

# Financial Globalization, Capital Account Liberalization and International Consumption Risk-Sharing

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*This paper analyzes whether international risk-sharing has improved along the same lines as the process of financial globalization. International financial markets allow investors to efficiently diversify their risks. Agents can protect themselves against fluctuations in their incomes through trading in assets with appropriate payoff structures. However, the usual finding in the literature is that international risk-sharing is quite limited. We argue that despite the liberalization of capital accounts and the removal of various legal barriers to capital mobility, international risk-sharing still appears to be rather limited.*

## 1 Introduction

In theory, developed financial markets and stable financial intermediaries allow investors to efficiently pool their risks. Agents can protect themselves against fluctuations in their incomes through trading in assets with appropriate payoff structures. If, for example, the GDP growth rates in two countries are negatively correlated so that rates of return in country A are strong when they are weak in country B and vice versa, inhabitants of each country could buy foreign assets in the other country to smooth the fluctuations in their income and therefore in their consumption. For this kind of risk-sharing it makes no difference whether agents invest in foreign assets directly or keep an account with a bank which invests abroad. Hence, domestic consumption growth should not depend exclusively on domestic income growth, but also on global income growth and, as this argument holds for every financially integrated country, the growth rates of consumption across these countries should be highly correlated.

However, the usual finding in the literature is that international risk-sharing is rather limited.<sup>4</sup> Backus et al. (1992) demonstrate that cross-country consumption correlations are too low to be consistent with a model characterized by complete markets and perfect capital mobility. In addition, French and Poterba (1991) report a large home bias in equity holdings (i.e. unexplained preferences for domestic equity) and consequently only a small degree of international diversification. Moreover, various authors have empirically tested for risk-sharing using consumption data and find that the implications of complete market models are largely rejected.<sup>5</sup> In particular, a common result is that the cross-country correlations of output growth rates are higher than those of consumption growth rates, which indicates that the opportunities for international risk-sharing have not been fully exploited. Moreover, consumption is usually found to react to country-specific shocks, which is inconsistent with perfect risk-sharing.

However, the ongoing process of globalization and financial market integration has increased the amount of international financial transactions. Tesar and Werner (1998) present some evidence that the home bias, although still substantial, has somewhat declined over time. Europe appears to be a particularly interesting case in this context, since the creation of the EU and EMU (Economic and Monetary Union) were to a great extent motivated by the idea of promoting

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<sup>4</sup> For recent surveys see Obstfeld and Rogoff (2000) and Lewis (1999).

<sup>5</sup> See, for instance, Obstfeld (1994), Canova and Ravn (1996), Lewis (1996).

the integration of financial and goods markets. Blanchard and Giavazzi (2002), for instance, report that the Feldstein and Horioka (1980) puzzle, which emphasizes the high correlation between domestic savings and domestic investment, has basically disappeared in Europe over the last decades, suggesting that capital mobility has indeed increased. Similarly, capital mobility has also risen in Austria over time. Over the period from 1980 to 1998 foreign assets and liabilities as a share of GDP more than doubled in Austria.<sup>6</sup> For the years 1998 to 2002, Nesvadba (2004) reports an increase of more than 50%. Thus, one might expect risk-sharing to have improved over time.

The purpose of this paper is to review the empirical evidence on whether the continuing process of globalization coincides with an increase in the extent of risk-sharing among industrialized countries and in particular the EU-15 Member States.

The remainder of the paper is structured as follows: Section 2 discusses financial market integration in Europe. Section 3 provides a brief overview of the methodology used in the empirical literature, and section 4 surveys the empirical evidence on the evolution of risk-sharing over time. Section 5 concludes the paper.

## **2 Measures of Financial Market Integration in Europe**

We start from the assumption that capital controls are the main obstacle for financial integration and, consequently, risk-sharing in Europe. Therefore, we will sketch the ups and downs in the liberalization of capital accounts from the foundation of the European Economic Community (EEC) to the creation of EMU.<sup>7</sup> Additional obstacles to financial integration in Europe are the remaining differences in national financial regulations and the segmentation of retail markets for financial services. Therefore, measures implemented to remove these barriers to a single financial market are described at the end of this section.

### **2.1 Capital Account Liberalization**

Already in 1957, the freedom of capital movements was codified in the Treaty of Rome, the founding text of the EEC. The Treaty of Rome (“the Treaty”) states that “to the extent necessary to ensure the proper functioning of the Common Market, member states shall progressively abolish between themselves all restrictions on the movement of capital” (Article 67.1). The commitment to liberalization was admittedly weak, as the operational agreements asked countries only to abstain from introducing new restrictions. The Treaty also contained safeguard clauses which allowed for deflection from the path of liberalization. In the early 1960s, two EC directives were adopted that aimed at specifying the obligations from the Treaty for intra-Community flows. For the rest of the 1960s, the momentum for liberalization was lost, as countries like France and Italy feared exchange rate devaluations caused by speculation and therefore resisted further attempts to liberalize short-term capital movements.

<sup>6</sup> See Lane and Milesi-Ferretti (2001).

<sup>7</sup> For a detailed report on the liberalization of capital accounts in Europe, see Bakker (1996).

In general, the maintenance of exchange rates was one of the goals of economic policy, and whenever liberalization measures posed a threat to that goal, they were reversed. Such a threat arose in the early 1970s from the massive capital flows out of the U.S.A. and into European countries. The governments of EEC member countries tried to avoid the economic consequence of such flows, the appreciation of their currencies, for they feared a loss of competitiveness. The oil crisis of 1973 confronted most EEC members with the risk of large current account deficits, prompting them to impose stringent controls on capital outflows. The accession of Denmark, Ireland and the U.K. can be seen as a further drawback for the liberalization of capital accounts in the EEC, as these countries not only had not taken part in the liberalization process of the 1960s, but had also developed their own traditions of restraining capital movements. The lost momentum for liberalization was also reflected in the Commission's attitude toward capital controls. Being a strong advocate of liberalization during the 1960s, the Commission now called for measures to control undesirable capital flows.

The effectiveness of capital controls was undermined by the lack of legal enforceability and new financial instruments. Also, the growing influence of market participants operating cross-border exacerbated the maintenance of capital controls in all EEC member states. In 1979 the U.K., under its newly elected conservative government, implemented rapid liberalization of capital movements. In the same year, the European Monetary System (EMS) was founded. Aiming at enhancing European integration by creating monetary stability, the EMS neglected capital liberalization at the beginning. In the EMS, in case of downward pressure on a member's currency, countries with stable exchange rates were to intervene to support that currency. No later than 1982, Germany and the Netherlands began to question that mechanism and proposed capital account liberalization as a solution. The reluctance to give up controls stemmed partly from institutional reasons: maintenance of capital controls required a large bureaucratic apparatus; once abandoned, the controls might not be reimposed easily.

But then France joined the liberalization movement, as it found the very strict measures imposed in 1983 to be relatively ineffective. By the mid-1980s the Commission, too, reassumed a proliberalization attitude and paved the way for the Single European Act of 1987. Equally emphasizing the freedom of capital movements and that of goods and services, the Single European Act led to the adoption of the directive of 1988<sup>8</sup>, which aimed at the establishment of a fully liberalized financial market by 1990. The directive contained concessions in the form of longer transition periods for Member States which were not ready to give up controls in the near future, especially the newly acceded Mediterranean countries. From 1988 on, EEC Member States abandoned their controls successively, Greece being the last to do so in 1994.

<sup>8</sup> Council Directive 88/361/EEC of 24 June 1988 for the implementation of Article 67 of the Treaty.

## 2.2 Financial Services Regulations

Besides capital account liberalization, other obstacles to financial integration were abolished during the period under consideration. The freedom of establishment in the financial services sector was already granted in 1973. The first banking coordination directive (1977) aimed at the harmonization of rules and administrative provisions applicable to the operations of credit institutions. But the impact of these directives was limited due to the capital account restrictions still in place at that time.

A breakthrough occurred after adoption of the Single European Act when the second banking coordination directive was implemented in 1993. The second directive established the principle of a single license allowing banks and other financial institutions to offer their services throughout the Community. It relies on three pillars, namely the further harmonization of regulations governing the financial sector, the principle of home-country control (that is, the supervision of a financial institution operating in any Member State by the supervising bodies of its country of origin) and the mutual recognition by the national supervisory authorities of the rules and regulations in the countries of origin of the banks operating on their territory. The rules harmonized by the second directive include regulations on the preparation of annual accounts, the definition of a solvency ratio, the monitoring of market risks, the prevention of money laundering and the limitation of large exposures. For Romero de Avila (2003), the codification of some minimum standards together with the principle of mutual recognition “opened up a process of competitive deregulation (what has often been called a “race to the bottom”) in the range of banking activities permitted in EU countries,” as any more stringent national regulation would entail a competitive disadvantage for national financial institutions. In the aftermath of the implementation of the second directive, cross-border branching increased by a substantial 58% within the first three years.

To sum it up, the easing of capital controls was on the European agenda already in the 1960s, soon after the signing of the Treaty of Rome. The collapse of Bretton Woods and the oil crises in the 1970s changed the political priorities and led to an increase in restrictions on capital mobility. In addition, the intensification of economic integration in Europe as well as the growing awareness of the controls’ declining effectiveness within a changed financial landscape convinced policymakers of the need to integrate financial markets. Beginning with the Single Act of 1986, capital controls were abolished in all Member States to pave the way for EMU. Approximately about the time capital controls had been abolished in the last Member State, the establishment of a Single Market for financial services was begun, opening up the way to intensified competition among European banks and other financial institutions. But one has to keep in mind that other factors that are crucial to the integration of financial markets, such as taxation, corporate laws or the judicial enforcement of investor rights, which are subject to national standards, still represent informal barriers to perfect financial integration within the EU.

### 3 Testing for Risk-Sharing Using Consumption Data

Empirical studies of risk-sharing are usually based on two central implications of economic theory: (1) Under full risk-sharing, individual country consumption growth rates should move one for one with aggregate consumption growth, and (2) consumption growth rates should not be correlated with idiosyncratic shocks, in particular income shocks.

Empirical tests of these theoretical implications are in general implemented by running regressions of individual consumption growth on aggregate consumption growth and aggregate GDP growth:

$$c_t^i = a^i + \beta c_t^a + \gamma y_t^i + u_t,$$

where  $c_t^i$  and  $c_t^a$  denote consumption growth in country  $i$ , aggregate consumption growth  $y_t^i$  denotes individual GDP growth and  $u_t$  is an error term. Under complete markets, agents are able to completely eliminate any idiosyncratic risk. Thus, individual consumption should move one for one with aggregate consumption and should not depend on idiosyncratic variables, such as idiosyncratic income. Thus, testing the joint hypothesis that  $\beta = 1$  and  $\gamma = 0$  constitutes a test of perfect risk-sharing. Under incomplete markets, individual consumption will also depend on the realization of idiosyncratic shocks, such as income shocks. Hence, in this case the coefficient  $\gamma$  would be significantly different from zero.

In general, perfect risk-sharing is strongly rejected in the data.<sup>9</sup> Sorenson and Yosha (1998) show that under incomplete markets, the coefficient on idiosyncratic income can be interpreted as the fraction of risk that is not insured against country-specific risks. They find that about 40% of income shocks are smoothed in the EU. Moreover, risk-sharing among the EU member countries appears to be rather limited compared to risk-sharing among U.S. states. Asdrubali et al. (1996) find that risk-sharing among U.S. states is considerably higher. In particular, about 75% of idiosyncratic income shocks are smoothed among U.S. states.

### 4 Has Risk-Sharing Changed over Time?

Most of the empirical literature discussed so far imposed parameter constancy over time. Hence, the literature has mostly ignored that the increasing financial globalization and integration might have had a considerable impact on the amount of risk-sharing that individual countries can achieve.

As discussed earlier, capital flows among the EU-15 countries were more restricted in the 1970s and early 1980s than in the 1960s. The late 1980s and 1990s were again characterized by more liberal regimes. Nevertheless, the individual country experiences displayed considerable heterogeneity, in particular with respect to the dating of deregulation/reregulation. In principle it would be possible to test for the impact of changes in the capital account regime on risk-sharing by applying the standard Chow test for parameter stability to the regression equation. There are several disadvantages to such a strategy: First, in some cases, it is difficult to date liberalization measures, since they were implemented gradually. Second, if risk-sharing relationships respond with a lead

<sup>9</sup> See, for instance, Lewis (1999) and the references therein.

or a lag to changes in capital account restrictions, the Chow test for a break at a known date may have low power. Finally, while in theory changes in the degree of capital account restrictions should result in changes in the degree of risk-sharing, many other factors might be important, too. One way to deal with the resulting specification problem is to choose a data-driven approach which does not impose a priori knowledge of the break dates.

Obstfeld (1994) runs time series regressions separately for each of the G-7 countries and finds some evidence for partial risk-sharing and a trend toward an increase in risk-sharing after the Bretton Woods era.

Following Obstfeld (1994), Moser et al. (2004) estimate time series regressions for the EU-15 countries and analyze whether the regression relationship has remained stable over time. The procedure proposed in Bai and Perron (1998a, 1998b) is used to identify structural breaks at unknown dates. To assess whether risk-sharing has changed over time, the evolution of the slope coefficients across different regimes is analyzed. Perfect risk-sharing entails an increase in the comovement of consumption in country  $i$  with aggregate consumption and a decline in the exposure to idiosyncratic income. In identifying the causes of changes in the degree of risk-sharing, it is important to note that changes in the degree of capital account liberalization and regulations on financial services are neither necessary nor sufficient to trigger changes in risk-sharing. However, we argue that at least in the sphere of economic policy it is in these areas where the most important changes took place. It is therefore of interest whether observed changes in risk-sharing are consistent with changes in the policy regime, at least with respect to the general trends across Europe.

The main results reported in Moser et al. (2004) can be summarized as follows: It is found that for a number of countries there was no change in the degree of risk-sharing during the period under consideration. Notably, for some countries (Italy, France, Greece and Portugal) risk-sharing has even deteriorated over time, which is broadly consistent with an adverse influence of the reregulation of capital accounts in these countries after the breakdown of the Bretton Woods regime. However, with the exception of Portugal, the degree of risk-sharing in Europe did not recover in the 1980s and 1990s. In fact, Portugal after 1985 is the only example where intra-European risk-sharing has improved. Thus, overall it appears that financial globalization has not improved consumption risk-sharing in the EU-15.

Using a methodology closely related to that in Asdrubali et al. (1996), Artis and Hoffmann (2004) analyze how risk-sharing has evolved over time. They examine a sample of OECD countries and find no indication of an improvement in risk-sharing in the more recent subsample starting in 1980. However, they argue that permanent and transitory shocks to GDP are qualitatively different sources of risk and should therefore be analyzed separately in risk-sharing regressions. Taking this distinction into account, Artis and Hoffmann (2004) find that the countries in their sample have become insured against permanent shocks during the period of financial globalization.

In any case, international risk-sharing in Europe appears to be far from perfect, which may also have far-reaching implications for EMU, since the question of how to deal with asymmetric shocks is important for a monetary union. It is usually found that macroeconomic shocks are less synchronized among Euro-

pean countries than among U.S. states. However, as long as international financial markets provide insurance against regional shocks, these asymmetries may not be problematic.

One might argue that the introduction of the single currency occurred only relatively recently and that it is therefore not adequately reflected in the empirical analysis. It might be the case that the single currency has a profound impact on international trade in goods and assets which has not become discernible so far. Along these lines, Mélitz and Zumer (1999) argued that the single currency will promote risk-sharing among EMU countries. Moreover, the effects of recent policy initiatives, such as the Financial Services Action Plan of the European Commission, might result in more risk-sharing in the future. Without having identified the sources of the apparent lack of an improvement in risk-sharing, though, the effects of EMU as well as of other recent policy initiatives on intra-European risk-sharing are hard to judge. Thus, a detailed analysis of potential explanations of the limited extent of risk-sharing appears to be an interesting and important topic that warrants further research.

## 5 Concluding Remarks

This paper has dealt with the issue of whether international risk-sharing has improved along the same lines as the process of financial globalization. In some sense this is equivalent to asking the question of how integrated the financial markets really are. Using a standard risk-sharing regression covering the period 1960–2002, Moser et al. (2004) find that risk-sharing among the EU-15 countries does not appear to have improved. Using a sample of OECD countries, Artis and Hoffmann (2004) present empirical evidence that countries have become better insured against permanent shocks, but not against temporary shocks. This would imply that the increase in capital mobility has led to a more efficient allocation of permanent income risk and thereby increased economic welfare.

Nevertheless, international risk-sharing still appears to be rather limited despite the liberalization of capital accounts and the removal of various legal barriers to capital mobility. However, it can be argued that legal barriers are only one friction that prevents the integration of international financial markets. Indirect barriers such as differences in institutional aspects including investor protection and accounting standards, which are reflected in transaction and information costs, might be even more important than capital account restrictions.<sup>10</sup>

A variety of other legal and regulatory factors can also influence the degree and geographical distribution of the international diversification of portfolios. A recent example in Austria is an investment restriction which provides financial incentives to purchase stocks (effected by certain investment vehicles on behalf of investors) that are first-listed at exchanges in a European Economic Area (EEA) country whose stock market capitalization does not exceed 30% of that country's GDP over a number of years (see Federal Law Gazette No. 155/2002 Article 108h paragraph 1 and Federal Law Gazette No. 10/2003 Article I). At

<sup>10</sup> Empirical evidence in favor of the hypothesis that risk-sharing is related to institutional aspects and in particular to investor protection is reported in Scharler (2004).

present this condition applies in particular to the new Member States and Austria itself.<sup>11</sup> The investment products that are structured according to those regulations have become quite popular so far.<sup>12</sup> It is therefore likely that these financial regulations have caused a substitution of the domestic and foreign assets which they cover for financial assets which they do not cover and which were previously held by Austrian residents.

Overall, most studies on international risk-sharing point toward a substantial divergence between theory and empirical evidence. One interpretation of this divergence is that the degree of capital mobility is not high enough to allow for an efficient international diversification of financial asset holdings.

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<sup>11</sup> The new Member States are the countries that entered the European Union in May 2004 (the Czech Republic, Estonia, Cyprus, Latvia, Lithuania, Hungary, Malta, Poland, Slovenia and Slovakia).

<sup>12</sup> According to data of the Austrian Ministry of Finance, within one year after its inception on January 1, 2003, Austrians purchased a total of 281,138 pension insurance contracts covering a total investment volume of EUR 238.5 million.

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