, loans yielding 3% and above (up to 3.96%) would compensate the shortfalls stemming from the non-performing.

Step 12. *Actual pricing (looking beyond priced-in loss expectations)*

Even if Bank A cannot set the rate below 3%, the tightening of margins by competitors forces a response in terms of pricing, besides the LTV measure adopted to attract borrowers. So the bank sets a 3.5% rate for all consumer loans in the segment.

With the risk premium falling short of that required to cover initially expected losses, cash flows from performing loans no longer suffice to compensate shortfalls expected on the non-performing.

So the bank ends up offering 10,000€, 15 year, amortizing, fixed 3.5% rate loans, with a final contractual installment of 868€ (instead of the 897€ that would cater for risk expectations).

$10{,}000€ = \text{Annual contractual installment} \times a_{\overline{15}|3.5\%}$"

$\text{Annual contractual installment} \approx 868€$

"Ideal" step. *Recognition of the value adjustment*

The fair value of an average loan within the segment would result from discounting the expected cash flows (contractual cash flows net of expected shortfalls) at the risk-free rate (3%).

$\text{Annual expected cash flows} = \text{Annual contractual installment} - \text{Annual expected cash shortfall} = \text{Annual contractual installment} - (\text{Annual constant installment} - \text{Minimum annual cash flow}) = 868€ - (897€ - 838€) = 809€$

$\text{Fair value} = 809€ \times a_{\overline{15}|3\%} \approx 9{,}658€$

So a 342€ value adjustment (the difference between the 10,000€ lent and fair value) would be necessary for each single loan within the group. This reflects the cost for keeping up with competitors, and results from discounting the un-priced expected losses, i.e. those resulting from lending at a premium (0.5%) falling short of that required to cover all loss expectations (0.96%). The latter would result in 897€ installments, while the former results in 868€ installments, so the un-priced loss amounts to 29€ per year (897€ – 868€).

$\text{Value adjustment} = 10{,}000€ - 9{,}658€ \approx 342€ \approx 29€ \times a_{\overline{15}|3\%}$

Besides mispricing, a value adjustment would also be required if expected losses were inadequately estimated due to involuntary risk understatement.

**Component 7**

The estimation and recognition of expected loan losses in response to credit growth or lenient underwriting responds to the underlying assumption in this framework ("loan losses accrue as credit risk builds up in respect of a loan or a group of loans"), so it should not be understood as a way of creating a countercyclical buffer, or a means of attaining any other macro-economic purpose.

According to Hoogervorst (2012a), accounting standard setters cannot *"develop standards that make items appear to be stable when they are not".* This statement reflects the traditional reluctance of accounting standard setters in accepting what Wall and Koch (2000) define as the *regulatory* approach to loan-loss recognition, which follows the perception that prudential authorities are usually biased towards excess conservatism.[50]

However, this perception has to be qualified in the context of the peculiarities of the retail lending business of banks. Excess optimism and the according underestimation of credit risk is particularly common in favorable economic contexts, but the need to consider the related impact when estimating loan losses should not be branded as a way of attaining "rainy-day" buffers aimed at making loans and loan portfolios appear as stable. Rather, it should be viewed as the response to a verified correlation between relaxed practices resulting from such undue optimism and ensuing problems.

After all, as discussed in Section 7 any macro-economic consideration has to be decoupled from strict loan valuation. Moreover, prudential authorities are legally enabled to require banks whichever additional information they deem necessary, so their approach to loan-loss provisioning should not be considered different to an economic view.

**Component 8**

In estimating loan losses sound management judgment should be given prominence over statistical methodologies.

Management judgment should play the key role in determining how risk factors affect expected performance. While historical information serves as a starting point in the assessment, estimations are inherent to financial information and particularly relevant in the area of loan-loss provisioning.

In this connection, banks should not be allowed to use lack of quality data as an excuse for not devoting their best efforts in estimating losses.

However, the role of enforcers (mainly auditors) and supervisors in challenging loan-loss accounting practices by banks will have to be awarded increased importance, owing to: a) the described peculiarities of the retail lending business by banks; b) the resulting managerial incentive to relax loan conditions; and c) the increased judgmental nature of the expected credit loss model in relation to the existing accounting model.

50 See footnote 10.

**Overall result**

Arguably if all the above components were considered, this framework would ensure that loan losses are recognized not only in response to deterioration of the originally assessed borrower creditworthiness, but also due to the way loans are granted.

The proposed framework would lead to indicators of cash shortfalls being based on lenient credit practices, changes in the underwriting criteria, growth strategies, or generally changes in the approach to risk management, in addition to macroeconomic circumstances affecting the loan or group of loans, and the worsening of credit quality.

The argument that upfront recognition of losses that may result from such approach is not solid accounting gets around the notion of accrual accounting.[51] The allowance should reflect collectability concerns on products which expose the bank to increased risks relative to traditional loans, and especially those with a higher potential for payment shocks (such as those incorporating features like the ones described in Box 1).[52] As an example, estimated losses on a loan in which the bank's commitment represents just half of the collateral's value should normally be lower (and be recognized later) than those on another in which the same committed amount equals the value of collateral pledged. The same differentiation of credit loss estimation and recognition should be expected from loans in which the principal amount (and thus exposure to credit loss) is constantly decreasing, as compared to others with negative amortization features.

In other words, the impact of any factor affecting a borrower's ability, propensity or willingness to repay has to be estimated, including not only changes in credit quality as compared to origination, but also risks that are ignored when pricing loans, or even purposefully "priced-out" in order to achieve what Haldane (2009) calls the "geared golden goose of finance".[53]

Such gearing being ultimately backstopped by public funds, it seems unlikely that bank managers admit the expected impact of lenient practices or undue growth strategies that are not compensated through pricing or other loan conditions. This requires loan-loss accounting to adequately portray such impact. Arguably accounting standards based on the proposed framework would achieve such objective.[54] Otherwise the implementation of those standards by banks should be based on guidelines consistent with the framework. Prudential authorities are in a privileged position to develop such guidelines.[55]

This is not to suggest an alternative standard for banks, nor a uniform way of arriving at loss estimates. Rather it should be viewed as a means of ensuring consistent application of the standard by banks.

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51 In fact, as stated in the IASB's Conceptual Framework for Financial Reporting (Paragraph 4.40), "assessments of the degree of uncertainty attaching to the flow of future economic benefits are made on the basis of the evidence available when the financial statements are prepared" so that "for a large population of receivables… some degree of non-payment is normally considered probable; hence an expense representing the expected reduction in economic benefits is recognized".

52 See US Regulatory Agencies (2006).

53 As explained in the introduction, banks presumed to be sound could in fact be leveraged up to 50 or 60 times. In the words of Haldane, even if "banks may not be special after all", leverage turns them into a "different animal". That "animal" runs systematically over the cliff of technical bankruptcy, and hence the importance of adequately valuing its assets.

54 Following the publication of its revised standard for financial asset impairment in July 2014, the IASB created a group aimed precisely at tackling the related application issues (http://www.ifrs.org/About-us/IASB/Advisory-bodies/ITG-Impairment-Financial-Instrument/Pages/Home.aspx).

55 See footnote 6.

In the same vein, such bank-specific guidance should not be considered incompatible with enforcement efforts. While banking supervisors would ensure that regulatory capital is placed as a last line of defense against inadequate allowance levels, the existence of specific orientation should instill the appropriate incentives on banks to timely recognize losses estimated on the basis of a broader range of information. This would help enforcers verifying the compliance of loan-loss allowances with the relevant accounting standard, as interpreted in the context of the retail lending business of banks.

## 10 Conclusions: Bumps on the road ahead

While accounting cannot cater for the unexpected, it should strive to determine the value impact of features that characterize the retail lending business of banks. Final cash shortfalls are obviously uncertain, but it would be cynical of bank managers to refrain from their estimation based on that hurdle. In the end, the aim should be to reflect the performance prospects of a loan, or a group of loans, on the face of the financial statements.

In the midst of the crisis, Haldane (2009) expressed the view that "a recovery in lending is best achieved if banks believe new loans will be profitable". According to the analysis in this article, profitability can be sought in different ways, some of which may bring about undesirable outcomes.

After the initial stages of the crisis, credit started recovering through banks engaging in risky, uncharted lending based on relaxed conditions to gain volume. Curry (2013) warned of the "adverse financial consequences" of banks entering "new lines of business with the potential to generate higher profits, but also bigger losses".

While it is no surprise that the current crisis (like most throughout history) has credit risk in its DNA, it strikes to find out that deficiencies in the use of existing information appear to be among the main factors at stake. Inadequate application of current accounting standards for loan-loss estimation and recognition has clearly contributed to the mess and, disturbing as it may seem, many banks are still reluctant to admit what their assets are really worth.

Obviously this should be avoided. Recurring "pandemic" episodes demonstrate the inherent fragility of bank balance sheet structures and the quick spillover of any institution's problems. Society cannot afford to periodically bail banks out, so prudential authorities must ensure the safety and soundness of banks and protect their depositors. Among other measures, that implies responding to transparency concerns by adequately informing of a bank's exposures to credit risk and their likely impact. This means providing reliable estimates of loan values, which in turn requires appropriate recognition of loan losses.

How can this be done? Identifying risk sources and loss patterns based on historical information is a first step, but bank loan losses depend on a wide array of factors affecting borrower behavior. Losses accrue as risks build up in the loan portfolio, and a bank can be exposed to those risks not only because of credit quality deterioration or visible environmental factors, but also well in advance due to the way loans are granted. As shown in this article, bank managers have a natural incentive to underprice credit risk.

Accordingly, enhancing the ability to estimate loan losses requires a framework that incorporates the anticipated effects of conditions known to affect relevant credit risk factors. Taking these conditions on board makes estimation highly judgmental, but the usefulness of financial reporting is not based on accuracy, and when it comes to loan-loss recognition no statistical model can replace judgment and due diligence.

In any case the prospects are for a bumpy road. When dissecting the situation of the US residential loan business Curry (2013) expressed concerns that might sound familiar at this stage of the article:

— "Many home-equity borrowers today face… a balloon payment that will require them to refinance or substantially higher monthly payments".

— Credit risk is "once again on the rise, with relaxed underwriting standards, pricing for risk, and more risk layering".

— "There are steps we need to take to be transparent about the current impairment of the loan portfolio". Those steps include "prudent allowance practices consistent with GAAP and regulatory guidance", and there is a "need for revisions in the way banks account for impairment so that bankers can start to increase… reserves as the risks in their loan portfolios increase".

As a disturbing corollary, even if "we are not talking about an imminent crisis" banks now face the legacy of lenient practices and their strategy seems to be following past steps instead of looking at ways to reinvent their business responsibly.

Most likely, by incorporating all observable information affecting the expected collectability of loan cash flows, financial statements will better translate the economics of the banking business and enhance transparency. This may incentivize prudent lending through market discipline that penalizes banks running on unhealthy strategies. But better information is just a piece in the bigger puzzle, which might be useless in the absence of an authority that seals the pump and builds drains. Prudential authorities cannot sit on the fence while banks trip over the same stone. They should ensure adequate implementation of any standard on loan-loss accounting, but also introduce incentives that force bank managers to move in the direction of sound underwriting, as common sense requires of companies running on so huge leverage levels.

Far from empirics, granting credit deals with individual and social behavior, and thus with the errors and passion of human beings. Especially as regards estimation and recognition of loan-loss allowances, few thoughts better apply to this craftwork like Joseph Campbell's (1969): "I can see no reason why anyone should suppose that in the future the same motifs already heard will not be sounding still… put to use by reasonable men to reasonable ends, or by madmen to nonsense and disaster".

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# 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. |