THE EUROPEAN REDEMPTION PACT
AN ILLUSTRATIVE GUIDE[1]

Hasan Doluca, Malte Hübner, Dominik Rumpf and Benjamin Weigert
German Council of Economic Experts, Wiesbaden, Germany

The European Redemption Pact (ERP), a proposal of the German Council of Economic Experts, describes an exit strategy from the debt crisis which currently plagues the euro area. The pact includes a binding commitment of all participating countries to bring public debt ratios below the reference value of 60% within the next 20 to 25 years. To ensure that this objective can be reached with realistic primary balances, participating countries can transfer their excessive debt exceeding the 60% threshold at a certain date, into a redemption fund for which participating member countries are jointly and severally liable. In this technical paper, we describe in detail one possible way of implementing the ERP and the primary balances each country would need to achieve under the proposal.

Keywords: European Redemption Pact, European debt crisis.

In their for now latest attempt to solve the European debt crisis, policy makers at the EU summit in January 2012 decided to introduce a fiscal compact aimed at initiating a reduction in excessive sovereign debt. While this decision laid the foundations for solving the debt crisis, one cannot rule out that individual member countries of the European Monetary Union (EMU) get into refinancing difficulties until financial markets have been convinced that the agreed consolidation process is being upheld. The high degree of uncertainty on financial markets is reflected in the still high risk

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premiums on sovereign debt. At these interest rates, the consolidation path agreed upon in the fiscal compact requires member countries with high debt ratios to run primary surpluses at levels which only very few countries were so far able to sustain over a prolonged period of time.

Given the herd instinct and high degree of uncertainty still prevailing in financial markets, there is still the danger that an abrupt loss in market confidence can swiftly turn into a "self-fulfilling prophecy" among investors. The massive surge in interest rates thus triggered then actually calls into question whether the public debt of a country is actually sustainable. Therefore, we cannot exclude that financing terms for some EMU member countries deteriorate further, even when the respective member countries have undertaken credible and essentially appropriate reforms. In the extreme case, such a country may no longer be able to refinance outstanding bonds in the international financial market, and a liquidity crisis could then turn into a solvency crisis.

To regain the trust of the markets, the consolidation targets of the fiscal compact have to be backed by realistic paths for primary balances. At the same time, to give EMU member countries time to reach required primary balances, one has to ensure that sudden outbursts of a liquidity crisis can be adequately dealt with. However, these measures must neither rely on the European Central Bank to buy up government bonds nor imply unlimited joint financing through Eurobonds. In addition, a successful mechanism for addressing potential liquidity crisis should function pre-emptively and not only after a crisis occurs such as the EFSF/ESM. The European Redemption Pact (ERP), a proposal of the German Council of Economic Experts (GCEE), describes an exit strategy from the debt crisis which fulfils these requirements.

1. European Redemption Pact—The proposal

The proposal, which is described in detail in the Council's annual report of the year 2011 demands that member countries engage in an irrevocable consolidation of their public finances in return for support in time of a liquidity crisis[2]. The key idea of the

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2. The respective chapter of the annual economic report 2011/12 and additional information on the ERP can be downloaded from www.sachverstaendigenrat-wirtschaft.de.

proposal is to separate the public debt of participating member countries into a part that is compatible with the debt threshold of 60% of Gross Domestic Product (GDP) stipulated in the Stability and Growth Pact (SGP) and the excessive debt above this threshold. Under the proposal, the EMU member countries' debt exceeding the 60% ceiling on a certain date will be transferred into the European Redemption Fund (ERF) for which the EMU members are jointly and severally liable. In return, the participating countries would enter into payment obligations towards the ERF that are calculated such that each country would repay its transferred debts within 20 to 25 years. Through the joint and several guarantees for the fund, highly indebted member countries pay a lower interest rate on their transferred debt. This reduction in refinancing costs reduces primary balances required for reducing debt ratios below the 60% threshold.

The possibility to take advantage of lower financing costs for the transferred debt is associated with strict conditions. In particular, these conditions comprise earmarking the revenue of a designated tax for fulfilling the payment obligations, depositing collaterals and an obligation to commit to consolidation and structural reforms. After transferring excessive debt into the ERF, the remaining national debt must thereafter not again exceed a level of 60% of GDP. To this end, debt brakes would be introduced in all participating countries based on the German and Swiss models. In particular, after a transition period, these debt brakes must constrain the structural deficit below the level of 0.5% of GDP set out in the SGP.

Participation in the pact is open to all euro area countries. However, one has to distinguish between those states that are currently running a structural adjustment programme and the other member countries of the EMU. Countries that are currently running a structural adjustment programme can join the redemption pact immediately, but their debts can only be transferred to the redemption fund after the successful conclusion of the respective adjustment programme. Concerning the other member countries, at the very least, those countries should take part whose debt ratios exceed the level of 60% of GDP. At present, these would be Austria, Belgium, Cyprus, France, Germany, Italy, Malta, the Netherlands, and Spain.

The central parameters of the ERP are consistent with the deficit and debt rules of the intensified Stability and Growth Pact and the fiscal compact. In particular, the commitment to redeeming the debt in the ERF within 20 to 25 years corresponds to the stipulations calling for annual debt reduction by 1/20th of debt exceeding the target level of 60% of GDP. Moreover, the commitment to implement national debt brakes, the key element of the fiscal compact, already fulfils a central precondition for the implementation of the ERP.

To make the proposal operational countries enter in payment-obligations against the fund in return for being allowed to transfer part of their debt. Two questions are important: (i) how can debt be transferred into the fund? and (ii) how must the payment-obligations be designed to ensure timely redemption?

Transferring debt into the redemption fund is organized by allowing participating member countries to refinance themselves through the redemption fund until the amount of debt refinanced through the ERF reaches the current difference between the debt accumulated to date and the hypothetical debt that would just equal 60% of GDP, *i.e.* the SGP debt threshold (Figure 1). The exact

Figure 1. Debt ratios in the euro area (2011)*
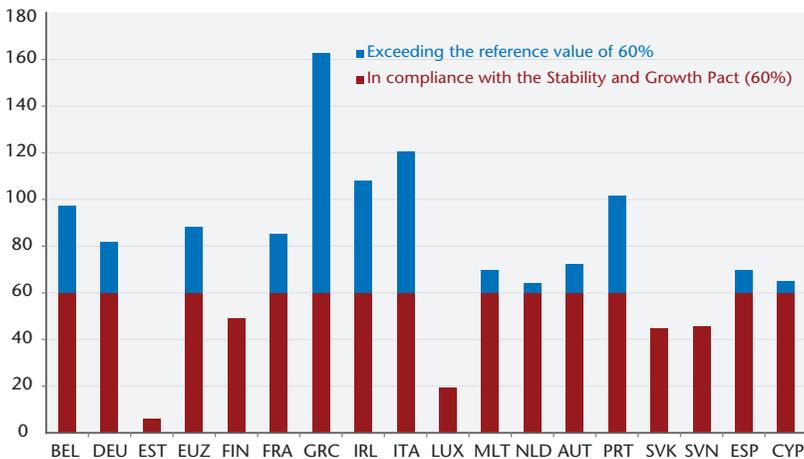
*In relation to Gross Domestic Product at current prices. BEL-Belgium, DEU-Germany, EST-Estonia, EUZ-Euro Zone, FIN-Finland, FRA-France, GRC-Greece, IRL-Ireland, ITA-Italy, LUX-Luxembourg, MLT-Malta, NLD-Netherlands, AUT-Austria, PRT-Portugal, SVK-Slovakia, SVN-Slovenia, ESP-Spain, CYP-Cyprus.
Source: EU (November 2011).

length of this transitional phase depends on the sequence of immediate refinancing needs. During this so-called roll-in phase, the participating countries fulfil consolidation and reform agreements which are comparable to the structural adjustment programmes of the EFSF. While each country will henceforth have to service its own debt financed *via* the new fund until it is completely redeemed and the new fund expires, participants will be jointly liable for the debt, thus ascertaining affordable refinancing cost for all participants.

Payment-obligations through which the transferred debt is redeemed are expressed as a constant fraction of GDP. The scale of annual payment-obligations relates to the volume of transferred debt. It is set at a level that ensures that each country redeems its debt in the ERF within a period of 20 to 25 years. Accordingly, countries transferring more debt have to bear higher annual payment-obligations. As the ERF can only gain the trust of financial markets if the joint and several guarantee is upheld until the transferred debt is completely redeemed, payment obligations have to be constructed in a way that all participating countries complete the redemption of their debt inside the ERF at approximately the same time.

By agreeing to redeem their debt in the redemption fund within 25 years and to keep the remaining debt below the 60%-threshold, participating countries implicitly commit to certain upper limits for their primary balances and debt quotas. The exact development of these figures depends on several assumptions on GDP growth and country specific refinancing costs. In addition, required primary balances are determined by the sequencing of refinancing needs that each country is allowed to cover through the redemption fund during the roll-in phase. In general, there are several options to implement the ERP, which differ mainly in the exact sequencing of refinancing via the funds. In the following, we study the development of primary balances for one possible implementation of the ERP.

2. Implementing the ERP—Illustrative examples and calculations

In this section we describe in detail one possible way of implementing the ERP together with the set of assumptions. Thereby,

answers are given to technical questions that arise when implementing the ERP like, e.g., how the debt of each country will be transferred into the ERF and how payment obligations for each country are calculated.

2.1. Designing the roll-in phase

The total amount that each country is allowed to refinance via the ERF depends on the amount of debt that exceeds the threshold of 60% debt of GDP as set out by the Maastricht-Treaty at a certain date (To simplify the subsequent analysis, we use 1 January 2012 as the starting date of the ERF). Countries that are currently showing high deficit figures might be admitted to transfer a slightly higher amount. Without this deficit surcharge, which was not part of the original proposal of the GCEE, they would either face unrealistically high consolidation needs during the first years or end up with a debt-to-GDP ratio exceeding the 60%-ceiling after the roll-in phase. In the following, we design the deficit surcharge in a way that prevents high deficit countries from having to improve their fiscal balance by more than two percentage points in 2012. Under these assumptions, the total volume to be refinanced by the ERF adds up to 2 327 billion euro (Table 1). Together with the deficit surcharges which prevent the eventual size of the ERF would stand at 2 378 billion euro. Of this amount, Italy would account for 963 billion euro or 40% of the debt in the ERF, followed by Germany with 558 billion euro or 23% and France with 533 billion euro or 22% (Table 1).

In our calculations, the transfer of national debt to the ERF will be stretched over three to four years—the roll-in phase. Depending on whether short term treasury notes are included or not, a longer roll-in phase can be constructed for most countries. In most cases a country's refinancing needs during the first three years exceed by far the amount to be transferred to the ERF. Given the large amount of short term debt, the total amount to be transferred is allocated such that 50% is used in the first, 30% in the second and 20% in the third year. However, any other allocation rule, e.g. 33.33% in each year, can be implemented without altering the basic results. Under this scenario, Italy would be allowed to roll-in debt of about 963 billion euro which covers nearly 100% of the refinancing needs over the four years 2012 to 2015 (Table 1) and

no specific allocation rule would be necessary. In contrast, Germany with a much lower debt-to-GDP ratio and consequently less debt exceeding the 60% threshold would cover only a fraction of its refinancing needs by using the ERF. The same holds true for the Netherlands that covers only (10.9%) of its total refinancing needs *via* ERF.

Table 1. Financing of general governments via ERF[1] within the roll-in phase[2]

Euro billion

		2012	2013	2014	2015	Total
Germany	Financial demand	399.0	342.0	192.0	197.0	1.130.0
	thereof *via* ERF	279.2	167.5	111.7	0.0	558.4
	Ratio (%)	70.0	49.0	58.2	0.0	49.4
France	Financial demand	381.0	202.0	155.0	162.0	900.0
	thereof *via* ERF	266.4	159.8	106.5	0.0	532.7
	Ratio (%)	69.9	79.1	68.7	0.0	59.2
Italy	Financial demand	422.0	211.0	171.0	169.0	973.0
	thereof *via* ERF	422.0	211.0	171.0	159.3	963.3
	Ratio (%)	100.0	100.0	100.0	94.2	99.0
Spain	Financial demand	205.0	107.0	86.0	58.0	456.0
	thereof *via* ERF	60.7	36.4	24.3	0.0	121.5
	Ratio (%)	29.6	34.1	28.3	0.0	26.6
Netherlands	Financial demand	88.0	53.0	46.0	49.5	236.5
	thereof *via* ERF	12.9	7.8	5.2	0.0	25.8
	Ratio (%)	14.7	14.6	11.2	0.0	10.9
Belgium	Financial demand	72.0	40.5	35.0	34.0	181.5
	thereof *via* ERF	68.9	40.5	28.4	0.0	137.7
	Ratio (%)	95.7	100.0	81.1	0.0	75.9
Austria	Financial demand	22.5	20.0	29.5	18.0	90.0
	thereof *via* ERF	18.3	11.0	7.3	0.0	36.7
	Ratio (%)	81.5	55.0	24.9	0.0	40.7
Cyprus	Financial demand	2.2	3.9	1.4	2.5	10.0
	thereof *via* ERF	0.7	0.4	0.3	0.0	1.3
	Ratio (%)	30.0	10.2	18.9	0.0	13.2
Malta	Financial demand	–	–	–	–	0.0
	thereof *via* ERF	0.3	0.2	0.1	0.0	0.6
	Ratio (%)	–	–	–	–	n/a
Total[3]	Financial demand	1591.7	979.4	715.9	690.0	3977.0
	thereof *via* ERF	1129.4	634.6	454.8	159.3	2378.0 [a)]
	Ratio (%)	71.0	64.8	63.5	23.1	59.8

1. European Redemption Fund. 2. Own calculation, basic data from Thomson Financial Datastream as of 30 January 2012. 3) Without Malta.– a) The financing amount *via* ERF for some countries is slightly increased to avoid unrealistic high improvements of primary balances in 2012, while achieving debt to GDP ratio to decline below 60% of GDP at the end of the roll-in phase. For this reason the amount lies above the total overhang of debt exceeding the level of 60% of GDP at the end of 2011 by about 50 billion euro.

2.2. Annual payment obligations to the fund and debt accounting

The scale of annual payment-obligations depends on the volume of transferred debt. Countries transferring more debt have to bear higher annual payment-obligations. A country's annual payments to the fund are a constant fraction of GDP—the "annual payment key." They have to comprise the pro-rated interest payments by the redemption fund on its transferred debt and a redemption payment. Given a certain annual payment key, the time until a country has redeemed is debt in the fund depends on the assumed growth rate and the refinancing costs of the ERF. Given our assumptions on future real GDP growth, it turns out that all debt in the Redemption Fund is redeemed after a period of 20 to 25 years if the annual payment keys are calculated according the following two-step rule: First, total payments in the first year equal one percent of the amount of debt to be transferred plus the ERF's pro-rated annual interest payments. In a second step, the sum of these two components is then set in relation to the country's 2011 GDP. This ratio is the annual payment key, which is kept constant from then on. More precisely, a country's annual payment key is obtained from the following formula:

$$\text{annual payment key} = (\text{interest rate ERF} + 1 \text{ percentage point}) \times \frac{\text{amount to be transferred to the ERF}}{\text{GDP of 2011}}$$

This formula illustrates that with economic growth, a country's payment-obligations rise in absolute terms over the course of time.

Annual payments to the fund start in the first year even though not all debt has been transferred to the fund. During the roll-in phase, the annual payments are therefore corrected to reflect not yet transferred amounts of debt (Table 2).

Table 2. Illustrative calculation of annual payment obligations

Assumptions

GDP 2011	€ 1 000.00 billion
GDP 2012	€ 1 030.00 billion
Public debt 2011	€ 900.00 billion
Ratio of public debt to GDP (2011)	90%
Interest rate of ERF-bonds[1]	4%

Debt to be transferred and annual payment key

Total volume of debt to be transferred to the ERF[1]	€ 300 billion	[Public debt] – 60% * [GDP$_{2011}$]
Debt transfer to the ERF in year		
2012...	€ 150 billion	
2013...	90 billion	
2014...	60 billion	
Annual payment key	1.5%	[Interest rate of the ERF] + [1% "redemption charge"] * [total debt to be transferred to ERF] / [GDP$_{2011}$]

2012
Payment-obligations for 2012

Debt not yet transferred to the ERF[1)	€ 150.00 billion	(= 90 billion + 60 billion)
a_{2012} = Hypothetical payment allocation if the total amount to be financed by the ERF would have been already transferred to the ERF in 2012	€ 15.00 billion	["annual payment key"]*[GDP$_{2011}$]
– Correction for debt not yet transferred to the ERF	€ 7.50 billion	a_{2012} * [Debt not yet transferred]/ [Total debt to be transferred]
= Payment-obligations in 2012	€ 7.50 billion	

Account balance at the end of 2012

Liability against ERF at the beginning of 2012	€ 0.00 billion	
+ Debt transfer to the ERF in 2012...........	€ 150.00 billion	
+ Financing costs	€ 6.00 billion	[Interest rate of the ERF] *€ 150 bn
– Payment-obligations in 2012.................	€ 7.50 billion	
= Liability against ERF at the end of 2012	€ 148.50 billion	

2013
Payment-obligations for 2013

Debt not yet transferred to the ERF[1]	€ 60.00 billion	
a_{2013} = Hypothetical payment allocation if the total amount to be financed by the ERF would have been already transferred to the ERF in 2013..	€ 15.45 billion	["annual payment key"] *[GDP$_{2012}$]
– Correction for debt not yet transferred to the ERF	€ 3.09 billion	a_{2013} * [Debt not yet transferred]/ [Total debt to be transferred]
= Payment-obligations in 2013	€ 12.36 billion	

Account balance at the end of 2013

Liability against ERF at the beginning of 2013	€ 148.50 billion	
+ Debt transfer to the ERF in 2013...........	€ 90.00 billion	
+ Financing costs	€ 9.54 billion	[Interest rate of the ERF] *€ 238.5 bn
– Payment-obligations in 2013.................	€12.36 billion	
= Liability against ERF at the end of 2013	€ 235.68 billion	

1. European Redemption Fund.

2.3. A stylized model of debt dynamics

To discuss in detail how each country's fiscal position will be affected by participating in the ERP as well as the resulting evolution of their stock of public-debt it is helpful to use a simple theoretical framework of public debt dynamics. A country's gross public debt ratio to GDP ratio ($d \equiv$ Debt/GDP) evolves over time according to the following stylized dynamic equation:

$$d_{t+1} - d_t = (i_t - g_t)d_t - p_t \qquad (1)$$

with i_t denoting the average nominal interest rate to be paid on the amount of public debt at year t, g_t denoting the year t growth rate of nominal GDP and p_t denoting the primary fiscal balance relative to GDP. The primary fiscal balance is the balance before interest payments are deducted and is essentially comparable to a company's earnings before interest position (EBIT) on the Profit and Loss Statement. By using this stylized model, we abstract from any one time effects that directly affect the stock of gross public debt like receipts from privatization or additional liabilities assumed by bank bailout packages. These are not in all cases considered in the official deficit figure.

As can be seen from Equation (1), a consolidation path can be expressed as target values for the debt ratio or as targets for the primary balance. In the former case, primary balances required to meet the desired reduction in debt ratios become a function of assumed interest- and growth rates. In the latter case, commitment to a certain path for primary balances ties down debt ratios which also depend on the assumption on interest- and growth rates.

Participation in the ERP defines a target debt ratio of 60% to be reached after no more than 25 years. In addition, the level of annual payments to the ERF affects the consolidation path for the next 25 years. With the path of debt ratios fixed, we thus see that the primary balances as required by the ERP become a function of assumed growth-, and interest rates.

As can be seen directly from equation (1) certain assumptions about key parameters are necessary to calculate the evolution of the public debt-to-GDP ratio, namely, the average nominal interest rate that will prevail in the future and prospective nominal GDP growth rates. Additionally, after joining the ERP a part of a

country's public debt is refinanced via the ERP while the remainder is still refinanced on the market. Therefore we need to distinguish between two different nominal interest rates, interest rates that will be paid by the ERP and interest rates that will be paid by the sovereign on financial markets. The crucial interest rate for total debt dynamics is the weighted average of both interest rates.

2.4. Assumptions: Interest rates

With regard to interest rates we consider two different scenarios. The first scenario covers the current situation with highly stratified interest rates for various member countries of the euro area and assumes sustained high interest rates for most of the member countries (scenario "without ERP"). In the case of Italy interest rates of 7% were already reached and even surpassed during the past months and there is the risk that high interest rates will prevail in the future.

The second scenario describes the interest rates likely to prevail after the introduction of the ERP (scenario "ERP"). Of course, for this scenario, it is essential to come up with a plausible assumption on the refinancing costs for the ERF. The main challenge in this respect is to assess how the financial market will receive the new bond class created by the ERF.

Bond yields depend, alongside other factors, in particular on the following two key parameters: (1) probability of default and (2) the bond's liquidity. When trying to project the interest rates on bonds to be issued by the ERF one can thus draw on the yields of existing bonds which are also guaranteed by European countries. Bonds issued by the European Investment Bank (EIB) or the European Financial Stability Facility (EFSF) are therefore a natural reference point for potential yields on ERF bonds. For ten-year bonds, these two institutions currently pay interest rates of around 3.0% and 3.3% respectively (as of 23 January 2012). For the two reference bonds (EIB, EFSF) the default probability can be considered to be comparable to that of the bonds to be issued by the ERF. With respect to the EFSF, it bears remarking that only partial liability is involved, and thus there is a somewhat higher default probability than under joint and several liability.

Market liquidity for ERF bonds would presumably be higher than that for the two reference bonds. The impact of a more liquid market on the yield can best be estimated by comparing the yields between the bonds issued by the Kreditanstalt für Wiederaufbau (KfW) and the far more liquid Bunds. A ten-year paper issued by KfW is currently traded at about 0.5 percentage points higher than the Bunds despite the identical default probability. The liquidity advantage for the ERF bonds will probably be on a similar order.

Based on these considerations, financing costs of the ERF can be expected to fall within a range of around 2.5% to 3%. However, higher yields also seem possible given present market uncertainty. In the light of the currently exceptionally low-interest rate environment for risk less assets, yields above those on bonds issued by EFSF, *i.e.* around 3.3%, seem improbable, however. To reflect a future normalisation of the interest rate, we assume ERF's financing costs of 4%—compared to an EFSF interest rate of 3.3% today.

Furthermore in the scenario "ERP" interest rates on nationally issued debt are assumed to be significantly higher, but still lower than in the scenario "without ERP" (Table 3). Exceptions are those countries in the euro area that currently benefit from lower interest rates due to safe haven effects, *i.e.* Germany and the Netherlands. For these countries, interest rates on nationally issued debt would normalize with the introduction of the ERF. Accordingly, for these countries we assume higher interest rates in the "ERP"—scenario than in the scenario "without ERP".

2.5. Assumptions: Nominal GDP growth

GDP in the year 2012 is assumed to grow according to the growth forecast of the European Commission as published in the AMECO database for each country in November 2011. From the year 2013 on, we assume a growth rate of nominal GDP of 3%, which is derived from a growth rate of real GDP of 1 – 1.5% and an average inflation rate of 1.5 – 2% being in line with the inflation target of the ECB. As growth prospects are less favourable for the year 2012, GDP growth is lower for that year compared to the long term growth rate of nominal GDP assumed for any year beyond 2012.

Table 3. ERP[1]: Key figures for participating countries

		Gross Domestic Product	Public debt	Primary balance	Interest rates		"Without ERP"
					"ERP"		
					ERF[2] bonds	national debt	national debt
		2011			**%**		**%**
Germany	Euro billion	2.567.1	2.098.6	27.9			
	% of GDP	*100.0*	*81.8*	*1.1*	4.0	3.5	3.0
France	Euro billion	1.987.7	1.697.1	-63.8			
	% of GDP	*100.0*	*85.4*	*-3.2*	4.0	4.0	4.5
Italy	Euro billion	1.586.2	1.910.9	14.8			
	% of GDP	*100.0*	*120.5*	*0.9*	4.0	5.0	7.0
Spain	Euro billion	1.074.9	748.0	-47.9			
	% of GDP	*100.0*	*69.6*	*-4.5*	4.0	5.0	7.0
Netherlands	Euro billion	607.4	390.3	-14.6			
	% of GDP	*100.0*	*64.3*	*- 2.4*	4.0	3.5	3.0
Belgium..............	Euro billion	370.4	360.0	-1.2			
	% of GDP	*100.0*	*97.2*	*-0.3*	4.0	4.5	5.5
Austria	Euro billion	300.9	217.2	-2.4			
	% of GDP	*100.0*	*72.2*	*- 0.8*	4.0	4.0	4.5
Cyprus	Euro billion	17.9	11.7	-0.8			
	% of GDP	*100.0*	*65.4*	*-4.3*	4.0	5.0	7.0
Malta	Euro billion	6.4	4.5	0.0			
	% of GDP	*100.0*	*69.6*	*0.2*	4.0	5.0	6.0

1. European Redemption Pact.
2. European Redemption Fund.
Source: EU (November 2011), own calculations.

3. Results

Based on these assumptions, we are now able to calculate primary balances, debt ratios and the evolution of the size of the ERF over time.

3.1. Primary balances

During the roll-in phase primary balances improve step-wise up to the level that is necessary to fulfil the requirements of the national debt brakes which ensure a structural deficit below 0.5% of GDP and national debt (*i.e* debt not transferred to ERF) not exceeding 60% of GDP. For each scenario, Table 4 shows the maximum primary surplus that has to be reached between 2012 and 2035. Taking Italy as an example, we see that it needs to run a

primary surplus of 4.2% of GDP to comply with the requirements of the debt brakes, even when it can benefit from reduced interest rates achieved by the implementation of the ERP (Table 4, column "Primary balances required to meet budget rules with ERP"). From a historical perspective, this constitutes already the upper bound of primary balances that can be sustained over a longer time horizon. Only a small number of countries were able to sustain primary balances well beyond 4% of GDP for a decade (Figure 2). However, most of these countries faced more favourable macroeconomic conditions during their fiscal consolidation than what we experience in the euro area today.

Figure 2. Primary balances of selected countries*
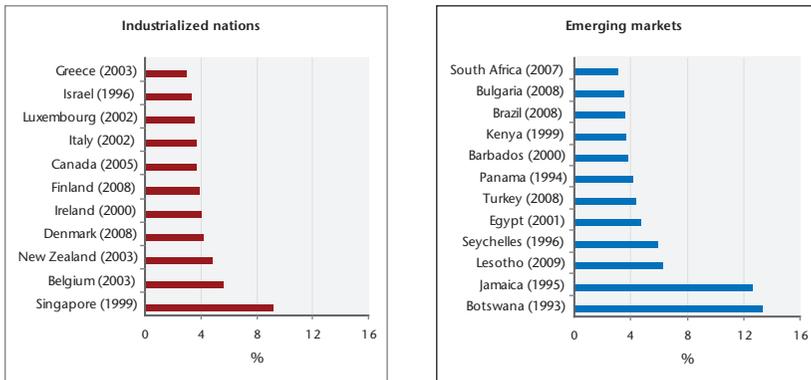
* In relation to nominal GDP. Highest average primary balance over a ten-year period. Years in brackets are the last year of the respective period.
Source: IMF.

To achieve the same debt reduction path without the implementation of the ERP, Italy would have to achieve a maximum primary surplus of 6.8% (Table 4, column "Primary balance required too meet budget rules without ERP"). This is well above the maximum primary balances observed historically. At the interest rates prevailing in the "without-ERP"-scenario, Italy already needs a primary surplus of 4.8% only to stabilize the debt-to-GDP ratio (Table 4, column "Primary balance required to stabilize current debt ratio without ERP"). This means that in case interest rates prevail at a level of 7% over the coming years, any successful consolidation would probably be just enough to compensate for the resulting higher interest payments, without being able to

reduce the debt-to-GDP ratio. These illustrative calculations show that bringing down risk-premiums on sovereign debt is necessary precondition for a successful reduction of debt-to-GDP ratios in the euro area.

Table 4. Consolidation requirements and ERP[1, 2]

	Primary balance in 2011		Primary balance required …			Improvement of actual primary balance required to meet budget rules…	
			to meet budget rules[3]…		to stabilize current debt ratio		
	actual	structural	with ERP	without ERP	without ERP	with ERP	without ERP
	Percent of GDP			Percent of GDP		Percentage points	
Germany	1.1	1.6		1.8	0.0	0.9	0.7
France	-3.2	-1.2	2.4	3.0	1.2	5.6	6.2
Italy	0.9	4.1	4.2	6.8	4.7	3.2	5.8
Spain	-4.5	-1.7	2.5	4.0	2.7	6.9	8.5
Netherlands	-2.4	0.1	1.5	1.4	0.0	3.9	3.8
Belgium	-0.3	-0.7	2.9	4.2	2.4	3.3	4.5
Austria	-0.8	0.1	2.2	2.4	1.1	3.0	3.2
Cyprus	-4.3	-1.3	2.3	3.8	2.5	6.6	8.1
Malta	0.2	-0.2	2.7	3.3	2.0	2.5	3.1

1. European Redemption Pact. 2. Own calculations, November 2011. 3. Maximum primary balance which is necessary to ensure deficit does not exceed 0.5% of GDP and national debt does not exceed 60% of GDP if ERP would be implemented. Without ERP: Maximum primary balance needed to reach same evolution of debt ratio.
Source: EU (November 2011).

3.2. Evolution of the ERF volume over time

With the beginning of the roll-in phase, participating countries start serving and redeeming their debt inside the ERF. As a consequence, even though the size of the ERF grows during the roll-in phase, its maximum size of 2 281 billion euro is slightly smaller than the total sum of all amounts refinanced by the ERF which add up to 2 378 billion Euros. With the end of the roll-in phase the fund begins to shrink in size. As each country's annual payment to the ERF is defined as a fixed percentage of nominal GDP the actual annual amount paid to the fund grows at the same rate as GDP. In addition, the share of interest payments in annual payment obligations declines relative to the share of payments devoted to redeeming debt. While initially, annual payments to the fund are mainly used to service interest payments, redemption is getting

more and more important towards the end of the retention period. The speed at which the volume of the ERF shrinks in time therefore accelerates over time. In 2035 each country makes its final payment to the fund and the ERF ceases to exist (Figure 3).

Figure 3. Debt in European Redemption Fund by country*
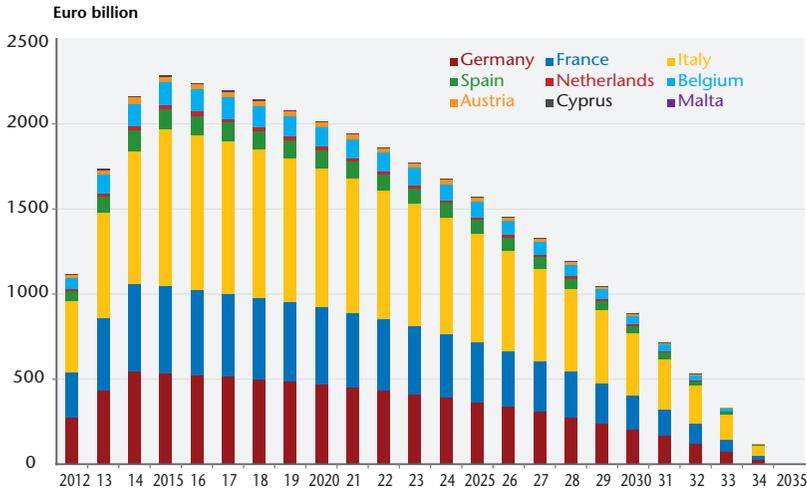
* Own calculations.

3.3. Detailed results by country

After having described all the elements of the ERF and the specific timing of events, we can illustrate the impact of implementing the ERP for each participating country in detail. Italy may serve as an illustrative example (Figure 9): The top left panel summarises a country's key macroeconomic data together with information about total public debt, annual payments to the ERF and crucial parameters used in the various scenarios. Given that Italy had a debt-to-GDP ratio of 120.5% at the end of the year 2011, it receives a credit line of 963 billion euro from the ERF. During the roll-in phase this credit line is used to refinance nearly all maturing national debt via the ERF. Successively, all debt in the ERF is redeemed until 2035 (Figure 9, top right panel). To achieve the envisaged debt reduction, the primary balance needs to be improved from 0.9% in 2011 to a maximum of 4.2% in 2015 (Figure 9, middle left panel). In comparison, without the ERP and sustained high interest rates, the primary balance to achieve the

same level of debt reduction has to be improved from 0.9% in 2011 to a maximum of 6.8% in 2015.

To illustrate the influence of interest rates on required consolidation efforts, we have so far taken interest rates and a sequence of debt-to-GDP-ratios as given and calculated the primary balances associated with these consolidation paths. As equation (1) shows, we can also make a different thought-experiment and hold primary balances constant and ask to what extent debt-ratios can be reduced under different interest-rate scenarios. If we apply different interest rate scenarios to the primary balances obtained under the scenario "ERP", we get a range of debt levels (Figure 9, middle right panel). Assuming that Italy would achieve exactly the same primary balances as previously calculated for the scenario "ERP" (Figure 9, middle left panel), without the favourable interest rate environment obtained by implementing the ERP, the debt-to-GDP ratio would increase above 130% in the year 2035. On the contrary, when achieving a reduction of interest rates to the levels assumed in the "ERP"-scenario, Italy's debt would, by construction, be reduced to 60% until 2035 with the same primary balances.

The reason for the significant difference in debt levels achieved are the interest payments resulting from the low refinancing costs of the ERF and the expected normalisation of interest rates of nationally issued debt. Even if the latter won't play out, *i.e.* interest rates for nationally issued debt prevail at high levels, Italy's debt-to-GDP level would decrease enormously. Finally, the bottom table gives detailed information about Italy's envisaged account balance evolution within the ERF and the debt evolution composed by debt issued nationally and through the ERF.

For most of the countries the debt-to-GDP ratio in 2035, the final year of the ERP, is well below 60%. This is due the underlying binding budget rules which call for a structural deficit of at most 0.5% of GDP and for a debt ratio—excluding debt transferred to ERF—not exceeding the target value of 60%. For all countries except Italy the former rule is binding which implies national debt ratios to fall below 60%. Only in periods of high redemptions in the ERF the latter rule can require deficits lower than 0.5% of GDP or even surpluses. Under the assumed growth rates, this is the case only for Italy, which therefore ends up with a debt ratio of exactly 60% in 2035.

Primary balances induced by these budget rules differ notably between countries for two reasons: interest rates for nationally issued debt range from 3.5% to 5% and the initial debt level varies from around 60% to 120%. As indicated by our stylized model of debt dynamic, an interest rate range of 3.5% to 5% at a debt-to-GDP ratio of 60% will necessarily result in a primary balance spread of up to 1 percentage point. A country like Malta or Cyprus will therefore face a tighter fiscal policy over the 25 year horizon than the Netherlands even though the latter have a higher initial debt level.

4. Conclusion

In this paper, we have illustrated one possible implementation of the European Redemption Pact proposed by the German Council of Economic Experts. Based on a set of assumptions about future growth rates and interest rates of bonds issued by sovereigns and under joint and several liability, we were able to illustrate primary balances required in each of the euro area member countries to reduce public debt below the 60% threshold enshrined in the SGP within the next 20-25 years. Our calculations show that required primary balances become sustainable if interest rates on public debt can be reduced by allowing member countries of the euro area (that are not yet taking part in an adjustment program) to transfer their excessive debt beyond the 60% threshold into a redemption fund that is able to issue bonds under joint and several liability.

Figure 4. Austria[1]

Macroeconomic key data and assumptions

GDP (2011)	
Euro billion	300.9
Gross public debt (2011)	
Euro billion	217.2
% of GDP	72.2
Debt to be transferred to ERF	
Euro billion	36.7
% of GDP	12.2
Annual payments to ERF (annual payment key)[3]	
% of GDP	0.6
Interest rates %	
scenario "ERP"	
ERF bonds	4.0
national debt	4.0
scenario "without ERP" (ongoing high interest rates)	
national debt	4.5

Development of debt[2]

Primary balance required to meet consolidation targets[2]

Development of debt scenarios[2] (primary balance as in scenario "ERP")

"ERP" implementation with high interest rates for national debt

ERF account

	2012	2013	2014	2015	2016	2017	2018	2025	2030	2034	2035
Debt within ERF (Euro billion)											
account balance (beginning of year)	0	18,1	28,8	35,6	35,1	34,4	33,6	25,4	15,5	4,2	0,9
+ refinancing via ERF	18,3	11,0	7,3	–	–	–	–	–	–	–	–
= account balance (beginning of year, transferred to ERF)	18,3	29,1	36,1	35,6	35,1	34,4	33,6	25,4	15,5	4,2	0,9
+ interest rates	0,7	1,2	1,4	1,4	1,4	1,4	1,3	1,0	0,6	0,2	0,0
– annual payment	0,9	1,5	1,9	2,0	2,1	2,1	2,2	2,7	3,1	3,5	0,9
= account balance (end of year)	18,1	28,8	35,6	35,1	34,4	33,6	32,8	23,7	13,0	0,9	0
Composition of debt (% of GDP)											
total (year end)	72,8	72,3	71,2	69,7	68,1	66,7	65,2	56,2	50,9	47,1	46,2
thereof:											
national	66,9	63,3	60,4	59,3	58,3	57,3	56,4	51,0	48,4	47,0	46,2
within ERF	5,9	9,0	10,8	10,3	9,9	9,4	8,9	5,2	2,5	0,2	0

1) Own calculations; basic data for 2011: EU.– 2) As a ratio of nominal Gross Domestic Product.– 3) Within in the roll-in phase there are lower annual payments because not all debt designated has already been transferred.

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Figure 5. Belgium[1]

Macroeconomic key data and assumptions

GDP (2011)	
Euro billion	370.4
Gross public debt (2011)	
Euro billion	360.0
% of GDP	97.2
Debt to be transferred to ERF	
Euro billion	137.7
% of GDP	37.2
Annual payments to ERF (annual payment key)[3]	
% of GDP	1.8
Interest rates %	
scenario "ERP"	
ERF bonds	4.0
national debt	4.5
scenario "without ERP" (ongoing high interest rates)	
national debt	5.5

Development of debt[2]

Primary balance required to meet consolidation targets[2]

Development of debt scenarios[2] (primary balance as in scenario "ERP")

"ERP" implementation with high interest rates for national debt

ERF account

	2012	2013	2014	2015	2016	2017	2018	2025	2030	2034	2035
Debt within ERF (Euro billion)											
account balance (beginning of year)	0	68,2	107,4	133,9	131,7	129,2	126,4	95,5	58,1	16,0	3,4
+ refinancing via ERF	68,9	40,5	28,4	–	–	–	–	–	–	–	–
= account balance (beginning of year, transferred to ERF)	68,9	108,7	135,8	133,9	131,7	129,2	126,4	95,5	58,1	16,0	3,4
+ interest rates	2,8	4,3	5,4	5,4	5,3	5,2	5,1	3,8	2,3	0,6	0,1
– annual payment	3,4	5,6	7,3	7,5	7,8	8,0	8,2	10,1	11,7	13,2	3,6
= account balance (end of year)	68,2	107,4	133,9	131,7	129,2	126,4	123,2	89,2	48,7	3,4	0
Compsotion of debt (% of GDP)											
total (year end)	97,0	95,6	93,8	91,6	89,4	87,3	85,3	72,5	64,9	59,6	58,4
thereof:											
national	79,2	68,3	60,7	60,0	59,3	58,7	58,2	56,6	57,4	59,1	58,4
within ERF	17,9	27,3	33,1	31,6	30,1	28,6	27,0	15,9	7,5	0,5	0

1) Own calculations; basic data for 2011: EU.– 2) As a ratio of nominal Gross Domestic Product.– 3) Within in the roll-in phase there are lower annual payments because not all debt designated has already been transferred.

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Figure 6. Cyprus[1]

Macroeconomic key data and assumptions

GDP (2011)	
Euro billion	17.9
Gross public debt (2011)	
Euro billion	11.7
% of GDP	65.4
Debt to be transferred to ERF	
Euro billion	1.3
% of GDP	7.4
Annual payments to ERF (annual payment key)[3]	
% of GDP	0.4
Interest rates %	
scenario "ERP"	
ERF bonds	4.0
national debt	5.0
scenario "without ERP" (ongoing high interest rates)	
national debt	7.0

Development of debt[2]

Primary balance required
to meet consolidation targets[2]

Development of debt scenarios[2]
(primary balance as in scenario "ERP")

"ERP" implementation
with high interest rates
for national debt

ERF account

	2012	2013	2014	2015	2016	2017	2018	2025	2030	2034	2035
Debt within ERF (Euro billion)											
account balance (beginning of year)	0	0,7	1,0	1,3	1,3	1,2	1,2	0,9	0,6	0,2	0,0
+ refinancing via ERF	0,7	0,4	0,3	–	–	–	–	–	–	–	–
= account balance (beginning of year,											
transferred to ERF)	0,7	1,1	1,3	1,3	1,3	1,2	1,2	0,9	0,6	0,2	0,0
+ interest rates	0,0	0,0	0,1	0,1	0,1	0,0	0,0	0,0	0,0	0,0	0,0
– annual payment	0,0	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,0
= account balance (end of year)	0,7	1,0	1,3	1,3	1,2	1,2	1,2	0,9	0,5	0,0	0
Compsotion of debt (% of GDP)											
total (year end)	69,0	68,7	67,8	66,3	64,9	63,5	62,1	53,7	48,7	45,2	44,4
thereof:											
national	65,4	63,2	61,2	60,0	58,9	57,8	56,7	50,5	47,2	45,1	44,4
within ERF	3,6	5,5	6,6	6,3	6,0	5,7	5,4	3,2	1,5	0,1	0

1) Own calculations; basic data for 2011: EU.– 2) As a ratio of nominal Gross Domestic Product.– 3) Within in the roll-in phase there are lower annual payments because not all debt designated has already been transferred.

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Figure 7. France[1]

Macroeconomic key data and assumptions

GDP (2011)	
Euro billion	1,987.7
Gross public debt (2011)	
Euro billion	1,697.1
% of GDP	85.4
Debt to be transferred to ERF	
Euro billion	532.7
% of GDP	26.8
Annual payments to ERF (annual payment key)[3]	
% of GDP	1.3
Interest rates %	
scenario "ERP"	
ERF bonds	4.0
national debt	4.0
scenario "without ERP" (ongoing high interest rates)	
national debt	4.5

Development of debt[2]

remaining national debt   within ERF

Primary balance required to meet consolidation targets[2]

scenario "ERP"   scenario "without ERP"

Development of debt scenarios[2] (primary balance as in scenario "ERP")

scenario "ERP"   scenario "without ERP"

"ERP" implementation with high interest rates for national debt

ERF account

	2012	2013	2014	2015	2016	2017	2018	2025	2030	2034	2035
Debt within ERF (Euro billion)											
account balance (beginning of year)	0	263,7	418,7	518,3	510,2	500,9	490,3	374,1	232,9	73,2	25,6
+ refinancing via ERF	266,4	159,8	106,5	–	–	–	–	–	–	–	–
= account balance (beginning of year, transferred to ERF)	266,4	423,5	525,3	518,3	510,2	500,9	490,3	374,1	232,9	73,2	25,6
+ interest rates	10,7	16,9	21,0	20,7	20,4	20,0	19,6	15,0	9,3	2,9	1,0
– annual payment	13,3	21,7	28,0	28,8	29,7	30,6	31,5	38,7	44,9	50,6	26,6
= account balance (end of year)	263,7	418,7	518,3	510,2	500,9	490,3	478,5	350,4	197,3	25,6	0
Composition of debt (% of GDP)											
total (year end)	87,5	86,5	85,0	83,0	81,1	79,2	77,4	66,2	59,4	54,7	53,6
thereof:											
national	74,5	66,5	60,9	60,0	59,2	58,4	57,7	54,4	53,7	54,1	53,6
within ERF	13,0	20,0	24,1	23,0	21,9	20,9	19,8	11,8	5,7	0,7	0

1) Own calculations; basic data for 2011: EU.– 2) As a ratio of nominal Gross Domestic Product.– 3) Within in the roll-in phase there are lower annual payments because not all debt designated has already been transferred.

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Figure 8. Germany[1]

Macroeconomic key data and assumptions

GDP (2011)	
Euro billion	2,567.1
Gross public debt (2011)	
Euro billion	2,098.6
% of GDP	81.8
Debt to be transferred to ERF	
Euro billion	558.4
% of GDP	21.8
Annual payments to ERF (annual payment key)[3]	
% of GDP	1.1
Interest rates %	
scenario "ERP"	
ERF bonds	4.0
national debt	3.5
scenario "without ERP" (ongoing high interest rates)	
national debt	3.0

Development of debt[2]

■ remaining national debt ■ within ERF

Primary balance required
to meet consolidation targets[2]

■ scenario "ERP" ■ scenario "without ERP"

Development of debt scenarios[2]
(primary balance as in scenario 'ERP')

— scenario "ERP" — scenario "without ERP"

"ERP" implementation
with high interest rates
for national debt

ERF account

	2012	2013	2014	2015	2016	2017	2018	2025	2030	2034	2035
Debt within ERF (Euro billion)											
account balance (beginning of year)	0	276,4	438,8	543,1	534,6	524,8	513,7	391,3	242,7	74,8	24,7
+ refinancing via ERF	279,2	167,5	111,7	–	–	–	–	–	–	–	–
= account balance (beginning of year,											
transferred to ERF)	279,2	443,9	550,5	543,1	534,6	524,8	513,7	391,3	242,7	74,8	24,7
+ interest rates	11,2	17,8	22,0	21,7	21,4	21,0	20,5	15,7	9,7	3,0	1,0
– annual payment	14,0	22,8	29,4	30,3	31,2	32,1	33,1	40,7	47,2	53,1	25,7
= account balance (end of year)	276,4	438,8	543,1	534,6	524,8	513,7	501,1	366,3	205,2	24,7	0
Compsotion of debt (% of GDP)											
total (year end)	81,1	79,7	78,1	76,3	74,6	72,9	71,3	61,2	55,1	50,9	49,9
thereof:											
national	70,6	63,4	58,6	57,7	56,8	56,0	55,3	51,7	50,5	50,4	49,9
within ERF	10,5	16,2	19,5	18,6	17,8	16,9	16,0	9,5	4,6	0,5	0

1) Own calculations; basic data for 2011: EU.– 2) As a ratio of nominal Gross Domestic Product.– 3) Within in the roll-in phase there are lower annual payments because not all debt designated has already been transferred.

Figure 9. Italy[1]

Macroeconomic key data and assumptions

GDP (2011)	
Euro billion	1,586.2
Gross public debt (2011)	
Euro billion	1,910.9
% of GDP	120.5
Debt to be transferred to ERF	
Euro billion	963.3
% of GDP	60.7
Annual payments to ERF (annual payment key)[3]	
% of GDP	2.9
Interest rates %	
scenario "ERP"	
ERF bonds	4.0
national debt	5.0
scenario "without ERP" (ongoing high interest rates)	
national debt	7.0

Development of debt [2]

remaining national debt / within ERF

Primary balance required to meet consolidation targets [2]

scenario "ERP" / scenario "without ERP"

Development of debt scenarios[2] (primary balance as in scenario "ERP")

scenario "ERP" / scenario "without ERP"

"ERP" implementation with high interest rates for national debt

ERF account

	2012	2013	2014	2015	2016	2017	2018	2025	2030	2034	2035
Debt within ERF (Euro billion)											
account balance (beginning of year)	0	417,8	621,7	782,2	927,0	910,4	891,6	683,4	429,7	142,8	57,1
+ refinancing via ERF	422,0	211,0	171,0	159,3	–	–	–	–	–	–	–
= account balance (beginning of year, transferred to ERF)	422,0	628,8	792,7	941,4	927,0	910,4	891,6	683,4	429,7	142,8	57,1
+ interest rates	16,9	25,2	31,7	37,7	37,1	36,4	35,7	27,3	17,2	5,7	2,3
– annual payment	21,1	32,3	42,2	52,1	53,7	55,3	56,9	70,0	81,2	91,3	59,4
= account balance (end of year)	417,8	621,7	782,2	927,0	910,4	891,6	870,3	640,7	365,7	57,1	0
Compsotion of debt (% of GDP)											
total (year end)	120,0	117,8	115,3	112,5	109,7	107,0	104,4	87,0	73,3	61,8	60,0
thereof:											
national	94,2	80,5	69,7	60,0	59,7	59,4	59,3	60,0	60,0	60,0	60,0
within ERF	25,8	37,3	45,6	52,5	50,0	47,6	45,1	27,0	13,3	1,8	0

1) Own calculations; basic data for 2011: EU.– 2) As a ratio of nominal Gross Domestic Product.– 3) Within in the roll-in phase there are lower annual payments because not all debt designated has already been transferred.

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Figure 10. Malta[1]

Macroeconomic key data and assumptions

GDP (2011)	
Euro billion	6.4
Gross public debt (2011)	
Euro billion	4.5
% of GDP	69.6
Debt to be transferred to ERF	
Euro billion	0.6
% of GDP	9.6
Annual payments to ERF (annual payment key)[3]	
% of GDP	0.5
Interest rates %	
scenario "ERP"	
ERF bonds	4.0
national debt	5.0
scenario "without ERP" (ongoing high interest rates)	
national debt	6.0

Development of debt [2]

Primary balance required to meet consolidation targets [2]

Development of debt scenarios[2]
(primary balance as in scenario "ERP")

"ERP" implementation with high interest rates for national debt

ERF account

	2012	2013	2014	2015	2016	2017	2018	2025	2030	2034	2035
Debt within ERF (Euro billion)											
account balance (beginning of year)	0	0,3	0,5	0,6	0,6	0,6	0,6	0,4	0,3	0,1	0,0
+ refinancing via ERF	0,3	0,2	0,1	–	–	–	–	–	–	–	–
= account balance (beginning of year, transferred to ERF)	0,3	0,5	0,6	0,6	0,6	0,6	0,6	0,4	0,3	0,1	0,0
+ interest rates	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
– annual payment	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,1	0,1	0,0
= account balance (end of year)	0,3	0,5	0,6	0,6	0,6	0,6	0,6	0,4	0,2	0,0	0
Compsotion of debt (% of GDP)											
total (year end)	70,6	70,2	69,2	67,7	66,2	64,8	63,4	54,8	49,6	46,0	45,1
thereof:											
national	66,0	63,1	60,7	59,6	58,5	57,5	56,5	50,7	47,7	45,9	45,1
within ERF	4,6	7,0	8,5	8,1	7,7	7,3	6,9	4,0	1,8	0	0

1) Own calculations; basic data for 2011: EU.– 2) As a ratio of nominal Gross Domestic Product.– 3) Within in the roll-in phase there are lower annual payments because not all debt designated has already been transferred.

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Figure 11. Netherlands[1]

Macroeconomic key data and assumptions

GDP (2011)	
Euro billion	607.4
Gross public debt (2011)	
Euro billion	390.3
% of GDP	64.3
Debt to be transferred to ERF	
Euro billion	25.8
% of GDP	4.3
Annual payments to ERF (annual payment key)[3]	
% of GDP	0.2
Interest rates %	
scenario "ERP"	
ERF bonds	4.0
national debt	3.5
scenario "without ERP" (ongoing high interest rates)	
national debt	3.0

Development of debt [2]

- remaining national debt
- within ERF

Primary balance required to meet consolidation targets [2]

- scenario "ERP"
- scenario "without ERP"

Development of debt scenarios [2] (primary balance as in scenario "ERP")

- scenario "ERP"
- scenario "without ERP"

"ERP" implementation with high interest rates for national debt

ERF account

	2012	2013	2014	2015	2016	2017	2018	2025	2030	2034	2035
Debt within ERF (Euro billion)											
account balance (beginning of year)	0	12,8	20,3	25,1	24,7	24,3	23,7	18,0	11,1	3,3	1,0
+ refinancing via ERF	12,9	7,8	5,2	–	–	–	–	–	–	–	–
= account balance (beginning of year,											
transferred to ERF)	12,9	20,5	25,5	25,1	24,7	24,3	23,7	18,0	11,1	3,3	1,0
+ interest rates	0,5	0,8	1,0	1,0	1,0	1,0	0,9	0,7	0,4	0,1	0,0
– annual payment	0,6	1,1	1,4	1,4	1,4	1,5	1,5	1,9	2,2	2,5	1,0
= account balance (end of year)	12,8	20,3	25,1	24,7	24,3	23,7	23,2	16,9	9,4	1,0	0
Compsotion of debt (% of GDP)											
total (year end)	66,1	65,8	65,0	63,6	62,3	61,0	59,7	51,7	47,0	43,7	42,9
thereof:											
national	64,0	62,7	61,2	60,0	58,8	57,7	56,6	49,9	46,1	43,6	42,9
within ERF	2,1	3,2	3,8	3,6	3,5	3,3	3,1	1,8	0,9	0,1	0

1) Own calculations; basic data for 2011: EU.– 2) As a ratio of nominal Gross Domestic Product.– 3) Within in the roll-in phase there are lower annual payments because not all debt designated has already been transferred.

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Figure 12. Spain[1]

Macroeconomic key data and assumptions

GDP (2011)	
Euro billion	1,074.9
Gross public debt (2011)	
Euro billion	748.0
% of GDP	69.6
Debt to be transferred to ERF	
Euro billion	121.5
% of GDP	11.3
Annual payments to ERF (annual payment key)[3]	
% of GDP	0.5
Interest rates %	
scenario "ERP"	
ERF bonds	4.0
national debt	5.0
scenario "without ER" (ongoing high interest rates)	
national debt	7.0

Development of debt[2]

Primary balance required to meet consolidation targets[2]

Development of debt scenarios[2] (primary balance as in scenario "ERP")

"ERP" implementation with high interest rates for national debt

ERF account

	2012	2013	2014	2015	2016	2017	2018	2025	2030	2034	2035
Debt within ERF (Euro billion)											
account balance (beginning of year)	0	60,1	95,5	118,2	116,4	114,3	111,9	85,6	53,5	17,3	6,5
+ refinancing via ERF	60,7	36,4	24,3	–	–	–	–	–	–	–	–
= account balance (beginning of year, transferred to ERF)	60,7	96,6	119,8	118,2	116,4	114,3	111,9	85,6	53,5	17,3	6,5
+ interest rates	2,4	3,9	4,8	4,7	4,7	4,6	4,5	3,4	2,1	0,7	0,3
– annual payment	3,0	4,9	6,4	6,6	6,8	7,0	7,2	8,8	10,2	11,5	6,7
= account balance (end of year)	60,1	95,5	118,2	116,4	114,3	111,9	109,2	80,2	45,4	6,5	0
Compsotion of debt (% of GDP)											
total (year end)	72,8	72,3	71,3	69,7	68,2	66,7	65,3	56,3	50,9	47,1	46,3
thereof:											
national	67,3	63,9	61,1	60,0	58,9	57,9	56,9	51,3	48,5	46,8	46,3
within ERF	5,5	8,5	10,2	9,7	9,3	8,8	8,4	5,0	2,4	0,3	0

1) Own calculations; basic data for 2011: EU.– 2) As a ratio of nominal Gross Domestic Product.– 3) Within in the roll-in phase there are lower annual payments because not all debt designated has already been transferred.

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