# Legality and the Spread of Voluntary Investor Protection

**Douglas Cumming**

York University, Schulich School of Business

**Gael Imad'Eddine**

Université Lille Nord de France – SKEMA Business School

**Armin Schwienbacher***

Université Lille Nord de France – SKEMA Business School

This version: 15 January 2012

*Contact author address for correspondence: Université Lille 2; Faculté de Finance, Banque, Comptabilité; Rue de Mulhouse 2 - BP 381; F - 59020 Lille Cédex (France); Phone: +33 3 20 90 75 34; Email: armin.schwienbacher@skema.edu.

# Legality and the Spread of Voluntary Investor Protection


**Abstract**

We examine the spread of UCITS funds around the world, and consider whether such mutual funds that adopt higher standards of voluntary investor protection expand their operations to other countries with higher or lower investor protection regimes. The data indicate equity funds spread to countries with better antidirector rights and bond funds to spread to countries with better creditor rights; however, spread of either type is uncorrelated with and not explained by enforcement standards. The data therefore indicate that the loss of insider managerial benefits from UCITS constraints is smaller in countries where legal standards are higher, and this mechanism is a primary determinant of the spread of voluntary protection mechanisms among mutual funds. This central finding holds over a wide range of robustness checks.



**Keywords:** Mutual funds, Investor protection, International distribution, Law and finance

**JEL Classification:** G23, G15, G18, K22

"Although SEC regulations provide guidance on mandatory disclosures, voluntary reporting mechanisms are rapidly becoming best practice."

-- Nicola Skibola, "Navigating the Voluntary Sustainability Reporting Maze," Business Insider 23 Feb 2011

## 1. Introduction

Voluntary standards in financial reporting, corporate governance, corporate social responsibility and other areas of finance, economics, management and law have been spreading at an increasing rate in recent years. Investors have an expectation that firms and funds take extra care to follow best practices, and best practices are increasingly voluntary standards that go above and beyond that which is required by law. Even regulators are aware of this fact: recent regulatory reforms such as the Dodd-Frank Act encourage and incentivize voluntary reporting that goes above the minimum standards required by law. Studies on the topic show, among other things, that voluntary adoption of international standards help accessing foreign investors and thereby reducing home biases in mutual fund investments (Covring et al., 2007) and enables corporations to obtain loans at preferential terms (Kim et al., 2010).

A fundamental question that is raised by the rapid spread of voluntary standards is where exactly do these standards spread to? In particular, do voluntary standards spread to countries with good legal systems such that the standard is a complement with the higher minimum standard set by law? Or do voluntary standards spread to countries with poor legal systems such that the standard is a substitute for the absence of sufficient legal protections?

The question regarding where voluntary standards are more likely to be adopted is an important one for a variety of reasons, two of which are perhaps most important. First, there is a massive literature in law, economics and finance that ranks countries based on various indices of legal standards around the world (spurred on by seminal work such as La Porta et al., 1998). If voluntary standards in governance are positively correlated with legal standards then we would expect the importance of legal standards in stimulating better governance and economic efficient outcomes to be understated. Conversely, if voluntary standards in governance are negatively correlated with legal standards then the importance of international differences in legal standards would diminish as voluntary standards become more widely adopted. Second, by understanding how voluntary standards spread, policymakers can better design mechanisms to encourage the spread of standards, and investors can make decisions to better take advantage of the adoption of standards.

In this paper, we examine the context of voluntary standards of The Undertakings for Collective Investment in Transferable Securities (UCITS) on international distributions of European investment funds. In brief, UCITS is a set of standards that a fund manager may voluntarily take on if the fund wants to become a UCITS fund, and these standards are not required by national laws. The standards cover issues pertaining to risk management of a fund: limits on the proportion of listed equity and debt securities, home country securities, non-listed securities, exclusion of certain asset classes such as real estate, etc. The UCITS structure is popular; for example, Cumming et al. (2010) show that 58.9% of 22,634 mutual funds in Europe were UCITS funds in the the 2001-2009 period. Institutional details of UCITS are detailed in section 2 of this paper.

In this paper we examine the spread of cross-border UCITS funds across Europe and other parts of the world, particularly across Asia. We consider 1344 bond funds and 2784 equity funds from various countries of origin in Europe initiated in the 2001-2007 period, and distributed over the 2001-2010 period, and consider whether funds are more likely to expand operations to other countries with higher or lower investor protection regimes. Using UCITS regulation for testing voluntary adoption of investor protection mechanisms has several advantages. First, in contrast to regulations pertaining to corporations, UCITS regulation covers a quick uniform industry, namely the mutual fund industry. This facilitates comparison as players (fund promoters) belong to a same industry. Second, the UCITS regulation is a European-wide regulation that offers clear and uniform benefits to fund promoters from adoption. It enables funds structured as UCITS to distribute more easily cross-border within the European Union and at times even beyond. Fund promoters are free to choose domestic legal structures for their funds and still distribute internationally, however with more requirements.

The data indicate that UCITS funds are much more likely to spread to stronger legal regimes. This finding holds for both bond funds and equity funds, and for stronger creditor rights regimes and stronger anti-director rights regimes. In particular, on average a UCITS bond fund spreads to countries with higher creditor rights by 0.5 relative to the country of origin; since the average creditor rights in the country of domiciliation of the fund is 1.4, UCITS funds spread to new countries with creditor rights that are 36% stronger. Similarly, UCITS equity funds spread to new countries with stronger anti-director rights by 0.2 relative to the country of origin; since the average anti-director rights in the country of domiciliation of the fund is 3.9, UCITS funds spread to new countries with anti-director rights that are 5% stronger. These effects are both economically significant and statistically robust.

To complement this analysis, we examine whether cross-border UCITS funds are distributed in counties with a wider range of legal regimes. We measure range by the difference between the highest and lowest legal indices among the set of countries in which the fund is notified. Our analysis confirms that UCITS funds have a larger range than non-UCITS funds; however, the observed wider range is largely attributable to the fact that UCITS funds are more likely to be notified in countries with the highest legal standards; in other words, there is no difference between UCITS and non-UCITS funds in terms of countries with lowest standards but well in terms of countries with highest legal standards. This finding holds for equity as well as bond funds that are distributed internationally. This is consistent with the hypothesis that voluntary legal mechanisms are more likely to be chosen in countries with better legal environments.

Overall, the data indicate voluntary investor protection is more likely to spread to countries with higher legal standards. In other words, voluntary investor protection mechanisms are not a substitute for poor laws in a country; rather, better legal conditions stimulate the voluntary adoption of investor protection mechanisms to protect investors over and above that which is the minimal requirement in a country. There are two possible explanations for this finding: (1) fund managers operating in countries with weak legal standards lose a greater proportion of insider benefits of not adopting stringent provisions of UCITS, and/or (2) UCITS is more easily enforced in countries with better laws. We do not find support for UCITS spreading to countries with any systematic difference in enforcement relative to the fund manager's home country. But we do find support for the importance of legal quality on substantive matters pertaining to creditor and anti-director rights. Therefore, we may infer that UCITS fund managers expand to stronger legal environments relative to non-UCITS funds since the comparative reduction on insider benefits is larger for a UCITS fund in a low legality country.

Our evidence is related to a large body of work on voluntary standards. For example, recent prior evidence indicates that the market rewards or values more highly firms that voluntarily adopt corporate governance standards beyond what is minimally acceptable in a country (Chhaochharia and Laeven, 2009). Similarly, there is evidence that corporate governance standards affect voluntary disclosure of strategic, non-financial and financial information (see, e.g., Eng and Mak, 2003, among numerous other studies). More generally, there is evidence that country level legal standards facilitate better corporate governance (La Porta et al., 1998, 2000). Martynova and Renneboog (2008) show that spillovers of corporate governance standards generate synergy values in cross-border M&As when target firms are located in countries with poor governance practices. However, prior work has not considered whether a voluntary set of standards for governance is more or less likely to spread to countries with better legal environments. We believe it is worthwhile to know whether voluntary standards that firms or funds can opt into in one country and take to other parts of the world are complements or substitutes with country level legal protections.

Our paper is also related to a narrower but growing body of international evidence on mutual fund distribution and UCITS in particular. Heinemann (2002) discusses the benefits of UCITS III for international fund distribution over that of UCITS I, but does not examine barriers to international notification and/or test for the effect of such barriers. Cumming et al. (2010) examine the scope of notification of UCITS funds, but unlike our current work, they do not test whether or not legal standards are related to voluntary corporate governance standards. Jayaraman, Khorana, and Nelling (2002) and Ding (2006) document the benefits of mutual fund mergers, but do it in a U.S. context where international distribution cannot be addressed. Frank et al. (2004) examines disclosure regulation and active fund performance in relation to copycat funds (see also Alexander et al., 2007; Kacperczyk et al., 2008). Romero-Avila (2007) and Cumming et al. (2011) examine the effect of regulatory harmonization on the growth of the banking industry and stock market development in Europe, respectively, but do not examine the mutual fund industry. Froot et al. (2001) and Bergstresser and Poterba (2002) examine portfolio flows of international investors and fund flows. Cumming and Dai (2009) examine the impact of regulation on the flow-performance relation between institutional investors and hedge fund managers, but do not consider mutual funds or retail investors. Khorana and Servaes (1999) examine initiation of mutual funds in the US, indicating that larger promoters (fund families) enjoy economies of scale and scope. Extending this analysis, Khorana, Servaes, and Tufano (2005, 2009) examine the size of and fees in the mutual fund industry around the world (see also Chordia, 1996), but do not examine the effect of UCITS on international distributions.

Our analysis complements these studies by showing that voluntary adoption of standards in UCITS is highly positively correlated with legal protections at the country level. To the best of our knowledge, our paper is the first to examine the relation between the adoption of voluntary standards and country level legal protections in any context. We hope this type of analysis will be extended to our contexts in future work. The benefit of working with UCITS funds is that we are able to capture the full range of countries where the funds are distributed. Unlike industrial companies that can have in some countries production facilities, in others product development and research activities, and selling support facilities in a third group of countries, the fund management activity is uniform across the countries where funds are distributed. Differences of legal standards therefore have similar impacts, unlike for industrial companies with a broad range of different activities.

This paper is organized as follows. Section 2 provides information on the European investment fund market and its regulatory environment, and summarizes our testable hypotheses. Section 3 describes the data. Summary statistics on the European investment fund industry are provided in section 4. Multivariate empirical analyses of the relation between voluntary standards and country-level legal protections are provided in section 7. Concluding remarks follow in section 6.

**2. The Regulatory Environment**

The main purpose of the UCTIS regulation is to facilitate cross-border distribution and ultimately create a single market for investment funds. The European Union (EU) aims at achieving this objective by simplifying the cross-border distribution of funds that follow certain regulations that help protecting retail investors.

Under UCITS, a fund domiciled in one of the EU countries only need to go through a simplified registration process at the national regulator of another EU country (so-called notification procedure) for obtaining the right to sell units of the funds (i.e., distribute) in this country. The money collected can then be invested in securities based on the specific investment strategy of the fund (for instance worldwide, although the money comes from a selected number of EU countries only).

The first set of EU rules, UCITS I, was adopted in 1985 to allow open-ended funds that invest in transferable securities to be subject to harmonized regulations throughout Europe. However, Member States created obstacles to UCITS I that limited the ability of a fund to distribute cross-border. UCITS II was an ambitious attempt at curtailing such problems, but too ambitious to secure agreement from

Member States and therefore never implemented. In 2001, UCITS III was introduced, which brought about regulatory changes to facilitate cross-border distributions within the European Union. By 2005, approximately €5 trillion were invested in collective investments throughout Europe, of which approximately 70% were UCITS funds.

UCITS III comprised two directives[1]: a "Management Directive" and a "Product Directive". The Management Directive enabled a simplified and more cost-efficient prospectus. The Product Directive enabled a wider range of financial instruments and permitted UCITS money funds, derivative funds, index-tracking funds, and funds-of-funds. UCITS III, however, was not without barriers to integration, as highlighted by the changes introduced in the January 2009 UCITS IV Directive approved for implementation in 2011 (Ferguson, 2009). UCITS IV differs from UCITS III by enabling more cost effective notification procedures, key investor information, and introducing frameworks for fund mergers.

UCITS rules apply to funds marketed to retail investors, and there are a number of important provisions in UCITS to ensure investor protection. The competent authorities of the home Member State of the EU carries out supervision of the fund management company. For example, the authorities in the home Member State will supervise each fund and require that each fund management company (UCITS III Article 5f):

> (a) has sound administrative and accounting procedures, control and safeguard arrangements for electronic data processing and adequate internal control mechanisms including, in particular, rules for personal transactions by its employees or for the holding or management of investments in financial

[1] A directive is a set of guidelines decided at the European level by all Member States of the European Union. Each Member State has a certain time to implement the directives in the local law. The European Commission *ex-post* verifies the conformity of the local law to the directives implemented.

instruments in order to invest own funds and ensuring, inter alia, that each transaction involving the fund may be reconstructed according to its origin, the parties to it, its nature, and the time and place at which it was effected and that the assets of the unit trusts/common funds or of the investment companies managed by the management company are invested according to the fund rules or the instruments of incorporation and the legal provisions in force;

(b) is structured and organised in such a way as to minimise the risk of UCITS' or clients' interests being prejudiced by conflicts of interest between the company and its clients, between one of its clients and another, between one of its clients and a UCITS or between two UCITS.

There are a variety of other strict UCITS rules to protect investors. For instance, UCITS has strict rules on delegation of fund management responsibilities and delegation to a third party does not limit the liability of a fund management company that delegates. Fund management companies likewise cannot invest in other funds or investment companies which it manages, unless there is prior general approval from clients. Compensation scheme structures are communicated to clients. Risk management practices apply to the whole portfolio, including instruments such as OTC derivative instruments. Risk management must be communicated to the competent authorities supervising the fund, including but not limited to types of derivative instruments, the underlying risks, the quantitative limits and the methods which are chosen in order to estimate the risks associated with transactions in derivative instruments regarding each managed UCITS. Global exposure relating to derivative instruments does not exceed the total net value of its portfolio. UCITS funds cannot deviate from their objectives set out in incorporation or prospectus.

UCITS funds have strict position limits, which include (UCITS III Article 22) no more than 5 % of its assets in transferable securities or money market instruments issued by the same body (albeit there are exceptions when this can be raised to 10%, or even up to 35% if the assets are guaranteed by the Member State). A UCITS may not invest more than 20 % of its assets in deposits made with the same body. The total value of the transferable securities and the money market instruments held by the UCITS in the issuing bodies in each of which it invests more than 5% of its assets must not then exceed 40% of the value of its assets. A UCITS may not combine investments in transferable securities or money market instruments issued by deposits made with, and/or exposures arising from OTC derivative transactions undertaken with a single body in excess of 20 % of its assets.

Member States may raise the 5 % limit to a maximum of 25 % in the case of certain bonds when these are issued by a credit institution which has its registered office in a Member State and is subject by law to special public supervision designed to protect bond-holders. In particular, sums deriving from the issue of these bonds must be invested in conformity with the law in assets which, during the whole period of validity of the bonds, are capable of covering claims attaching to the bonds and which, in the event of failure of the issuer, would be used on a priority basis for the reimbursement of the principal and payment of the accrued interest. When a UCITS invests more than 5 % of its assets in bonds and issued by one issuer, the total value of these investments may not exceed 80 % of the value of the assets of the UCITS (UCITS III Article 22).

A fund requires many players for its day-to-day operation and this might hamper the identification of the different liabilities in the case of conflict. An administrator has to calculate the fund's net asset value and has to act as a registrar or transfer agent, the entity that deals with shareholders or unitholders who come into and out of the fund. Shareholders and unitholders rely on the trustee to represent and protect their interests while the custodian is responsible for holding the assets. It can also be called a depositary.[2] As stressed by Amery (2010), the terms "depositary",

[2] http://www.indexuniverse.eu/europe/opinion-and-analysis/7590-back-office-the-new-black.html?Itemid=126

“custodian”, “trustee” and “administrator” are often used interchangeably to describe the middle- and back-office functions of a collective investment scheme. This confusion regarding terminology reflects, in part, the different legal structure that a UCITS-compliant collective investment scheme may follow. UCITS can be constituted under three different structures: the law of contract (as common funds), trust law (as trusts) and in corporate form (as investment companies). The functions of “depositary” and “trustee” are essentially the same. The custodianship of fund assets and the administration of the fund are supposed to be performed by separated entity, but very often they are done by the same institution using different subsidiary. For example, "ABN AMRO Target Click Fund (USD) 2010" a Luxemburg domiciled fund is administrated by ABN AMRO Luxembourg Management SA, and the custodian is ABN AMRO Bank (Luxembourg) SA. The fund management company is ABN AMRO Luxembourg Management SA. Another example is provided in the Appendix, including information on international notification.

## 3. Testable Hypotheses

It is possible that there are conflict-of-law provisions in the key investor information document that sets out details in terms of where investors may sue the fund in the event of a dispute. However, interpretation of conflict-of-law clauses is not always perfectly transparent,[3] and there have been recent calls for more transparent rules.[4] Tiernan and Stapleton (2003) underline this issue in the Irish context. One must determine the *lex situs* of assets held by counterparties. It is possible there is non-compliance with the laws of the jurisdiction in which the securities are held, possibly with complex sub-custodial arrangements. Under the “look through” approach courts look at the location of the actual security

[3] Dillon Eustace Financial Service Group. 2004. “Hedge Funds and Alternative Investment in Ireland”, mimeo.

[4] http://www.efinancialnews.com/story/2009-10-26/custodians-call-for-clarity-on-ucits-rules

certificates. Under the "place of relevant intermediary" or PRIMA approach, courts look to the chain of intermediaries to either the jurisdiction of incorporation of the issuer of securities, location of the security register or the location of the actual security certificates.

Under UCITS, management groups need to establish a fully functional management company in each country where they domicile a fund. Management groups must satisfy costly local substance requirements.[5] In the event of a dispute, investors sue the depositories (custodians) in the country in which they reside[6] even if the management is to blame.[7] UCITS does not allow escaping responsibilities through a complex network of players. Under the UCITS regulation, the competent authorities responsible for authorization and supervision must be public authorities or bodies appointed by public authorities responsible for the control and supervision of UCITS funds. The competent authorities of the Member State in which the UCITS is domiciled are responsible for checking, supervising and imposing sanctions if the provisions are infringed. The authorities in other Member States become involved when a UCITS markets its units on their territory; if this is the case, they too may apply sanctions.[8] As a result, the laws of the countries in which a UCITS fund is notified are important to both the fund investors and the fund management company.

In view of the interactions between national laws outlined above, there are two competing predictions respecting the use of UCITS in different countries with varying levels of state legal

---

[5] See European Commission, 16.11.2006, "White Paper on Enhancing the Single Market Framework for Investment Funds, http://ec.europa.eu/internal_market/investment/asset_management_en.htm

[6] PWC, February 2011. "UCITS V" The Depository's Role and Manager's Remuneration," PriceWaterhouseCoopers.

[7] Ibid.

[8] http://europa.eu/legislation_summaries/other/l24036a_en.htm (as seen in March 14th 2011)

protections. On one hand, we may expect UCITS to make up for low quality investor protection and act as a substitute for the weak regulation in a country. This "legal substitutes hypothesis" implies that the marginal benefit to investors for investing in a UCITS fund in a country with weak anti-director rights (for equity funds) or weak creditor rights (for bond funds) is greater as opposed to funds structured under domestic legal rules.

On the other hand, one might conjecture that the voluntary standards a fund manager agrees to by taking on the UCITS structure are more easily to adhere to in countries with stronger legal standards. This "legal complements hypothesis" implies that the marginal costs to fund managers for establishing and distributing a UCITS fund in a country with strong anti-director rights (for equity funds) or strong creditor rights (for bond funds) is lower. The legal complements hypothesis is related to the institutional approach (North, 1990; Aoki, 2001), which posits that institutions need to be complementary to reach their full potential. Institutions broadly defined includes regulation (Aoki, 2001), and a same set of rules can have different outcome depending on the existence or the absence of complementary institutions. There are two possible explanations for legal complements. First, fund managers operating in countries with weak legal standards lose a greater proportion of insider benefits of not adopting stringent provisions of UCITS.[9] Conversely, fund managers lose less insider benefits in adopting the UCITS structure in a country with more stringent regulations, since many of the constraints attached to UCITS structure may be already included in the securities regulation of these countries. At times national regulations may even be more stringent than under UCITS so that the costs of UCITS adoption are close to zero. Second, UCITS is more easily enforced in countries with better laws. That is, UCITS funds are

[9] Relatedly, for example, Renders and Gaeremynck (2007) find evidence that insiders with more to lose were less likely to be early adopters of the 2007 IFRS standards.

tailored to maximize the retail investor's protection, but this framework needs to be related to real means to implement this protection. This issue of how to sue fraudulent fund managers or custodians is critical. Therefore the legal system of the domicile as well as the legal system of the country where the fund is distributed does matter.

For equity funds, there is a close link with provisions in UCITS and antidirector rights. Anti-director rights (La Porta et al., 1998; Spamann, 2009) focus on the ability of the voting mechanism against interference by corporate insiders. As explained above, a UCITS fund may not acquire any shares carrying voting rights which would have an effect on the independence of the issuer. Under the legal substitutes hypothesis, investors into UCITS funds are afforded greater protection, and hence UCITS is more likely to be adopted in weaker regimes because it makes up for the weaker legal regime in which the fund operates. Under the alternative, the legal complements hypothesis, a strong anti-director rights regime already favors minority shareholders and protects UCITS fund investments which are required to be minority investments. Moreover, under the legal complements hypothesis, UCITS limits the scope of insider opportunistic behavior of the fund manager in the management of the fund in a country with weak anti-director rights, and the costs of adopting the UCITS structure are higher in countries with weak legal regimes as fund managers give up relatively more insider benefits.

For bond funds, there is a close link with provisions in UCITS and creditor rights. UCITS funds have strict lending and borrowing requirements and specific leverage restrictions,[10] and creditor rights pertain to the ability of a debt holder to recover claims. Under the legal substitutes hypothesis, UCITS

---

[10]See, e.g., the requirements detailed here: http://ey.mobi/Publication/vwLUAssets/ucits-and-new-alternative-ucits-jan11/$FILE/UCITS%20and%20New%20Alternative%20UCITS%20January%202011.pdf

bond funds are more likely to be adopted in countries with weaker creditor rights legal regimes since fund managers cannot exceed the maximum allowable UCITS leverage which thereby makes UCITS funds less risky relative to non-UCITS funds. In contrast, under the legal complements hypothesis, UCITS bond funds are more likely to be adopted in countries with stronger creditor rights legal regimes since fund managers are constrained in their ability to risk shift given the leverage restrictions from the fund. In a country with weak creditor rights, non-UCITS fund managers can pursue excessively risky strategies of higher leveraged returns, which maximizes the upside potential reward to the fund manager at the expense of the fund's investors.

In our empirical analyses, we assess the relative importance of the marginal benefits to investors versus the marginal costs to fund managers by ascertaining whether or not the data indicate that fund managers spread voluntary provisions of UCITS funds to countries with weak or strong legal conditions, and consider substantive matters of law for anti-director and creditor rights as well as matters of enforcement.

**3. Data**

Our analysis builds on data provided by Lipper, a Thomson Reuters company specialized in collecting worldwide information on mutual funds. The full sample includes all the bond and equity funds launched from 2002-2007 domiciled in Austria, Belgium, Czech Republic, Denmark, France, Germany, Finland, Ireland, Italy, Latvia, Luxembourg, the Netherlands, Norway, Poland, Slovakia, Slovenia, Spain, Sweden, Switzerland, and the United Kingdom. Switzerland is included in our sample, although it is not a member state of the EU; however, their local regulation tends to transpose the UCITS orientations. These are the EU countries covered in the database and definitely are the most important countries of domiciliation in Europe. The full sample includes UCITS as well as non-UCITS funds. To avoid a sample selection bias, we also include funds that have been merged or liquidated already. However, we intentionally exclude funds launched prior to 2002, because of the major changes in regulation that occurred in 2001. We further exclude funds launched after 2007, since fund promoters require some time to reach their desired scope of notifications. Our sample was extracted in September 2009.

The database includes, among other things, information on year of launch, year of closure (if inactive at the meantime), country of domiciliation, the list of countries where the fund has been notified, fund type, geographical focus of investment, and several other key aspects. It is important to note that this database gives us a picture of the situation as of August 31, 2009. Historical development of funds is therefore not available; e.g., the exact date of each notification. All the variables are defined in Table 1.

[Table 1 about Here]

A note is warranted on the construction of our dependent variables. The objective is to capture the overall quality of the legal environment in which the funds are notified (distributed). To measure legal standard for bond funds, we use creditor rights indices of the different countries of notification. We then construct the average of creditor rights indices of the countries each considered fund is notified, *while excluding the country of domiciliation*. This gives us a measure of the average legal standard for bond investments in the countries of notification. We further construct this measure by weighting each country by population (data obtained from the World Bank). This controls for the fact that some countries are particularly small and thus offer little scope of distribution compared to larger countries (such as France and Germany). We also construct a similar measure by weighting by GDP, which information was taken from the World Bank database.[11] For equity funds, we proceed similarly but with Spamann's (2008) anti-director rights indices, *while again excluding the country of domiciliation.*

## 4. Summary Statistics

Table 2 shows summary statistics of our variables. First, it shows that average creditor rights are relatively similar, regardless whether these are weighted or not, and whether it is weighted by population or GDP. The same is true for anti-director rights. Interestingly however, creditor rights in the country of domiciliation (which is excluded from the calculation of the dependent variables) are remarkably lower, namely 1.422. For anti-director rights, the difference is less pronounced but still negative (with a sample average of 3.916 in the countries of domiciliation). Second, a large proportion of the cross-border investment funds in Europe are structured as UCITS: 88.2% of bond funds and 92.5% of equity funds that are distributed cross-border are UCITS. Third, these bond (equity) funds are notified on average in 6.7 (7.0) countries, while about 34-35% are notified at least in one country outside Europe. Whenever this is the case, the funds are notified most often in Asia-Pacific. More details are provided below on the specific countries (Table 3, Panel A). Finally, it is worthwhile mentioning that 56% of bond funds and 48% of equity funds are managed by one of the top-50 promoters. This indicates that while

[11] In unreported analysis, we also constructed measures weighted by the countries' industry of investment funds, using data available from the European Financial Management Association (EFMA). The correlation between these different weighted measures turns out to be extremely high.

some fund promoters might be quite large, this market is highly competitive given the large number of players active in the European market of investment funds.

[Table 2 about Here]

Table 3 presents summary statistics on the countries of notification (Panel A) and domiciliation (Panel B) of European cross-border funds. The European countries with the greatest offer of cross-border bond investment funds are (ordered by importance) Luxembourg, Germany and Austria. For cross-border equity funds, the ranking is the same among the top-3. Obviously, the ranking is likely to change if national funds (i.e., those that are not cross-border but only notified in the country of domiciliation) were taken into account (see Cumming et al., 2010, for related statistics). In terms of notifications outside Europe, the three countries that are mostly represented are Singapore (23.1% [24.6%] of all the cross-border bond [equity] funds), Hong Kong (9.8% [13.6%] of all the cross-border bond [equity] funds) and Chile (8.6% [9.7%] of all the cross-border bond [equity] funds).

Domiciliation of investment funds in Europe is highly clustered, with Luxembourg and Ireland taking the bulk of the domiciliations. It is interesting to note that some countries that are relatively small have a large fraction of available investments funds notified in their country. For instance, this is the case for Austria, which only has about 8 million inhabitants but where 47.8% of all bond funds and 46.3% of all equity funds are notified (Panel A). This is even more remarkable as this country is home for only a small fraction of the European cross-border investment funds. Indeed, only 6.03% of all the bond funds and 2.30% of all the equity funds are domiciled in Austria (Panel B).

[Table 3 (Panels A and B) about Here]

Table 4 shows pair-wise correlations between our main variables. Panel A gives the correlation matrix for bond funds and Panel B for equity funds. First, it confirms the strong correlation between our dependent variables with respect to weighting or not the countries considered for the construction of the variables. Correlations range between 90.6% and 99.2% for bond funds and 90.5% and 99.6% for equity funds. Second, correlations between legal quality in the country of domiciliation and the average legal quality in the countries of notifications (which by construction exclude the legal quality of the country of domiciliation) are generally weak in terms of magnitude.

[Table 4 (Panels A and B) about Here]

**5. Multivariate Analysis**

In this section we present regression results for 1344 UCITS cross-border bond funds and 2784 UCITS cross-border equity funds over the considered period.  In subsection 5.1 we describe the regression methods and key variables.  In section 5.2 we analyze whether funds are distributed in countries with superior or inferior legal standards.  Subsection 5.3 presents regressions for notifications based outside of Europe.  Other robustness checks are discussed in subsection 5.4.

*5.1 Regression Methods*

Our regressions analyze in the dependent variables alternative measures of legal standards in the countries in which the UCITS funds were distributed. For bond funds we focus on indices of creditor rights. For equity funds we focus on indices of shareholder rights. Each of the legal indices in the dependent variable are constructed in two ways: (1) the average legal index values weighted by the population of the country of notification, and (2) the average legal index values weighted by GDP. The simple average legal index values of the countries of notification where the funds are distributed was also considered, but the results were similar (except in cases explicitly noted otherwise below) and hence not reported but are available on request.

To assess robustness of our dependent variable measures, we construct and explicitly test alternative dependent variables based on the difference in legal indices between notification countries and the country of domiciliation. Furthermore, we consider subsets of the data based on region, and explicitly show results for notifications outside of Europe.

The main explanatory variable used to test our central hypotheses in Section 2 is the dummy variable for UCITS fund structure. A positive coefficient on the UCITS variable supports the 'legal complements hypothesis', or the idea that voluntarily assumed investor protection standards are more likely to spread to countries with stronger legal systems due to the lower marginal costs to the fund managers. Conversely, a negative coefficient on the UCITS variable supports the 'legal substitutes hypothesis', or the idea that voluntarily assumed investor protection standards are more likely to spread to countries with weaker legal systems due to greater the marginal benefits to investors.

In our empirical analyses we control for a number of other factors that could affect choice of jurisdiction of notifications. We control for the overall scope of notifications, the characteristics of the fund such as its age, whether or not it belongs to a top-50 ranked promoter, its status (merged or liquidated or still active), fund promoter type, and legal conditions in the country of domiciliation. All the specifications include dummies for vintage year and countries of domiciliation. Standard errors are clustered by vintage year. We discuss other controls and robustness checks below alongside the results and discussion in subsections 5.2-5.5.

*5.2 Regression Results*

Table 5 presents regressions for the 1342 bond and 2777 equity funds separately, since creditor rights are more directly applicable to bond funds and anti-director rights are more applicable to equity funds. We present regressions for the GDP weighted and population weighted legal indices where notifications occurred, and show alternative specifications with different explanatory variables.[12] Eight specifications in total are presented in Table 5 to show robustness.

[Table 5 about Here]

The data indicate in Table 5 that UCITS funds are much more likely to spread to legal regimes with stronger investor protection. This finding holds for both bond funds and equity funds, and for

---

[12] Alternatively, we considered dependent variables measured net of the legal index value in the country of origin (i.e., the value of the legal index in the country of domiciliation is subtracted). Results are qualitatively very similar and thus are not reported explicitly in a separate table.

stronger creditor rights regimes and stronger anti-director rights regimes. In particular, on average a UCITS bond fund spreads to countries with higher creditor rights by approximately 0.5; since the average creditor rights in the country of domiciliation of the fund is 1.4 (Table 2), UCITS funds spread to new countries with creditor rights that are 36% stronger. Similarly, UCITS equity funds spread to new countries with stronger anti-director rights by 0.2; since the average anti-director rights in the country of domiciliation of the fund is 3.9 (Table 2), UCITS funds spread to new countries with anti-director rights that are 5% stronger. The data therefore provide very strong and robust support for the legal complements hypothesis and do not support the legal substitutes hypothesis.

We ran further tests to distinguish between whether the observed patterns in Table 5 are due to greater enforcement in countries with better laws, or due to the fact that the loss of a manager's insider benefits from adopting the UCITS constraints is greater in countries where legal standards are lower. That is, the choice to set up a fund under UCITS instead of any national structure may be related to the quality of enforcement in the countries where the fund is distributed. Indeed, retail investors in countries where funds are notified may prefer to invest in foreign UCITS funds as a way to invest in funds supervised by foreign public securities regulators with greater enforcement standards. In order to investigate this issue, we used, among other things, legal indices of law enforcement from La Porta et al. (1998, 2006) and Jackson and Roe (2009) for judicial efficiency and resource based measures of enforcement. Our analysis (not explicitly reported for reasons of conciseness but available on request) showed no systematic effect of UCITS funds as compared to other fund structures in relation to these various measures of enforcement on equity and bond funds. Sub-indices show no consistent pattern either.

In sum, although we do not find support for UCITS spreading to countries with any systematic difference in enforcement relative to the fund manager's home country, Table 5 nevertheless shows strong support for the importance of legal quality on substantive matters pertaining to creditor and antidirector rights. Therefore, enforcement is not the main determinant driving legal complementarity. Rather, UCITS fund managers expand to stronger legal environments relative to non-UCITS funds since fund managers operating in countries with weak legal standards lose a greater proportion of insider benefits if they adopt the stringent provisions of UCITS.

Many of the control variables are insignificant, which highlights the relative importance of the effect of the UCITS voluntary standards on choice of law. For instance, other variables that do not significantly affect the average legal environment of notifications include whether the promoter is large, the age of the fund and whether the promoter is a commercial bank. Perhaps one puzzling result is the effect of scope of distribution (Nbr. Notifications), since the effect is negative for bond funds and positive for equity funds. One explanation for this result is that there are greater legal complexities associated with bond covenants and contracts, thereby making it relatively more attractive to spread to lower quality creditor rights legal regimes for bond funds in the event of legal disputes. Further research is warranted.

One way to provide further insights into this seemingly puzzling result is to consider instead the spread of legal regimes within the notifications of each fund. We therefore measure the difference between the highest and lowest legal regime in which each fund is notified. This provides complementary insights into our research question, next to the (weighted) average legal regime. Results are shown in Table 6. They show that UCITS funds tend to have wider range of legal regimes. In unreported results, we investigated lowest and highest legal regimes separately, to see whether the spread is primarily driven by the highest or lowest legal regime, or both. It turns out that increased spread for UCITS funds is due to the highest legal regimes, and very little to notifications in low legal regimes. This additional finding is consistent with the legal complements hypothesis in that voluntary investor protection mechanisms are more likely to be associated with countries with higher legal standards. Conversely, they are unlikely to drive UCITS funds to distribute their fund units in countries with poor investor protection as a way to substitute for the poor legal environment.

[Table 6 about Here]

### *5.3 Effect of Notifications Outside of Europe*

As discussed in section 4, European UCITS funds are increasingly notified outside Europe, in particular in Asia-Pacific. Important countries are notably Chile, Hong Kong, Japan, South Korea, Macau, Singapore and Taiwan, where UCITS funds are at the meantime increasingly notified because of its international recognition. According to a large volume of practitioner reports and marketing materials, this trend is largely attributable to the high investor protection standard offered by UCITS. This is why an increasing number of national regulators allow UCITS funds to distribute their fund units to domestic retail investors. Our sample offers the opportunity to test the impact on such notification patterns, since we have information on the full spectrum of notifications worldwide.

[Table 7 about Here]

Table 7 shows that for equity funds, notifications outside Europe likewise drive substantial part of the increased legal environment in the countries of notification. This effect is primarily attributable to notifications in the Asia-Pacific area. The economic significance is similar to that in Table 5, but slightly greater for notifications outside Europe in Table 7, and the statistical significance is similar with all regressions showing significance at the 5% level. As well, the control variables show similar patterns as in Table 5.

*5.4 Other Robustness Checks*

We carried out a number of other robustness checks to confirm the robustness of our tests in Tables 5 to 7. These extra tests are not explicitly reported but available on request. For example, we considered the subset of countries for common versus civil law, similar language regimes, country exclusions, different measures of legal indices, subsets of different years, other control variables, etc. For all of our specifications the data pointed to the legal complements hypothesis for the context of the voluntary legal protections offered by UCITS and country level legal standards.

## 6. Concluding Remarks and Future Research

In this paper we considered for the first time whether voluntary legal standards are complements or substitutes with country level required legal standards. Our empirical context was the case of UCITS. We reviewed the specific context of UCITS and conjectured that voluntary adoption of legal standards could either be complementary to country level legal protections or substitutes for the absence of poor legal protections offered in a country. The legal substitute hypothesis predicted that voluntary standards meet investor interests and demand for better legal systems not offered at the required country level. The legal complements legal hypothesis conjectured that fund managers seek to minimize costs associated with maintaining the level of voluntarily adopted legal standards. Legal complements may either be attributable to ease of enforcement, or the fact that fund managers give up relatively more insider benefits in poor legal standards countries by voluntarily adopting higher standards above the minimum required at law.

Based on a complete sample of 1342 bond funds and 2777 of equity funds established between 2001 and 2007, and cross-border notifications over the 2001 to 2010 period, the data indicate support for the legal complements hypothesis and not the legal substitutes hypothesis. That is, the data indicate voluntary investor protection is more likely to spread to countries with higher legal standards. The evidence herein is both economically significant and statistically robust. Voluntary investor protection mechanisms are not a substitute for poor laws in a country; rather, better legal conditions stimulate the voluntary adoption of investor protection mechanisms to protect investors over and above that which is the minimal requirement in a country. Our robustness analyses showed that this central finding was not attributable to matters related to enforcement. Rather, UCITS funds spread to countries with stronger antidirector rights (for equity funds) and stronger creditor rights (for bond funds) since the costs of doing so are smaller as a UCITS funds in terms of giving up insider benefits. This finding herein is an important one, as it indicates how and where voluntary investor protection mechanisms spread around the world to better inform policymakers and investors. Further it sheds light on the pronounced role of legal conditions for corporate governance in the spirit of La Porta et al. (1998, 2000), and suggests that better country level corporate governance and legal standards encourages further voluntary adoption of standards that exceed that at the country level.

Further research could examine the substitutability versus complementary of voluntary standards and legal systems in other empirical contexts. While it may be the case that there are unique features of the UCITS regime that drive our results herein, we do not have any reason to believe this is the case at this stage. Nevertheless, additional research in other financial contexts would provide more empirical support and theoretical insights. As well, research in other contexts such as environmental or other non-financial contexts would be fruitful. This type of research would better inform investors and policymakers alike.

## References

Alexander, G.J., G. Cici, and S. Gibson, 2007. Does motivation matter when assessing performance? An analysis of mutual funds. Review of Financial Studies 20, 125-150.

Anderberg, K. and L. Bolton, 2006. UCITS: A developing model for the future of the European investment fund marketplace. Euromoney International Investment & Securities Review, 13-18.

Anderberg, K. and J. Brescia, 2009. UCITS IV: Reforms to the UCITS Directive adopted by the European Parliament. Euromoney's International Investment and Securitisation Review, 17-21.

Aoki, M., 2001. Toward an Comparative Institutional Analysis, MIT Press.

Barkus S. and C. Christian, 2009. UCITS: An opportunity for hedge fund managers. Dechert OnPoint Financial Services Quarterly report, Second Quarter.

Bergstresser, D., and J. Poterba, 2002. Do after-tax returns affect mutual fund inflows. Journal of Financial Economics 63, 381-414.

Chhaochharia, V., and L. Laeven, 2009. Corporate governance, norms and practices. Journal of Financial Intermediation 18, 405-431.

Chordia, T., 1996. The structure of mutual fund charges. Journal of Financial Economics 41, 3-39.

Covrig, V.M., M.L. Defond and M. Hung (2007). Home bias, foreign mutual fund holdings, and the voluntary adoption of International Accounting Standards. Journal of Accounting Research 45 (1), 41-70.

Cumming, D., and N. Dai, 2009. Capital flows and hedge fund regulation. Journal of Empirical Legal Studies 6, 848-873.

Cumming, D., G. Imad'Eddine, and A. Schwienbacher, 2010. Harmonized regulatory standards, international distribution of investment funds and the recent financial crisis. European Journal of Finance, forthcoming.

Cumming, D., S. Johan, and D. Li, 2011. Exchange trading rules and stock market liquidity. Journal of Financial Economics 99, 651-671.

Ding, B., 2006. Mutual fund mergers: A long-term analysis. Working Paper, SUNY Albany.

Fang, L.H., 2005. Investment bank reputation and the price and quality of underwriting services. Journal of Finance 60, 2729-2761.

Ferguson, M., 2009. UCITS IV: transforming the European investment fund industry (Ernst & Young Business Review, Luxembourg).

Frank, M.M., J.M. Poterba, D.A. Shackelford, and J.B. Shoven, 2004. Copycat funds: Information disclosure regulation and the returns to active management in the mutual fund industry. Journal of Law & Economics 47(2), 515-541.

Froot, K.A., P.G.J. O'Connell, and M.S. Seasholes, 2001. The portfolio flows of international investors. Journal of Financial Economics 59, 151-193.

Heinemann, F., 2002. The benefit of creating an integrated EU market for investment funds. Working Paper, Zentrum für Europäische Wirtschaftsforschung (ZEW).

Jackson, H., and M. Roe, 2009. Public and private enforcement of securities laws: resource-based evidence. Journal of Financial Economics 93, 207-238.

Jayaraman, N., A. Khorana and E. Nelling, 2002. An analysis of the determinants and shareholder wealth effects of mutual fund mergers. Journal of Finance 52, 1521-1551.

Kacperczyk, M., C. Sialm, and L. Zheng, 2008. Unobserved actions of mutual funds. Review of Financial Studies 21, 2379-2416.

Khorana, A., and H. Servaes, 1999. The determinants of mutual fund starts. Review of Financial Studies 12 (5), 1043-1074.

Khorana, A., H. Servaes and P. Tufano, 2005. Explaining the size of the mutual fund industry around the world. Journal of Financial Economics 78, 145-185.

Khorana, A., H. Servaes and P. Tufano, 2009. Mutual fund fees around the world. Review of Financial Studies 22, 1279-1310.

Kim, J.-B., J.S.L. Tsui and C.H. Yi, 2010. The voluntary adoption of International Financial Reporting Standards and loan contracting around the world. Review of Accounting Studies (forthcoming).

La Porta, R., F. Lopez-de-Silanes, A. Schleifer, and R. Vishny, 1998. Law and finance. Journal of Political Economy 106, 1112-1155.

La Porta, R., F. Lopez-de-Silanes, A. Schleifer, and R. Vishny, 2000. Investor protection and corporate governance. Journal of Financial Economics 58, 3-27.

La Porta, R., F. Lopez-de-Silanes, A. Shleifer, 2006. What works in securities laws? Journal of Finance 61, 1-32.

Marco P., 2005. Ce qui change en Europe avec la directive UCITS III. Banque & Finance n°76, 29-30.

Martynova, M., and L. Renneboog, 2008. Spillover of corporate governance standards in cross-border mergers and acquisitions. Journal of Corporate Finance 14, 200-223.

Nanda, V., M.P. Narayanan, and V.A. Warther, 2000. Liquidity, investment ability and mutual fund structure. Journal of Financial Economics 57, 417-443.

North D., 1990. Institutions, institutional change and economic performance. Cambridge University Press.

O'Neil, K., 2006. Understanding the Undertakings for Collective Investments in Transferable Securities III (UCITS III) Directive, Henderson Global Advisor Guide.

Renders, A., and A. Gaeremynck, 2007. The impact of legal and voluntary investor protection on the early adoption of International Financial Reporting Standards (IFRS). de Economist 155, 49-72.

Romero-Avila, D., 2007. Finance and growth in the EU: New evidence from the harmonization of the banking industry. Journal of Banking and Finance 31, 1937-1954.

SEC, 2000. U.S. Securities and Exchange Commission, Division of Investment Management: Report on Mutual Fund Fees and Expenses. Washington. http://www.sec.gov/news/studies/feestudy.htm

Zetzsche, D.A., 2008. Fonds im Fokus: Europaeische Entwicklungen im Recht der Finanzintermediaere. Research Paper No. 0041, Heinrich Heine University Duesseldorf.

## TABLE 1: Definition of Variables

This table provides a definition of all the variables used in the analysis. Sources of information are mentioned in brackets.

| | |
|---|---|
| Distribution Characteristics of the Fund: | |
| Average Creditor Rights | Average of Creditor Rights index of the countries of notification of the fund; the measure is calculated as unweighted average as well as weighted by population and GDP (Source: La Porta et al., 1998; World Bank) |
| Average Anti-Director Rights | Average of Anti-Director Rights index of the countries of notification of the fund; the measure is calculated as unweighted average as well as weighted by population and GDP (Source: Spamann, 2008; World Bank) |
| Creditor Rights at Domicile | Level of Creditor Rights index of the country where the fund is domiciled (Source: La Porta et al., 1998) |
| Anti-Director Rights at Domicile | Level of Anti-Director Rights index of the country where the fund is domiciled (Source: Spamann, 2008) |
| Notified outside Europe | Dummy variable equal to one if the fund is notified in at least one country outside Europe, and zero otherwise (Source: Lipper) |
| Notified in Asia-Pacific | Dummy variable equal to one if the fund is notified in at least one country in the Asia-Pacific region, and zero otherwise (Source: Lipper) |
| Notified in the Americas | Dummy variable equal to one if the fund is notified in at least one country in the Americas (North, Central or South America), and zero otherwise (Source: Lipper) |
| Nbr. Notifications | Number of countries in which the fund is notified as of September 2009 (Source: Lipper) |
| Other Fund Characteristics: | |
| Fund Age (years) | Age of the fund (in years) as of September 2009, calculated since year of launch (vintage year) (Source: Lipper) |
| UCITS Fund | Dummy variable equal to one if the fund is a UCITS fund, and zero otherwise (Source: Lipper) |
| Domiciliation Dummies | Dummy variables for the different countries of domiciliation; i.e., Austria, Belgium, Czech Republic, Denmark, France, Germany, Finland, Ireland, Italy, Latvia, Luxembourg, the Netherlands, Norway, Poland, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom (Source: Lipper) |
| Current Status: Merged | Dummy variable equal to one if the fund has merged, and zero otherwise (Source: Lipper) |
| Current Status: Liquidated | Dummy variable equal to one if the fund has been liquidated, and zero otherwise (Source: Lipper) |
| Fund Promoter Characteristics: | |
| Top-50 Promoter Fund | Dummy variable equal to one if the fund is from one of the 50 largest fund promoters (based on number of funds launched in the European Union), and zero otherwise (Source: Lipper) |
| Commercial Bank Promoter | Dummy variable equal to one if the parent promoter is a commercial bank, and zero otherwise (e.g., an investment company or an insurance company) (Source: own information collection) |
| Non-European Promoter | Dummy variable equal to one if the parent promoter is located outside Europe (Source: own information collection) |

**TABLE 2: Summary Statistics**

All the variables are defined in Table 1. For the two variables "Commercial Bank Promoter" and "Non-European Promoter", we only have information for the 150 largest promoters and thus the number of observations is 982 for bond funds and 1802 for equity funds.

| Variables | Bond Funds | | Equity Funds | | P-value: Bond vs. Equity |
|---|---|---|---|---|---|
| | Mean | Std. Dev. | Mean | Std. Dev. | |
| Dependent Variables: | | | | | |
| Average Creditors Rights (unweighted) | 2.307 | 0.629 | | | - - |
| Average Creditors Rights (population weighted) | 2.401 | 0.691 | | | - - |
| Average Creditors Rights (GDP weighted) | 2.419 | 0.697 | | | - - |
| Average Anti-Director Rights (unweighted) | | | 4.154 | 0.469 | - - |
| Average Anti-Director Rights (population weighted) | | | 4.346 | 0.506 | - - |
| Average Anti-Director Rights (GDP weighted) | | | 4.323 | 0.499 | - - |
| Fund and Promoter Characteristics: | | | | | |
| UCITS Fund (dummy) | 0.882 | 0.322 | 0.925 | 0.264 | 0.000 |
| Nbr. Notifications | 6.714 | 5.743 | 7.024 | 5.804 | 0.106 |
| Promoter is a Commercial Bank (dummy) | 0.467 | 0.499 | 0.507 | 0.500 | 0.018 |
| Non-European Promoter (dummy) | 0.164 | 0.370 | 0.171 | 0.377 | 0.543 |
| Fund is Notified outside Europe (dummy) | 0.341 | 0.474 | 0.349 | 0.477 | 0.580 |
| Fund is Notified in Asia-Pacific (dummy) | 0.282 | 0.450 | 0.302 | 0.459 | 0.174 |
| Fund is Notified in the Americas (dummy) | 0.101 | 0.302 | 0.111 | 0.315 | 0.317 |
| Creditor Rights at Domicile | 1.422 | 0.650 | | | - - |
| Anti-Director Rights at Domicile | | | 3.9159 | 0.4234 | - - |
| Fund Age (in years) | 4.633 | 1.684 | 4.3031 | 1.7998 | 0.000 |
| Top-50 Promoter fund (dummy) | 0.560 | 0.497 | 0.4767 | 0.4995 | 0.000 |
| Status: Merged (dummy) | 0.084 | 0.278 | 0.0769 | 0.2664 | 0.428 |
| Status: Liquidated (dummy) | 0.210 | 0.407 | 0.1846 | 0.3881 | 0.059 |
| Nbr. Observations | 1344 | | 2784 | | |

## TABLE 3 - PANEL A: Statistics on the Notification of Cross-Border Funds

This table presents summary statistics on the countries where fund are notified. Reported mean values represent percentage of total sample of bond (based on sample of 1344 obs.) or equity (based on sample of 2784 obs.) fund. The first two columns give the creditor rights index (La Porta et al., 1998) and anti-director rights index (Spamann, 2008) of the considered country of notification. Only countries with values greater than 1% are reported below. Countries appearing in our sample in less than 1% of the cases are not reported explicitly in this table.

| Variables | Creditor Rights | Anti-Director Rights | Bond Funds | | Equity Funds | | P-value: Bond vs. Equity |
|---|---|---|---|---|---|---|---|
| | | | Mean | Std. Dev. | Mean | Std. Dev. | |
| Percentage Notified in given Country: | | | | | | | |
| Austria | 3 | 4 | 47.8% | 50.0% | 46.3% | 49.9% | 0.341 |
| Belgium | 2 | 2 | 20.7% | 40.5% | 22.7% | 41.9% | 0.132 |
| Chile | 2 | 5 | 8.6% | 28.0% | 9.7% | 29.6% | 0.214 |
| Czech Republic | 3 | 3.75 | 8.4% | 27.8% | 6.5% | 24.7% | 0.032 |
| Denmark | 3 | 4 | 9.4% | 29.2% | 11.1% | 31.4% | 0.089 |
| Estonia | 1.3 | 3.75 | 1.6% | 12.7% | 2.5% | 15.5% | 0.064 |
| Finland | 1 | 4 | 20.3% | 40.2% | 22.7% | 41.9% | 0.074 |
| France | 0 | 5 | 37.4% | 48.4% | 45.5% | 49.8% | 0.000 |
| Germany | 3 | 4 | 65.6% | 47.5% | 64.3% | 47.9% | 0.415 |
| Greece | 1 | 3 | 3.8% | 19.1% | 3.6% | 18.7% | 0.791 |
| Hong Kong | 4 | 4 | 9.8% | 29.8% | 13.6% | 34.3% | 0.000 |
| Hungary | 2.2 | 4.5 | 2.8% | 16.6% | 2.0% | 14.0% | 0.120 |
| Iceland | 1.75 | 4 | 1.0% | 10.2% | 0.6% | 7.8% | 0.170 |
| Ireland | 1 | 4 | 24.0% | 42.7% | 24.7% | 43.2% | 0.615 |
| Italy | 2 | 4 | 40.9% | 49.2% | 41.7% | 49.3% | 0.618 |
| Japan | 2 | 5 | 2.0% | 14.0% | 1.7% | 12.9% | 0.480 |
| Latvia | 3 | 4.5 | 2.3% | 15.0% | 3.1% | 17.4% | 0.120 |
| Lithuania | 2 | 4.5 | 1.9% | 13.5% | 2.4% | 15.3% | 0.244 |
| Luxembourg | 1.3 | 3.75 | 75.6% | 43.0% | 70.5% | 45.6% | 0.000 |
| Macau | 2.2 | 4.5 | 3.5% | 18.4% | 5.1% | 22.0% | 0.014 |
| The Netherlands | 3 | 4 | 40.0% | 49.0% | 41.5% | 49.3% | 0.348 |
| Poland | 1 | 4.5 | 4.4% | 20.5% | 5.6% | 23.0% | 0.087 |
| Portugal | 1 | 4 | 17.0% | 37.5% | 17.3% | 37.9% | 0.758 |
| Singapore | 3 | 4 | 23.1% | 42.1% | 24.6% | 43.1% | 0.286 |
| Slovakia | 2 | 4.5 | 4.0% | 19.6% | 2.8% | 16.5% | 0.050 |
| South Korea | 3 | 4.06 | 2.3% | 15.0% | 1.9% | 13.7% | 0.406 |
| Spain | 2 | 6 | 36.8% | 48.2% | 37.4% | 48.4% | 0.675 |
| Sweden | 1 | 4 | 24.3% | 42.9% | 31.2% | 46.3% | 0.000 |
| Switzerland | 1 | 3 | 41.9% | 49.4% | 44.4% | 49.7% | 0.133 |
| Taiwan | 2 | 5 | 5.1% | 22.1% | 5.7% | 23.1% | 0.467 |
| United Kingdom | 4 | 5 | 40.0% | 49.0% | 44.0% | 49.6% | 0.016 |
| Nbr. Observations | | | 1344 | | 2784 | | |

### TABLE 3 - PANEL B: Statistics on the Domiciliation of Cross-Border Funds

This table presents summary statistics on the countries where fund are domiciled. Reported mean values represent percentage of total sample of bond (based on sample of 1344 obs.) or equity (based on sample of 2784 obs.) fund. The first two columns give the creditor rights index (La Porta et al., 1998) and anti-director rights index (Spamann, 2008) of the considered country of domiciliation.

| Variables | Creditor Rights | Anti-Director Rights | Bond Funds Mean | Bond Funds Std. Dev. | Equity Funds Mean | Equity Funds Std. Dev. | P-value: Bond vs. Equity |
|---|---|---|---|---|---|---|---|
| Percentage Domiciled in given Country: | | | | | | | |
| Austria | 3 | 4 | 6.03% | 23.81% | 2.30% | 14.99% | 0.000 |
| Belgium | 2 | 2 | 0.52% | 7.20% | 1.26% | 11.14% | 0.011 |
| Czech Republic | 3 | 3.75 | 0.07% | 2.73% | 0.07% | 2.68% | 0.977 |
| Denmark | 3 | 4 | 0.45% | 6.67% | 0.22% | 4.64% | 0.253 |
| Finland | 1 | 4 | 0.52% | 7.20% | 1.29% | 11.30% | 0.008 |
| France | 0 | 5 | 2.16% | 14.54% | 6.18% | 24.08% | 0.000 |
| Germany | 3 | 4 | 2.08% | 14.29% | 3.38% | 18.07% | 0.013 |
| Ireland | 1 | 4 | 19.57% | 39.69% | 19.86% | 39.90% | 0.823 |
| Italy | 2 | 4 | 0.07% | 2.73% | 0.00% | 0.00% | 0.317 |
| Latvia | 3 | 4.5 | 0.07% | 2.73% | 0.11% | 3.28% | 0.731 |
| Luxembourg | 1.3 | 3.75 | 66.15% | 47.34% | 60.56% | 48.88% | 0.000 |
| The Netherlands | 3 | 4 | 0.07% | 2.73% | 0.07% | 2.68% | 0.977 |
| Norway | 2 | 4 | 0.07% | 2.73% | 0.11% | 3.28% | 0.731 |
| Poland | 1 | 4.5 | 0.00% | 0.00% | 0.00% | 0.00% | - - |
| Slovakia | 2 | 4.5 | 0.00% | 0.00% | 0.04% | 1.90% | 0.317 |
| Slovenia | 3 | 3.75 | 0.15% | 3.86% | 0.04% | 1.90% | 0.310 |
| Spain | 2 | 6 | 0.00% | 0.00% | 0.00% | 0.00% | - - |
| Sweden | 1 | 4 | 0.07% | 2.73% | 0.93% | 9.62% | 0.000 |
| Switzerland | 1 | 3 | 0.22% | 4.72% | 0.29% | 5.35% | 0.696 |
| United Kingdom | 4 | 5 | 1.71% | 12.97% | 3.30% | 17.88% | 0.001 |
| Nbr. Observations | | | 1344 | | 2784 | | |

## TABLE 4: Correlation Matrix

This table provides pair-wise correlations separately for our samples of cross-border bond funds (Panel A) and equity funds (Panels). All the variables are defined in Table 1. “CR” stands for “Creditor Rights”, “ADR” for “Anti-Director Rights”. Significance level: * for 1%.

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PANEL A - BOND FUNDS:** | | | | | | | | | | | | | | | |
| (1) Average CR (unweighted) | 1.000 | | | | | | | | | | | | | | |
| (2) Average CR (population weighted) | 0.910* | 1.000 | | | | | | | | | | | | | |
| (3) Average CR (GDP weighted) | 0.906* | 0.992* | 1.000 | | | | | | | | | | | | |
| (4) UCITS Fund | 0.163* | 0.184* | 0.184* | 1.000 | | | | | | | | | | | |
| (5) Nbr. Notifications | -0.179* | -0.156* | -0.131* | 0.257* | 1.000 | | | | | | | | | | |
| (6) Commercial Bank Promoter | -0.208* | -0.155* | -0.157* | 0.001 | -0.018 | 1.000 | | | | | | | | | |
| (7) Non-European Promoter | 0.119* | 0.079 | 0.089* | 0.085* | 0.291* | -0.415* | 1.000 | | | | | | | | |
| (8) Notified outside Europe | -0.065 | -0.098* | -0.074* | 0.048 | 0.599* | -0.065 | 0.339* | 1.000 | | | | | | | |
| (9) Notified in Asia-Pacific | -0.044 | -0.081* | -0.074* | 0.054 | 0.569* | -0.126* | 0.374* | 0.872* | 1.000 | | | | | | |
| (10) Notified in the Americas | -0.116* | -0.128* | -0.094* | 0.092* | 0.459* | 0.071 | 0.035 | 0.467* | 0.261* | 1.000 | | | | | |
| (11) Creditor Rights at Domicile | 0.049 | 0.020 | 0.017 | -0.027 | -0.173* | -0.115* | -0.065 | -0.192* | -0.184* | -0.054 | 1.000 | | | | |
| (12) Fund Age (years) | -0.021 | -0.022 | -0.023 | 0.030 | -0.011 | 0.052 | 0.050 | 0.087* | 0.043 | 0.061 | -0.001 | 1.000 | | | |
| (13) Top-50 Promoter Fund | -0.054 | -0.055 | -0.052 | 0.002 | 0.086* | 0.369* | -0.307* | 0.025 | 0.017 | 0.044 | -0.020 | -0.076* | 1.000 | | |
| (14) Status: Merged | -0.043 | -0.036 | -0.040 | 0.052 | 0.049 | 0.138* | -0.056 | -0.031 | -0.017 | -0.031 | -0.046 | 0.090* | 0.101* | 1.000 | |
| (15) Status: Liquidated | 0.083* | 0.079* | 0.079* | -0.028 | -0.122* | -0.129* | 0.092* | -0.062 | -0.051 | -0.118* | -0.096* | 0.105* | -0.106* | -0.156* | 1.000 |

**PANEL B - EQUITY FUNDS:**

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (1) Average ADR (unweighted) | 1.000 | | | | | | | | | | | | | | |
| (2) Average ADR (population weighted) | 0.905* | 1.000 | | | | | | | | | | | | | |
| (3) Average ADR (GDP weighted) | 0.916* | 0.996* | 1.000 | | | | | | | | | | | | |
| (4) UCITS Fund | 0.053* | 0.142* | 0.137* | 1.000 | | | | | | | | | | | |
| (5) Nbr. Notifications | 0.021 | 0.229* | 0.199* | 0.197* | 1.000 | | | | | | | | | | |
| (6) Commercial Bank Promoter | -0.003 | 0.006 | 0.017 | 0.008 | -0.093* | 1.000 | | | | | | | | | |
| (7) Non-European Promoter | 0.122* | 0.151* | 0.148* | 0.032 | 0.278* | -0.461* | 1.000 | | | | | | | | |
| (8) Notified outside Europe | 0.101* | 0.234* | 0.213* | 0.026 | 0.591* | -0.110* | 0.278* | 1.000 | | | | | | | |
| (9) Notified in Asia-Pacific | 0.089* | 0.220* | 0.201* | 0.039 | 0.572* | -0.143* | 0.296* | 0.898* | 1.000 | | | | | | |
| (10) Notified in the Americas | 0.044 | 0.085* | 0.060* | 0.049* | 0.517* | 0.001 | 0.074* | 0.483* | 0.309* | 1.000 | | | | | |
| (11) Creditor Rights at Domicile | -0.021 | -0.087* | -0.087* | -0.039 | -0.169* | -0.011 | 0.069* | -0.081* | -0.090* | -0.052* | 1.000 | | | | |
| (12) Fund Age (years) | -0.043 | -0.061* | -0.061* | -0.085* | -0.034 | 0.008 | -0.0001 | 0.033 | 0.025 | 0.086* | -0.004 | 1.000 | | | |
| (13) Top-50 Promoter Fund | 0.051* | 0.045 | 0.046 | 0.037 | 0.183* | 0.375* | -0.276* | 0.082* | 0.043 | 0.106* | -0.017 | -0.085* | 1.000 | | |
| (14) Status: Merged | -0.062* | -0.066* | -0.066* | 0.026 | -0.028 | -0.008 | -0.080* | -0.059* | -0.061* | -0.012 | -0.045 | 0.107* | 0.041 | 1.000 | |
| (15) Status: Liquidated | 0.096* | 0.090* | 0.088* | -0.114* | -0.145* | -0.083* | 0.068* | -0.042 | -0.029 | -0.148* | -0.037 | 0.171* | -0.108* | -0.137* | 1.000 |

**TABLE 5: Do Voluntary Investor Protection Mechanisms Spread to High or Low Quality Legal Regimes?**

| | Average Creditor Rights | | Average Anti-Director Rights | | Average Creditor Rights | | Average Anti-Director Rights | |
|---|---|---|---|---|---|---|---|---|
| | population | GDP | population | GDP | population | GDP | population | GDP |
| Variables | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| **UCITS Fund** | **0.472**** | **0.461**** | **0.186**** | **0.186**** | **0.772***** | **0.771***** | **0.208***** | **0.216***** |
| Nbr. Notifications | -0.0235*** | -0.0200*** | 0.0171*** | 0.0142*** | -0.029*** | -0.0250*** | 0.0130*** | 0.0102** |
| Fund Age | -0.159* | -0.159* | 0.0598 | 0.0537 | -0.153* | -0.148* | 0.0315 | 0.0306 |
| Top-50 Promoter Fund | -0.0361 | -0.0352 | 0.0493 | 0.0553* | 0.00992 | 0.0000307 | 0.0327 | 0.0355 |
| Status: Merged | -0.0353 | -0.0442 | -0.0736 | -0.0740 | -0.0178 | -0.0288 | -0.0423 | -0.0412 |
| Status: Liquidated | 0.0406 | 0.0460 | 0.155*** | 0.145*** | 0.124 | 0.129 | 0.148*** | 0.144*** |
| Creditor Rights at Domicile | 0.463*** | 0.466*** | | | 0.314** | 0.317** | | |
| ADR Index at Domicile | | | -0.157** | -0.153* | | | -0.140 | -0.149 |
| Non-European Promoter | | | | | 0.0925 | 0.0911 | 0.138** | 0.155** |
| Commercial Bank Promoter | | | | | -0.137* | -0.134* | 0.0730 | 0.0827 |
| Domicile dummies included? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year dummies included? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 1342 | 1342 | 2777 | 2777 | 980 | 980 | 1802 | 1802 |
| Adjusted R-squared | 0.183 | 0.179 | 0.126 | 0.114 | 0.254 | 0.254 | 0.115 | 0.105 |

NOTE: Variables are as defined in Table 1. All the specifications include dummies for countries of domiciliation and vintage years. Regressions on Creditor Rights are with the sample of bond funds only, Anti-Director Rights with sample of equity funds only. For the calculation of the dependent variables, the country of domiciliation was excluded to avoid endogeneity. Furthermore, we only consider cross-border funds launched from 2002-2007. Standard errors are clustered by vintage years. Significance levels: * p<0.10, ** p<0.05, *** p<0.01

**TABLE 6: Do Voluntary Investor Protection Mechanisms Spread to a wider Range of Legal Regimes?**

| Variables | CR (Range) (1) | ADR (Range) (2) | CR (Range) (3) | ADR (Range) (4) |
|---|---|---|---|---|
| **UCITS Fund** | **0.414*** ** | **0.348*** ** | **0.492*** ** | **0.318** ** |
| Nbr. Notifications | 0.225*** | 0.218*** | 0.211*** | 0.211*** |
| Fund Age | -0.160* | 0.124** | -0.243** | 0.0931* |
| Top-50 Promoter Fund | 0.176*** | 0.00596 | 0.211 | -0.0180 |
| Status: Merged | -0.172* | 0.0357 | -0.154** | 0.0950 |
| Status: Liquidated | 0.0660 | 0.0730 | 0.0577 | 0.0361 |
| Creditor Rights at Domicile | -0.00169 | | 0.373** | |
| ADR Index at Domicile | | -0.292*** | | -0.156** |
| Non-European Promoter | | | 0.0582 | -0.368** |
| Commercial Bank Promoter | | | 0.172 | -0.0439 |
| Domicile dummies included? | Yes | Yes | Yes | Yes |
| Year dummies included? | Yes | Yes | Yes | Yes |
| Observations | 1342 | 2777 | 980 | 1802 |
| Adjusted R-squared | 0.698 | 0.732 | 0.699 | 0.745 |

NOTE: Variables are as defined in Table 1. The dependent variable is the difference between the highest and lowest legal regime within the list of notification of funds. Regressions (1) and (3) are for bond funds and regressions (2) and (4) for equity funds. “CR stands for “Creditor Rights”, “ADR” for “Anti-Director Rights”. All the specifications include dummies for countries of domiciliation and vintage years. Regressions on Creditor Rights are with the sample of bond funds only, Anti-Director Rights with sample of equity funds only. For the calculation of the dependent variables, the country of domiciliation was excluded to avoid endogeneity. Furthermore, we only consider cross-border funds launched from 2002-2007. Standard errors are clustered by vintage years. Significance levels: * p<0.10, ** p<0.05, *** p<0.01

**TABLE 7: Effect of Notifications Outside Europe**

| | Average Creditor Rights | | Average Anti-Director Rights | | Average Creditor Rights | | Average Anti-Director Rights | |
|---|---|---|---|---|---|---|---|---|
| | population | GDP | population | GDP | population | GDP | population | GDP |
| Variables | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| **UCITS Fund** | **0.468**** | **0.460**** | **0.211**** | **0.210**** | **0.467**** | **0.455**** | **0.202**** | **0.200**** |
| Nbr. Notifications | -0.022*** | -0.020*** | 0.00984*** | 0.00727** | -0.0200** | -0.0173** | 0.0114*** | 0.00925** |
| Fund Age | -0.158* | -0.159* | 0.0491 | 0.0436 | -0.158* | -0.158* | 0.0546 | 0.0498 |
| Top-50 Promoter Fund | -0.0363 | -0.0352 | 0.0497 | 0.0557 | -0.0364 | -0.0356 | 0.0539 | 0.0598* |
| Status: Merged | -0.0377 | -0.0446 | -0.0599 | -0.0610 | -0.0449 | -0.0504 | -0.0633 | -0.0646 |
| Status: Liquidated | 0.0395 | 0.0458 | 0.154*** | 0.144*** | 0.0339 | 0.0421 | 0.151*** | 0.140*** |
| Notified outside Europe | -0.0211 | -0.00326 | 0.151** | 0.143** | | | | |
| Creditor Rights at Domicile | 0.464*** | 0.466*** | | | 0.461*** | 0.466*** | | |
| ADR Index at Domicile | | | -0.162** | -0.158* | | | -0.160** | -0.156* |
| Notified in Asia-Pacific | | | | | -0.0127 | -0.0324 | 0.129** | 0.125* |
| Notified in the Americas | | | | | -0.116 | -0.0497 | -0.00559 | -0.0280 |
| Domicile dummies included? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year dummies included? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 1342 | 1342 | 2777 | 2777 | 1342 | 1342 | 2777 | 2777 |
| Adjusted R-squared | 0.182 | 0.178 | 0.138 | 0.126 | 0.183 | 0.178 | 0.134 | 0.123 |

NOTE: Variables are as defined in Table 1. All the specifications include dummies for countries of domiciliation and vintage years. Regressions on Creditor Rights are with the sample of bond funds only, Anti-Director Rights with sample of equity funds only. For the calculation of the dependent variables, the country of domiciliation was excluded to avoid endogeneity. Furthermore, we only consider cross-border funds launched from 2002-2007. Standard errors are clustered by vintage years. Significance levels: * p<0.10, ** p<0.05, *** p<0.01

**APPENDIX: The Case of Aberdeen Global – European Equity A**

Fund Name: *Aberdeen Global – European Equity A Acc*
Current Status: *Active*
Asset Type: *Equity*
Formal Legal Structure: *LU – SICAV – Part 1 (UCITS)*
Countries Notified for Sale: *Austria, Belgium, Chile, Finland, France, Germany, Hong Kong, Island, Ireland, Italy, Jersey, Luxembourg, Malta, the Netherlands, Singapore, Spain, Sweden, Switzerland, Taiwan, and Great Britain*
Fund Domicile: *Luxembourg*

Administrator: *BNP Paribas Securities Services Luxembourg SA*
Custodian: *BNP Paribas Securities Services Luxembourg SA*
Fund Management Company: *Aberdeen International Fund Managers Ltd*
Fund Management Parent Company: *Aberdeen Asset Management*

*Aberdeen Global – European Equity A is a UCITS funds domiciled in Luxembourg and managed by Aberdeen International Fund Managers Ltd, a UK based Management Company. The fund is notified for sale in 20 countries, some of which are outside of Europe. Fund units are invested in European stocks.*