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Overview of the Hercules scheme

Portfolio Solutions Group

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NPL markets comparison: Hercules introduction

Quick glance on European NPL market

The use of **securitization for non-performing loans** (NPL) is not a new phenomenon in Europe (transaction volume reached €3.9 bn in 2002)

European Banking Authority (EBA) reports **continuing decrease of total NPL stock in Europe**. Concretely, over €100 bn of NPLs had been disposed from 2Q2018 to 2Q2019 and as of June 2019 the total stock amount stands at **€636 bn**

Since 2016, NPL securitizations occurred mainly in Italy. This trend was further reinforced by the launch of **the GACS scheme**

The GACS protects **senior securities' holders against the non-payment of sums due for principal and interest**, and it is unconditional, irrevocable and on first request

The **securitization of NPL** is **welcomed by EBA** (as reported in their Opinion in October 2019). **Further developments** in the Regulation Framework should be addressed to ease the **capital requirements** for NPL securitization

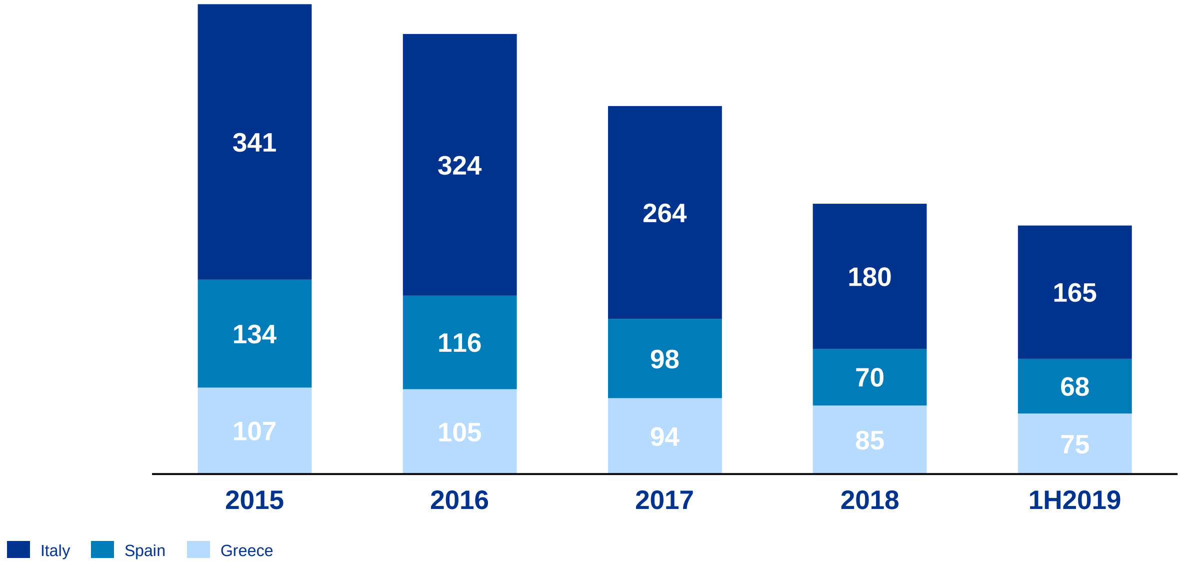
The Greek government has announced a mechanism called **Hercules** in order to support banks to reduce the existing pile of toxic debt left over from the last recession by €75 bn ($83 bn)

The scheme is based on the **GACS model used in Italy** but unlike that program, the senior tranche of the securitization should get a **BB- rating** (three steps into junk territory) to be eligible for Hercules, instead of BBB rating for GACS[1]

The Hercules scheme becomes effective only when the originator has sold **at least 50% plus 1 of junior notes** and an amount of junior and (if issued) mezzanine notes **that allows the derecognition and the significant risk transfer** ("SRT") of the securitized receivables

A Special Purpose Vehicle (SPV) will buy the NPLs, issue the notes and pay fees for the Hercules scheme on the senior notes. Guarantee calculation is based on **Greek credit-default swaps**. In November 2019, five-year Greek CDS stands at 149.2 basis points[2]

NPL stock trend comparison of 3 EU Member States with most Securitized NPL portfolios (2015-1H2019)



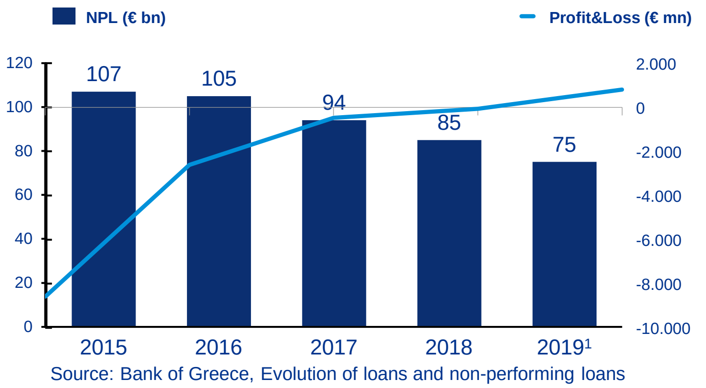
[1] According to the last GACS decree of May 2019
[2] As of 20 November 2019
Source: EBA, Risk Dashboard Data as of 2Q2019

Focus on the Greek NPE market

Statistics and analysis

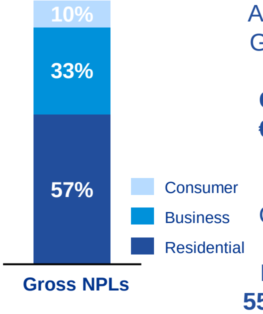
Greek banks have made some headway in addressing their NPL problems. They managed to bring down the volume from €94 bn in December 2017 to €75 bn in June 2019.
The creation and empowering of a servicing Greek market for NPLs provides a solution for establishing effective and constructive loan management process

Macroeconomics Data



Source: Bank of Greece, Evolution of loans and non-performing loans

NPL stock breakdown (1H2019)



At the end of 1H19, Greek banks had a total of **€75.0 bn Gross NPLs** and **€173.0 bn Gross loans**

On both amounts (total loans and NPLs) more than **55%** are **residential**

Systemic banks and servicers

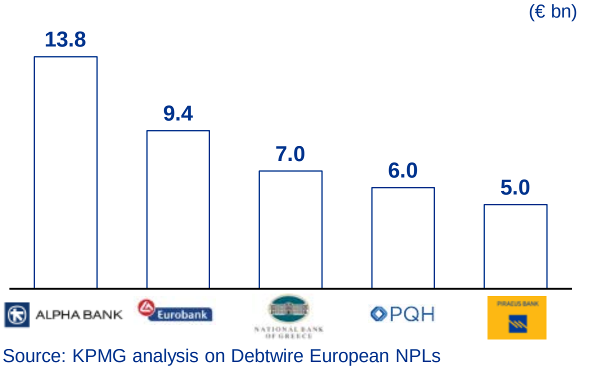
€ bn	ALPHA BANK	PIRAEUS BANK	Eurobank	NATIONAL BANK OF GREECE	Greece
Gross loan	51,0	50,8	35,9	37,5	**175**
NPE	21,3	25,4	14,3	13,7	**74,7**
NPE ratio	42%	50%	40%	37%	**43%**
Expected (2021) reduction of NPE ratio	66%	23%	Single digit	31%	**42%**
Expected (2021) reduction of NPE	14,3	11,3	1,3	4,3	**31,2**

Source: Banks Financial Statements (1H2019)

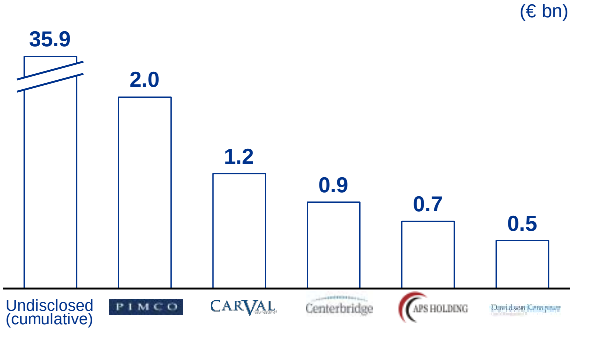
As of November 2019, Bank of Greece has authorized **22** servicers (those with significant Asset under Management are in bold)**: CEPAL, FPS, Thea Artemis, Pillarstone**, Resolute Asset Management, Independent Portfolio Management, **UCI**, **B2Kapital**, DV01 Asset Management, **Qquant, Special Financial Solutions,** Hoist, **Dovalue**, Melfin, **APS,** Cerved, EOS Matrix, EuPraxis, Mount street, NPA servicing, **Intrum** and Pepper Greece

Portfolio disposals

Key seller[2]



Key buyer[2]



Source: KPMG analysis on Debtwire European NPLs

[1] Greek NPL stock trend from 2015 until June 2019; 4 Systemic banks Profit (loss) totals from 2015 to 2019 (2019 is annualized)
[2] Combines closed and ongoing deals

Hercules: key features

Understanding Hercules

In order to **dispose non-performing loan** portfolios of an approximate cumulative **of €30 bn** (until 2021), Greece government has announced the implementation of a State guarantee on senior tranche in NPLs securitization

The scheme, based on previously proven model of Italian securitization markets (GACS), has the aim of supporting local banks in deleveraging to obtain market stability. The guarantee is paid by the SPV and the premium is defined at the inception for the whole life of the protection. The main difference between the two schemes is that **HASP will be active on the senior tranches with BB- rating** while GACS minimum rating is BBB

Assessment of the measure

First concern in construction and implementation of such a scheme is whether the model could be classified as a **State aid**. For a measure to be recognized as a State aid should fulfill the next statements (as per Article 107 paragraph 1, TFEU); (i), the aid is provided by a member State or derived from states resources; (ii), "*the measure confers a selective advantage to certain undertakings or the production of certain goods";* (iii), "*the measure must be liable to affect trade between member states"* and finally the measure in any way should distort or negatively influence the internal market(s)

According to the DG Comp decision, Hercules does not fit in any of the categories above. Since the DG Comp acknowledges that the Hercules is aligned with market terms, State aid does not imply

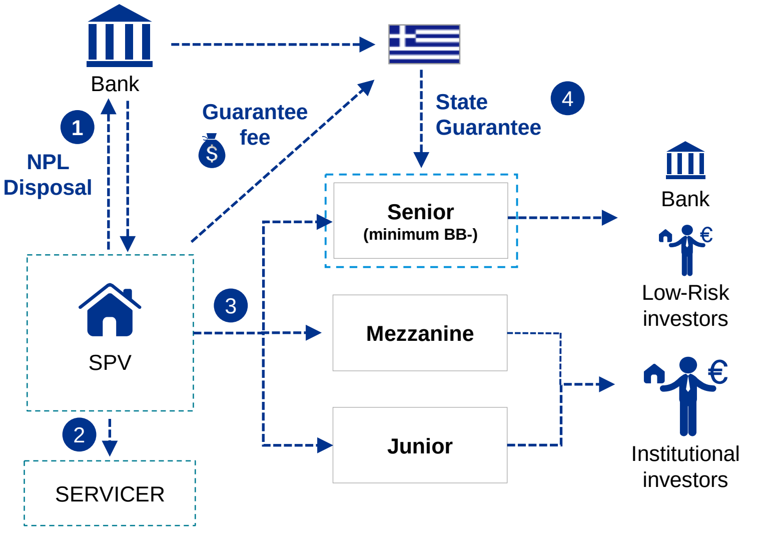
Features:

1. The bad loans will be securitized in at least two tranches: senior and junior. It is possible to issue also a tranche of mezzanine. The State guarantee will only apply to the senior
2. Both the senior and the mezzanine (if issued) will have a floating coupon and a flexible redemption structure to pass on cash flows from the securitized NPL portfolio
3. The guarantee can be activated only if the rating of the senior tranche of the securitized loans is, at its inception, not lower than a BB-
4. Upon securitization, the SPV will appoint an independent servicer to work-out the underlying NPLs of the securitization
5. The interests of the main parties (*i.e.* Originator, Investor(s) and Servicer(s)) should be aligned to avoid opportunistic behaviors
6. The securitization structure will have a liquidity buffer sufficient to achieve the minimum required rating
7. The initially appointed NPL servicer can be replaced

Hercules transaction steps and mechanics

Hercules securitization

HERCULES STRUCTURE



Securitization steps:

1. Transfer of the non-performing loans portfolio to an SPV
2. Appointment of an independent servicer to manage the portfolio
3. Issuance of 2 different tranches of notes (Senior and Junior) with an optional third (Mezzanine)
4. State guarantee on senior notes

What is guaranteed
Since the **senior notes** are ranked above mezzanine and junior, and because of the waterfall payment principle, only those type of securities (senior) will benefit from the State guarantee

NBV limit
The **current Net Book Value** ("NBV"), *i.e.* the gross book value minus current provisioning is the upper limit at which loans can be sold to the SPV

When the guarantee is active
The guarantee can be activated only if the minimum senior tranche rating is achieved and it will become effective only after the bank has **sold at least 50%** plus one share of the junior tranche and an amount of the mezzanine notes that allow derecognition.

Interest payments frequency
The floating coupon of the senior and mezzanine notes is paid with a specific frequency based on the contractual conditions such as quarterly, semi-annually or annually. These interest payments are calculated on the remaining outstanding nominal value of the notes

Minimum senior tranche rating
In order to provide the guarantee under the Hercules scheme, the senior tranche rating **must not be lower than BB-.** The rating provider has to be an External Credit Assessment Institutions (ECAI). In case of multiple ratings, the lowest is taken into account

Liquidity reserve
A liquidity line will be established between underlying assets cash flows and senior obligatory coupon payments. **That amount should be sufficient to attain the minimum level of rating.** The amount is proportional to the outstanding senior tranche

Hedging agreement
The securitization is negatively exposed to the EURIBOR rates increase. Therefore the SPV can sign a hedging agreement with an investment bank which will **fix the cap for the EURIBOR rate** on the senior note to ensure stability and avoid large increase of the rate

Hercules: the importance of Servicers' Independence

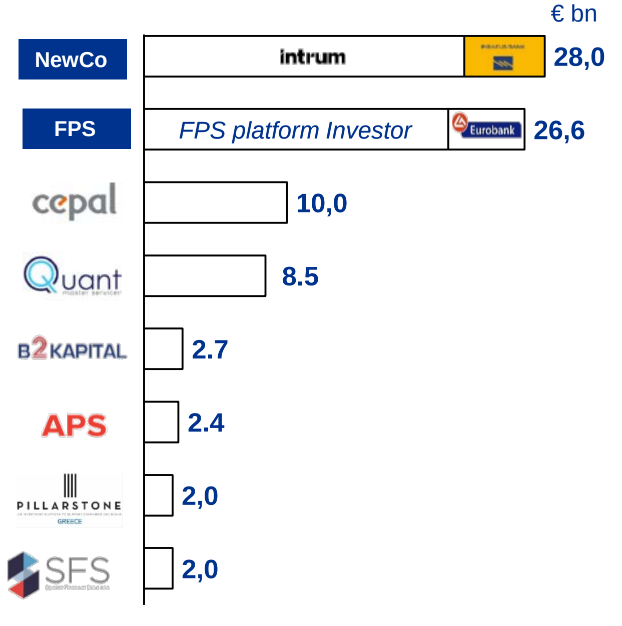
Servicer independence and servicing platforms

Upon asset disposal the SPV will appoint as a **Servicer** an independent entity specialized in NPL portfolio management. Servicer's fundamental function in the process is to enhance recovery rate of underlying assets in the work-out process, *i.e.* to generate cash flow fluidity

The importance of servicer independence lies in **avoiding conflict of interests between banks and investors**. Conflict of interest can be present if the servicer may pursue strategies that decrease the value of one or more tranches of the securitization. Additionally, if the servicer depends on originator, SRT might not be effective as the absence of control is one of the requirements to achieve SRT.

It is important to stress **that banks' captive recovery units are eligible to work-out the NPL portfolios,** if the disposal to investors allows derecognition under IFRS 10. In particular, these disposals will be considered fulfilled when the shares are transferred or at the price payment. In this scenario private investors will take over the control of such unit. Therefore servicers will in this case also retain its independence

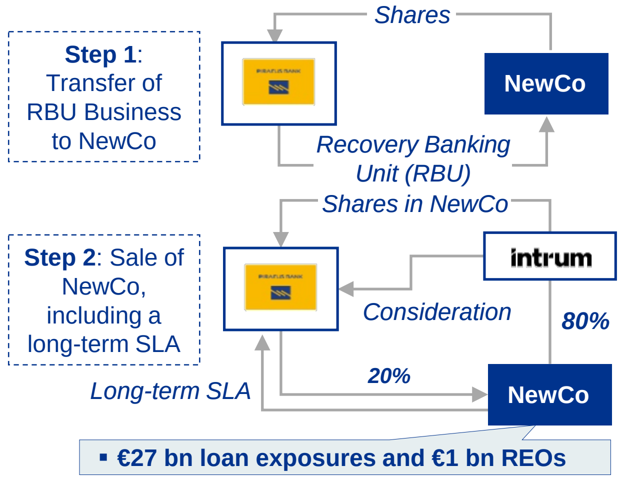
Current **Greek servicing NPE market consist of 22 authorized servicers**. However, only 11 of them currently have AuM (Assets under Management). Active servicers on the Greek market with the biggest AuM amount are presented below



Two of the **Systemic Greek banks have sold** or are finalizing the sale of their recovery unit to external investors. Banks internal recovery units are transferred into newly formed legal entities and will manage a combine value of over €55 bn of underlying asset. **Alpha Bank** is structuring a similar transaction (**Project Galaxy**) to transfer the recovery unit with the management of 27 bn of NPLs, of which **12 bn will be securitized**, thus being theoretically **eligible for Hercules application**

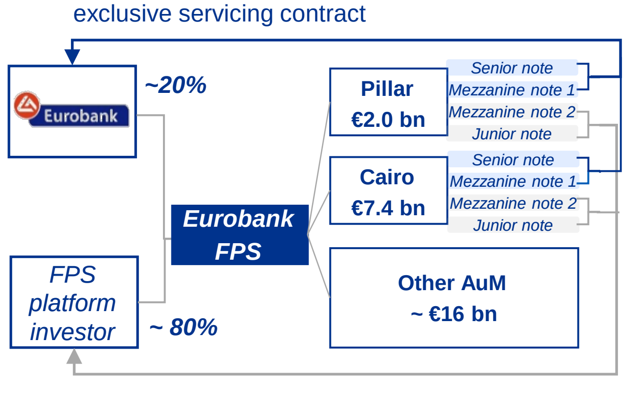
NewCo Servicing platform

- Piraeues Bank and Intrum set up a new servicing platform with the €27 bn of underlying assets
- Deal value is €410 mln for 10 years of exclusive servicing contract



Acquisition of FPS platform

- Eurobank is going to sell its services unit FPS
- Expected deal value is €300 mln for 10 years of exclusive servicing contract



Alignment of interests

Servicing fees, trigger events and key metrics

An option to pay service fees only in case of no underperformance **aligns noteholders and servicers**' interests. Moreover, rating agencies will take into account **mechanisms like fee deferral, payments scale and fee haircut into the rating consideration.** Post-trigger events concluded in European Commission paper are detailed below:

Servicer fee deferral

The NPL servicing fees are conditional upon performance targets. This means that part of the fees will be paid due to the work-out performance, **while the outstanding part of the fee repayments could be postponed due to under achievement** of the expected recoveries in the initial business plan

Mezzanine interest deferral

When the interest payments of mezzanine tranches are due and a performance trigger occurs, a delay of mezzanine tranche interest payments could happen. In this scenario the payment will be resumed **only when the next mezzanine tranche interests is due** or when the cumulative actual recoveries are equal or greater to initial business plan projected recoveries, or in the case senior tranche has been repaid (fully). In this way the senior noteholder and the guarantor are protected against other noteholders' opportunistic behavior

Servicer substitution

The initial appointed NPL servicer can be replaced by another NPL servicer in case the State guarantee is called upon and if, at two consecutive interest payment dates, the NPL servicer has cumulatively recovered less than the cumulative NPL recoveries projected in the initial Business Plan as assessed by the credit rating agency. In this scenario the newly appointed servicer **cannot be linked** to the previous one and the replaced servicer should provide all of the necessary documentations and should cooperate in every way to ensure a swift handover

Below there are reported two metrics that are commonly used in the Italian GACS transaction. Breaches of one (or both) of these metrics lead to underperformance events

Key metric	Formula	Example
Net Cumulative Collection ratio	$\frac{\sum_{t=0}^{n} Actual\ Net\ Collections_t}{\sum_{t=0}^{n} BP\ Net\ Collections_t}$ **>100%** Overperformance **<100%** Underperformance	The Business Plan (BP) submitted by the servicer at the beginning of the securitization (t=0), foresees €100 cumulative collections from t=0 to t=n. Cumulative actual collections at t=n were: (i) €90: the ratio is 90%. This means that the servicer has underperformed its BP (ii) €110: the ratio is 110%. This means that the servicer has overperformed its BP
Present Value Cumulative Profitability ratio	$\frac{\sum_{t=0}^{n} PV\ NCF\ closed\ Borrowers_t}{\sum_{t=0}^{n} BP\ TP\ closed\ Borrowers_t}$ PV=Present Value NCF=Net Cash Flows TP=Target price **>100%** Overperformance **<100%** Underperformance	The BP submitted by the servicer at the beginning of the securitization (t=0), foresees a cumulative target price equal to €100 from t=0 to t=n for the Borrowers that were closed at time n. The actual cumulative present value of NCF for closed Borrowers at time n were: (i) €90: the ratio is 90%. This means that the servicer has underperformed its BP (ii) €110: the ratio is 110%. This means that the servicer has overperformed its BP

Waterfall Structure and post-trigger events

Waterfall principle

Underlying NPL portfolio's cash flows and the cap proceeds are used for payments following the Ordinary Waterfall order, as shown below:

1. **Senior costs and fees to the servicer**

   Regular payments to the servicer may be subject to performance triggers and deferral provisions

2. **Interest on the liquidity line**
3. **Hercules guarantee fees on the senior notes**
4. **Interest on the senior notes**
5. **Pay back of the liquidity line or replenishment (if previously utilized)**
6. **Interest on the mezzanine notes (if they are present)**

   Regular payments to mezzanine noteholder (may be subject to performance triggers and deferral provisions)

7. **Repayment in full of senior notes**

   Repayment starting at the highest seniority still outstanding

8. **Repayment in full of mezzanine notes (if they are present)**
9. **Pay-out on junior notes**

Pricing of the State guarantee in steps

Guarantee fee

Metrics	Risk factors	Calculation
Base rate	Senior interest and principal are not fully repaid and the **Hercules is called upon**	Two-month average of mid-price of Greek Credit Default Swap (CDS) at different maturities (3, 5, 7 and 10 years)
Penalty	**Repayment** of senior tranche is **delayed** and the notes are still outstanding at the selected maturities (3, 5, 7 and 10 years)	Years 4 and 5[1]: 2.29 times the difference between 5-years and 3-years CDS benchmark Years 6 and 7[1]: 5.14 times the difference between 7-years and 5-years CDS benchmark Years 8 to 10[1]: 10.05 times the difference between 10-years and 7-years CDS benchmark
Spread Ratio Factor (SRF)	**Differences in Rating class** between minimum rating for Hercules (BB) and actual Greek rating (B)	Yield to worst (YTW) ratio of selected companies with BB and B ratio minus the respective swap rate $Spread\ Ratio\ Factort = \frac{YTW(BB\ index)_t - swap\ rate_t}{YTW(B\ index)_t - swap\ rate_t}$ Since the ratio has low volatility over time with average of 50%, this value is selected for the whole duration of Hercules
Overall Average Scoring (OAS)	**Changes in** the Greek **rating** and/or senior rating higher than the minimum	Adjusts factor according to the table below. If Greek rating is B and senior rating is BB, the OAS is 1. An improvement of the Greek rating moves the OAS downwards, all things being equal

		Rating of senior note		
		BB+	BB	BB-
Rating of Greece	BB+	0	0	0
	BB	0.33	0	0
	BB-	0.67	0.33	0
	B+	1.00	0.67	0.33
	B	1.33	1.00	0.67
	B-	1.67	1.33	1.00

Guarantee fee = (**Base rate** + **Penalty**) x (1 – **Spread Ratio Factor** x **Overall Average Scoring**)

Example

Input (bps)

Base Rate	3-year CDS	5-year CDS	7-year CDS	10-year CDS
	96,4	152,8	191,0	217,3

Penalty	3-5 year	6-7 year	8-10 year
	129,16	196,35	264,32

SRF 50

Output

Rating Greece	B	B	B+
Rating senior note	BB-	BB	BB-
Year 1	0,64%	0,48%	0,80%
Year 2	0,64%	0,48%	0,80%
Year 3	0,64%	0,48%	0,80%
Year 4	1,88%	1,41%	2,35%
Year 5	1,88%	1,41%	2,35%
Year 6	2,58%	1,94%	3,23%
Year 7	2,58%	1,94%	3,23%
Year 8	3,20%	2,41%	4,02%
Year 9	3,20%	2,41%	4,02%
Year 10	3,20%	2,41%	4,02%
Year 10+	1,45%	1,09%	1,81%

[1]Claculation based on the assumptions of 10-year linear repayment and discount rate of 4%

Source: DG Comp, State Aid SA.53519 – Greece – Hercules

Transaction process

Key phases

Phase	Portfolio preparation	Business Plan & Capital Structure	Transaction execution	Post Closing
Activities	Portfolio perimeter selection Data Remediation Pool Audit & Due Diligence	Business Plan drafting Rating Agencies analysis Capital Structure	Contracts Disposal to SPV and Notes' issuance	De-Recognition test & SRT test Hercules application
Key Factors	Portfolio perimeter selection Accurate information	Business Plan	Contracts	
Timing	2 – 3 months	2 months	1 month	1 month

Key Players involved

- Seller
- Investors
- SPV
- Government
- Financial Advisor
- Arranger
- Legal Advisor
- Audit firm
- Rating agency
- Master Servicer
- Special Servicer(s)
- Monitoring agent
- Investor Committee
- Back up servicer(s)
- Calculation agent
- Corporate service provider
- RoN
- Account bank(s)

To be considered

Key elements

Portfolio perimeter selection

	Secured	Granularity	Residential	Legal proceedings	Location	Vintage of unsecured loans	Interim cash flows
Portfolio target	> 50-60% GBV	€ 200-400k Average size	> 40% Open Market Value	< 30% Not started	High geographical distribution	< 5 years	> 1.5% - 2%

Accurate Information

- **Standard templates:** "market-standard" Loan Data Tape (LDT) and Templates required by Rating Agencies to re-perform the BP (Repossession template and Historical Collection template)
- **Historical and updated data:** complete dataset is crucial to have a comfort on MVD and recoveries applied on unsecured loans. Moreover, it is essential to provide updated data in terms of REV and legal proceedings
- **Quality & consistency checks**: key drivers to carry out a proper portfolio pricing

Business Plan

- Consistency with Repossession template and Historical Collection template
- Consistency with Portfolio features and repossession / workout servicer data
- Consistency between expected L&P expenses and market data
- Definition of the anticipated capital structure

Contracts

Draft contracts package in line with market best practice:

- **Transfer Agreement**: Representation & Warranties, exposure to potential indemnities to the SPV, R&W economic and time horizon limitations
- **Servicing Agreement:** Servicing fee scheme, incentive mechanisms and tools to engage the servicer (i.e. underperformance, penalties, fee deferrals etc.)
- **Offering Circular:** Order of payments and hedging structure

Capital Requirements Regulation (CRR) overview: focus on risk

Significant Risk Transfer (SRT)

The **Article 244** of the EU Regulation 2401/2017 relies on 2 pillars: quantitative (paragraph 2) and qualitative (paragraph 4)

Quantitative pillar

- **the risk-weighted exposure** amounts of the **mezzanine** securitization positions held by the originator institution **in the securitization do not exceed 50%** of the risk-weighted exposure amounts of all mezzanine securitization positions existing in this securitization;
- the **originator institution does not hold more than 20% of the exposure value of the first loss tranche** in the securitization;

Qualitative pillar

- the **transaction documentation reflects the economic substance** of the securitization;
- the **securitization positions do not constitute payment obligations** of the originator institution;
- the **originator institution does not retain control** over the underlying exposures
- the transaction documentation specifies that the originator (or the sponsor) may purchase securitization positions or restructure the underlying exposures beyond their contractual obligations where such arrangements **are executed in accordance with prevailing market conditions** and the parties to them act in their own interest as free and independent parties (arm's length)
- where there is **a clean-up call option**, that option can be exercised: at the discretion of the originator institution; only when 10 % or less of the original value of the underlying exposures remains unamortized; it is not structured to avoid allocating losses to credit enhancement positions

RW with State guarantee

The following paragraph combines **Articles 114, 235 and 249** and explains the transfer of risk and the risk-weight in case the State guarantee is applied

Substitution of use of guarantor risk-weight

As per Article 249 in presence of a guarantee the risk-weight is **transferred from debtor to the guarantor**.

Risk-weight calculation for guarantee exposure

Article 235 of the CRR concludes that **if a guarantee is active, the guaranteed amount is weighted according to the guarantor risk-weight**

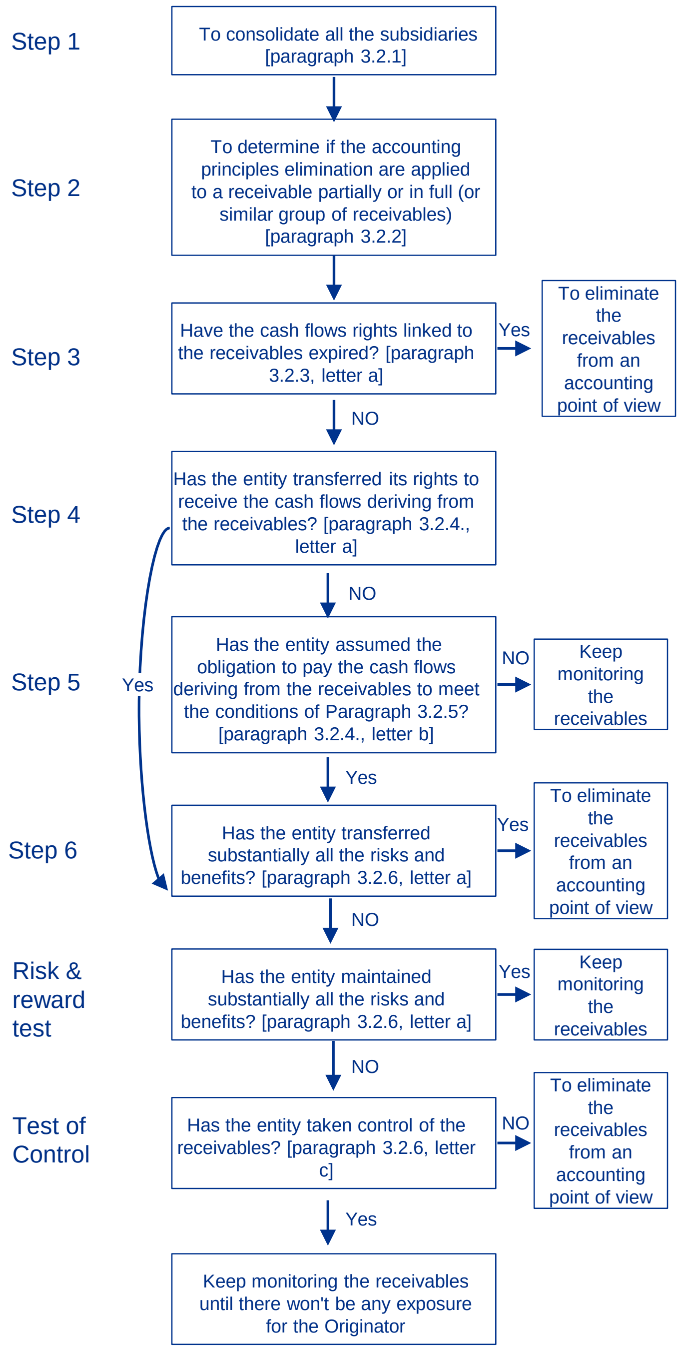
Guarantor risk-weight

Exposures to Member States' central governments, and central banks denominated and funded in the domestic currency of that central government and central bank shall be assigned a **risk-weight of 0%** (according to Article 114)

Derecognition (IFRS 9 B3.2.1)

Decisional tree

To better understand the derecognition rule, it is useful to show the Decisional Tree as per paragraph B3.2.1 of the IFRS 9



- The SPV has not participation / is not correlated to the originator
- The originator cannot affect the portfolio Cash Flow
- No partial loans or well identified cash flow can be sold
- According to the assumptions underlying the potential transaction, the contractual rights relating to the receivables are not extinguished
- Loans are transferred to the SPV according to the Greek law 3156/2003
- N.A.
- From a qualitative point of view:
  - Credit transfer to the SPV
  - Credit transfer to an external servicer
  - The bank retains only a certain % of the notes in compliance with the SRT
- From a quantitative point of view, multiple stress scenarios are run to assess the amount recovered compared to the base scenario to show that the originator cash flows volatility is 10% less than the transferred cash flows volatility.

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