A narrative of the ADEMU project, April 2017

Preamble

The June 2014 abstract of the proposal for the ADEMU project – which started in June 2015 – provided the following background:

> In response to the European debt crisis and associated deep recession, a number of important steps have recently been taken towards redesigning the institutional architecture of EMU, based on the roadmap outlined in the Van Rompuy Report (2012). But these institutional innovations – and especially the 'fiscal compact', the ESM, the SSM and the SRM – have relatively weak theoretical foundations.

The background has changed in these three years. At first it seemed to be going 'according to plan': with 'euro-stressed countries' starting to come out of the recession, the development of the *European Stability Mechanism* and of the *European Banking Union,* and the *2015 Five Presidents' Report* calling for a further development of the *Financial Union* and the *Fiscal Union,* as well as an enhancement of risk-sharing "through a mechanism of fiscal stabilization for the euro area as a whole," and to improve the collective decisionmaking within the *Fiscal Union* with a "future euro area treasury." The ADEMU research agenda of "reassessing the fiscal and monetary framework of the EU and, in particular, the euro area" was in line with these developments.

However, the plan has been shaken since 2016: in response to the international situation, EU priorities have changed – with migration, security and defense coming to the forefront, – euro-skeptic populism, nourished by the recession, has become a democratic challenge in several euro countries and, more importantly, Brexit: the first historical reversal of the European integration process, questioning the process itself. In fact, while on the occasion of the 60th anniversary of the Treaty of Rome (March 2017) all the official rhetoric was a vindication of the successes and prospects of the EU, the same European Commission in its *White Paper on the future of Europe* has postulated five different scenarios of "the potential state of the Union by 2025", which in turn entail five different scenarios for the EMU – only the maximalist scenario (#5 'Doing much more together') contemplates: "Economic, financial and fiscal union is achieved as envisioned in the report of the Five Presidents of June 2015."

Does this mean that the ADEMU research agenda is already obsolete before the project ends? We don't think so. In fact, in the aftermath of the euro and Brexit crises and a less supportive global environment, the questions regarding the EU and the EA – and in particular, EMU design – have become even more fundamental, from how to achieve price stability to how to achieve financial, fiscal and social stability and growth; from the European integration rhetoric to: what should, and can, the EU and the EA deliver?

As social scientists our role is not to say what will, or should, happen in 2025, but to assess, and provide, an empirical and theoretical foundation for the different paths that the EMU may follow. On the one hand, this need is even more pressing in 2017 than it was in 2014, on the other, there is more experience – e.g. of the incipient EMU institutions – and more research has been done.

What follows is a summary of the research being done within the ADEMU project. It does not pretend to be exhaustive but rather focuses on the main topics of the ADEMU agenda, both as a narrative, and a guide, to some of the working papers and activities of these first two years of the project, leading to discussion – for ADEMU researchers, the Advisory Committee, et al. – in preparation for the final year of the project (**ADEMU Final Conference, May 10 – 11, 2018, EUI - Florence**).

ADEMU ongoing research

UNDERSTANDING

On the EMU solving and creating credibility problems

The ADEMU starting point is the understanding of **the European Monetary Union as a solution to time-inconsistent monetary policies** of countries sharing a common market, in contrast with the traditional *Optimal Currency Area* (OCA) theory, according to which countries should form monetary union if, and only if, they are subject to similar shocks, which is not the case within the EA. As Chari et al. have shown[1], even with country-idiosyncratic risks, a monetary union can help price stability in a common market, by preventing countries from running competitive devaluations – a benefit that can overcome the cost of not adapting monetary policy to country shocks. However, this solution to one credibility problem entails a new credibility problem when the union cannot fully commit to price stability and to not bailing out members' sovereign debts: member countries may over-borrow, expecting to be bailed out or have their debts monetized. The latter is also known in the political science literature as the 'Hamilton Paradox'[2]. The euro crisis has been a costly vindication of this theory, with price stability through a major crisis, a dramatic build-up of sovereign debt in 'stressed countries', and a *de-facto* breach of the no-bailout clause, plus extensive purchases of sovereign debts by the ECB and, more recently, by the ESM. The theory also has implications for EMU designs, to which we return later.

[1] V.V. Chari, A. Dovis, P. Kehoe, *"A Journey Down the Slippery Slope to the European Crisis: A Theorist's Guide"* (WP 2017/054)" and *"Rethinking Optimal Currency Areas"* (WP 2016/9).

[2] See **ADEMU mini-conference on "*Fiscal Federalism within the EMU,*" EUI, Florence, December 2016.**

On the nature of the euro, and other, crises and recessions

The euro crisis and recession has brought to the forefront ***the links*** **between monetary, fiscal, financial and social policies**. In an ideal world (an economy with complete markets, flexible prices and full commitment) one could delink these policies and treat them separately – in particular, assign them to separate, uncoordinated, governing bodies. The latter would greatly simplify EMU design and management, but in such a perfect world there would be no need for an EMU[3]. Not surprisingly, understanding these links within the EMU takes us a long way towards understanding the euro crisis, and which EMU designs are likely to be more resilient. In fact, the euro *debt crisis* offers a paradigmatic example of how these links can operate in advanced economies and, in particular, of the role that several elements can play: underlying distortions or frictions, limited commitment, and agents' heterogeneity and expectations.

We now briefly review how the ADEMU project is helping to better understand these links and underlying elements.

The monetary-fiscal link: sovereign debt crises and the role of expectations

A sovereign debt crisis always involves an element of credibility and the euro-crisis has been no exception[4]. Crises can be driven by fundamentals because a country cannot credibly raise enough revenues – say, in times of crisis – to fulfill its debt obligations (Greece), or because it cannot credibly avoid unaccounted for new liabilities, in particular, bailing out private banks in crisis (Ireland and Spain). But expectations can also be driven factors generating ***self-fulfilling debt crises*** (spreads are high because lenders believe default is likely and it is, indeed, likely when high interest rates make existing debt liabilities unsustainable). As Ayres et al. show, whether such *self-fulfilling crises* can emerge crucially depends on how debt markets and contracts operate[5]. It also depends on whether the Central Bank – possibly with the support of the Treasury – can credibly commit to intervene, for example by buying sovereign debt under threat. In fact, as Corsetti and Dedola have shown, **a Central Bank willingness to intervene may be enough to dissipate a self-fulfilling debt crisis**, which is consistent with the ECB's role in the euro crisis[6]. Nevertheless, as Delatte *et al.* have estimated it took one year for the euro area economy to return to the non-crisis regime after Draghi's

[3] See, for example, P. Kehoe and E. Pastorino, *"Fiscal Unions Redux,"* (WP 2016/012).

[4] For comprehensive surveys of the current sovereign debt literature see: M. Aguiar and M. Amador, 2014. "Sovereign Debt," in *Handbook of International Economics*, Vol. 4, and M. Aguiar, H. Cole, 2016. "Quantitative Models of Sovereign Debt Crises," in *Handbook of Macroeconomics*, Vol. 4.

[5] J. Ayres, G. Navarro, J.P. Nicolini and P. Teles "Sovereign Default: The Role of Expectations" (WP 25/2016), presented at the **ADEMU Conference on "Sovereign Debt, Sustainability and Lending Institutions" University of Cambridge, Cambridge, 2-3 September 2016.**

[6] G.Corsetti, L.Dedola, "The Mystery of the Printing Press Monetary Policy and Self-fulfilling Debt Crises," (WP 2016/035)

successful speech (August 2012). They also have also shown that investors reacted strongly to the deterioration of fundamentals when **bank credit risk** was high (i.e. the financial link was being perceived to be risky)[7].

Expectations regarding how debt crises can be resolved also play an important role, especially, in monetary unions (and federal states), where it can either be because within the union bailing-out (redemption or monetization) expectations change (a recurrent theme through the euro-crisis)[8], or because expectations about exit from the union, followed by default, change, as Kriwoluzky et al. have shown[9]. Furthermore, how agents form beliefs can also explain how prices react to different forms of – possibly revenue-equivalent – forms of default, e.g. the risk of default, or a haircut, in a monetary union vs. the risk of inflation with domestically denominated debt[10].

The fiscal-social link and its trade-offs

When, after a period of 'bonanza', crises become recession there are two recurrent questions regarding what the policy should be: to stimulate the economy by implementing a fiscal stimulus (Keynes) or not to intervene and to allow the recession to perform its cleansing effect (Hayek)? To provide social insurance – and, possibly, postpone socially costly reforms (to alleviate the consequences of the deep recession, even at the cost of worsening debt problems), or to implement austerity measures aimed at stabilizing the debt dynamics and implement reforms? Again, the recession in the 'euro stressed' countries, after the euro-bonanza that followed the introduction of the euro, has been no exception, and these two questions have long been at the center of the policy debate, and still linger in the aftermath of the euro-crisis (what should have been done?), in the form of social unrest and euro-skepticism.

As modern economic theory shows, in an 'ideal world' with job destruction and creation, Hayek is right, but it may be optimal to provide social insurance and increase sovereign debt if the government can borrow more efficiently than private agents. Current macroeconomic research throws new light on these questions by relaxing the 'ideal world' assumptions and ADEMU research is actively contributing to this new literature.

As Ravn and Sterk, Beaudry *et al*. and Den Haan *et al*. have shown, assuming that households have no access to complete insurance markets turns out to have

[7] A.L. Delatte, J. Fourquau and R. Portes, "Regime-Dependent Sovereign Risk Pricing during the Euro Crisis" (WP 2016/32).
[8] See J.C. Conesa and T. Kehoe (ADEMU Associated Researchers) (2017), "Gambling for redemption and self-fulfilling debt crisis" *Economic Theory* (forthcoming).
[9] A. Kriwoluzky, G. Muller and M. Wolf in "Exit expectations and debt crises in currency unions" (WP 2016/5).
[10] M. Bassetto and C. Galli, "Is Inflation Default? The Role of Information in Debt Crises" (WP 2017/059)

fundamental consequences. In particular, under such circumstances, households have an incentive to engage in precautionary savings, and important links between the demand and supply sides of the economy arise. Consider a recession with increasing unemployment – possibly due to 'cleansing liquidation,' – and perhaps higher incidence of long-term unemployment. Under such circumstances, employed households will have an incentive to engage in precautionary savings due to the high risk of job loss and the worsening consequences thereof. In the face of such a demand-side contraction, firms have an incentive to cut back on hiring which feeds even lower goods demand.

Even if prices are flexible (Hayek) **deficient aggregate demand can turn a crisis into a recession** (Keynes)[11]. Nominal rigidities can amplify this effect[12] and be particularly strong when resources are diverted from productive assets (capital) to unproductive ones (such as money)[13]. This amplification mechanism may be strong enough for large shocks to mean that the economy transitions into an equilibrium with potentially very high levels of unemployment: a dark corner of the labor market[14]. Moreover, the lack of social insurance which triggers the demand-contraction when idiosyncratic income risk increases, also implies that the economy can become trapped in a low growth–high unemployment trap: a secular stagnation[15]. **The importance of heterogeneity and individual income risk** has been highlighted in Hintermaier and Koeninger's analysis of household portfolios across European countries[16].

These models provide a conceptual and quantitative framework within which to analyze **the policy trade-off between the potential benefit to stimulate an economy in recession and the cost of possibly aggravating the debt problem and postponing the adjustment process** and, therefore, prolonging the recession. Nevertheless, the common conclusion is that a well-designed stimulus policy may be beneficial – we will return to this.

Analyzing this trade-off, **limited commitment** may play an important role. For instance, if the fiscal authorities of an indebted country cannot fully commit to their

[11] See P. Beaudry, D. Galizia, F. Portier "*Reconciling Hayek's and Keynes' Views of Recession*," (WP 2017/057)
[12] See M. Ravn and V. Sterk, "Job uncertainty and deep recessions" (WP 2016/30)
[13] See W. Den Haan, P. Rendahl and M. Riegler, "Unemployment (Fears) and Deflationary Spirals" (WP 2016/08)
[14] See V. Sterk, "The Dark Corners of the Labor Market," (WP 2016/10)
[15] See M.O. Ravn and V. Sterk, "Aggregation fluctuations with HANK & SAM: An Analytical Approach" (WP 2016/31)
[16] See T. Hintermaier and W. Koeniger, "Towards Understanding Differences in European Household Finances" (WP 2016/017). **The ADEMU Mini-conferences on "Macroeconomics of Financial Frictions" and on "Heterogeneous Agents in Macro," University of Cambridge, Cambridge, 19 April, 2016, and 10 May, 2016**, also focused on the role of financial frictions and heterogeneity in macroeconomics, a topic which is also the focus of the **ADEMU Conference on "The New Macroceonomics of Aggregate Fluctuations and Stabilisation Policy," UCL, London, 18-19 May, 2017.**

policies, **binding to an austerity program may be optimal in times of crisis** since it can act as a partial commitment device to implement a costly adjustment process, even if such counter-cyclical policy is not optimal in normal times[17]. This is consistent with the empirical work of Born *et al.* who find that the sovereign default risk-premium responds positively to a reduction in government consumption[18]. Nevertheless, in a low inflation environment if the reduction of government consumption takes the form of a reduction in the public wage or public employment it may not have any expansionary effect on the private sector, as Pappa *et al.* have shown[19].

More generally, given the limits that a monetary union places on monetary policy, one can ask how **stabilization** can be achieved **through fiscal policy[20]** and how effective the '**transmission of fiscal policy**' to the private sector is. Fève and Sahuc consider two different amplification mechanisms that have been proposed – the existence of 'hand-to-mouth' consumers (i.e. agents that simply consume their labor income) and **the possible complementarity between public and private consumption.** They conclude that it is the 'complementarity-mechanism' one which better explains the observed transmission patterns in the Euro Area[21], which is also consistent with the findings of Bermperoglou *et al.*[22]. Furthermore, the multiplier effect of increasing government consumption is lower when the feedback effects of government debt or of contemporaneous crowding are taken into account[23]; in fact, the investment multiplier can even be negative in the short run, while in the long run it is positive when the public investment is persistent[24].

While the above-cited ADEMU work contributes to the recent research on fiscal multipliers, the transmission mechanism of government spending shocks and fiscal strategies[25], there is also related ADEMU work that contributes to the recent research on optimal fiscal policy, focusing on how it should be designed in times of crisis and in a heterogeneous union[26]. In particular, regarding **capital taxation**, there are two

[17] See N. Balke, M. O. Ravn, "Time-Consistent Fiscal Policy in a Debt Crisis" (WP 2016/049), presented at the **ADEMU mini-conference on "Fiscal Policy in a Monetary Union in Times of Crisis," Barcelona GSE, March 30, 2017.**

[18] See B. Born, G. Müller and J. Pfeifer, "Does Austerity Pay Off?" (WP 2016/004)

[19] See E. Pappa, Sajedi, E. Vella, "Fiscal consolidation in a Disinflationary Environment: Price-VS Quantity-Based measures" (WP 2016/3)

[20] One of the topics of the **ADEMU Workshop on "Policies for Economic Stability: Lessons and the Way Forward," Galatina, Italy, 28-29 August, 2017.**

[21] P. Fève, J.G. Sahuc, "In search of the transmission mechanism of fiscal policy in the Euro Area" (WP 2016/28)

[22] D. Bermperoglou, E. Pappa, E. Vella ,"The Government Wage Bill and Private Activity," (WP 2016/33)

[23] See A. Moura, "The effects of government spending endogeneity on estimated multipliers in the U.S." (WP 2016/015)

[24] See M. Dupaigne and P. Fève, "A Persistent Government Spending and Fiscal Multipliers: The Investment-Channel," (WP 2016/027)

[25] A forthcoming **ADEMU workshop at Toulouse School of Economics** will focus on **"The Transmission Mechanism of Fiscal Policy in the Euro Area and in Times of Crisis."**

[26] Research on this, and related issues will be presented and discussed at the **ADEMU Conference on "Redesigning Fiscal Policies," Lisbon, 22 September, 2017.**

recurring themes in the policy debate, as well as in research: **whether it should be taxed at all and, if so, whether it should be centralized, or at least harmonized**, at the EU level[27]. Correia shows that the elimination of capital taxation may hurt the poor if done at the EU level, but not if done in a small economy, for which it is efficient[28] (a result that recalls the recurrent discussion between the EU and Ireland). Furthermore, if agents may renege on their debts, a successful tax reform should combine the elimination of capital taxes with an increase on the progressivity of labor income taxes[29].

Fiscal policy coordination not only refers to tax policy, but may also regard spending policies. On the latter, Gambetti and Gallio show[30] that, while real business cycles share many commonalities among the four large EA countries, public spending policies do not, resulting in important spillovers from government spending shocks[31].

On the financial link: Banking Union and the ECB

The financial and euro crises made clear the close linkages between the banking sectors of the euro area member states and the high potential for contagion these linkages could create – particularly when governments cannot credibly commit to never rescue banks[32]. It also flagged the possibility that a currency area where a single monetary policy is combined with provisions for supervision and resolution of its banking sector managed at the country level could be ill-designed. For these reasons, the European Union has pushed towards a deeper integration of its banking sector in the form of a **European Banking Union** (EBU).

The EBU is designed around three pillars. First, there is the **Single Resolution Mechanism** (SRM), which centralizes the European response to banks facing difficulties. The SRM will make use of the Single Resolution Fund (SRF) financed through contributions by the banking sector. The spirit of the SRM is that, unless there are severe systemic disruptions to the banking system, bank resolutions will make use of this fund and, therefore, there will be no need for bail-outs in which public funds are needed. However, a closer scrutiny of the design for the use and targets of the fund in these resolutions, shows that **the mechanism does not necessarily eliminate**

[27] The latest call for EU harmonization of corporate taxes was the October 2016 European Commission proposal to re-launch of the Common Consolidated Corporate Tax Base (CCCTB), as part of a broader Corporate Reform Package –as with past calls, implementation has not followed.
[28] See I. Correia's "Capital Taxation and Globalization," (WP 2016/19).
[29] See A. Abraham and E. Carceles-Poveda, "Tax Reform with Endogenous Borrowing Limits and Incomplete Asset Markets" (WP 2016/13)
[30] See L. Gambetti and F. Gallio, "Measuring fiscal spillovers in the Euro Area" (WP 2016/44).
[31] See also O. Arce, S. Hurtado, C. Thomas, "Policy Spillovers and Synergies in a Monetary Union," (WP 2016/006) presented at the **ADEMU Workshop on "Macroeconomic Imbalances and Spillovers," CERGE-EI, Prague, April 2016.**
[32] See W. Schelkle's "Hamilton's paradox revisited: lessons from the euro area" at the **ADEMU Conference on "How much of a Fiscal Union for the EMU?," Madrid, May 18-19, 2017**

implicit governmental guarantees and, hence, could fail to discipline banks' risk-taking incentives[33].

The second pillar is the **Single Supervisory Mechanism** (SSM)[34]. This mechanism, granted to the European Central Bank, has the role of monitoring the financial stability of banks. However, from a legal perspective, Monti and Petit question the existence of a suitable provision within the Treaties empowering the EU legislator to create the elements of a Banking Union, and warn that **the design of the SSM** as a multi-layered structure encompassing the ECB and the different National Competent Authorities (NCAs) **could jeopardize its effectiveness**[35]. Regarding **bank supervision**, Jungherr analyzes the endogenous choice of opacity by banks and shows that strategic behavior by banks reduces transparency and increases the risk of banking crises. Nevertheless, **full transparency may not be optimal** – in particular, performing public stress tests on banks, a task appointed to the SSM, could be harmful from a social point of view if the policy maker has access to banks' private information[36].

The third pillar is the **European Deposit Insurance Scheme** (EDIS), which is at a standstill –possibly due to fears of becoming an across-countries transfer system and/or exacerbating the inherent moral hazard problems. However, as Rodríguez observes there are other options to guarantee the value of deposits. He shows how **a 100% reserve requirement could be implemented in our current monetary system.** At a general level, a necessary condition for this implementation has to do with the remuneration of required reserves at the same rate as the refinancing operations of the central bank, a policy already followed by the Eurosystem. A second, and more stringent necessary condition, is the disposal by banks of enough eligible collateral to pledge on these refinancing operations. Needless to say, should this version of narrow banking be in place there would be no need for a deposit guarantee scheme at the European level to prevent self-fulfilling bank runs[37].

Within the EBU, **the ECB plays three roles**[38]. The first one, already mentioned, is **as guarantor of the SSM.** The second is **as the authority responsible for monetary stability** – in particular as liquidity provider for the euro area, a role that, as Adao and Silva have shown, it has been strengthened since the euro crisis with the observed

[33] See Mikaella Yiatrou, "Bank resolution credibility and economic implications" (WP 2016/38).

[34] The **ADEMU Workshop on "The European Banking Union and its Instruments," EUI, October 11, 2016**, focused on the legal status of the SSM and the SRM.

[35] See G. Monti and C.A. Petit, "The Single Supervisory Mechanism: legal fragilities and possible solutions" (WP 2016/16)

[36] J. Jungherr, "Bank opacity and financial crisis" (WP 2016/2)

[37] H. Rodriguez. "Narrow banking with modern depository institutions: Is there a reason to panic?" (WP 2017/052)

[38] These roles – in particular, their legal operative base – will be analyzed in the forthcoming **ADEMU workshop "The New ECB in Comparative Perspective",** 19-20 September 2017, EUI.

increase in firms' cash holdings[39]. The third role is **as the authority responsible for financial stability**, a *de facto* mandate which has become very relevant, if not predominant, since the financial and euro crises. Following the steps of the Federal Reserve Board and the Bank of England, the ECB has actively pursued Quantitative Easing (QE) policies. However, it has not implemented any Credit Easing policy such as the TALF implemented in 2009 by the FRB, which was a successful response to the freeze of the AAA-ABS market, and responsible for channeling a significant amount of funds for loans to households and small businesses. In fact, with TALF the FRB took a risk which needed to be backed up by the US Treasury, something unfeasible in the EA. Gaballo and Marimon, interpret the AAA-ABS freeze as a high-interest-high-risk Self-Confirming Equilibrium and show that a **credit-easing policy** – such **as** TALF – is **an optimal policy** that dissipates (pessimistic) misbeliefs, even when the central bank has the same misbeliefs as private creditors[40].

On the legal, operational and political-economy limits of EMU

Legal, operational and political-economy limitations are not only present in the design of the European Banking Union, but also in the **EMU** design itself[41]. In particular, the underlying **intergovernmental design** makes EMU possible, but it also has three important implications. First, national jurisdictional or political institutions may overturn, or **hold up joint policy initiatives** (not only fiscal), as Beukers and Fasone document and discuss[42]. Second, as Kilpatrick has emphasized, there are three central legal challenges inherent in the current economic governance regime, namely (a) limits to the competence of the EU to strengthen economic governance, (b) the issue of compatibility with fundamental rights and legitimacy, and (c) **the sheer complexity of economic governance**. In particular, regarding the latter, can the existing *Macroeconomic Imbalance Procedure* can provide anything more than transparency and 'peer-pressure'[43]? Third, and in part as a corollary to (c), there are serious **limits to policy coordination,** since EMU has evolved from a relatively simple rule-based system to a more encompassing and discretional one – an example being the evolution of the Stability and Growth Pact (SGP) which, with all its ex-post revisions, has never been confronted with an enforcement test[44]. There is a need for simplification, drawing the lines, and using rewards more than (non-credible) sanctions, as Steinbach discusses[45].

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[39] See B. Adão and A.C. Silva, "The Effect of Firm Cash Holdings on Monetary Policy," (WP 2016/11)

[40] G. Gaballo and R. Marimon, "Breaking the spell with credit-easing," (WP 2016/1)

[41] The **ADEMU Workshop on "Legal and Institutional Dimensions of EMU," EUI, Florence, October 2015,** provided an overview of the limits of the current fiscal and monetary framework.

[42] T. Beukers and C. Fasone, "EMU and national constitutional conditions to long-term change" (WP 2016/39)

[43]See C. Kilpatrick "The new Economic component of EMU: A Lawful and Effective Design," (WP 2016/7)

[44] See P. Leino and T. Saarenheimo "On the limits of EU Economic Policy coordination" (WP 2016/36)

[45] A. Steinbach, "Structural Reforms in EU Member States: Exploring Sanction-based and Reward-based Mechanisms (WP 2016/45)

Most of these legal issues are also a manifestation of **the political-economy limitations** of the current EMU framework. As the recent work of the IMF shows, countries' compliance with the agreed rules (e.g. the SGP) has been lower among the largest, as well as among those with weaker domestic governments – that is, a weak central authority may be reluctant to punish them: whether because they are the strong ones, or whether because being weak they may fail if punished[46]. There are two other broader political-economy issues that deserve ADEMU's attention: one regards the strengthening of the institutional framework – especially of the EA, for example, with a Treasury; the other, the weakening of rent-seeking activities within the EU – in particular, lobbying activities that can distort or damage policies.

There may be a need to develop or strengthen the Fiscal Union policies and institutions – at the level of the EU, EA or some other subset of countries – in order to efficiently allocate the Union's public goods (defense, security, migration, etc.), but the ADEMU research question is: **how much of a fiscal union is needed to effectively operate an EMU?**[47] There are two dimensions to this question. One is the need for **a "Treasury" with financial capacity**. As has already been mentioned, the ECB would need a financial back-up to be an 'ultimate lender of last resort', or to implement unconventional policies with risks that cannot (should not?) be absorbed by its balance sheet (e.g. as the FED did with TALF); similarly, within the current Banking Union design (without 100% requirements), public guarantees may be needed. However, we have also mentioned a downside to proposals of this type: a central financial capacity, unless it is well designed, may exacerbate moral hazard problems and, possibly, implement undesired transfers across countries. On the other hand, after 2008, unconventional monetary policies have become a source of revenue – say, for the U.S. Treasury – while maintaining price stability; in other words, central banks can provide fiscal capacity by managing their asset portfolio, as large 'non-for-profit hedge funds'.

The other dimension is **a "Treasury" as a fiscal authority**. Existing treasuries get, in part, their authority through having financial capacity, but this need not be the case. In fact, at least in the EA, there is a need to provide proper coordination and decision making to many decisions taken by the ECB, the ESM and the EBU (SRM & SRF) – which, in part, respond to the fiscal policies of the member states – and have fiscal (or political) consequences (e.g. purchasing and handling sovereign debt, etc.) for the EA. In the current framework this 'authority' is, in practice, the Eurogroup which, even given the crucial role it has played through the euro crisis, remains an 'informal body', with its authority – for example, in relation to the other EA institutions – still ill defined, as it is its accountability. The latter is important since, as it happens with Treasuries, fiscal and monetary coordination is at the fringes of the independence status of the ECB.

[46] V. Gaspar, S. Gupta and C. Mulas-Granados (eds.) *Fiscal Politics*, IMF (2017).
[47] A question that will be addressed by the **ADEMU Conference on "How much of a Fiscal Union for the EMU?," Madrid, May 18-19, 2017.**

There is a wide literature in economics about the importance of central bank independence from politics. However, central banks are far from independent from private-sector rent-seeking. The banking sector has been extremely innovative in defeating measures designed to combat rent-seeking and this poses a problem both to tax-payers who get to pay the bills and to the stability of the system. The EBU is not immune to these different forms of rent-seeking, which in some cases take the simple form of 'defending their assets' – for example, when in the first round of the Greek debt crisis, in 2010, the option of rescheduling the unsustainable debt was dismissed. The theoretical work of Levine and Modica emphasizes the underlying mechanisms at work and, possible, if any, forms of immunization in democratic competitive economies[48].

PROPOSING

The above ongoing ADEMU research – which, in turn, builds on the work of many ADEMU Associated Researchers, and others – already helps us to understand the shortcomings of the current EMU framework, as well as of proposals that do not properly take into account 'the links between monetary, fiscal, financial and social policies' and the underlying trade-offs, which are often shaped by 'existing distortions and frictions in our economies' (i.e. away from the 'ideal world'), 'credibility problems' (limited commitment or enforcement and moral hazard), 'agents' heterogeneity and of their risks and expectations.' Obviously, a single model cannot, and should not, attempt to take all these elements into account, in the same way that no single evidence can elucidate them all, but keeping them in mind help us to improve on existing models and policy proposals.

In particular, as we have seen, the ongoing ADEMU research can help: the design of debt-markets and contracts to reduce the risk of self-fulfilling debt crises; better assessment of the trade-off between stimulus and austerity programs in times of crisis – in particular, the effectiveness of fiscal policies; assessment of whether capital taxes should be used or avoided; reassessment of the EBU design (even it is not a core element of the project) and exploration of new financial arrangements to reduce financial risks; a definition of the legal and political-economy limits of the current EMU framework and how some may be overcome. Further work needs to be done, but a base is now in place. Furthermore, there is an area where more concrete proposals are underway, with which we conclude this narrative: risk-sharing arrangements for a new EMU framework.

A risk-sharing fund for the Euro Area?

[48] D. Levine and S. Modica "Size, fungibility and the strengh of lobbying organizations," (WP 2016/22)

A recognized problem with the EMU design is how country or regional, specific shocks can be smoothed, given that there is a common currency and (*Fiscal Compact*) limitations on fiscal national policies. Even under the present, more flexible, interpretation of the Stability and Growth Pact, the ability to share risks is very limited, compared with federal systems, where the same federal budget provides some risk sharing to imperfectly correlated shocks across the federation[49]. Ferrari and Rogantini have shown, using counterfactual analysis, that being in the EA did not help to smooth consumption – in particular, for countries on the periphery[50]. The development of the European Banking Union can help to pool risks, but it is unlikely it will have the smoothing effect that pro-cyclical local tax revenues have in federal tax systems. Similarly, it can be argued that the ESM can help to smooth consumption but it is not designed as a risk-sharing mechanism (we return to this).

A "shock absorbing facility" for the EA, or EU, must take into account two problems: first, that the extent of *ex-post* solidarity in a heterogeneous union is limited (i.e. risk-sharing transfers should not become persistent transfers beyond some mutually accepted limits); second that, as with any insurance scheme, there may be moral hazard problems since idiosyncratic shocks (e.g. welfare state commitments) can have an important endogenous component and information about the effort to prevent them is limited[51]. In other words, what is needed is the design of a *constrained efficient risk-sharing mechanism,* along the lines of the *Financial Stability Fund* (FSF) proposed by Ábrahám *et al*.[52]. The fund sets a long-term contract with each participating country specifying state-contingent countercyclical transfers, designed in such a way that neither the country nor the fund, have any incentive to break the contract at any point in time, and the country exercises the right amount of effort to reduce country risks.

It is interesting to note how the FSF mechanism compares with – *de facto* defaultable – long-term uncontingent sovereign debt contracts, currently in place, when the risk-averse 'borrowing' country is subject to similar shocks that the 'euro stressed countries' have been exposed to, in the last ten years. Without debt crises, the real euro crisis would not have been so severe, nor would it have turned into a recession and

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[49] Furcieri and Zdziencka (2015, *Open Eco. Review*) estimate, that in EA(15), 1978 – 2010, 70% of countries' business cycle shocks are not smoothed, while the percentage is substantially lower in US states (25%) or in German Landers (20%). Using their methodology, our own estimate for EA(19), 1995 – 2015, is 83% (M. Lanati).

[50] A. Ferrari, A. Rogantini Picco, "International Risk Sharing in the European Monetary Union" (WP 2017/055)

[51] Although it can be improved, an issue that will be discussed in the **ADEMU Workshop on "Measures of Public Balance Sheet Risk Assessment and on Social & Labour Insurance Risks," U. of Bonn, July, 6-7, 2017.**

[52] Á. Ábrahám; A. Cabrales, Y. Liu and R. Marimon, "On the optimal design of a Financial Stability Fund" (2017), with preliminary results presented at the **ADEMU Workshop on "Risk Sharing Mechanisms for the EU," EUI, Florence, May 2016.** A simpler form of fiscal transfers is studied in G. de Almeida Bandeira, "Fiscal Transfers in a Monetary Union with Sovereign Risk" (WP 2016/47).

consumption smoothing and, therefore, welfare of the borrowing country would have been higher, even if *ex-post* permanent transfers from the risk-neutral fund were set to zero.

Furthermore, risk-sharing transfers can take the form of long-term (state contingent) bonds, and the fund has an important capacity to absorb existing (non-contingent) debts, therefore it can also be seen as an institution that transforms non-contingent debts, with possible default, into contingent debts -- effectively non-defaultable debts, to the extent that ex-post, neither the debtor nor the lender want to breach or renegotiate the contract. In sum, an entity that can also help to overcome another EMU problem:

Dealing with the euro crisis debt overhang

In the aftermath of the euro crisis a main issue is whether the EMU has the correct policies and institutions to handle the existing **debt overhang problem** and to prevent – or at least deal better with -- future debt crises. The creation of the **European Stability Mechanism** (ESM) has been the main institutional innovation of the EMU to resolve debt crises. It has provided financial assistance to Greece (ongoing), Cyprus, Ireland, Portugal and Spain. In particular it has extended the maturity of existing debts, reducing turnover risks, and providing more resilience than traditional programs, such as the ones provided by the IMF throughout the euro-crisis[53]. Furthermore, Collective Action Clauses (CAC) have been introduced in order to assist debt restructuring, which apply to all EA bonds issued from 2013[54].

There are several proposals to deal with the debt overhang problem that combine some form of debt restructuring with the transformation of a fraction of the existing sovereign debts into EA sovereign Eurobonds, or an EA institution that would purchase national public debt of EA members. The most recent one, by Corsetti *et al.,* combines a "non-defaultable" Eurobond issued by a "euro area fund" with debt restructuring of excessive national public debts (such a combination is also seen as a framework for macroeconomic stabilization, with the fund having fiscal capacity and being a backstop support for the EMU, i.e. fulfilling some of the Treasury functions discussed above)[55]. However, while conditionality to 'fiscal criteria' is required to activate the mechanism, there is no *ex-post* conditionality and "non-defaultable" means that the euro itself

[53] G. Corsetti, A. Erce and T. Uy , "Debt Sustainability and Terms of Official Support", presented at the **ADEMU Conference on "Sovereign Debt, Sustainability and Lending Institutions"** and the **ADEMU Workshop on "Economic Policy Changes"** (EUI, Florence, November 2016).
[54] For a discussion of its shortcomings, see T. Martinelli, "Euro CAC and the existing rules on sovereign debt restructuring in the euro area an appraisal 4 years after the Greek debt swap" (WP 2016/43).
[55] G. Corsetti, L. Dedola, M. Jarociński, B. Maćkowiak and S. Schmidt, "Macroeconomic stabilization, monetary-fiscal interactions, and Europe's monetary union" (WP 2017/058 & ECB DP No 1988/2016), which contains a synthetic comparison with other existing proposals to deal with the debt overhang problem.

absorbs the potential cost of – possibly, partial – default (or, presumably, new lending is renegotiated).

There are similarities with the current ESM practices, where conditionality is applied ex-ante (through agreed austerity measures) but not ex-post and extending the maturity of the debt can also accentuate moral hazard problems since governments can simply postpone their debt overhang problem[56]. As indicated, the (FSF) constrained optimal risk-sharing mechanism accounts for the moral hazard problem it is "non-defaultable by design," not by transferring the risk to the euro and, in fact, does not require an ex-ante 'agreed austerity program', although it may help to consolidate non FSF debts.

A European Unemployment Insurance mechanism?

Of particular interest is to study the possibility of implementing a European Unemployment Insurance scheme. This is a current proposal in the European Parliament, being studied by the European Commission, since risk-sharing within the labor market could be an important landmark of the EMU welfare state. However, even the most developed quantitative studies do not account for the structural differences across EU labor markets and how different unemployment insurance policies change workers' saving behaviors, or employment decisions, e.g. the move between the different states of employment, unemployment and inactivity[57]. When all these elements are taken into account and calibrated the diagnosis is very revealing of the state of the EA labor markets and policies and of the difficulties of sharing risks across national labor markets without disrupting the efficient allocation of labor or generating persistent redistribution effects, as the ongoing work of Ábrahám *et al.*[58] shows.

In particular, 'structural differences' across EU labor markets are, in many cases, exacerbated by differences in national unemployment insurance policies. Remarkably, the 'optimal', and 'politically supported', UI policies (i.e. within the class of existing policies characterized by their replacement and duration ratios) are very similar across the 'structurally diverse' EU countries. Permanent transfers can easily be avoided by having different (experience rated) labor taxes to cover UI benefits. Nevertheless, these tax differences possibly provide the best indicator of the cost of having bad labor market institutions, in terms of job creation and destruction, even if

[56] For example, Spain has already made four early repayments to the ESM (while growing but not being able to reduce its deficit to previously-agreed levels), but could have not done so in accordance with the ESM uncontingent debt contract.
[57] See the complementary work of M. Dolls, C. Fuest, D. Neumann, A. Peichl "An Unemployment Insurance Scheme For The Euro Area? A Comparison Of Different Alternatives Using Micro Data" (WP 2016/048).
[58] Á. Ábrahám, J. Brogueira de Sousa, R. Marimon and L. Mayr, "On the design of a European Unemployment Insurance Mechanism" (2016), preliminary results presented at the **ADEMU Workshop on "Job Creation, Job Destruction and Productivity Growth," EUI, Florence, 14-15 October, 2016.**

countries could implement their ‘optimal’ policies without an EU scheme, having it at the EA, or wider, level helps risk-sharing (taxes would still be different, but smoother with an EA balanced budget) and gives a Bismarckian dimension to the EA, or EU.

APPENDIX. Abstracts of cited papers:

1. [A Journey Down the Slippery Slope to the European Crisis: A Theorist's Guide, V.V. Chari, A. Dovis, P.J. Kehoe | ADEMU Working Paper: 2017/054]

We offer a theoretically based narrative that attempts to account both for the formation of the European Monetary Union and the challenges it has faced. Lack of commitment to policy plays a central role in this narrative [back].

2. [Rethinking Optimal Currency Areas, V.V. Chari, A. Dovis and P. Kehoe – WP2016/009]

The traditional Mundellian criterion, which implicitly assumes commitment to monetary policy, is that countries with similar shocks should form unions. Without such commitment a new criterion emerges: countries with dissimilar temptation shocks, namely those that exacerbate time inconsistency problems, should form unions. Critical to this new criterion is the idea that monetary policy is benevolent in that it takes into account the interests of all the countries in the union. When countries have dissimilar temptation shocks, benevolent unions can help overcome the time inconsistency problems that individual countries face. Existing unions can strictly gain by admitting new members with more severe time inconsistency problems, because policy in the expanded union is less sensitive to the temptation shocks of members of the existing union [back].

3. [Fiscal Unions Redux, P. Kehoe and E. Pastorino | ADEMU Working Paper: 2016/012]

Before the advent of sophisticated international financial markets, the widely accepted belief was that within a monetary union, a union-wide authority orchestrating fiscal transfers between countries is necessary to provide adequate insurance against country-specific economic fluctuations. This belief prompts a question: Do sophisticated international financial markets obviate the need for such an active union-wide authority? We argue that they do. Specifically, we show that in a benchmark economy with no international financial markets, an activist union-wide authority is necessary to achieve desirable outcomes. With sophisticated financial markets, however, such an authority is unnecessary if its only goal is to provide cross-country insurance. Since restricting the set of policy instruments available to member countries does not create a social externality across them, this result holds in a wide variety of settings. Finally, we establish that an activist union-wide authority concerned just with providing insurance across member countries is needed only when individual countries are either unable or unwilling to pursue desirable policies [back].

4. [Sovereign Default: The Role of Expectations, J. Ayres, G. Navarro, J. Nicolini and P. Teles | ADEMU Working Paper: 2016/025]

In the standard model of sovereign default, as in Aguiar and Gopinath (2006) or

Arellano (2008), default is driven by fundamentals alone. There is no independent role for expectations. We show that small variations of that model are consistent with multiple interest rate equilibria. Some of those equilibria correspond to the ones identified by Calvo (1988), where default is likely because rates are high, and rates are high because default is likely. The model is used to simulate equilibrium movements in sovereign bond spreads that resemble sovereign debt crises. It is also used to discuss lending policies similar to the ones announced by the European Central Bank in 2012 [back].

5. *The Mystery of the Printing Press Monetary Policy and Self-fulfilling Debt Crises, G.Corsetti, L.Dedola | ADEMU Working Paper: 2016/035*

We study the conditions under which unconventional (balance-sheet) monetary policy can rule out self-fulfilling sovereign default in a model with optimizing but discretionary scale and monetary policymakers. When purchasing sovereign debt, the central bank effectively swaps risky government paper for monetary liabilities only exposed to inflation risk, thus yielding a lower interest rate. As central bank purchases reduce the (ex ante) costs of debt, we characterize a critical threshold beyond which, absent fundamental fiscal stress, the government strictly prefers primary surplus adjustment to default. Because default may still occur for fundamental reasons, however, the central bank faces the risk of losses on sovereign debt holdings, which may generate inefficient inflation. We show that these losses do not necessarily undermine the credibility of a backstop, nor the monetary authorities´ ability to pursue its inflation objectives. Backstops are credible if either the central bank enjoys fiscal backing or fiscal authorities are sufficiently averse to inflation [back].

6. *Regime-Dependent Sovereign Risk Pricing during the Euro Crisis, A. Delatte, J.Fouquau, R.Portes | ADEMU Working Paper: 2016/032*

Previous work has documented a greater sensitivity of long-term government bond yields to fundamentals in Euro area peripheral countries during the euro crisis, but we know little about the driver(s) of regime switches. Our estimates based on a panel smooth threshold regression model quantify and explain them: 1) investors have penalized a deterioration of fundamentals more strongly from 2010 to 2012; 2) the higher the bank credit risk, measured with the premium on credit derivatives, the higher the extra premium on fundamentals; 3) after ECB President Draghi's speech in July 2012, it took one year to restore the non-crisis regime and suppress the extra premium [back].

7. *Exit expectations and debt crises in currency unions, A. Kriwoluzky, G. Müller and M. Wolf | ADEMU Working Paper: 2016/005*

Membership in a currency union is not irreversible. Exit expectations may emerge during sovereign debt crises, because exit allows countries to reduce their liabilities through a currency redenomination. As market participants anticipate this possibility, sovereign debt crises intensify. We establish this formally within a small open economy model of changing policy regimes. The model permits explosive dynamics of debt and sovereign yields inside currency unions and allows us to distinguish between exit expectations and those of an outright default. By estimating the model on Greek data, we quantify the contribution of exit expectations to the crisis dynamics during 2009–2012 [back].

8. *Is Inflation Default? The Role of Information in Debt Crises, M.Bassetto, C.Galli | ADEMU Working Paper: 2017/059*

We consider a two-period Bayesian trading game where in each period informed agents decide whether to buy an asset ('government debt') after observing an idiosyncratic signal about the prospects of default. While second-period buyers only need to forecast default, first-period buyers pass the asset to the new agents in the secondary market, and thus need to form beliefs about the price that will prevail at that stage. We provide conditions such that coarser information in the hands of second-period agents makes the price of debt more resilient to bad shocks not only in the last period, but in the first one as well. We use this model to study the consequences of issuing debt denominated in domestic vs. foreign currency: we interpret the former as subject to inflation risk and the latter as subject to default risk, with inflation driven by the information of a less-sophisticated group of agents endowed with less precise information, and default by the information of sophisticated bond traders. Our results can be used to account for the behavior of debt prices across countries following the 2008 financial crisis, and also provide a theory of 'original sin' [back].

9. *Reconciling Hayek's and Keynes' Views of Recession, P. Beaudry, D. Galizia, F. Portier | ADEMU Working Paper: 2017/057*

Recessions often happen after periods of rapid accumulation of houses, consumer durables and business capital. This observation has led some economists, most notably Friedrich Hayek, to conclude that recessions often reflect periods of needed liquidation resulting from past over-investment. According to the main proponents of this view, government spending or any other form of aggregate demand policy should not be used to mitigate such a liquidation process, as doing so would simply result in a needed adjustment being postponed. In contrast, ever since the work of Keynes, many economists have viewed recessions as periods of deficient demand that should be countered by activist fiscal policy. In this paper, we re-examine the liquidation perspective of recessions in a setup where prices are flexible but where not all trades are coordinated by centralized markets. The model illustrates why liquidations likely cause recessions characterized by deficient aggregate demand and accordingly suggests that Keynes' and Hayek's views of recessions may be closely linked. In our framework, interventions aimed at stimulating aggregate demand face a trade-off whereby current stimulus postpones the adjustment process and therefore prolongs the recessions, but where some stimulative policies may nevertheless remain desirable [back].

10. *Job uncertainty and deep recessions, M. Ravn and V. Sterk | ADEMU Working Paper: 2016/030*

This paper proposes a theory in which aggregate shocks also produce idiosyncratic risk which in turn introduces a demand channel that we argue is relevant for understanding the Great Recession. We study a model in which households are subject to uninsurable idiosyncratic employment shocks, firms set prices subject to nominal rigidities, and the labor market is characterized by matching frictions and by downward inflexible wages. Higher risk of job loss and worsening job finding prospects during unemployment depress goods demand because of a precautionary savings motive amongst employed households. Lower goods demand produces a decline in job vacancies and the ensuing drop in the job finding rate in turn triggers higher precautionary saving setting in motion an amplification mechanism. The amplification mechanism is absent from standard macroeconomic models and depends on the combination of incomplete financial markets and frictional goods and labor markets. The model can account for key features of the Great Recession in response to the observed changes in the job separation rate and an increase in search efficiency heterogeneity estimated from the matching function. We argue that the latter shock is required to reconcile the large increase in the incidence of longer term unemployment observed during the Great Recession [back].

11. *Unemployment (Fears) and Deflationary Spirals, W. Den Haan, P. Rendahl and M. Riegler | ADEMU Working Paper: 2016/008*

The interaction of incomplete markets and sticky nominal wages is shown to magnify business cycles even though these two features – in isolation – dampen them. During recessions, fears of unemployment stir up precautionary sentiments which induce agents to save more. The additional savings may be used as investments in both a productive asset (equity) and an unproductive asset (money). But even a small rise in money demand has important consequences. The desire to hold money puts deflationary pressure on the economy, which, provided that nominal wages are sticky, increases wage costs and reduces firm profits. Lower profits repress the desire to save in equity, which increases (the fear of) unemployment, and so on. This is a powerful mechanism which causes the model to behave differently from both its complete markets version, and a version with incomplete markets but without aggregate uncertainty. In contrast to previous results in the literature, agents uniformly prefer non-trivial levels of unemployment insurance [back].

12. *The Dark Corners of the Labor Market, V. Sterk | ADEMU Working Paper: 2016/010*

Standard models predict that episodes of high unemployment are followed by recoveries. This paper shows, by contrast, that a large shock may set the economy on a path towards very high unemployment, with no recovery in sight. First, I estimate a reduced-form model of flows in the U.S. labor market, allowing for the possibility of multiple steady states. Next, I estimate a non-linear search and matching model, in which multiplicity of steady states may arise due to skill losses upon unemployment, following Pissarides (1992). In both cases, estimates imply a stable steady state with around 5 percent unemployment and an unstable one with around 10 percent unemployment. The search and matching model can explain observed job finding rates remarkably well, due to its strong endogenous persistence mechanism [back].

13. *Macroeconomic Fluctuations with HANK & SAM: an Analytical Approach, M. Ravn and V. Sterk | ADEMU Working Paper: 2016/031*

New Keynesian models with unemployment and incomplete markets are rapidly becoming a new workhorse model in macroeconomics. Such models typically require heavy computational methods which may obscure intuition and overlook equilibria. We present a tractable version which can be characterized analytically. Our results highlight that - due the interaction between incomplete markets, sticky prices and endogenous unemployment risk - productivity shocks may have radically different effects than in traditional NK models, that the Taylor principle may fail, and that pessimistic beliefs may be self-fulfilling and move the economy into temporary episodes of low demand and high unemployment, as well as into a long-lasting .unemployment trap.. At the Zero Lower Bound, the presence of endogenous unemployment risk can create inflation and overturn paradoxical properties of the model. We further study financial asset prices and show that non-negligible risk premia emerge [back].

14. *Towards Understanding Differences in European Household Finances, T. Hintermaier and W. Koeniger | ADEMU Working Paper: 2016/017*

This paper documents facts about differences in household portfolio composition across European countries, using the Eurosystem's Household Finance and Consumption Survey (HFCS) as a data source. On the asset side of balance sheets, the focus of our analysis is on the distinction between housing wealth and other assets. On the liability side, we distinguish types of debt which are collateralized by housing. As a consequence, this paper addresses crossEuropean differences in home-equity positions. These facts inform the design of a European Household Finance Common Reference Model (HFCRM). This reference model identifies a common structure of key factors in household financial decision making. At the same time the HFCRM is flexible enough to admit parameterizations which fit the diversity of financial and legal institutions across European countries [back].

15. *Time-Consistent Fiscal Policy in a Debt Crisis, N. Balke, M. O. Ravn | ADEMU Working Paper: 2016/049*

We analyze time-consistent fiscal policy in a sovereign debt model. We consider a production economy that incorporates feedback from policy to output through employment, features inequality though unemployment, and in which the government lacks a commitment technology. The government's optimal policies play off wedges due to the lack of lump-sum taxes and the distortions that taxes and transfers introduce on employment. Lack commitment matters during a debt crisis - episodes where the price of debt reacts of elastically to the issuance of new debt. In normal times, the government sets procyclical taxes, transfers and public goods provision but in crisis times it is optimal to implement austerity policies which minimize the distortions deriving from default premia. Could a third party provide a commitment technology, austerity is no longer optimal [back].

16. *Does Austerity Pay Off?, B. Born, G. Müller and J. Pfeifer| ADEMU Working Paper: 2016/004*

We investigate if a reduction of government consumption lowers the sovereign default premium. For this purpose we build a new data set for 38 emerging and developed economies. Results vary along three dimensions. First, the time horizon: the premium declines, but only in the long run. Second, initial conditions: the premium increases in the short run, but only if it is already high. Third, size: the short-run response of the premium increases disproportionately as government consumption is reduced. We rationalize these findings in a structural model of optimal sovereign default where default risk is priced in an actuarially fair manner [back].

17. *Fiscal consolidation in a Disinflationary Environment: Price-VS Quantity-Based measures, E. Pappa, R. Sajedi and E. Vella | ADEMU Working Paper: 2016/003*

An important feature of the current economic conditions in the EU, which challenges the design and implementation of macroeconomic policy, is inflation uncertainty. With monetary policy at the zero lower bound, and inflation well below its target, a key issue for policy makers is the effect this has on the transmission of fiscal policy. We aim to address this question, in particular comparing the effects of price-based and quantity-based fiscal instruments. In this paper we focus on the public wage bill, and consider a model of a monetary union in which the government can consolidate their debt through reductions in the public wage or public employment. We find that in both cases the low inflation environment eliminates the expansionary effects of the reduction in the public wage bill for the private sector. The drag in economic activity is substantially amplified in the low inflation environment, with increased debt-to-GDP levels during the consolidation process [back].

18. *In search of the transmission mechanism of fiscal policy in the Euro Area, P. Fève and G. Sahuc | ADEMU Working Paper: 2016/028*

This paper applies the DSGE-VAR methodology to assess the size of fiscal multipliers in the data and the relative contributions of two transmission mechanisms of government spending shocks, namely hand-to-mouth consumers and Edgeworth complementarity. Econometric experiments show that a DSGE model with Edgeworth complementarity is a better representation of the transmission mechanism of fiscal policy as it yields dynamic responses close to those obtained with the flexible DSGE-VAR model (i.e. an impact output multiplier larger than one and a crowding-in of private consumption). The estimated share of hand-to-mouth consumers is too small to replicate the positive response of private consumption [back].

19. *[The Government Wage Bill and Private Activity, D.Bermperoglu, E.Pappa, E.Vella | ADEMU Working Paper: 2016/033]*

We estimate the effects of public wage expenditures on output and the labor market in U.S. data by identifying shocks to public employment and public wages using sign restrictions. Public wage shocks do not induce significant effects on output, but disaggregating by government level reveals that their effects can be contractionary at the federal level and expansionary at the state and local level. Public employment shocks are expansionary at all government levels by crowding in private consumption and increasing labor force participation and private-sector employment. Local government wage shocks lead to a similar crowd in of private consumption, while shocks to federal government wages lead to public-private wage spillovers, inducing a negative labor demand effect, a sharp fall in private-sector employment and an increase in unemployment. We develop a DSGE model with public good production, search and matching frictions, and endogenous labor force participation that matches the qualitative properties of the empirical evidence. The sign of the output response for public wage shocks depends crucially on the degree of complementarity between public and private goods in the consumption bundle [back].

20. *[The effects of government spending endogeneity on estimated multipliers in the U.S., A. Moura | ADEMU Working Paper: 2016/015]*

This paper uses an estimated sticky-price model to identify endogenous movements in government consumption in the U.S. economy. Two feedback effects are considered, one originating from the stock of public debt and one from contemporaneous output. The data provide significant statistical evidence in favor of such mechanisms, even though a subsample analysis reveals that their strength may have decreased over time. Monte Carlo simulations assessing a DSGE model with exogenous spending and various identified VARs suggest that failing to account for these feedbacks may induce a severe upward bias in estimated multipliers [back].

21. *[Persistent Government Spending and Fiscal Multipliers: The Investment-Channel, M. Dupaigne, P. Fève, ADEMU Working Paper: 2016/027]*

This paper inspects the mechanism shaping government spending multipliers in various small scale DSGE setups with endogenous labor supply and capital accumulation. We analytically characterize the short-run investment multiplier, which in equilibrium can be either positive or negative. The investment multiplier increases with the persistence of the exogenous government spending process. The response of investment to government spending shocks strongly affects short-run multipliers on output and consumption [back].

22. *[Capital Taxation and Globalization, I. Correia | ADEMU Working Paper: 2016/019]*

The decline of capital taxation is associated with efficiency gains. We show that, when agents are heterogeneous, equity concerns can change the policy recommendation driven by efficiency. Given the empirical evidence on the roots of heterogeneity inside each country, either in developing or developed economies, the elimination of capital taxation would lead always to a decline in inequality and to an increase of welfare of the poorest, in a small open economy acting unilaterally. On the contrary for a closed economy, or for group of open economies following the same policy, the opposite can be the result: with the elimination of capital taxation it can hurts the poorest of each country. Therefore a low degree of capital openness can support a positive tax on capital [back].

23. *Tax Reform with Endogenous Borrowing Limits and Incomplete Asset Markets, A. Abrahám and E. Carceles-Poveda | ADEMU Working Paper: 2016/013*

This paper studies different income tax reforms in an infinite horizon economy with a progressive labor income tax code, incomplete markets and endogenous borrowing constraints on asset holdings. The endogenous limits are determined at the level at which households are indifferent between defaulting and paying back their unsecured debt. The reforms we study area all revenue neutral and they eliminate capital income taxes but they differ in the changes to the labor income tax code. Our results illustrate that a successful reform has to combine the elimination of capital income taxes with an increase in the progressivity of the labor income tax code. On the one hand, this reduces the disposable income of the rich, leading to lower savings and to a lower aggregate capital. On the other hand, it allows the middle income households to save more at a higher after tax interest rate and the low income households to borrow more on a lower interest rate. This increases welfare both in the long run and throughout the transition. The welfare gains are hence obtained not through more capital accumulation but by reducing wealth and consequently consumption inequality [back].

24. *Measuring fiscal spillovers in the Euro Area, L. Gambetti, F. Gallio | ADEMU Working Paper: 2016/044*

We study fiscal policy coordination and fiscal policy spillovers in Germany, France, Spain and Italy using a Time-Varying Coefficients VAR model for the period 1995-2014. While the four country-specific cycles share large commonalities, fiscal policy coordination across countries, measured as the time-varying correlation between government spending growth, is very low. Country-specific government spending shocks generate significant effects on the remaining countries. International spillovers are especially strong in the medium run and during the financial crisis. Also, we find heterogeneous and asymmetric response to spending across countries [back].

25. *Policy Spillovers and Synergies in a Monetary Union, O. Arce, S. Hurtado and C. Thomas | ADEMU Working Paper: 2016/006*

We provide a general equilibrium framework for analyzing the effects of supply and demand side policies, and the potential synergies between them, in an asymmetric monetary union that faces a liquidity trap and a slow deleveraging process in its 'periphery'. We find that the joint implementation of pro-competition structural reforms in the periphery, a fiscal expansion in the 'core', and forward guidance about the three policies: forward guidance re-inforces the expansionary effects of country-specific policies, and the latter in turn improve the effectiveness of forward guidance [back].

26. *Bank resolution credibility and economic implications, M.Yiatrou | ADEMU Working Paper: 2016/038*

This paper tests the credibility of the bank resolution regime in the European Union in removing the implicit public guarantee that governments will bail-out their troubled banks, and discusses the implications of a resolution regime with limited credibility. It argues that the removal of the implicit guarantee, and thus the perceived credibility of the regime hinge greatly on the adequacy of funds envisaged for bank resolution in any given case, and on the willingness of a government to place a bank into resolution first, before bailing it out. As such, to test whether the implicit guarantee is removed, the paper analyses the adequacy of the envisaged funds by looking at their technicalities and their target-levels, starting from internal and external funding (the bail- in tool and capital markets) to the newly created Single Resolution Fund (SRF), National Resolution Funds (NRFs), Deposit Guarantee Scheme (DGS) and the Direct Recapitalisation Instrument (DRI) of the ESM. This analysis comes to the conclusion that the regime might not provide adequate funding for every given bank resolution, and as such it creates winners and losers under a limitedly-credible regime. This finding can have some important economic implications. Most importantly, it aggravates the inconsistencies of the cost of funding of different banks. Also, where it fails to remove the implicit guarantee, it creates an ever closer link between the cost of funding of the bank and its sovereign's credit rating instead of severing the sovereign-bank default loop. Nevertheless, the paper acknowledges that in order to construct a fully credible regime much higher sources of funding would be needed, which would pose huge opportunity losses and hurt the profitability of banks perhaps to a disproportionate extent. As such, the paper settles that the current regime might be a good compromise in terms of the limited credibility it provides [back].

27. *The Single Supervisory Mechanism: legal fragilities and possible solutions, C. Petit and G. Monti | ADEMU Working Paper: 2016/016*

This paper analyses the principal legal challenges posed by the current Banking Union apparatus. It focuses on the legal basis for Banking Union, the powers of the various agencies and regulators and the problems that arise from their interaction, and the difficult relationship between Euro-area and the internal market. It outlines legislative changes to address the problems of the SSM framework [back].

28. *Bank opacity and financial crisis, J. Jungherr | ADEMU Working Paper: 2016/002*

This paper studies a model of endogenous bank opacity. In the model, bank opacity is costly for society because it reduces market discipline and encourages banks to take on too much risk. This is true even in the absence of agency problems between banks and the ultimate bearers of the risk. Banks choose to be inefficiently opaque if the composition of a bank's balance sheet is proprietary information. Strategic behavior reduces transparency and increases the risk of a banking crisis. The model can explain why empirically a higher degree of bank competition leads to increased transparency. Optimal public disclosure requirements may make banks more vulnerable to a run for a given investment policy, but they reduce the risk of a run through an improvement in market discipline. The option of public stress tests is beneficial if the policy maker has access to public information only. This option can be harmful if the policy maker has access to banks' private information [back].

29. *Narrow banking with modern depository institutions: Is there a reason to panic?, H. Rodriguez Mendizabal, ADEMU Working Paper: 2016/052*

What would be the effect of imposing a 100 percent reserve requirement to depository institutions? This paper contends that reserves do not compete with loans on the asset side of bank's balance sheets. Thus, they only affect liquidity provision by banks indirectly through their impact on the cost of loan and deposit creation. This cost could be driven to zero if, as the Eurosystem does, central banks remunerated required reserves at the same rate of their refinancing operations. The paper argues that the crucial constraint imposed by a fully backed banking system is collateral availability by depository institutions [back].

30. *The Effect of Firm Cash Holdings on Monetary Policy, B. Adao and A. Silva | ADEMU Working Paper: 2016/011*

Firm cash holdings increased substantially from 1980 to 2013. The overall distribution of firm cash holdings changed in the same period. We study the implications of these changes for monetary policy. We use Compustat data and a model with financial frictions that allows the calculation of the monetary policy effects according to the distribution of cash holdings. We find that the interest rate channel of the transmission of monetary policy has become more powerful, as the impact of monetary policy over real interest rates increased. With the observed changes in firm cash holdings, the real interest rate takes 3.4 months more to return to its initial value after a shock to the nominal interest rate [back].

31. *Breaking the spell with credit-easing, G. Gaballo and R. Marimon | ADEMU Working Paper: 2016/001*

We show that credit crises can be Self-Confirming Equilibria (SCE), which provides a new rationale for policy interventions like, for example, the FRB's TALF credit-easing program in 2009. We introduce SCE in competitive credit markets with directed search. These markets are efficient when lenders have correct beliefs about borrowers' reactions to their offers. Nevertheless, credit crises – where high interest rates self-confirm high credit risk - can arise when lenders have correct beliefs only locally around equilibrium outcomes. Policy is needed because competition deters the socially optimal degree of information acquisition via individual experiments at low interest rates. A policy maker with the same beliefs as lenders will find it optimal to implement a targeted subsidy to induce low interest rates and, as a by-product, generate new information for the market. We provide evidence that the 2009 TALF was an example of such Credit Easing policy. We collect new micro-data on the ABS auto loans in the US before and after the policy intervention, and we test, successfully, our theory in this case [back].

32. *EMU and national constitutional conditions to long-term change, T.Beukers, C.Fasone | ADEMU Working Paper: 2016/039*

Significant long-term developments in EMU are conditioned not only by the current EU legal framework but also by national constitutions. Conditions are posed by constitutional courts interpreting the constitution, by putting limits to transfers of sovereignty and by putting limits on the basis of rights protection. Good examples of this are the German and Portuguese constitution. Conditions are posed also by referenda prescribed or allowed for the ratification of new treaties. Member states are free to determine the national constitutional requirements for the ratification of EU treaties (in line with the national constitution), including the use of referenda. The United Kingdom illustrates that development of the EU can also be conditioned by referenda on membership. Conditions are posed to euro area development by non-euro area member states. The most prominent example of this is again provided by the United Kingdom (Fiscal Compact and in-or-out referendum) [back].

33. *The new Economic component of EMU: A Lawful and Effective Design, C. Kilpatrick | ADEMU Working Paper: 2016/007*

This analysis aims to set out clearly and succinctly the legal arrangements for macro-economic governance in EMU, legal challenges to that regime and different ways of assessing that new regime. It focuses on changes introduced from 2010, the year when the euro area crisis, and the response to it, began, and on changes to the law other than those concerning provision of sovereign debt loan assistance. The analysis first presents the (many) key EMU acronyms before outlining in four diagrams what is new in EMU by looking at what changes have been made since 2010. It outlines what further proposals in this area are included in the Five Presidents' Report of June 2015. It then briefly examines three central legal challenges with the current regime: competence, compatibility and complexity. Finally it raises issues of the effectiveness of the EU macro-economic governance regime by considering three assessments: too early to say, abject failure or triumph of pragmatic intelligence. These raise questions of optimal policy design. The four diagrams accordingly provide the foundation for understanding the current regime, further proposed changes, legal challenges and issues of effectiveness [back].

34. *On the limits of EU Economic Policy coordination, P.Leino, T.Saarenheimo | ADEMU Working Paper: 2016/036*

Successive EMU roadmaps have presented the expansion of EU controls over Member States' economic policies as an integral part of monetary union, vital to its survival. Possible alternatives have been hardly discussed. In this contribution we trace the evolution of the EU economic policy coordination framework from a relatively narrow, rules-based exercise into a largely discretionary process that reaches even the most politically salient areas of the Member States' economic policies. We then discuss how the extensive coercive powers the EU formally possesses have turned out to be difficult to use in practice. This reflects the fundamental limits of the EU's legitimate use of power over its Member States, set by its current level of political and cultural integration. To have a chance of success, further designs EMU need to respect these limits [back].

35. *Structural Reforms in EU Member States: Exploring Sanction-based and Reward-based Mechanisms, A. Steinbach | ADEMU Working Paper: 2016/045*

An insufficient level of structural reforms remains a perennial phenomenon in the EU. Despite the gradual expansion of macroeconomic governance, legal instruments fostering the implementation of structural reforms have been underexploited. This article examines the leeway provided by EU Treaties and legislation to use existing and new instruments to incentivize structural reforms more forcefully. First, in light of the recent change in the EU Commission's enforcement practice, we highlight how the sanctions-based regime under the Stability and Growth Pact (SGP) can be extended to incorporate structural reforms. There is significant room for manoeuvre to account for the implementation of structural reforms both in the preventive and the corrective arm of the SGP. Second, contractual agreements on structural reforms offer an alternative to the sanction based system. Unlike existing instruments, contractual agreements allow for more egalitarian and reward-based incentives and thus deviate from the classic 'surveillance model' of economic governance in the EU. We can conceptualize such agreements in two ways: First, as agreements concluded between the EU and individual Member States, underpinned by financial support as an incentive. Second, as mutual agreements concluded between Member States, which agree on the implementation of structural reforms as a kind of barter trading ensuring reciprocity. We highlight the legal boundaries on scope and design of such agreements and how they relate to the institutional governance setting in the EU [back].

36. *Size, Fungibility and the Strength of Lobbying Organizations, D. Levine and S. Modica | ADEMU Working Paper: 2016/022*

How can a small special interest group successfully get an inefficient transfer at the expense of a much larger group with many more resources available for lobbying? We consider a simple model of collusive organizations that provide a public good in the form of effort and have a fixed cost per member of acting collusively. Our key result is that the willingness of such a group to pay for a given prize depends on whether the prize is fungible - that is, whether the prize can be used to pay for itself. If the prize is fungible, as in the case of a transfer payment, a smaller group always has an advantage. If the prize is non-fungible - civil rights for example - willingness to pay first increases then decreases with the size of the group. We use the theory to study agenda setting both with and without blackmail by the politician showing that in general the small group is not too greedy: when it wins it optimally chooses to pre-empt the large group by choosing a prize small enough to equal the large group participation cost [back].

37. *International Risk Sharing in the European Monetary Union, A. Ferrari, A. Rogantini Picco | ADEMU Working Paper: 2017/055*

This paper aims at empirically assessing the effect of the adoption of the euro on the ability of euro area member states to smooth consumption and share risk. With the objective of evaluating the economic performance of euro area countries in the scenario where the euro had not been adopted, we construct a counterfactual dataset of macroeconomic variables via the Synthetic Control Method. In order to get some preliminary measures of risk sharing, we compute correlations between consumption and GDP within a country, bilateral consumption correlations, and Brandt-Cochrane-Santa Clara indices across euro area member states. We then decompose risk sharing in different channels by means of the Asdrubali, Sorensen and Yosha (1996) output variance decomposition. Our difference in difference estimates show that the euro has not affected the level of international risk sharing across euro area countries, but has partially reduced the ability of member states to smooth consumption. We attribute this change to the higher GDP growth generated by the adoption of the euro, which has been accompanied by a greater output volatility. We also report differential effects for euro area core and periphery countries, showing that the former have not suffered any negative effect from the adoption of the euro in terms of risk sharing whereas the latter are now less able to smooth consumption [back].

38. *On the optimal design of a Financial Stability Fund, Á. Ábrahám; A. Cabrales, Y.Liu and R. Marimon | Draft*

A Financial Stability Fund set by a union of sovereign countries can improve countries' ability to share risks, borrow and lend, with respect to the standard instrument used to smooth fluctuations: sovereign debt financing. Efficiency gains arise from the ability of the fund to offer long-term contingent financial contracts, subject to limited enforcement and moral hazard constraints. In contrast, standard sovereign debt contracts are uncontingent and subject to untimely debt rollovers and default risk. We develop a model of the Financial Stability Fund (FSF) as a long-term partnership with limited commitment (limited ex-post transfers). We quantitatively compare the constrained-efficient FSF economy with the incomplete markets economy with default. In particular, we characterize how (implicit) interest rates and asset holdings differ, as well as how both economies react differently to the same productivity and government expenditure shocks. In our economies, `calibrated', to the euro area `stressed euro-countries', there are substantial efficiency gains achieved by establishing a well-designed Financial Stability Fund; this is particularly true when economies experience negative shocks. Our theory provides a basis for the design of an FSF - for example, for the Eurozone, as recommended by the Four and Five Presidents' reports (2012 and 2015)- and a theoretical framework to assess alternative risk-sharing mechanisms; e.g. the combination of the European Stability Mechanism (ESM) conditional interventions and the QE policies of the ECB [back].

39. *Fiscal Transfers in a Monetary Union with Sovereign Risk, G. de Almeida Bandeira | ADEMU Working Paper: 2016/047*

This paper considers a scheme of fiscal transfers between member states of a monetary union subject to sovereign spread shocks. The scheme consists of a set of cross-country transfer rules triggered when sovereign spreads widen. I study its implementation in a two country model with financial frictions estimated for Portugal and the Eurozone. The model illustrates how domestic fiscal policy is unable to buffer the widening of sovereign spreads when public debt is high and spreads are responsive to the fiscal outlook. On the contrary, because transfers are made between governments, they alleviate the strain caused on the fiscal stance directly and reduce the pass-through of sovereign risk to private lending to firms. I find that, for welfare to improve for all member states, their relative size and fiscal profile need to be nearly symmetric. Nevertheless, I show that for a cost to the remaining member states significantly smaller than the benefits they derive from being part of the union, a small country like Portugal can secure sizeable increases in life-time consumption [back].

40. *Euro CAC and the existing rules on sovereign debt restructuring in the Euro area: an appraisal four years after the Greek debt swap, T. Martinelli | ADEMU Working Paper: 2016/043*

After explaining the role of Collective Action Clauses (CAC), this paper explores how these have been developed in the 'statutory' CAC operation in Greece in 2012 and the Euro-area CAC provisions found in the ESM Treaty which apply to all Euro-area bonds issued from 2013. The paper explains the legal risks that arise and the capacity of CAC to assist in debt restructuring. Noting certain remaining weaknesses in the existing Euro CAC, the paper closes by offering some modifications as well as more long term solutions to debt restructuring [back].

41. *Macroeconomic stabilization, monetary-fiscal interactions, and Europe's monetary union, G. Corsetti, L. Dedola, M. Jerociński and S. Schmidt | ADEMU Working Paper: 2017/058*

The euro area has been experiencing a prolonged period of weak economic activity and very low inflation. This paper reviews models of business cycle stabilization with an eye to formulating lessons for policy in the euro area. According to standard models, after a large recessionary shock accommodative monetary and fiscal policy *together* may be necessary to stabilize economic activity and inflation. The paper describes practical ways for the euro area to be able to implement an effective monetary-fiscal policy mix [back].

42. *An Unemployment Insurance Scheme For The Euro Area? A Comparison Of Different Alternatives Using Micro Data, M. Dolls, C. Fuest, D. Neumann, A. Peichl | ADEMU Working Paper: 2016/048*

This is the first paper that assesses the importance of different stabilization channels of an unemployment insurance system for the euro area (EA). We provide insights on the potential added value of common unemployment insurance (UI) as a fiscal risk sharing device which crucially hinges on its ability to provide interregional smoothing. Running counterfactual simulations based on micro data for the period 2000-13, we and that 10 per cent of the income fluctuations due to transitions into and out of un-employment would have been cushioned through interregional smoothing at EA-level. Smoothing gains are unevenly distributed across countries, ranging from -5 per cent in Malta to 22 per cent in Latvia. Our results suggest that the interregional smoothing pforthcintertemporal smoothing through debt. We and that four member states would have been either a permanent net contributor or net recipient. Contingent benefits could limit the degree of cross-country redistribution, but might reduce desired insurance effects. We also study heterogeneous effects within countries and discuss moral hazard issues at the level of individuals, the administration and economic policy [back].

43. *On the design of a European Unemployment Insurance Mechanism, Á. Ábrahám, J. Brogueira de Sousa, R. Marimon and L. Mayr | Draft*

European labour markets are subject to idiosyncratic shocks (and idiosyncratic responses to common shocks), resulting in countercyclical unemployment expenses difficult to accommodate under existing, fiscal compact, budget rules. These and other factors (solidarity, labour market integration) provide a rationale for European unemployment risk sharing. We study the potential benefits, and problems, of creating a European Unemployment Insurance Mechanism (EUIM). Following Krusell et al. (2011) and Krusell et al. (2015), we use a dynamic general equilibrium model with search frictions to analyze workers' flows (employment, unemployment and inactivity) and their cyclical properties, in order to assess the potential benefits of an EUIM under alternative common (and jointly financed) unemployment insurance policies. Our analysis shows that country-specific structural differences play a determinant role in explaining labour market differences, leaving limited space for welfare improvements with an EUIM. The framework would also allow us to study the optimal design of an EUIM, subject to redistributional and incentive (moral hazard & free riding) constraints [back].