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The Eurozone: A Positive but Unequal Game

Sixty years after the Treaty of Rome, the European project has grown larger, following its early principles of reinforcing peace and democracy among its members.

Today, the European project is at a crossroads. The financial crisis highlighted the need for further integration and reforms, yet the European Monetary Union (EMU) remains incomplete, with policymakers including ECB President Draghi and French President Macron calling for further fiscal and financial integration. The road ahead is either towards more Europe, or no Europe.

In this first report, we analyse the economic gains that the Eurozone has so far brought to its members and assess the costs of leaving. Here are our key findings:

- 1. The Eurozone is a positive-sum game.** We estimate that all countries have gained from Eurozone membership. Looking at Germany, France, Italy and Spain, we find that Eurozone membership has brought additional benefits of between 2.6% and 8.1% of GDP in 2017 (compared to a hypothetical scenario of no Euro). This includes a trade boost from the single currency, lower interest rates from economic and budget convergence, even excluding the impact of ECB quantitative easing.
- 2. The Eurozone benefits are not equally distributed among its members.** While Spain and Italy are still better off inside the Eurozone, core European countries have reaped a larger portion of the gains from the common currency. In other words, Germany currently enjoys a lower exchange rate vs. other world currencies vis-a-vis where a Deutsche Mark would be, while France, Italy and Spain suffer from a higher rate.
- 3. The cost of exit is likely to be even higher than the mathematical loss of the economic benefits gained with membership.** There can be several collateral effects: even if not a Eurozone member, the United Kingdom’s planned exit from the EU has highlighted the potential for additional losses. Even before a Brexit agreement is sealed, the UK is lagging other developed markets on growth and investment, while the Pound has been among the worst-performing currencies this year.

The conclusions are clear. Eurozone is a positive-sum game, but needs reforms to strengthen its fiscal and financial architecture, and introduce shock-absorbers for countries which have reaped less of the benefits, as well as periphery countries that have been hit hard by the crisis.

The current EU budget as well as common Euro-Area institutions like the EIB and EIF, as well as emergency funding in the ESM, are on aggregate still too small to represent a significant re-equalisation of the common benefits. In addition, some current policies, like ECB quantitative easing linked to the central bank's capital key, in turn linked to relative GDP, can pro-cyclically exacerbate differences in growth.

We discuss a number of short- and long-term solutions: the first includes strengthening the EU budget and introducing a European Finance Ministry. Long term solutions include strengthening banking and capital markets union, introducing automatic shock-absorbers like growth-linked debt for small countries, and aligning EU funding with reform progress for individual members.

The EMU: A Positive-Sum Game, but Gains Are Unevenly Split

The key rationale for a monetary union is that it should bring economic benefits to member states via increased market integration, efficiency gains and improved financial resilience. Have Eurozone (EZ) members been able to reap such gains? We assess this by looking at three areas (see Methodology for details):

- 1. Intra-Eurozone trade:** A monetary union helps reduce transaction costs and promote intra-Eurozone trade, which should in turn boost economic growth.
- 2. Extra-Eurozone trade:** By adopting a common currency EZ members have given up the automatic balance-of-payments adjustment mechanism via FX. The Euro may be over/undervalued relative to each nation's fundamentals, which in turn hurt/boost the country's export competitiveness outside the Eurozone.

3. Interest savings due to lower public funding costs: Our analysis shows that all member states we studied have benefited from the Euro in terms of lower real interest rates for the same fundamentals (vs. a hypothetical scenario of no Euro), after controlling for QE effects. In our view, this is likely because on one hand the spreads between weaker and stronger member states have compressed, reducing funding costs for weaker countries. On the other hand, demand for debt from stronger countries as “safe haven assets” is also higher, given the Euro plays a much bigger role in reserve currency allocation vs. the respective national currencies.

We analyse four major EZ members: Germany, France, Spain and Italy. Our findings show that while all EZ members we studied have benefited from the union, Germany has benefitted more than the others. Relative to a scenario where the EZ does not exist, Germany’s GDP in 2017 is 8% higher vs. around 2.6–4.3% for France, Spain and Italy. The major contributor to the difference between Germany’s benefit and the other nations is that the Euro is weak relative to Germany’s fundamentals, providing the nation with an export boost. In contrast, relative to Italy, Spain and France’s fundamentals, the Euro may be slightly overvalued and hence acts as a drag to exports. Italy, France and Spain do benefit more than Germany from greater interest savings on government debt and more intra-EZ trade, but these advantages are eclipsed by Germany’s export advantage.

	Intra-EZ trade boost % GDP effect, 2017	Extra-EZ trade boost % GDP effect, 2017	Interest saving % 2017 GDP	Total gain as % 2017 GDP
GERMANY	0.7%	4.3%	3.1%	8.1%
FRANCE	1.0%	-1.3%	4.6%	4.3%
SPAIN	1.3%	-2.6%	4.8%	3.5%
ITALY	0.8%	-3.0%	4.8%	2.6%

▲ SOURCE
Algebris (UK) Limited estimates, Eurostat, ECB, OECD, IMF, World Bank, national statistics agencies, Bloomberg

Methodology

To analyse the benefits and costs of the EZ to its members, we focus on four nations: Germany, France, Spain and Italy. These costs and benefits are assessed along three lines: boosts to intra-EZ trade, increase/decrease in exports outside of the EZ (extra-EZ) due to relative currency strengths and interest savings on government debt.

Intra-EZ trade: The “Rose effect” is the estimated increase in intra-EZ trade attributable to creation of the union. Across the EZ, the Rose effect is estimated to be 15% on average (*IfW*¹, *ECB*²), while it differs by country. Based on an empirical study by *Micco, Stein and Ordonez* (2003)³ and calculations by *Baldwin and Taglioni* (2004)⁴, the Rose effect is estimated to be 24% for Spain, and around 15% for Germany, France and Italy. In absolute terms, we estimate the increase in intra-EZ trade volume to be €68bn for Germany, €52bn for France, and €32bn for Spain and Italy.

To estimate the GDP impact from this increase in trade, we multiply each nation’s additional trade volume generated thanks to the common currency by a trade-to-GDP ratio, which is the € increase in nominal GDP per € increase in trade. We estimate this trade-to-GDP ratio for each nation by regressing quarterly data of changes in trade (both intra- and extra-EZ) vs. changes in nominal GDP. On average across the four nations, we find that a €1 increase in trade volume results in a €0.35-0.45 increase in nominal GDP. Multiplying our two estimates and dividing by each nation’s 2017 GDP, we estimate the Rose effect boost to GDP at 1.3% for Spain, 1% for France and 0.8-0.7% for Germany and Italy.

	Trade volume before EZ (EUR bn)	Rose effect in %: Increase in intra-Eurozone trade	Rose effect in Euro (EUR bn)	Trade to GDP ratio	Increase in GDP in Euro (EUR bn)	Intra-EZ trade gains as % 2017 GDP
GERMANY	455	15%	68	34.9%	24	0.7%
FRANCE	324	16%	52	45.2%	23	1.0%
SPAIN	135	24%	32	45.4%	15	1.3%
ITALY	224	15%	32	41.6%	14	0.8%

▲ SOURCE
Algebris (UK) Limited estimates, Eurostat, IMF, Micco, Stein and Ordonez (2003), Baldwin and Taglioni (2004)

¹ Herwartz, H., Weber, H, [The euro's trade effect under cross-sectional heterogeneity and stochastic resistance](#), Kiel Working Papers No. 1631, June 2010

² Baldwin, R., [The Euro's trade effects](#), ECB Working Paper Series No. 594, March 2006

³ Micco, A., Stein, E., Ordonez, G., [The currency union effect on trade: early evidence from EMU](#), Inter-American Development Bank, Working Paper No. 490, July 2003

⁴ Baldwin, R., Taglioni, D., [Positive OCA criteria: Microfoundations for the Rose effect](#), COE-RES Discussion Paper Series No. 34, February 2004

Trade outside of the EZ: Given the divergence amongst EZ nations' performance, the Euro may be over/undervalued relative to each nation's fundamentals. This over/undervaluation may cause a competitive disadvantage/advantage in exports outside the EZ. To estimate the GDP impact of this disadvantage/advantage, we: (I) obtain estimates of each nation's potential currency over/undervaluation; (II) estimate the decline/boost to extra-EZ trade per unit of over/undervaluation; (III) estimate the beta of boost to GDP per unit boost of exports; and (IV) multiply all these three factors together to get a % GDP impact.

	IMF estimate: EUR over/under valuation relative to fundamentals	Average of IMF estimate	Beta: Change in exports per unit change in Euro (ECB 2014)	% Export increase from under/over valuations	Exports of goods and services to GDP	Domestic value added %	Extra-EZ Trade boost as % 2017 GDP
GERMANY	-10 to -20%	-15%	-0.8	12%	47%	75%	4.3%
FRANCE	+0% to +8%	4%	-1.4	-6%	31%	74%	-1.3%
SPAIN	+3% to +10%	7%	-1.6	-10%	34%	73%	-2.6%
ITALY	+0% to +10%	5%	-2.6	-13%	31%	75%	-3.0%

▲ SOURCE
Algebris (UK) Limited estimates, Eurostat, ECB, OECD, IMF

For part I we use the latest [IMF REER model](#)⁵ output which estimates that the Euro is 10-20% undervalued relative to Germany's fundamentals, 0-8% overvalued relative to France's, 0-10% overvalued relative to Italy's and 3-10% overvalued relative to Spain's. For the purposes of this exercise, we take the average of each country's range. For part II we use the [ECB's 2014 estimate of the sensitivity of each country's exports to the Euro](#)⁶. To then estimate the export impact in € from the relative over/undervaluation of each nation, we multiply the ECB's estimated sensitivity, the IMF's estimated currency over/undervaluation, and the value of the nation's exports outside of the EZ in 2017. For part III we utilise each country's [domestic value added in gross exports](#) to approximate the impact of a € gain in exports to a € gain in GDP. Finally, for part IV, we multiply all of the above. We estimate that each nation's Euro under/overvaluation relative to the fundamentals, provides a 4.3% GDP boost to Germany, and erodes -1.3% for France, -2.6% for Spain and -3% for Italy.

Interest cost savings: While most EZ nations have benefited from lower yields since the EZ was formed, this benefit is unequal amongst nations. To estimate the interest benefits, we first begin with an estimate of each nation's real yield if the EZ did not exist. We estimate this by running a

⁵ [2018 External Sector Report: Tackling Global Imbalances and Rising Trade Tensions](#), IMF, July 2018

⁶ [Quarterly Report on the Euro Area](#), Volume 13 No. 3, 2014

panel-regression on real yields since 1982 with the following independent variables: GDP growth rate, public debt to GDP ratio, Government Effectiveness index, EZ (binary variable: 1 since EZ, 0 before EZ) and QE (binary variable: 1 since ECB QE, 0 before ECB QE). We use the model results based on assuming no EZ and with QE (assuming national central banks will conduct non-conventional monetary easing, in line with other central banks globally over the past decade). Using this model, we find that real yields are 4.9% lower in Spain and Germany with the Euro, 4.7% lower in France and 3.7% lower in Italy. To estimate the interest savings vs. a hypothetical scenario where the EZ did not exist, we multiply the reduction in real yields by the nation's 2017 gross debt to GDP. Doing so, we estimate that Italy and Spain have saved 4.8% of GDP by paying lower interest rates, while the benefit to France is 4.6% and to Germany is 3.1%.

	2017 real interest	Model: real rates if EZ did not exist	Real rate savings from EZ	Public debt to GDP, 2017	Interest saving as % 2017 GDP
GERMANY	-1.33%	3.57%	4.9%	64%	3.1%
FRANCE	-0.35%	4.36%	4.7%	97%	4.6%
SPAIN	-0.46%	4.42%	4.9%	98%	4.8%
ITALY	0.77%	4.45%	3.7%	131%	4.8%

▲ SOURCE
Algebris (UK) Limited estimates, ECB, OECD, IMF, World Bank, national statistics agencies, Bloomberg

Existing Adjustment Mechanisms

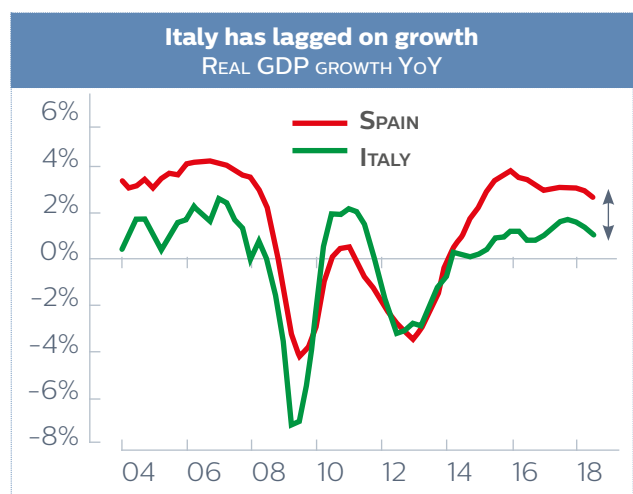
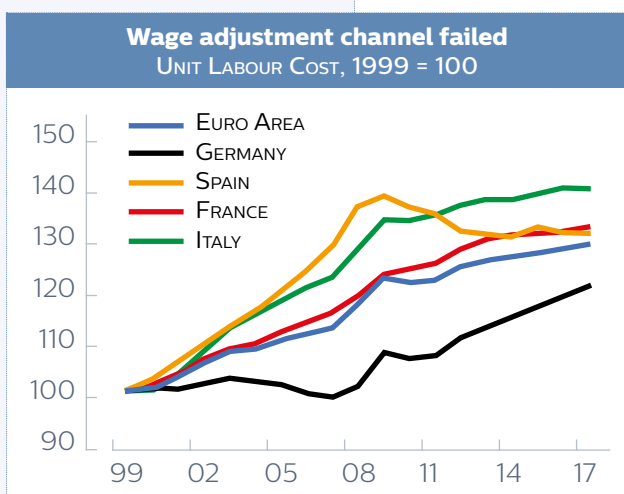
With no country-specific monetary policy and no FX flexibility, a monetary union should have other adjustment mechanisms to counter divergence between member states and evenly redistribute the benefits from the union. While there are a range of existing adjustment mechanisms, the crisis has shown that these are insufficient.

Wage Adjustment Channel

While a lagging country in a monetary union cannot restore competitiveness by currency depreciation, it can do so through lower wages, assuming perfect wage flexibility. However, this channel has not been working in the Eurozone. As shown left, since the inception of the Euro, Unit Labour

Costs (ULC) have been growing faster in Italy, France and Spain than in Germany, which means wage growth has outstripped productivity growth by more in the former three countries and further exacerbated the imbalances among member states.

This adjustment channel is much easier to implement in a rising growth environment. In this case, the strongest countries would promote higher wages. However, it has proven politically difficult to implement wage or labour tax cuts in a slow growth phase and in the weakest economies.



▲ SOURCE
Algebris (UK) Limited, Eurostat

► SOURCE
Algebris (UK) Limited, Bloomberg

National Structural Reforms

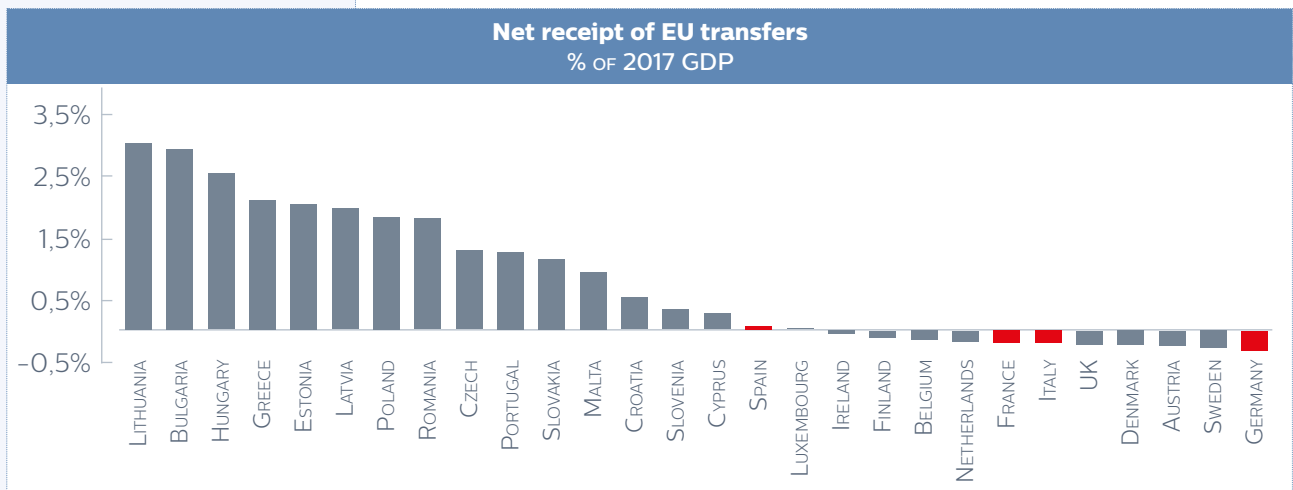
To regain competitiveness and address the imbalances, especially in labour markets and productivity, each member state needs to carry out the necessary structural reforms domestically. As we have seen since the crisis, countries that have embarked on reforms early on are enjoying faster growth. Following measures to improve labour market flexibility, unit labour costs have fallen by over 30% in Ireland and 5% in Spain from their peaks in 2008/09. They were also the earliest to reform the banking sectors by doing transparency exercises and setting up national bad banks to help banks offload non-performing loans. Thanks to these reforms, real GDP in Ireland and Spain has been growing at 9% and 2% YoY on average since 2013 vs. 1.6% for the whole Eurozone. Nevertheless, not every country has implemented the necessary reforms. While the principle of linking EU funding to reforms exists, it has not been codified and it is not strictly adhered to, due to the flexibility introduced by the Juncker Cabinet in 2015. Italy, for example, has been a laggard in addressing its structural bottlenecks of a slow judiciary, a fragmented banking system, restrictive labour market practices and inefficiency in public administrations. Due to persistent bottlenecks, Italy has been growing at 0.4% on average since 2013, far below its peers.

Fiscal Transfers

The most significant source of direct financial transfers in Europe comes in the form of the EU budget, which amounts to €160bn in commitments in 2018, equivalent to almost 1% of GDP. The budget is intended to provide for a natural redistribution mechanism amongst member countries. Whilst this is more evident in absolute net contributions, the redistributive effort is more questionable when considered as a share of Gross National Income. For example, whilst France gains 4.3% of GDP from EZ membership, more than a gain of 2.6% by Italy, both contribute around 0.2% of GNI to the EU budget. In addition, Germany benefits 8.1% of GDP from EZ membership, over three times as much as Italy, but it contributes only 0.3% of GNI to the EU budget.

Financing Support for Investments

The EU budget is the most important source of financial contributions, but it is not the only one. The European Investment Bank (EIB) is owned by EU member states and is the world’s largest multilateral borrower and lender, with more than 90% of its activity in the EU. Aggregate loans allocated to EU member countries as a share of 2017 GDP range from ~1% in the case of Denmark and Germany to above 9% in the cases of Poland, Portugal and Cyprus. This share is ~4% for Italy.

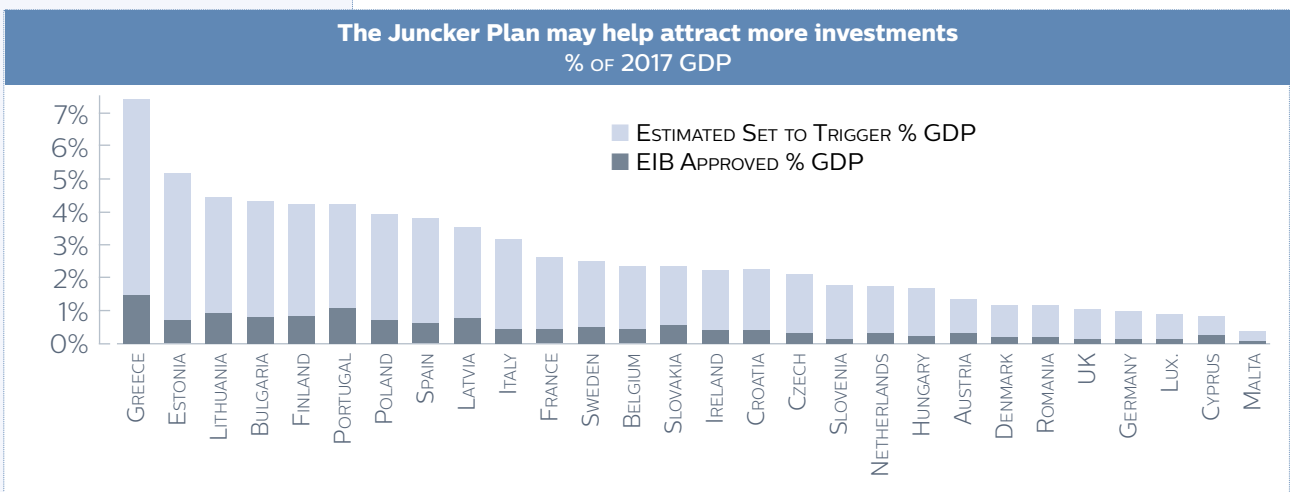
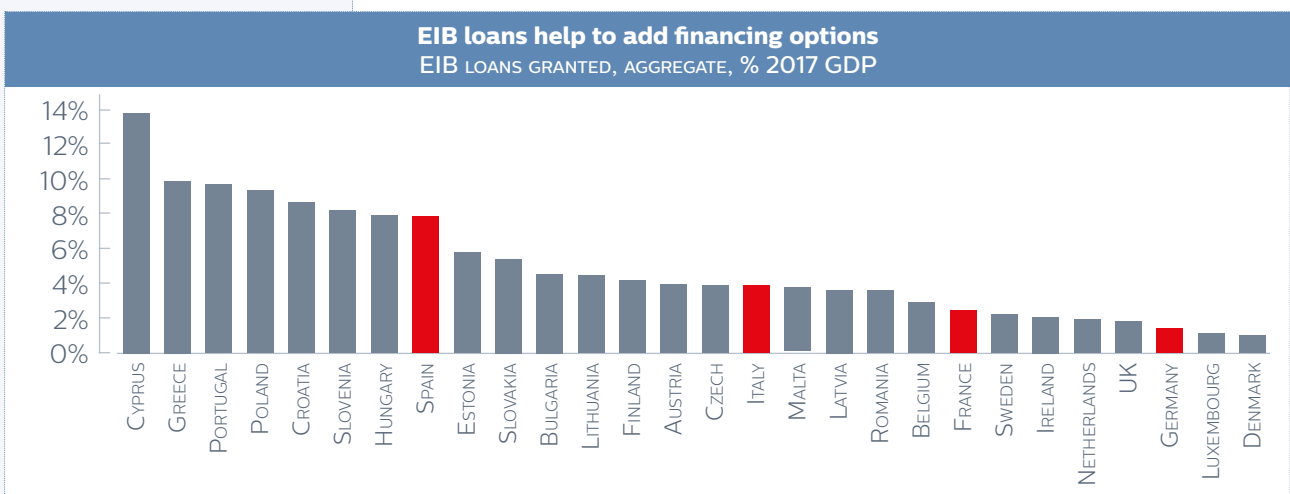


▲ SOURCE
Algebris (UK) Limited,
European Commission

The EIB does not provide detailed or aggregated data on the financing conditions of loans granted. It is therefore difficult to estimate the direct financial benefit of its operations, which we assume to take place at concessional rates. Perhaps more important than the interest savings on these loans is that the EIB tends to operate in areas where normal capital markets may be incomplete, for example extending longer maturity financing options than may otherwise be available. The benefits of such financing operations may be difficult to estimate, but are certainly non-trivial.

Part of the EIB loans are also directed towards the [Juncker Plan's European Fund for Strategic Investments](#) (EFSI). The EFSI provides an EU-budget guarantee to the EIB loans, thereby allowing the EIB to partially fund riskier projects with the balance funding coming from private markets. The part of the EFSI investments which originates from the EIB is already accounted for in the EIB loans. However, the EFSI estimate that these EIB-originated loans would trigger further private investments. The total investment generated (including EIB-originated loans) as a % of GDP is between 4%–2.5% for Spain, Italy and France, and 1% for Germany.

▼ Source
Algebris (UK) Limited,
European Commission,
EIB Financial Report 2017



▲ Source
Algebris (UK) Limited,
European Commission

A Financial Backstop: European Stability Mechanism (ESM)

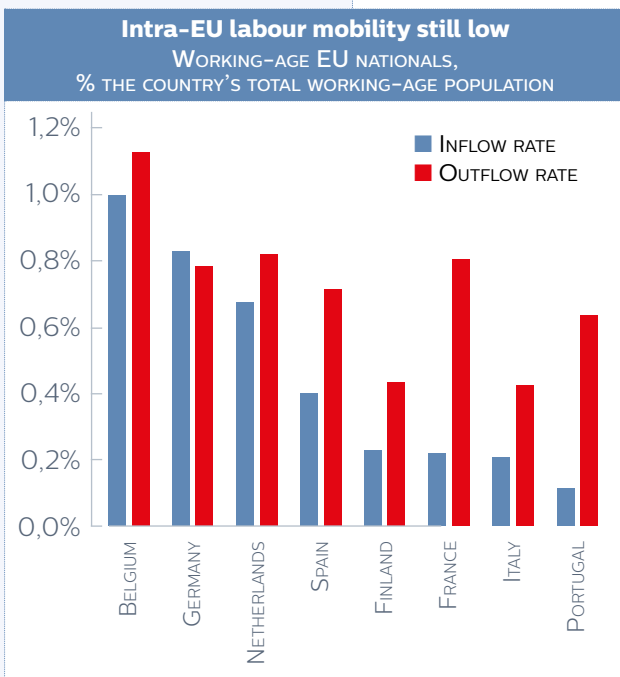
The ESM is the Eurozone's permanent crisis resolution mechanism, which works by providing stability support and financial assistance to member states in or threatened by severe financing problems. It replaced the temporary institution European Financial Stability Facility (EFSF) that was set up at the height of the European crisis in 2010. Together the two institutions have a [lending capacity](#) of €700bn (€500bn for the ESM), and have

lent out €268bn to five countries: Ireland, Portugal, Spain, Cyprus and Greece (ongoing).

In the absence of further fiscal integration, the ESM arguably is the most important Eurozone infrastructure in anchoring market confidence and fostering financial stability. It works both to benefit the weaker nations which may have higher chances of needing help, and the Eurozone as a whole as it strengthens the irreversibility of the monetary union.

Capital and Labour Mobility

Free movement of capital and labour are among the founding principles of the EU. Perfect capital mobility helps to boost cross-border investments and promote financial convergence. In addition, perfect labour mobility helps redistribute idle workers from low-growth countries to high-growth countries, reducing economic imbalances among member states.



▲ SOURCE
Algebris (UK) Limited,
Eurostat (2016)

However, while the monetary union has boosted intra-Eurozone capital flows, there are still many intangible barriers which prevent further financial integration, including heterogeneous bankruptcy and corporate laws, tax treatments, loan underwriting standards and non-performing loan classifications. These barriers have hindered the deepening of capital markets in Europe and are likely a key reason for European companies' reliance on bank financing, as suggested by ESM Managing Director Klaus Regling. [The Capital Markets Union](#) (CMU) project is designed to overcome these barriers and strengthen the banking sector, but is still a work in progress.

Furthermore, intra-EU labour mobility is also low, despite improvements over the past years. According to the [European Commission](#)⁷, the inflow of working-age EU migrants as a share of total working-age population in the EU country of destination was 0.4%

in aggregate in 2015. This is better than 0.2% in 2009, but still compares poorly to an [inter-state migration rate](#) of 1.7% in the US in 2016-17.

⁷ [2017 annual report on intra-EU labour mobility](#), European Commission, January 2018

Three Steps for Europe's Future

In this report, we have highlighted the economic benefits for European states within the Eurozone. Adding to the economics, there are social and political dividends from a union.

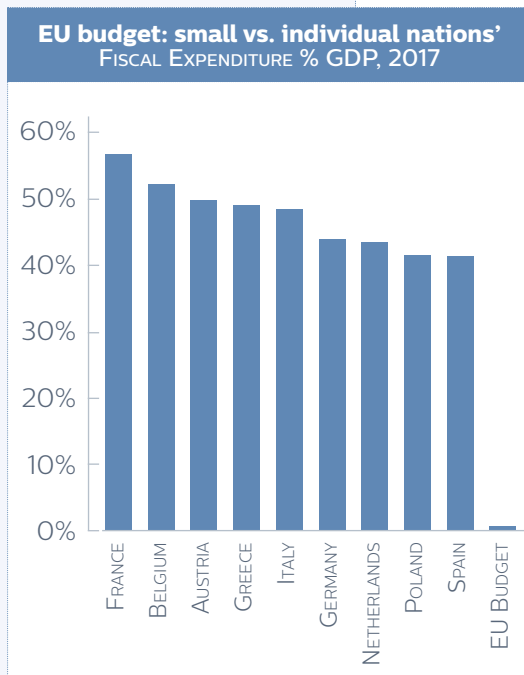
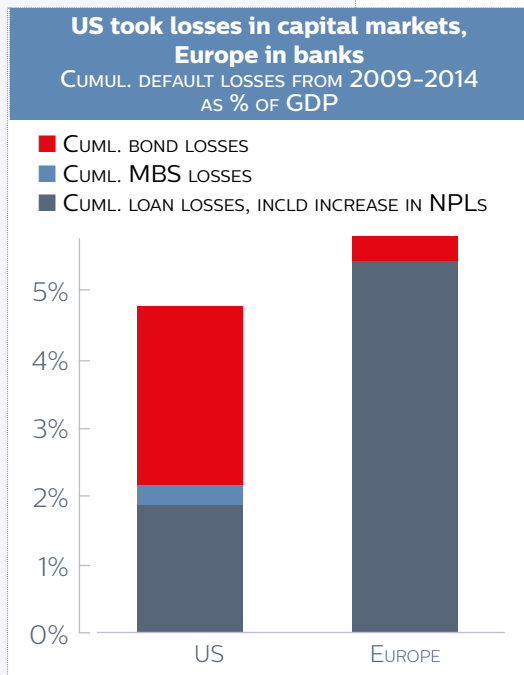
However, the Eurozone benefits are not equally distributed among its members. The crisis hit Eurozone countries hard, with some nations bearing deeper scars than others. While part of the economic divergence is due to relative competitiveness, which needs to be addressed by national structural reforms, it is clear that current adjustment and shock-absorbing mechanisms are insufficient. Such rising divergence can be dangerous, fueling domestic discontent and lending support to populist politics.

So far the European Central Bank has borne much of the strain to defend the common currency: its Quantitative Easing programme, set to end in December this year, helped to lower funding costs at moments of high political uncertainty. Yet one-size-fits-all monetary tools are not a medium-term substitute for reforms or stronger pan-European institutions. Today, a recession in Malta, Luxembourg, Portugal or Cyprus would not prevent the ECB from hiking rates, were inflation data above target in Germany and France. Furthermore, the institutional set-up of the ECB and its QE programme can even exacerbate the divergence between nations. The central bank's capital key, which guides the proportion of QE bond purchases, depends on relative GDP, magnifying the benefits of countries which have been growing faster.

Today, the Eurozone is at a crossroads: with a common currency and monetary policy yet with insufficient reforms and fiscal power, the Eurozone remains an incomplete union. The ball is now in the court of fiscal policy and governments – both nationally and at the European level. European governments have moved to strengthen backstops like the European Stability Mechanism, with its €500bn firepower. However, these are still insufficient to counter a future economic or political crisis.

There are some easy wins to remove obstacles to equality even before further fiscal and capital markets integration. For example, currently the ECB capital key is adjusted every five years. This could be extended to a longer period, like re-weighting based on 20-year average GDP, to reduce pro-cyclicality. In addition, banks should be encouraged to make cross-border lending within the Eurozone, rather than being penalised. SIFI capital surcharges should be eliminated for intra-Eurozone lending. When banks carry out cross-border mergers and acquisitions, regulators

▼ SOURCE
Algebris (UK) Limited, Moody's,
European Central Bank,
Federal Reserve



▲ SOURCE
Algebris (UK) Limited, Eurostat, IMF

should recognise synergies as part of additional capital as an incentive to strengthen the banking system, rather than demanding for more capital.

For the long term, fixing the Eurozone requires more focus on growth, robustness and on leveling the playing field among its members.

The key steps to complete Europe's architecture call for a common fiscal policy, a common architecture for banks and financial markets, and shock-absorbing mechanisms to protect and redistribute the benefits of the union to smaller countries.

Growth. First, a common, pro-growth fiscal policy strategy is needed to lengthen the expansion, boost growth and reduce unemployment in those areas which have been most affected by the crisis. The example of Greece has shown how a debt-austerity feedback loop can eventually end up increasing debt/GDP ratios, as well as destroying human and financial capital. Monetary expansion in the U.S. worked in tandem with double-digit budget spending by the Treasury, which helped getting the benefit of QE to the real economy, rather than only financial markets. The ECB has been calling for a pro-growth strategy for years, as well as reforms, yet Europe's Juncker plan remains a drop in the ocean, at 0.4% of Eurozone GDP.

Robustness. Second, completing the banking and capital markets union is key for the Eurozone to be able to get back up in a future financial crisis. The U.S. exited the 2008 crisis and the following balance sheet recession by restructuring private debt in capital markets: over 80% of U.S. credit is bonds. Thanks to capital markets, quicker and lower bankruptcy costs, U.S. firms restructured their bad loans in a few years. In Europe, instead, the situation is the opposite: bank loans account for most of the credit and bankruptcy laws are slower. The result is €1tn of non-performing loans still sitting, hindering new loans to small and medium businesses. Europe needs to break from bank-dominated credit markets, with leaner, more efficient banks and deeper capital markets to provide quicker restructuring and alternatives to bank credit in the next crisis.

Equality. Third, the Eurozone needs stronger shock-absorbing mechanisms and investments in common European public goods to counter economic divergence among smaller countries and more evenly re-distribute the benefits of the union. While monetary policy has been helping Euro members to counter the crisis, there are limits to what a one-size-fits-all tool can

do. The shock-absorbers need to be a mix of discretionary and fiscal, in the form of a stronger EU budget (currently at less than 1% of GDP), as well as automatic stabilisers, including a common financing mechanism or GDP-linked bonds for small countries, with interest counterbalancing divergence in growth. These should also be accompanied by more investments in common European public goods like defence, healthcare and infrastructure spending, allowing member states to benefit from the stability and economies of scale that a true union should provide.

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