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Capital position of banks in the EMU: an analysis of Banking Union scenarios

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1 Introduction

This background document provides details of the simulations of shocks to the capital position of banks in the EMU that underpins the Financial Risk Report 2018¹ of the CPB. This involves investigating the potential impact of two legacy problems on the capital position of banks. These problems are the high amount of government debt, especially in Italy, and the high level of non-performing loans on banks' balance sheets. We consider shocks in which either one or both write-offs are required. We also investigate regulatory changes on the capital position of banks that are proposed for the deepening of the Banking Union.

We investigate both the write-offs and the regulatory changes by looking at the loss of capital (or addition to risk weighted assets) both at a country-level and at the individual bank level. We also consider the simultaneous implementation of combinations of these write-offs and regulatory changes. The impact on the capital position of a bank is measured by the change in the bank's core capital (CET1). This is the most narrow definition of capital used by the Bank for International Settlements under Basel III, and is commonly used to express the impact of stress tests.

For the analysis we use data on the 92 biggest banks in the Eurozone and other EU countries.² We obtain data on the balance sheet positions of these banks from the European Banking Authority's (EBA) transparency exercise. The EBA data collection includes all large banks that are under direct supervision of the Single Supervisory Mechanism (SSM). Note that small banks are not included in this dataset. For the current analysis we use the data from June 2017. In the analyses we only consider the direct (or first-round) effects on the capital position of banks. Due to the nature of the data, we are not able to include potential second-round effects, induced by changes to the state of the economy or for example via inter-bank loans or shares.

The results we obtain can be summarized as follows. First, we simulate the effects of a write-off of 20% of Italian debt in case of a restructuring. Our findings show that predominately banks in Italy are hardest hit, while the impact on banks outside Italy is only minor. We also study a 20% write-off of the debt of all GIIPS³ countries. In this example it is primarily banks in Portugal, Italy and Spain which see a substantial drop in their core capital ratio. These two findings show that the national sovereign-bank nexus may still pose a threat, but that the risk of direct contagion to banks in other countries is low.

Second, we investigate the impact of two proposals to regulate sovereign debt exposure on bank balance sheets. These proposals aim to break the sovereign-bank nexus. The first proposal entails implementing risk weights to sovereign debt exposure. The second proposal

¹ "Risicorapportage Financiële Markten 2018" (Centraal Planbureau, May 2018, [link](#))

² Denmark has not decided whether it will join the banking union yet, see the [press release of the Danish Ministry of Industry, Business and Financial Affairs](#). For this reason, we have left Denmark out of the EMU sample concerning the Banking Union scenarios.

³ GIIPS: Greece, Ireland, Italy, Portugal and Spain.

sets concentration limits to sovereign debt exposure. The simulations show that the capital position of banks is only moderately affected by implementing risk weights to sovereign debt exposure. However, setting concentration limits forces banks to sell off substantial amounts of their sovereign debt exposure.

Third, we study the effects of writing-off a fraction of the non-performing loans (NPL). Recently the European Central Bank (ECB) has set an addendum to the guideline for banks' NPLs.⁴ Key in this guideline is reducing the amount of NPLs from banks' balance sheets, and setting more strict guidelines for handling future NPLs. In this section we simulate the outcome for the capital position of banks in response to writing-off a fraction of their exposure to NPLs, where we take the example of a 20 percent write-off. We find that banks are hit severely producing especially large losses in Southern-European countries.

Finally, in Section 3 we combine some of the write-offs and regulatory changes above in more comprehensive scenarios. Generally, the results show that it is primarily the same banks from southern European countries which suffer losses.

2 Shocks to the capital position of banks in the EMU

In this section, we analyze the impact of different shocks on the capital position of banks. The structure is as follows. In Section 2.1 we simulate a write-off of Italian and GIIPS debt. In Section 2.2 we study the impact of two proposals for regulating sovereign exposures on banks' balance sheets. In Section 2.3 we examine the write-off of non-performing loans.

2.1 Writing-off government debt

The Italian government debt is 132% of GDP.⁵ What would happen to bank balance sheets if part of the debt were written off? And what would happen if banks had to write-off part of their exposure to GIIPS countries? In this section we analyze the impact of these two shocks on the capital position of banks.

2.1.1 Writing-off 20% of Italian government debt

First we analyze a 20% write-off of banks' exposure to Italian government debt (including both Italian bonds and loans). Table 2.1 shows the results for all euro countries in the sample. The impact on the capital position of banks is linear for other write-off percentages.

Italian banks are most vulnerable to a restructuring of the Italian government debt. Together they have EUR 143 billion of Italian government bonds and loans on their balance sheets.

⁴ "Addendum to the ECB Guidance to Banks on Nonperforming Loans: Supervisory Expectations for Prudential Provisioning of Non-Performing Exposures" (ECB, March 2018), ([link](#))

⁵ This is measured in 2017. Source: ECB.

With a 20% write-off, these banks will lose EUR 29 billion. This is approximately 29% of their core capital.

Most banks outside of Italy only take a small hit. The largest exposure to Italian government debt is by banks in France (49 billion), Spain (29 billion), Belgium (26 billion) and Germany (24 billion). With a 20% write-off, the aggregate loss to banks in these countries is between 3-5% of their aggregate core capital. A notable exception here is Belgium. The loss for Belgian banks is around 15% of their core capital, which is mainly due to Dexia. This is the only Belgian bank with a sizable exposure to the Italian government (20 billion), and thus vulnerable to a write-off of Italian debt.

Table 2.1 The effects of a 20% write-off of Italian debt

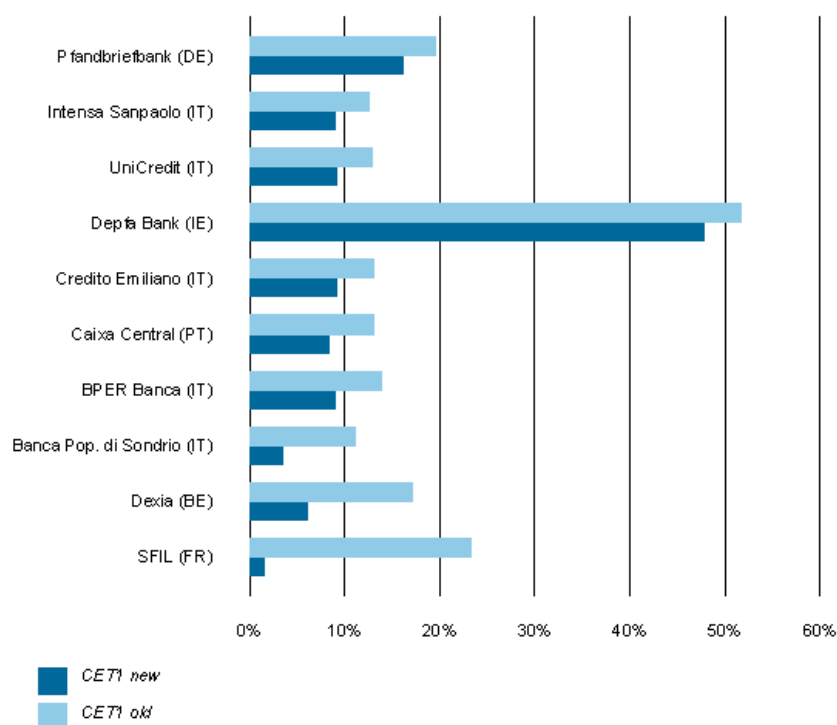
	Exposure to Italian debt (billion)	Loss from a 20% write-off (billion)	Loss as % of core capital
Austria	1	0	1%
Belgium	26	-5	15%
Cyprus	0	0	0%
Estonia	0	0	0%
Finland	0	0	0%
France	49	-10	3%
Germany	24	-5	3%
Greece	0	0	0%
Ireland	2	0	1%
Italy	143	-29	29%
Latvia	0	0	0%
Luxembourg	0	0	4%
Malta	0	0	1%
Netherlands	2	0	0%
Portugal	4	1	5%
Slovenia	0	0	0%
Spain	29	-6	5%
All euro countries*	279	-56	6%
Other EU countries*	13	-3	1%

Note: the numbers are rounded to the nearest integer; therefore, for some countries we report a loss of 0 whereas a positive loss as % of core capital can be observed. * These are all the euro countries except Lithuania and Slovakia. The Other EU countries are Bulgaria, Denmark, Hungary, Sweden, and the UK.

Figure 2.1 shows the results for the ten banks that see the largest percentage fall of their CET1 ratio due to the write-off.⁶ The CET1 ratio is defined as CET1 capital with respect to the risk weighted assets. Several non-Italian banks face losses of more than 3%-points in their CET1 ratio. Almost all large Italian banks face a big drop in their CET1 ratio: Banca Popolare di Sondrio (-7.6%-points), BPER Banca (-4.8%-points), Credit Emiliano (-3.9%-points), UniCredit (-3.7%-points), and Intensa Sanpaolo (-3.5%-points). The biggest hit is, however, taken by SFIL (a French investment bank), for which the CET1 ratio drops from 23% to approximately 1.6% after the shock.

⁶ Some banks might actually hold higher capital ratios at this moment because they foresee a write-off or regulatory change in the near future that will affect their capital position.

Figure 2.1 The impact on individual banks' CET1 ratio of a 20% write-off of Italian debt



2.1.2 Writing-off 20% of all GIIPS debt

Table 2.2 shows the effect of writing-off 20% of the total exposures to GIIPS countries (Greece, Ireland, Italy, Portugal, and Spain). This sheds light on the sovereign-bank nexus in these countries and shows the spill-over effects to banks in other countries.

The total exposure of euro banks to GIIPS debt countries is EUR 586 billion. The write-off results in a EUR 117 billion loss, which equals 12% of the banks' aggregated core capital. The biggest loss relative to core capital is taken by banks in Portugal (43%), Italy (35%), and Spain (28%). The direct spill-over effects of these write-offs in other countries appear to be small.⁷ This can be seen in the CET1 ratios of individual banks, given in Figure 2.2, which mainly features banks from GIIPS countries. Only Belgian banks are hit hard with a loss of EUR 8 billion, which is about 24% of their core capital. Again, this is mainly due to losses from Dexia's exposure to Italian debt (see Section 2.1.1).

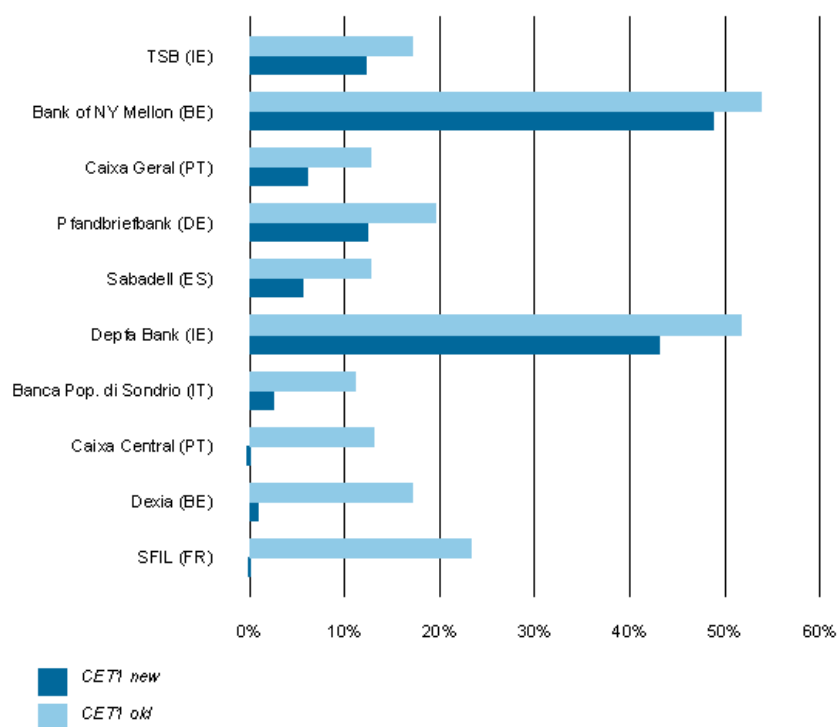
⁷ We cannot exclude an indirect spill-over effect through, for example, cross-border claims of banks, since we do not have data on these exposures. In any event the [ESRB-report](#) and the [BIS-statistics](#) suggest that these exposures are relatively small.

Table 2.2 The effects of a 20% write-off of all GIIPS debt

	Exposure to GIIPS debt (billion)	Loss from a 20% write-off (billion)	Loss as % of core capital
Austria	3	-1	2%
Belgium	41	-8	24%
Cyprus	0	0	0%
Estonia	0	0	0%
Finland	0	0	0%
France	71	-14	5%
Germany	42	-8	5%
Greece	19	-4	12%
Ireland	20	-4	15%
Italy	174	-35	35%
Latvia	0	0	0%
Luxembourg	2	0	16%
Malta	0	0	1%
Netherlands	5	-1	1%
Portugal	36	-7	43%
Slovenia	0	0	2%
Spain	174	-35	28%
All euro countries*	586	-117	12%
Other EU countries*	22	-4	1%

* See notes on Table 2.1.

Figure 2.2 The impact on individual banks' CET1 ratio of a 20% write-off of GIIPS debt



2.2 Regulating the exposure of sovereign debt on banks' balance sheets

The crisis has revealed that sovereign debt and banks are connected. Several solutions have been proposed to break the sovereign-bank nexus. The first proposal is the implementation of risk weights. This option entails an increase in capital requirements which depends on the credit risk of the sovereign debt and the height of a bank's exposure to this debt. The second proposal is to set concentration limits to sovereign debt exposure. That is, banks will be allowed to hold a maximum amount of sovereign debt, equal to a certain fraction of their core capital. Any debt exposure above the maximum will have to be sold. We show the impact of each of these regulatory changes on the capital position of banks.

2.2.1 Risk weights

For the analysis of the risk weight proposal, we use the current ratings for sovereign debt by Fitch⁸ and the potential credit assessment of sovereign debt exposures by the Bank of International Settlements (BIS)⁹. Table 2.3 displays the results of implementing risk weights to sovereign exposures, and Figure 2.3 shows the change of CET1 ratio for individual banks.

Table 2.3 The effects of implementing sovereign risk weights

	Additional risk weighted assets (billion)	As % of existing RWA	Capital to restore to current CET1 ratio
Austria	14	5%	2
Belgium	22	11%	4
Cyprus	1	6%	0
Estonia	0	1%	0
Finland	0	0%	0
France	37	2%	5
Germany	22	2%	4
Greece	20	11%	3
Ireland	6	4%	1
Italy	88	11%	11
Latvia	0	3%	0
Luxembourg	1	5%	0
Malta	0	3%	0
Netherlands	4	1%	1
Portugal	17	13%	2
Slovenia	1	6%	0
Spain	49	5%	6
All euro countries*	282	4%	39
Other EU countries*	27	1%	4

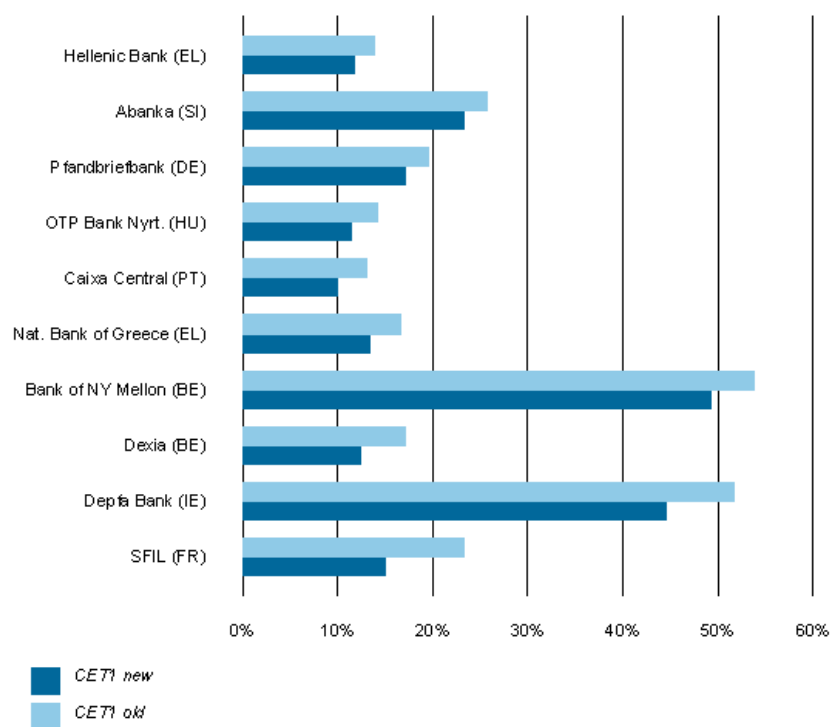
* See notes on Table 2.1.

⁸ For the current ratings, see the credit ratings by [Fitch](#)

⁹ Bank of International Settlements (BIS), "Revisions to the Standardised Approach for Credit Risk," December 10, 2015, [link](#).

The implementation of risk weights increases the size of risk weighted assets (RWA), because government debt weights rise from zero to a non-zero risk weighting. For all euro banks combined, RWA increases by EUR 282 billion, which is 4% of existing RWA. An increase in the RWA leads to a decrease of the CET1 ratio as the denominator rises. The largest increases in RWA are for banks in Italy (88 billion), Spain (49 billion), and France (37 billion). To restore the CET1 ratio to the old level, all euro-banks combined need to attract the relatively small amount of EUR 39 billion. Italian banks need to attract EUR 11 billion to restore their CET1 ratios. These findings are confirmed by the moderate drop in CET1 ratios for individual banks, as can be seen in Figure 2.3.

Figure 2.3 The impact on individual banks' CET1 ratio of implementing sovereign risk weights



2.2.2 Concentration limits

Another proposal to break the sovereign-bank nexus is to set concentration limits to sovereign debt exposure.¹⁰ Under this proposal, a limit is set on the exposure of a bank to a single sovereign. This limit is a predefined fraction of the bank's own funds. Consider bank *A* with own funds of EUR 20 billion and for which a concentration limit of 50 percent is set to sovereign exposures. This implies that bank *A* may hold a maximum of EUR 10 billion of sovereign exposure on its balance sheet. Now, if this bank currently holds EUR 25 billion of a particular country then it has to sell-off the excess EUR 15 billion. Lower concentration limits thus require larger sell-offs of sovereign debt exposure.¹¹

¹⁰ N. Véron, "Sovereign Concentration Charges: A New Regime for Banks' Sovereign Exposures," September 11, 2017, http://www.europarl.europa.eu/thinktank/en/document.html?reference=IPOL_STU%282017%29602111.

¹¹ It is also possible to set a concentration limit that lies above 100 percent, as it puts a cap on the concentration to sovereigns in relation to the core capital.

Table 2.4 The effects of setting concentration limits (30%) to sovereign exposures

	Maximum of concentration (billion)	Exceeding limit (billion)
Austria	14	12
Belgium	12	102
Cyprus	1	0
Estonia	0	0
Finland	4	10
France	115	289
Germany	62	229
Greece	9	24
Ireland	9	11
Italy	40	109
Latvia	0	0
Luxembourg	1	1
Malta	0	1
Netherlands	45	36
Portugal	5	26
Slovenia	1	2
Spain	47	131
All euro countries*	364	984
Other EU countries*	151	119

* See notes on Table 2.1.

Currently a concentration limit of 25% is in effect for bank exposure to non-sovereign clients that constitute one or more institutions.¹² We simulate the impact of setting concentration limits of 30, 50 and 100 percent of core capital to sovereign debt exposure. We start with 30 percent, instead of 25, to be in line with the calibration of sovereign debt exposure in the study of Véron (2017).

In Table 2.4 we show the impact of setting a concentration limit of 30 percent to sovereign exposure. The largest excesses are in France (289 billion), Germany (229 billion), and Spain (131 billion). The excesses are also fairly large in Belgium and Italy. The own funds (core and additional capital) of German banks are 206 billion euros, so a 30% limit implies that these banks could have a combined 62 billion German government exposure (maximum of concentration). The individual excess per bank at the 30% limit adds up to 229 billion. These excesses would need to be sold off. Given the size of these excesses, setting concentration limits may require a long transition period. In Tables 2.5 and 2.6 we find similar results for concentration limits of 50 and 100 percent. Note that the excesses do not increase linearly for these higher limits, as the maximum of concentration - which is displayed as the sum of individual banks - actually differs per bank depending on the amount of own funds and sovereign exposure.

¹² See the Single Rulebook for capital requirements regulation by the [EBA](#)

Table 2.5 The effects of setting concentration limits (50%) to sovereign exposures

	Maximum of concentration (billion)	Exceeding limit (billion)
Austria	23	5
Belgium	20	82
Cyprus	2	0
Estonia	0	0
Finland	6	10
France	191	202
Germany	103	184
Greece	15	16
Ireland	16	6
Italy	66	77
Latvia	0	0
Luxembourg	1	0
Malta	1	0
Netherlands	75	32
Portugal	9	21
Slovenia	1	2
Spain	78	69
All euro countries*	606	705
Other EU countries*	252	57

* See notes on Table 2.1.

Table 2.6 The effects of setting concentration limits (100%) to sovereign exposures

	Maximum of concentration (billion)	Exceeding limit (billion)
Austria	46	1
Belgium	40	45
Cyprus	3	0
Estonia	0	0
Finland	12	10
France	382	132
Germany	206	119
Greece	31	3
Ireland	31	1
Italy	132	15
Latvia	0	0
Luxembourg	3	0
Malta	1	0
Netherlands	149	29
Portugal	18	10
Slovenia	2	1
Spain	156	6
All euro countries*	1213	372
Other EU countries*	505	26

* See notes on Table 2.1.

2.3 Resolution of non-performing loans

Non-performing loans (NPL) on bank balance sheets restrict the supply of credit. Banks have provisions for losses on their non-performing loans, but these may not be sufficient. A reduction of NPLs therefore improves the strength of the European banking sector. We simulate the impact of writing-off 20% of the current stock of NPLs. The impact on the capital position of banks is linear for other percentages. This analysis ignores the presence of any provisions that banks hold in case of a NPL write-off. Data suggest that especially Greek banks hold substantial provisions of around 70% of their NPL portfolio.¹³ In for example Italy, banks hold provisions of around 50%, according to this data. Still a 20% write-off is useful to consider. For example, UniCredit had a similar net write-off when it sold around EUR 16 billion worth of NPLs, even though it had 13 billion worth of provisions for losses on its NPLs.¹⁴

In several countries banks lose substantial amounts from a 20 percent write-off of NPLs. Table 2.7 shows that all euro-area banks lose a combined EUR 131 billion, mainly in France (27 billion), Italy (26 billion), and Greece (22 billion). The loss for all euro-area banks as a percentage of their combined core capital is 14%. The three countries that lose the most as a percentage of core capital are Cyprus (87%), Greece (70%), and Portugal (37%).

Table 2.7 The effects of writing-off 20% of bad loans

	Exposure to NPLs (billion)	Loss from a 20% write-off (billion)	Loss as % of core capital
Austria	18	-4	10%
Belgium	14	-3	8%
Cyprus	11	-2	87%
Estonia	0	0	0%
Finland	1	0	3%
France	137	-27	9%
Germany	56	-11	7%
Greece	108	-22	70%
Ireland	26	-5	19%
Italy	128	-26	26%
Latvia	0	0	5%
Luxembourg	1	0	6%
Malta	0	0	8%
Netherlands	41	-8	8%
Portugal	31	-6	37%
Slovenia	2	0	19%
Spain	81	-16	13%
All euro countries*	656	-131	14%
Other EU countries*	86	-17	5%

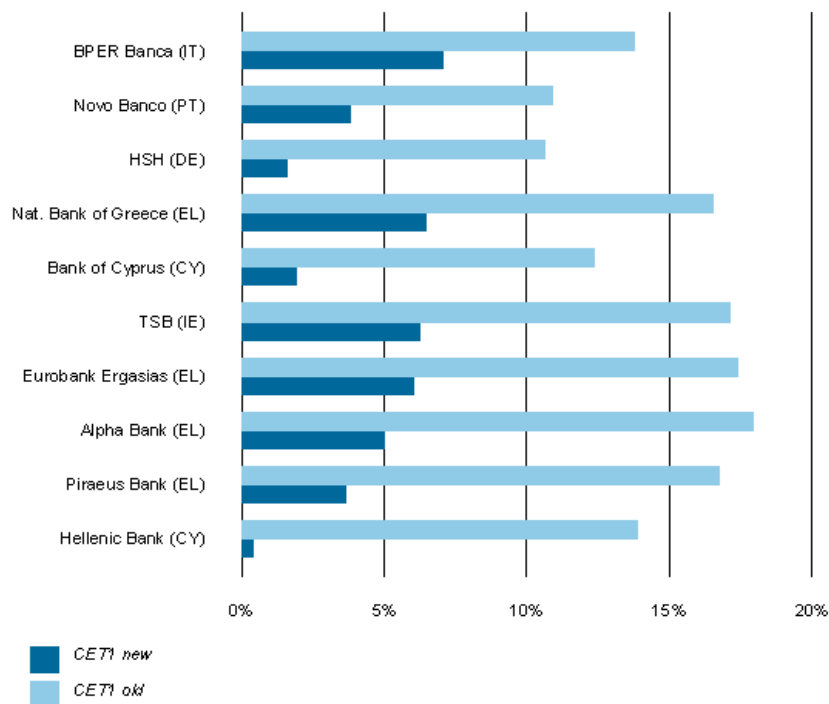
* See notes on Table 2.1.

¹³ This is suggested by data from the Financial Soundness Indicators of the IMF.

¹⁴ See among others the [press release by Bloomberg](#).

The loss in bank capital the NPL write-offs entail implies a decline in the CET1 ratio. In terms of the CET1 ratio, the hardest hit banks are predominately Southern-European banks, but the figure also includes a German and Irish bank, see Figure 2.4. Greek banks are especially hit hard (with 4 banks in the top 10).

Figure 2.4 The impact on individual banks' CET1 ratio of writing-off 20% of bad loans



3 Combination of shocks

In this Section, we investigate scenarios in which we combine shocks investigated in Section 2. In Section 3.1 we combine a write-off of NPLs and the implementation of risk weights on sovereign debt. Next, in Section 3.2 we combine a write-off of NPLs and Italian sovereign debt exposure. Finally, in Section 3.3 we examine the case where we combine a write-off of NPLs, Italian sovereign exposure and implement risk weights on sovereign debt.

3.1 Writing-off non-performing loans and implementing risk weights to sovereign debt

The second scenario of the 2018 financial risk report considers a risk reduction before the banking union requires any risk sharing. One way to reduce the current risk is to write-off part of the NPLs and to introduce risk weights to sovereign debt held by banks, since this would reduce the sovereign-bank nexus.

We study this scenario in Table 3.1 by combining a 20% write-off of NPLs and the implementation of risk weights, as is presented earlier in Tables 2.3 and 2.7, respectively. The write-off of NPLs reduces the amount of core capital and the implementation of risk weights increases the amount of risk-weighted-assets, decreasing the numerator and increasing the denominator of the CET1 ratio, respectively.

Italian banks are hit hardest by this scenario. They lose 26 billion of core capital due to the write-off of NPLs and their risk-weighted-assets increase by 88 billion, leading to an overall decrease in the CET1 ratio. To restore the CET1 ratio, Italian banks would need EUR 37 billion in additional capital. Banks in France, Greece, and Spain would also need a substantial amount of additional capital to restore their CET1 ratio, EUR 33, 25 and 22 billion, respectively.

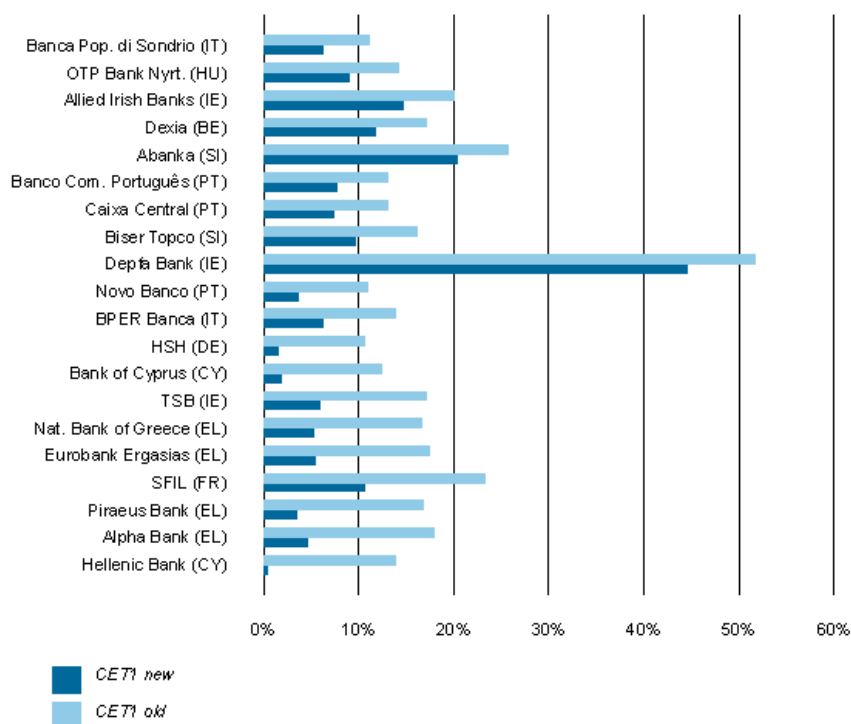
In Figure 3.1 we display the 20 hardest hit banks. Compared to the previous figures we now include more banks because this combined scenario has a larger impact on more banks. The largest individual bank losses are for Southern-European banks. In particular, Cypriote and Greek banks see a substantial drop in their CET1 ratio. The Cypriote Hellenic Bank suffers the largest drop (-13.5%-points).

Table 3.1 The effects of writing-off 20% of NPLs and implementing risk weights

	Loss of capital (billion)	Loss as % of core capital	Additional risk weighted assets (billion)	As % of existing RWA	Capital to restore to current CET1 ratio (billion)
Austria	-4	10%	14	5%	5
Belgium	-3	8%	22	11%	7
Cyprus	-2	87%	1	6%	2
Estonia	0	0%	0	1%	0
Finland	0	3%	0	0%	0
France	-27	9%	37	2%	33
Germany	-11	7%	22	2%	15
Greece	-22	70%	20	11%	25
Ireland	-5	19%	6	4%	6
Italy	-26	26%	88	11%	37
Latvia	0	5%	0	3%	0
Luxembourg	0	6%	1	5%	0
Malta	0	8%	0	3%	0
Netherlands	-8	8%	4	1%	9
Portugal	-6	37%	17	13%	8
Slovenia	0	19%	1	6%	1
Spain	-16	13%	49	5%	22
All euro countries*	-131	14%	282	4%	170
Other EU countries*	-17	5%	27	1%	21

* See notes on Table 2.1

Figure 3.1 The impact on individual banks' CET1 ratio of writing-off 20% of NPLs and implementing risk weights



3.2 Writing-off non-performing loans and Italian debt exposure

In this scenario, we investigate the consequences of a 20% write-off of NPLs in all euro-countries as well as a 20% write-off in Italian government debt. This scenario is a combination of the earlier results shown in Tables 2.1 and 2.7. We report the combined results in Table 3.2.

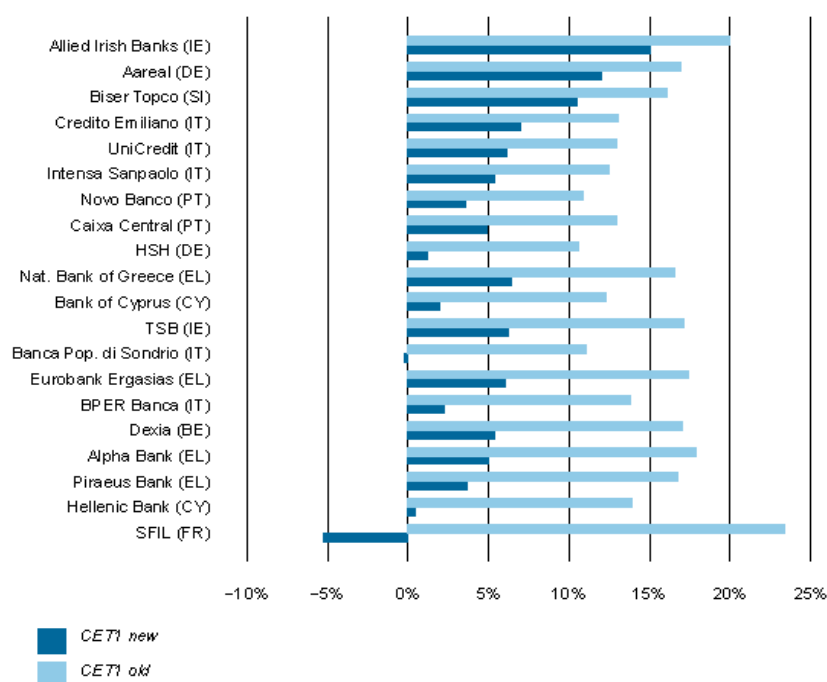
In this combined scenario Italian banks are hit hardest. They lose in total EUR 54 billion in core capital, which represents 55% of their total core capital. This loss in capital is equally caused by the write-off of NPLs and the write-off in Italian debt exposure. Banks in other countries are not hit as hard in absolute terms, yet as a percentage of core capital, banks in Cyprus, Greece and Portugal face substantial losses as well.

Table 3.2 The effects of writing-off 20% of NPLs and of Italian debt

	Loss of capital (billion)	Loss as % of core capital
Austria	-4	11%
Belgium	-8	23%
Cyprus	-2	87%
Estonia	0	0%
Finland	0	3%
France	-37	13%
Germany	-16	10%
Greece	-22	70%
Ireland	-6	21%
Italy	-54	55%
Latvia	0	5%
Luxembourg	0	10%
Malta	0	9%
Netherlands	-9	9%
Portugal	-7	43%
Slovenia	0	20%
Spain	-22	18%
All euro countries*	-187	20%
Other EU countries*	-20	6%

* See notes on Table 2.1.

Figure 3.2 The impact on individual banks' CET1 ratio of writing-off 20% of NPLs and of Italian debt



Individual banks experience a big decrease in their CET1 ratio, as displayed in Figure 3.2. Again, the Southern European banks dominate the top 10. Surprisingly, a French bank (SFIL, with a loss of -28.5%-points) is hit severely, even losing more than their current core capital. This is primarily due to their substantial exposure to Italian government debt.

3.3 Writing-off non-performing loans and Italian sovereign debt in combination with risk weights to sovereign debt

In this last scenario, we combine the writing-off of 20% of NPLs and of 20% of Italian government debt with the implementation of risk weights to sovereign debt. The first two decrease core capital and the latter increases risk-weighted-assets. Together they lead to a reduction in the CET1 capital ratio. This scenario represents a combination of the previous results shown in Tables 2.1, 2.3 and 2.7. We report these results in Table 3.3.

In this last scenario, Italian banks are hit hardest. They lose EUR 54 billion in core capital, more than half of their core capital. The risk-weighted assets increase by EUR 88 billion. To restore their core capital ratio, Italian banks would need EUR 65 billion.

Table 3.3 The effects of writing-off 20% of NPLs and of Italian debt, and implementing risk weights

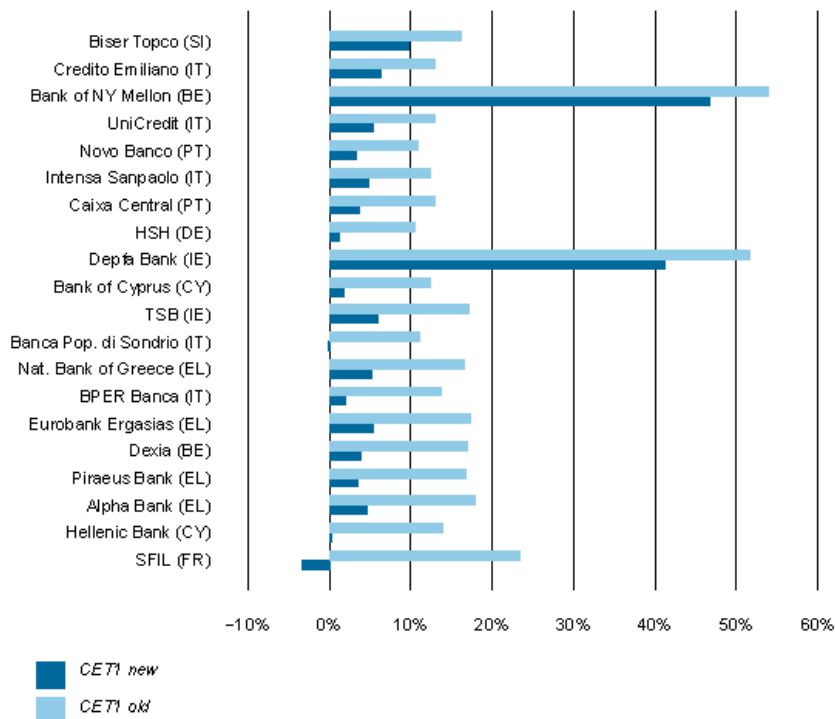
	Loss of capital (billion)	Loss as % of core capital	Additional risk weighted assets (billion)	As % of existing RWA	Capital to restore to current CET1 ratio (billion)
Austria	-4	11%	14	5%	6
Belgium	-8	23%	22	11%	12
Cyprus	-2	87%	1	6%	2
Estonia	0	0%	0	1%	0
Finland	0	3%	0	0%	0
France	-37	13%	37	2%	42
Germany	-16	10%	22	2%	20
Greece	-22	70%	20	11%	25
Ireland	-6	21%	6	4%	7
Italy	-54	55%	88	11%	65
Latvia	0	5%	0	3%	0
Luxembourg	0	10%	1	5%	0
Malta	0	9%	0	3%	0
Netherlands	-9	9%	4	1%	9
Portugal	-7	43%	17	13%	9
Slovenia	0	20%	1	6%	1
Spain	-22	18%	49	5%	28
All euro countries*	-187	20%	282	4%	226
Other EU countries*	-20	6%	27	1%	24

* See notes on Table 2.1.

Spanish banks would also need EUR 42 billion in additional capital. In addition, France, Greece and Germany would all need over EUR 20 billion in additional capital to restore their CET1 capital ratio. Other countries are less hard hit. All together banks in the euro area would need EUR 226 billion additional capital.

In Figure 3.3 we show the 20 hardest hit banks. The figure shows that the combination of both write-offs as well as the regulatory change would have a strong impact on the capital position of several, mainly Southern European, banks.

Figure 3.3 The impact on individual banks' CET1 ratio of writing-off 20% of NPLs and Italian debt, and implementing risk weights



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