RISK SHARING ACROSS THE US AND EMU: THE ROLE OF PUBLIC INSTITUTIONS

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Summary

Risk sharing across EMU countries falls short of the level achieved in other federations (such as Canada, Germany and the US) by a wide margin. This observation has been documented in various studies, such as Sala-i-Martin and Sachs (1991), Bayoumi and Klein (1997), Sorensen and Yosha (1998) and Von Hagen and Hepp (2013). Various updates and refinements of this work up to 2014 (Alcidi et al. (2016), Furceri and Zdzienicka (2015), Rogantini Picco (2015), Milano (2016)) confirm these findings and offers some other interesting insights about the way the US Federation and the European Monetary Union (EMU) have achieved some degree of consumption smoothing before and after the big recession. A variance decomposition analysis along the lines pioneered by Asdrubali et al. (1996) may give some partial answers to the following key questions. To what extent the lack of risk sharing within the EMU is a consequence of (i) the limited role of centralized fiscal authorities, (ii) the effort of peripheral countries to comply with the rules of the growth and stability pact or (iii) the lack of a developed and internationally integrated financial market? These are the basic findings that we derive from the analysis.

a. The US Federation achieves more intensive risk sharing largely because of a more integrated financial market.

b. Public (national and super-national) institutions have a larger role in providing risk sharing in the EMU than in the US, especially after the implementation of the ESFS, ESFM and the ESM.

c. The contribution of these institutions to risk sharing after the big recession more than compensated the dis-smoothing caused by a pro-cyclical fiscal consolidation and by households' increased precautionary savings.

Factor markets in the EMU provide very little risk sharing because both labor and financial markets are much more fragmented. In other words, although the EMU is integrated in terms of goods trading, it is very fragmented with respect to services and financial trading. If, between 1999 and 2014, factor income flows in the EMU had contributed to risk sharing as much as they did in the US in the same time interval, the overall degree of risk sharing in the EMU would have been about 50%, compared to 57% in the US. This may suggest that a full implementation of a financial market union along with a much more integrated market in services and a free movement of workers may largely compensate for the lack of a political union. On the other hand, public institutions in the EMU play an important role, although this poses more than a challenge to the overall stability of the Eurozone. Exactly because the US is a federal political union, states are subject to a stricter fiscal discipline in exchange for more direct transfers (which contribute with about one third of total consumption smoothing). To the contrary, lack of a political union in the EMU implies that direct transfers contribute very little to risk sharing and that there is less fiscal discipline at the country level. The latter is, in turn, responsible for pro-cyclical fiscal expansions and contractions contributing negatively to the risk sharing obtained through public savings. In other words, the analysis seems to suggest that the reason why the EMU needs more fiscal transfers to withstand idiosyncratic shocks is not because public (local and centralized) institutions should do more to improve risk sharing, but because delegation of risk sharing to national governments threatens the stability of the Euro Area.

Methodology

The procedure introduced by Asdrubali et al. (1996) gives rise to the estimation of an index, denoted as β_u, representing lack of consumption smoothing, i.e., the percentage of idiosyncratic country-specific GDP shocks that are not smoothed via the available instruments in a sample of countries over a time interval. This is roughly equivalent to the sample covariance between the growth rates of country-specific consumptions and GDP as a ratio to the sample variance of GDP growth rates. Then, $\beta_u = 0$ means that national consumption growth rates are totally uncorrelated with the national GDP growth rates on average across the Federation. In turn, the degree of consumption smoothing, $1 - \beta_u$, can be decomposed into the sum of four components, β_j, with $j = f, d, \tau, s$, each one representing the percentage of GDP shocks that are smoothed on average (across the sample) via four channels: factor income flows ($j = f$), capital depreciation ($j = d$), net international transfers ($j = \tau$) and national savings ($j = s$). By the national accounts identity,

$$Total\ degree\ of\ Risk\ Sharing = 1 - \beta_u = \beta_f + \beta_d + \beta_\tau + \beta_s$$

In Milano (2016), the coefficient β_s is decomposed into the three corresponding coefficients arising from households', corporate and government savings, and, for the post-crisis period 2007-2014, it is further decomposed into the contribution to consumption smoothing of two sub-channels underlying government savings: the public net lending to markets (including the ECB) and the one to the ESFS, the ESFM and the ESM.

Results

Some earlier estimates provided by Demyank et al. (2007) and Afonso and Furceri (2008) suggest that overall consumption smoothing through international credit markets has slightly declined in the Euro Area following the introduction of the Euro and up to the big recession. This is mostly a consequence of a more modest role of private credit (as compared to public savings) in providing risk sharing. According to Furceri and Zdzienicka (2015), credit flows have become less counter-cyclical, even though amounts have increased. This is probably a consequence of the large inflows of capital in Peripheral Europe (from the Core) up to 2006,

due to a perception that the adoption of a common currency (along with implicit guarantees) was limiting country risks. However, ten years after the big recession, the situation has changed dramatically in terms of investors' behavior and because a significant overhaul of the EMU architecture and ECB interventions. We summarize the empirical analysis contained in Milano (2016) in the following five statements[i].

1. As shown in Chart 1, country specific GDP shocks are only partially smoothed, both in the EMU and the US, but much more so in the US. Within the time interval 1999-2014, total risk sharing (i.e., $1-\beta_u$) is about 29% in the former and about 57% in the latter. Moreover, the introduction of the common currency has generated some limited benefits in terms of risk sharing. The estimated value of $1-\beta_u$ is down to 22% in the interval 1970-1999.

Chart 1: Risk Sharing in EMU and US 1999-2014
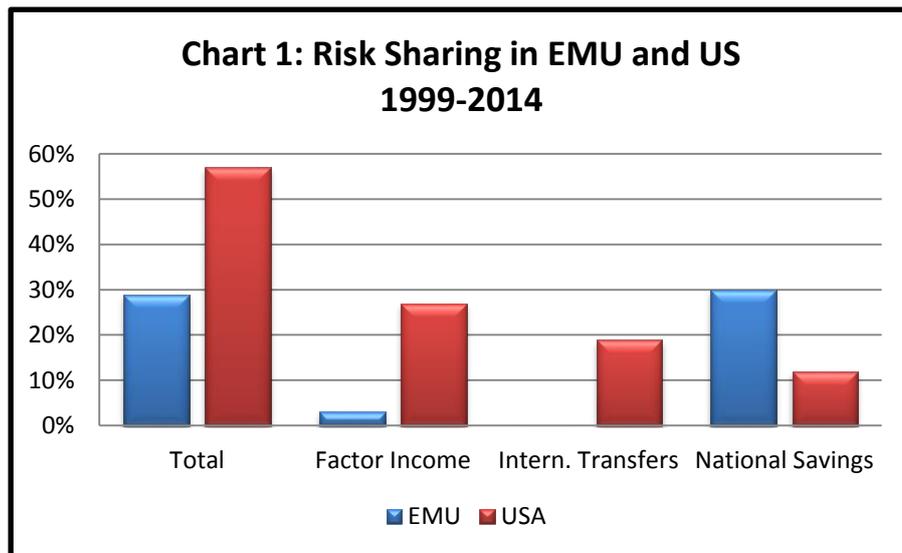
2. Chart 1 also shows that, in the EMU, risk sharing is almost entirely accomplished through the savings channel (internal and external borrowing and lending by the private and the public sector), smoothing about 30% of idiosyncratic shocks, whereas, in the US, it is accomplished through a diversified range of mechanisms: factor income flows (smoothing about 27% of shocks), direct transfers from the Federation (19%) and savings (12%). In turn, risk sharing from the savings channel in the EMU is almost entirely generated by public funds (government budget). Between 1999 and 2014, EMU government savings smooth about 28% of shocks, compared to 11% for corporate saving and -7% for households (although this estimate is not significant). Quite interesting, since the smoothing capacity of the net factor income channel, i.e., β_f, is a proxy for the efficiency of international financial markets in providing insurance (within the Union or Federation), we conclude that the EMU lags behind the US Federation by a wide margin. If these markets in the EMU were as much developed as in the US, the degree of risk sharing in the former region would be roughly comparable.

3. From Charts 2 and 3, we see that, after the big recession (i.e., in the 2007-2014 period), the percentage of idiosyncratic national GDP shocks smoothed through the available channels increases substantially in the EMU ($1-\beta_u$ goes from 23% in the 1999-2006 period to 31% in the 2007-2014 period), whereas it falls in the US (from to 70% to 60%). Furthermore, these changes hide some notable modifications in the way risk sharing is achieved. In particular, in both areas the percentage smoothed through factor income flows falls dramatically: from 7% to 2% (i.e., by 71%) in the EMU (although these estimates are insignificant) and from 40% to 22%, (i.e., by 45% in the US). In other words, capital markets did not provide more insurance during the crisis. However, in the US, the contribution to income smoothing of direct transfers

and savings increases by a modest amount: from 19 to 22% and from 10 to 15%, respectively. In the EMU, instead, there is a big increase in the amount of risk sharing achieved through savings (from 15 to 39%), whereas the contribution of direct transfers remains very close to zero. Since risk sharing through corporate savings does not change significantly (from 13 to 16%) and households' savings contributes negatively after 2007, the increase in the degree of risk sharing achieved in the EMU in this period is entirely achieved via government saving (i.e., rising deficits following negative shocks and official lending).

Chart 2: Risk Sharing in EMU before and after the recession

Chart 3: Risk Sharing in USA before and after the recession
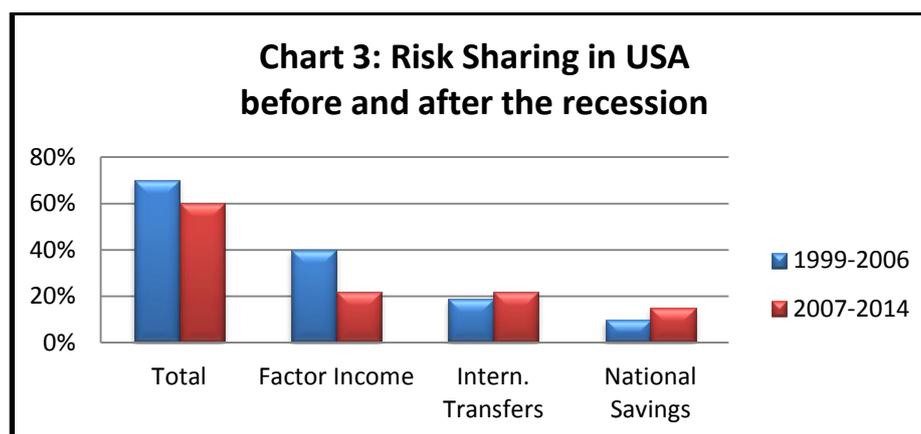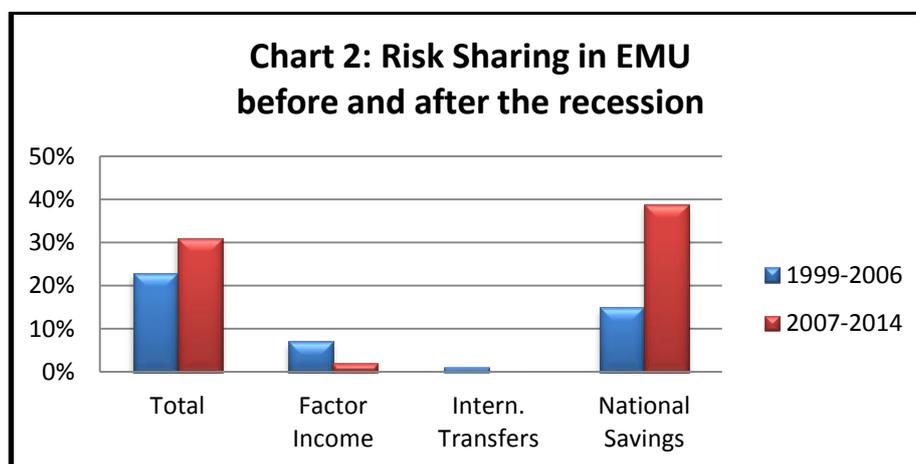
4. To assess, albeit in a very rough way, the amount of risk sharing provided by public institutions, we can lump together the betas related to international (interstate) transfers, β_τ, and the one related to the net lending of countries' (states') governments, which we denote as β_{sg}. Notice that the value of β_{sg} for the US Federation is almost zero, as US States comply to a balanced budget rule, and the value of β_τ for the EMU is almost zero because of very limited centralized fiscal transfers for insurance purposes. Then, we can say that, in the period '99-'14, the amount of risk sharing provided by public institutions, i.e., $\beta_\tau + \beta_{sg}$, was about 28% in the EMU and 19% in the US. The same numbers for the after-recession period ('07-'14) are 38% and 22%, respectively. In other words, the contribution of public institutions to risk sharing is much higher in the EMU than in the US. Notice that this measures do not take into account the amount of loans from the ECB to banks after the recession (which have been substantial and channeled through various instruments) and, then, we may conjecture that the contribution to risk sharing of public institutions are probably higher than estimated.

5. By splitting the net borrowing of national governments into that obtained through markets (including central banks) and through Centralized Public European Institutions (CPEI), i.e., the ESFS, the ESFM and the ESM, we observe that the latter have played a very important role in

providing insurance in the after-recession period 2007-2014 (Chart 4). Namely, the percentage of shocks smoothed through the CPEI reached 55%. As mentioned in the previous point, this figure probably underestimates the contribution of the centralized public institutions of the EMU, because it does not include the lending facilities provided by the ECB to national banks at below market rates. One may conjecture that these loans explain why the percentage of shocks smoothed via corporate savings jumped from 11% in the pre-recession period ('99-'06) to 16% in the post-recession period ('07-'14). In any case, the reason why the effective net percentage of shocks that were smoothed overall after the recession in the EMU is only 38% is that two channels played a significantly negative role: governments net borrowing from markets (whose contribution to risk sharing has been -17%) and households savings (-12%). Not surprisingly, the magnitude of these numbers is almost entirely driven by the behavior of Peripheral Europe (Greece, Ireland, Portugal, Spain), which faced fiscal consolidation and reduced access to credit markets. For this group of countries, in the 2007-2014 period, the beta related to government net borrowing from markets is about -63% and the one related to government borrowing from CPEI is about 86%. On the other hand, for the core countries in the EMU these numbers are, respectively, 73% and 3%. Chart 5 shows the patterns of the government net lending to CPEI (EU net lending) and to markets.

Chart 4: Risk Sharing in EMU 2007-2014

Chart 5: Gov. Savings vs EU and Markets in Peripheral Europe
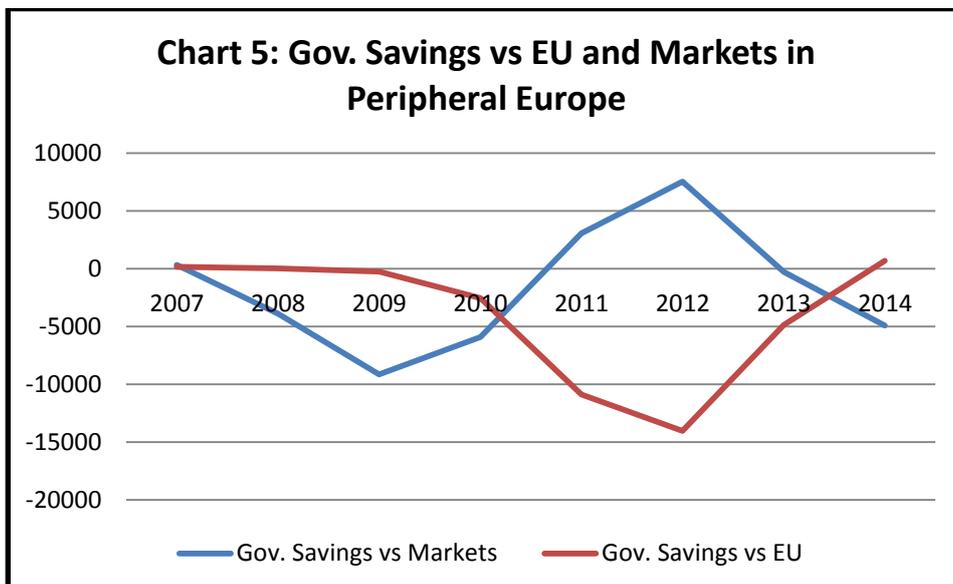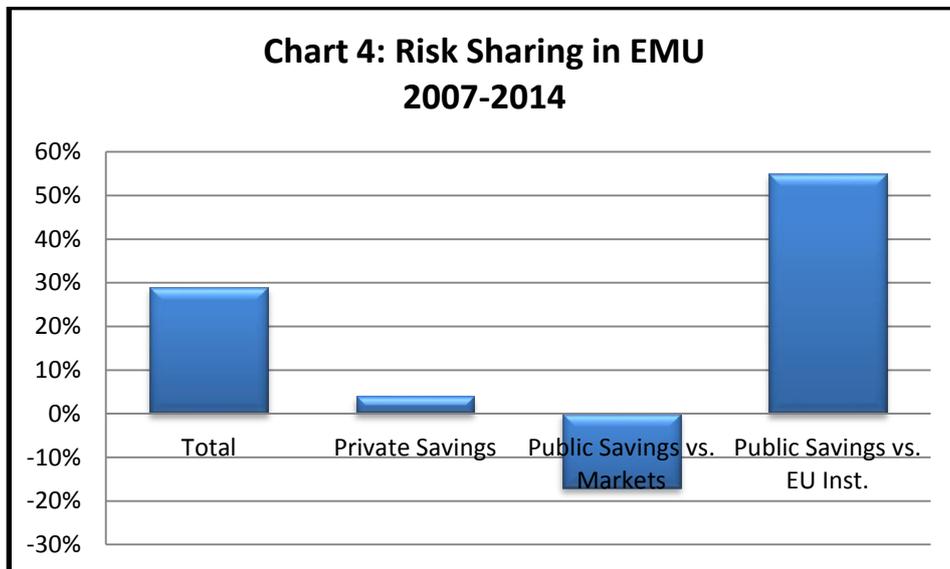
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[i] Data are obtained from various sources. GDP, gross national income, national income, disposable national income, consumption and savings by sector are from OECD Annual National Account, Main Aggregates and Detailed Tables. The period covered is 1970-2014. The countries we examine are the Euro Zone countries: Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Portugal and Spain. Transfers from European institutions to each Euro Area country are from IMF data, Balance of Payments. The period covered is 2007-2014. Moreover US data are from Bureau of Economic Analysis (BEA) and Federal Reserve Economic Data (FRED). All data are in nominal terms and are transformed into real terms using CPI deflator; they are transformed in per-head terms using the population data from OECD.