The taxation of crossborder savings income and the quality and cost of information exchanged

VERY PRELIMINARY
(an updated version will be available in the coming weeks)

Marcel Gérard
ILSM, Catholic University of Louvain, Louvain-la-Neuve and Mons, Belgium

April 17, 2015

Abstract

In today debates about international taxation, either in academic or political spheres, there is a keyword: information exchange. This is true for the taxation of multinational enterprises and also for the taxation of savings income. In this paper we focus on the latter: both the European Union Directive and the US Qualified Intermediary and Foreign Account Tax Compliance Act mechanisms are based on that principle. In this paper we attempt to answer, or at least to highlight, two questions. First why did the US move from unilateral to reciprocal exchange of information? And second, which governments find their best interest in participating to the device proposed by the US authorities?

JEL: H24, H26, H31, H73, H77, F36, F55
Keywords: Cross border taxation of saving income, information exchange, cost of information, FATCA.

1 Introduction

In today debates about international taxation, in academic as in political spheres, there is a keyword: information exchange (IE). This is true for the taxation of multinational enterprises, especially when issues are discussed which are related to the Base Erosion and Profit Shifting (BEPS) action plan conducted by OECD

*The author is indebted to Wolfgang Eggert and Mitchell Kane for stimulating conversations on Information Exchange and the FATCA system. Contact address: marcel.gerard@uclouvain.be

1
upon request of the G20 (see Miller, 2014). This is true also when taxation of savings income is at stake: both the European Union (EU) Directive in that matter and the US Qualified Intermediary (QI) and Foreign Account Tax Compliance Act (FATCA) mechanisms in the United states (US) are based on that principle, though initially in a non-reciprocal way for the US; and the extension of FATCA proposed by the US to partner countries in February 2012, is a move from unilateral to reciprocal exchange of information - see below and Section 2 for institutional details.

In this paper we focus on the taxation of international or cross-border savings income and we attempt to tentatively answer, or at least to highlight, two questions. First, why did the US move from unilateral to reciprocal exchange of information, and even more from a system based on unilateral transfer of information from banks all over the world to the US tax authorities without any implication of local governments, to a system of reciprocal exchange of information between US and foreign governments? And second, which governments in the world find their best interest in participating to the device proposed by the US authorities?

At this stage, some are already to be stressed, including differences between the EU and US approaches. First, though on the US side IE concerns all capital income from US source, on the EU side the scope is currently roughly limited to interest income.

Second, and more importantly for the sake of this paper, in the US QI and FATCA mechanisms banks all over the world are directly asked to sign an agreement with the US authorities and are then controlled by people reporting to US authorities; therefore the cost of supervising quality and quantity of information is supported by the information acquiring jurisdiction which has thus to scrutinize all its resident taxpayers expected to invest abroad. This is a particular form of the residence principle.

On the other hand, in the EU system, IE goes from local paying agents - in short the banks - to local tax authorities of the corresponding country, and from those authorities, which are in charge of verifying information relevance, to the tax authorities of the country of residence of the investor. Thus the country in charge of the control is that of the paying agent, the source country of the income: that country has to scrutinize all of the accounts held by foreigners located in banks on its territory. Therefore we view in that system a particular form of the source principle.

Nevertheless on February 8, 2012, the United States revised their position and proposed the governments of the largest EU Member States, who have accepted in a framework of reciprocity, to channel the information through public authorities, and thus to become active participants of the FATCA process (U.S. Treasury Department, 2012). Termed otherwise, the US have proposed EU largest Member States to adopt the source principle; according to that change, US tax authorities will no longer audit banks located abroad and hosting accounts of US taxpayers, but will commit to audit US accounts of non-US residents. Since then, a series of other Member States of the EU have decided to adhere that joint statement.
In this paper we concentrate on the two questions mentioned above leaving aside many others implied by those developments in international saving taxation; therefore, unlike other contributions, we give up assuming that IE is free of cost. We come to the conclusion that costly IE is more likely to be welfare enhancing when the country concerned is larger; since IE is globally welfare enhancing, we may expect that the possible welfare loss for small countries could be offset through side payments from the larger.

The rest of the paper first proposes a short review of institutional aspects and literature in Sections 2 and 3 respectively. Section 4 nests the paper in the traditional tax competition vs. coordination or cooperation two polar case approach; that is also a way to describe the basic features of the model; there we adopt the modeling strategy suggested by Keen and Ligthart (2006a, 2006b). Information exchange is introduced in Section 5 first assumed to be free of cost, then becoming costly for either the source country, where income is paid out, or the country of residence of the investors; throughout that section we adopt a static strategy: although the agents are supposed living for infinity, decisions are only taken in the initial period and never revised. In Section 6 we extend the approach by considering a true dynamic model and allowing for retaliation strategy against the non-compliant player. In those three Sections we adopt a three step modelling strategy: at step 1 governments decide about the tax system itself based on welfare maximization; in step 2 they decide on either the tax rates or the quality and quantity of information exchanged given the tax system at work; finally in step 3, the international investor of each country decides on the location of her savings given the tax setting. The program is then resolved backward. Finally Section 7 concludes, risking policy suggestions as well as avenues for further investigation.

2 Institutional aspects

In 2000, after decades of debates, the Member States of the European Union came to a compromise in the Portuguese city of Feira. They agreed to set up a system of information exchange roughly concerning the sole interest income. This system has been applied by all Member States since mid-2005 with an exception for three of them (Austria, Belgium and Luxembourg). Discussions to enlarge its scope are now in progress. Since then, Belgium has moved to IE and Luxembourg announced that it will do in 2015; and it seems that Austria will follow.

On the 1st of January 2001, the United States (US) launched the Qualified Intermediary (QI) mechanism, designed to cope with tax evasion. Becoming qualified intermediaries of the US Internal Revenue Service, financial institutions committed to report information on US taxpayers’ income from US sources. Due to the presence of loopholes in the QI legislation, in March 2010 the US authorities completed it through the Financial Accounts Tax Compliance Act (FATCA). Furthermore, in February 2012 the US moved from a unilateral to a cooperative FATCA. Through a joint statement, the United States and
some major EU Member States “have agreed to explore a common approach to FATCA implementation through domestic reporting and reciprocal automatic exchange and based on existing bilateral tax treaties” (U.S. Treasury Department, 2012, p.2). Since then several EU Member States have announced that they are ready to rally that group. In May 2013, possibly driven by recent events regarding the communication of hidden investments in tax havens, some EU Member States even claimed for a European FATCA.

The rest of this Section provides additional institutional information for the reader not familiar with the institutional aspects of international savings income taxation. In an open economy, income from savings invested abroad can in principle be taxed by the country where income is generated and most often where that income is paid out - called the source country or the paying agent country - or by the country where the investor has his residence - the residence country - or even by both. For a long time, savings income rising from a foreign source was only subject to a withholding tax levied at source. No exchange of information was organized between the source and the residence country and each country was a tax haven for its neighbor.

After World War II, the Model Tax Convention on Income and Capital proposed by the Organization for Economic Cooperation and Development (OECD) attempted to allow the residence country to effectively tax worldwide income of its residents. The OECD Convention (OECD, 1963) allowed the source country to levy a withholding tax on non-resident investors’ income, whilst the country of residence of the taxpayer was left free to subject that income to its own tax system provided that a credit was granted for the withholding tax levied abroad. A consequence of this system was that the residence country needed to get information from the source country in order to properly tax foreign income of its resident taxpayers and apply the crediting mechanism. Residence country legal authorities were actually entitled to claim such exchange, but could not always get all the necessary details or a high enough degree of precision of the information required. 

2.1 The EU approach: the EU Savings Directive

The absence of an efficient international tax scheme for capital income was rather unimportant as long as savings abroad remained contained. Within the European Union (EU), the increasing capital mobility resulting from the accomplishment of the Single Market in the late 1980’s turned a marginal phenomenon into a larger one. The willingness to preserve undistorted capital movements across EU Member States, as well as the possibility of making foreign savings income contributing to government revenues, led the governments of the EU Member States to find a way for avoiding tax competition among countries. Two avenues were therefore suggested: either introducing a system of coordinated withholding taxes levied at source or systematically exchanging information.

\footnote{For example, this could happen because the source country administration was not entitled to legally obtain or to reveal some information about foreign investors.}
tion among Member States.

The first attempt to coordinate the taxation of savings income was led by the EU Commissioner Christiane Scrivener. The proposal aimed at coordinating the withholding taxes levied by the EU Member States on interest income paid out to foreign investors with their residence in another EU Member State. The adoption of this proposal failed due to its rejection by a group of countries including Luxembourg and the United Kingdom, whilst in the EU unanimity is required in tax matters. The second attempt was directed by Mario Monti, at that time Commissioner for Internal Market, Financial Services and Financial Integration, Customs, and Taxation. Monti’s suggested reform asked each Member State to decide for one of the following two options: either a withholding tax levied at source, like in the Scrivener proposal, or a systematic exchange of information across EU internal borders. Adoption of that proposal, however, also failed. Finally, as already mentioned above, an agreement was reached in 2000. The text of this agreement served as basis for the EU Directive on Savings Income Taxation (EU Commission, 1989, 1998; and Cattoir, 2006).

The EU Directive on Savings Income Taxation currently at work (EU Commission, 2001; Council of the EU, 2003) is based on a system of automatic exchange of information, but tentatively allows Austria and Luxembourg to apply an alternative system of coordinated withholding tax with partial transfer of the revenue to the country of residence of the investor; that system is also in use for tax relations with a series of countries not belonging to the European Union, namely Switzerland, Liechtenstein, Monaco, Andorra, and San Marino.²

The main concern with the EU Directive comes from the limitation of its scope to savings income in the form of interest payments and to some interest-based financial products. This leaves away income from innovative financial products, insurance contracts, and dividends, which are close substitute for debt claims in investors’ portfolios. This is why in 2008 the EU Commission proposed an extension of the EU Savings Directive to a larger class of financial assets (EU Commission, 2008a).

2.2 The US view: QI and FATCA

As stated above, on the 1st of January 2001, the United States launched the Qualified Intermediary (QI) mechanism. This system proposed foreign financial institutions to sign an agreement for becoming Qualified Intermediary of the US Treasury. Participating institution committed to report information with regard to US taxpayers’ income from US source while non-participating institutions were prevented to access the US financial market. However the QI device exhibited two major loopholes at least. First, no reporting of non-US source income or assets was requested. Second, it was possible for US taxpayers to

²Belgium has stopped applying the withholding tax and started exchanging information since the 1st of January 2010.
escape QI reporting through the use of foreign shell entities owned by US taxpayers. As a result, after nine years of QI the US authorities revised the system and passed a new bill called FATCA, an acronym for Foreign Accounts Tax Compliance Act.

FATCA was initially adopted on the 18th of March 2010, as part of the Hiring Incentives Restore Employment Act (HIRE), but deemed to come into application between 2013 and 2017. Under FATCA, on the one hand, US taxpayers holding foreign financial assets are required to report this information on their annual tax return. On the other hand, foreign financial institutions have to report directly to the US Internal Revenue Service name and details of all the accounts held by US persons or foreign entities in which a US taxpayer holds substantial ownership interest (U.S. Internal Revenue Service, 2012).

Both the EU Directive and the QI/FATCA approach are based on exchange of information, enabling the residence jurisdiction to know its taxpayer personal income and to tax it at an individualized, possibly progressive, rate decided by that residence jurisdiction. In other words, both systems aim to make possible the inclusion of foreign savings income -though imperfectly - into a worldwide income tax base in order to properly enforce a Haig-Simons global income tax (Haig, 1921; Simons, 1938).

However, the two systems differ on a major issue. Although the primary agent in charge of providing information on the income paid out is in both cases the foreign financial institution - technically, the paying agent or the source country financial institution -, on the European side, the information is then channeled to the tax authorities of the residence country through those of the source country, which are ultimately in charge of monitoring the quality of the information exchanged; therefore we call that system an application of the source principle.

By contrast, on the American side, this mission is up to the responsibility of the US tax authorities; therefore we name it an application of the residence principle. In some sense, the US approach completely disregards local governments, being based on direct agreements between foreign financial institutions and US authorities. As consequence of the QI/FATCA system, the US tax authorities bear the whole cost of monitoring foreign financial institutions, which is high notwithstanding the existence of penalties that act as deterrent for non-compliance.

To alleviate this burden, but more importantly to favor a more efficient and transparent taxation of international flows of savings income at world level, the US decided to shift from the current unilateral FATCA to a more cooperative mechanism. On the 8th of February 2012, the US, jointly with France, Germany, Italy, Spain and the United Kingdom, issued an agreement intending to restore foreign governments in the playing field (U.S. Treasury Department, 2012). A series of other EU Member States have followed, namely Belgium, the Czech and Slovak Republics, Ireland, the Netherlands, Poland, Portugal and Romania.
3 Review of the literature

The early literature on cross-border savings income taxation already focused on IE issues, trying to assess whether and for why countries strategically prefer a system of information exchange over a withholding tax system. In their seminal contributions Bacchetta and Espinosa (1995, 2000) examine the incentives leading a government to share information about foreign investments with another government. They reach the conclusion that the informational behavior of governments is a strategic variable that should be taken into account when designing the optimal international tax system. In addition, they show that the incentives to transmit information depend on the precise institutional setup of the international tax system. Indeed, they prove that, under some features of the tax system, there is no room at all for information sharing, while such exchange may exist and be used for strategic purposes under other institutional arrangements.

Similarly, Gordon and Bovenberg (1996) use asymmetric information to explain the international immobility of capital. Moreover, Eggert and Kolmar (2002, 2004) point out that, in a context of optimal taxation, the integration of international capital markets may lead governments to establish sub-optimal tax rates and, hence, to under-provide public goods. By contrast, cooperation among governments leads to another equilibrium solution, characterized by an efficient level of public goods provision as well as by complete and voluntary information exchange between national tax authorities.

More recent theoretical literature on the subject is inspired by the series of proposals formulated since the late 1980s by the EU Commission and culminated into the adoption of the EU Council Directive on Savings. Huizinga and Nielsen (2003), for example, analyze the minimum withholding proposed by EU Commissioner Scrivener in 1989, investigating what happens to each country welfare when the inside tax haven is forced to raise its withholding tax. In the same vein, Keen and Ligthart (2006a, 2006b), Gérard (2004) and Gérard and Granelli (2013) assess the impact on the social welfare of the innovative revenue sharing mechanism that the EU Commission implemented when the proposal of a minimum withholding tax faced the opposition of some EU Member States. In particular, Keen and Ligthart (2006a, 2006b) demonstrate that any kind of withholding tax regime is Pareto dominated by a system of residence-based taxation implying full exchange of information.

The adoption of the Savings Directive by the EU Council in 2003 gave birth another flow of literature. Let us mention Huizinga and Nicodème (2004) who investigate the determinants of international deposits, providing evidence that foreign deposits do react to taxation, Ligthart and Voget (2012) who analyze the key factors leading governments to exchange information and find that information sharing is most often decided on a reciprocal basis, Johannesen (2010) and Hemmelgarn and Nicodème (2010) who show that the Directive did not lead EU residents to manage major shifts in their international allocation of savings.
The literature on tax evasion and the institutional designs able to limit such behavior plays also a role in this paper. The first contribution in this field is due to Allingham and Sandmo (1972) who model tax evaders as rationale agents. Over the last six years, by contrast, economists have studied when paying taxes can be rationally preferred to evading them. Alm and Torgler (2006) and Frey and Torgler (2007), for example, show that tax evasion is restrained by so called “tax morale”. Likewise, Kleven et alii (2009, 2011) assess third-party tax reporting against self-reporting in the context of labor income taxation.

4 Tax competition vs. tax coordination

As announced, our first model nests our analysis in the traditional two polar case approach; more specifically we use the same modelling strategy as in Keen and Ligthart (2006a, 2006b) and in Gérard (2004). The model considers a two-country world consisting of country $h$ (home) and country $f$ (foreign). In each country one representative international investor lives for a very long time approximated by infinity, but she takes her decisions in the initial period and doesn’t revise them later; assuming that the investor is international implies that she distributes her saving between the two countries at stake.

The model is organized in three steps solved backward. In the first step the international investor - or simply the investor - decides on the distribution of her portfolio between the two jurisdictions, taken into account the sole difference in tax rates as well as the cost of departing from an initial distribution; that cost is quadratic and symmetric. Moreover the before tax interest rate is unique and thus identical across countries; and the discounting rate is also unique.

In the second step local governments in the first case - tax competition and taxation at source - and central government in the second one - efficient centralization and coordination - decide on the tax rates applied to domestic and foreign income respectively, in order to maximize a social welfare function, identified with jurisdiction’s revenue as in Keen and Ligthart (2006a, 2006b). Finally, in the third step, a comparison of welfare levels determines the choice of each jurisdiction for either the first or the second system.

In the first of the two polar cases, no information is circulated among countries and the government of each of them attempts to be a tax haven for its neighbor. In the second case, externalities are internalized by a central government acting in the best interest of the two jurisdictions, thus maximizing their joint welfare levying tax according to the residence principle. That device is equivalent to full exchange of information when at no cost; and we know from Keen and Ligthart (2006a, 2006b) that any kind of withholding tax regime is Pareto dominated by a system of residence-based taxation implying full exchange of information.
4.1 Tax competition

Let us consider the three steps of the model and solve them backward.

4.1.1 The resident international investor

That representative agent maximizes a utility function over an infinite horizon of time

\[ \max_{a_h} U^h = \frac{(1 - t_h^h) a_h^h r + (1 - t_f^h) (1 - a_h^h) r}{\rho} - \frac{v}{2} (a_h^h - a_{0,h}^h)^2 \]  

(1)

with respect to the fraction of her saving invested at home, \( a_h^h \), given the two relevant tax rates for her, \( t_h^h \) levied on domestic income - by subscript jurisdiction on superscript resident - and \( t_f^h \) levied on income from savings invested abroad - again by subscript jurisdiction on superscript resident, and the cost \( v \) of changing the distribution of her portfolio, thus of departing from the initial distribution \( a_{0,h}^h \); that cost is quadratic. Moreover \( r \) is the interest rate - we assume investment in bonds with the same interest rate across the countries - and \( \rho \) is the discounting rate.

The first order condition of that maximization, assuming \( \rho = r \), generates the distribution of the portfolio between the two jurisdictions

\[ a_h^{h*} = a_{0,h}^h + \frac{t_f^h - t_h^h}{v} \]  

(2)

where we check that the second order condition is satisfied since \(-v < 0\). Moreover we assume we assume \( t_h^h \geq t_f^h \) in line with real world practice.

4.1.2 The local governments decide on tax rates

Local governments seek their best interest identified with their own tax revenue

\[ \max_{t_h^h, t_f^h} W^h = \frac{v}{\rho} \left( t_h^h a_h^{h*} N_h + t_f^h \left( 1 - a_f^{f*} \right) N_f \right) \]  

(3)

Expanding Keen and Ligthart (2006a,b) and Gérard (2004), in that equation the social welfare is measured by tax revenue collected from taxes on savings income due at rate \( t_h^h \) by the domestic amount of saving \( N_h \) pro rata the fraction \( a_h^{h*} \) of that saving invested at home, and from taxes on savings income due at rate \( t_f^h \) by the foreign amount of saving \( N_f \) pro rata the fraction \( 1 - a_f^{f*} \) of that saving invested in the home country. Therefore \( N \) increases with both the number of inhabitants of the jurisdiction and the wealth per capita in that jurisdiction.

From the first order condition of the maximization of the Social Welfare Function with respect to \( t_h^h \) we obtain the reaction function

\[ t_h^h = \frac{v a_{0,h}^h}{2} + \frac{t_f^h}{2} \]  

(4)
and from the f.o.c. with respect to $t_h^f$ the other reaction function

$$t_h^f = 1 - \frac{a_0^f}{2} v + \frac{t_h^f}{2}$$

(5)

A series of particular cases, especially illustrative, are presented in Table 1.

<table>
<thead>
<tr>
<th>Table 1. International distribution of savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>symmetric cases</td>
</tr>
<tr>
<td>$a_0^h = a_0^f = 1$</td>
</tr>
<tr>
<td>$t_h^h = t_f^f = 8 \frac{v}{12}$</td>
</tr>
<tr>
<td>$t_h^f = t_f^h = 4 \frac{v}{12}$</td>
</tr>
<tr>
<td>$a_0^h = a_0^f = .75$</td>
</tr>
<tr>
<td>$t_h^h = t_f^f = 7 \frac{v}{12}$</td>
</tr>
<tr>
<td>$t_h^f = t_f^h = 5 \frac{v}{12}$</td>
</tr>
<tr>
<td>$a_0^h = a_0^f = .50$</td>
</tr>
<tr>
<td>$t_h^h = t_f^f = 6 \frac{v}{12}$</td>
</tr>
<tr>
<td>$t_h^f = t_f^h = 6 \frac{v}{12}$</td>
</tr>
</tbody>
</table>

| asymmetric case                              |
| $a_0^h = .75; a_0^f = .50$                   |
| $t_h^h = 7 \frac{v}{12}; t_f^f = 5 \frac{v}{12}$ |
| $t_h^f = 6 \frac{v}{12}; t_f^h = 5 \frac{v}{12}$ |

The simplest case where initially the whole savings is invested domestically, $a_0^h = a_0^f = 1$, is typical of an extreme home bias and may be used as a benchmark. Then,

$$t_h^h = t_f^f = 8 \frac{v}{12} = \frac{2v}{3}; t_h^f = t_f^h = 4 \frac{v}{12} = \frac{v}{3}$$

(6)

and tax rates applied to income paid to foreigners are clearly smaller that those on income served to residents, a device at the root of tax externalities. The symmetric cases reported in Table 1 show that the tax rate on domestically invested income increases with the degree of captivity of the investor: a more captive investor is likely to be taxed more heavily. Conversely, when the taxpayer of, say, the foreign country becomes less (viz. more) captive of her domestic government, the withholding tax cut that the home government needs to decide in order to attract her savings becomes smaller (viz. higher). In other terms captive investors will be taxed heavily on her domestic income, but they will be offered relatively smaller withholding tax rates by the other jurisdiction. That appears in the asymmetric case: more captive investor of country home pays a higher rate on her domestic income than her counterpart of country foreign; and she is offered a smaller withholding tax rate by the government of country foreign to attract her investment abroad.

4.1.3 The local governments decide on the tax system

Finally the local governments will decide on the tax system they adopt, comparing values of the social welfare function under various tax designs. As long as tax competition is the sole device at stake, that question is not relevant.

But results obtained so far already enable us to check whether a country is likely to move to another, more cooperative, system. It turns out that in
country $h$, the Social Welfare per unit of saving amounts to, in the simplest case $a_h^0 = a_f^0 = 1$,
\[
\frac{W^h}{N_h} = \frac{4v}{9} + \frac{v N_f}{9 N_h}
\] (7)
which increases with the size of the competing country but goes down with its own country size. Therefore a small country (e.g. Austria, Luxembourg) is more likely to gain from that non-cooperative scenario than a large country (e.g. Germany, US); and thus a small country gains to have a larger neighbor, which provides a rational for the behavior of such countries.

4.2 Tax coordination
In this case, although the investor program is identical, a central authority now decides on the tax rates. That authority maximizes
\[
W^h + W^f = t_h N_h + t_f N_f
\] (8)
and in any case the tax rates will be set at their upperbound values $\bar{t}_h$ and $\bar{t}_f$ possibly assumed to be identical and equal to $\bar{t}$. Notice that that design obeys the Residence principle: tax revenue goes to the country of residence of the investor and not to the place where the income has its source or has been paid out. In that setting the investment in any jurisdiction is not changed by any relevant tax differential,
\[
a_h^{hs} = a_h^{0,h}
\] (9)
and the Social Welfare per capita in country $h$ amounts to
\[
\frac{W^h}{N_h} = \bar{t}
\] (10)
That value is more likely to be larger than under the previous non-cooperative design when the size of the country is larger, more precisely when
\[
N_h > \frac{v}{9\bar{t} - 4v} N_f
\]
If we take for $\bar{t}$ the largest value observed in Table 1, that for the simplest symmetric case with captive investors, the inequality above becomes
\[
N_h > \frac{N_f}{4}
\]

4.3 Tentative conclusion
A tentative conclusion arises at this stage, which can be summarized using the proposition below,
Proposition 1 A large country is more likely to prefer coordination while a small country taken individually might be better off in the non-cooperative case, i.e. when it can be a tax haven for its neighbor. However, since the total revenue is necessarily not smaller in the coordinated design, a mechanism of cross border equalization could offset the possible welfare loss of the smaller country (Keen and Ligthart 2006a, 2006b).

5 Exchange of information

We now turn to information exchange, first assuming that information is available for free. Then we remove that assumption. We consider two cases: in the former the cost of information is supported by the residence country, like in the QI or in the initial version of FATCA (by that expression we mean FATCA without the joint statement of February 2012); in the latter the burden of that cost is on the paying or source country, like in the EU Directive and the cooperative form of FATCA.

5.1 When information is free

This Section investigates whether the efficient design generated by the action of a central authority might be replicated by a decentralized design where IE is at work for free.

We first assume a tax system like that suggested by the OECD tax convention model where (i) the source country is permitted to levy a withholding tax on interests paid out on its territory to non-resident investors; and (ii) the residence country is allowed to levy its own tax on that income provided that it commits to grant the investor a credit for the withholding tax levied at source.

Then we will remove that withholding tax in order to follow the provisions of the EU Savings Directive when IE is at stake.

5.1.1 The investor

The utility function of the international investor is slightly different now. Income from savings invested abroad $(1 - a_f^h) r$ is first submitted to the withholding tax levied at source $t_f^j$ and then, on the fraction $p_f$ of that income known by the tax authorities of the country of residence, it is entitled to pay the tax levied by that latter jurisdiction at its own rate $t_h^j$; but on her tax liabilities in her residence country she benefits from a tax credit for $t_f^j$. Notice that $p_f$ is such that $0 < p_f < 1$ and measures both the quality and quantity of the information transferred, that we simply call quality - we interpret $p_f = 0.5$ as an IE of 50 per cent of the income - from source country $f$ to residence jurisdiction $h$. Information exchange however deserves additional comments below.

In line with the non-cooperative case above, we assume $t_h^j \geq t_f^j$.

Then the investor maximizes
\[
\max_{a^h} U^h = \frac{(1 - t^h) a^h r + \left[1 - t^h - p^f (t^h - t^f)\right] (1 - a^h) r}{\rho} - \frac{v}{2} \left(a^h - a^h_{0,h}\right)^2
\]

so that her investment at home amounts to,

\[
a^{h^*} = a^h_{0,h} + \left(1 - p^f\right) \frac{t^h - t^h}{v}
\]

which, depending on the quality of the IE goes from the second - centralized - baseline case to the first one.

### 5.1.2 The local governments

The local government Social Welfare Function is now

\[
\max_{t_h^h, t_f^h} W^h = \frac{r}{\rho} \left[t_h^h a^h_{0,h} + p^f (t^h - t^f) (1 - a^h_{0,h})\right] N_h + \frac{r}{\rho} t_f^h \left(1 - a_{f}^{h^*}\right) N_f
\]

From the relevant f.o.c. of that program we get the respective reaction functions

\[
t^h = \frac{p^f + (1 - p^f) a^h_{0,h} v}{(1 - p^f)^2} + \frac{1 - 2p^f t^h}{1 - p^f} \frac{v}{2}
\]

and

\[
t_f = \frac{1 - a^h_{0,h} v + \frac{t_f}{2}}{1 - p^h} \frac{v}{2}
\]

In the simple case where \(a^h_{0,h} = a^f_{0,f} = 1\) characterizing home bias preference,

\[
t^h = \frac{2}{(3 - 2p^f) (1 - p^f) v}, \quad t_f^h = \frac{1}{(3 - 2p^h) (1 - p^h) v}
\]

so that in the polar cases investigated above, those expressions become

\[
t^h = \frac{2v}{3}, \quad t_f^h = \frac{v}{3}, \quad p^f, p^h \to 0
\]

and

\[
t^h \to \bar{t}, \quad t_f^h \to \bar{t}, \quad p^f, p^h \to 1
\]

respectively.

Then the Social Welfare per unit of saving becomes

\[
\frac{W^h}{N_h} = \frac{4v}{9} + \frac{v N_f}{9 N_h}, \quad p^f, p^h \to 0
\]

\[
\frac{W^h}{N_h} = \bar{t}, \quad p^f, p^h \to 1
\]

and again we have the tentative conclusion below.
5.1.3 Tentative conclusion and further discussion

Again we tentatively conclude that

**Proposition 2** Large countries are more likely to benefit from exchange of information.

However it is important to note that IE is not an homogeneous concept. First of all IE might be purely volunteer: driven by tax morale (Alm and Torgler, 2006; Frey and Torgler, 2007) an international investor spontaneously reports on her capital income abroad; however the report on foreign income is expected to be low if only such motive is at stake - see the seminal work by Allingham and Sandmo (1972) reviewed above and modelling tax evaders as rationale agents. In that matter third party reporting eases collecting taxes, see Kleven et alii (2009, 2011) assessing third-party against self-reporting in the context of labor income taxation.

Second a key distinction is to be done between exchange of information upon request, as supported by the OECD, and automatic exchange as conducted in the framework of EU directive, US QI and US FATCA.

Moreover according to the EU directive withholding tax is prohibited when information is exchanged. Then $t_h^f = t_f^f = 0$ and the fraction of savings invested at home is larger than when levying a withholding tax at source is permitted; and that fraction also goes up with the quality of the information transferred from abroad (that is when the foreign government effort in transmitting good information is higher).

$$a_{h^*} = a_{0,h} - (1 - p_f) \frac{t_h}{v}$$

(19)

5.2 When the cost of information is supported by the residence government: US QI and initial FATCA

Let us now cope with the issue of information exchange in a completely different way. We adopt the view that the tax rates have been fixed at their - exogenously determined - desirable values $t_h^f$ and $t_f^f$ respectively; and that they apply only on income of the investor known by the administration of her place of residence. Moreover there is no withholding tax.

In addition, suppose that the tax authorities of the jurisdiction of residence of the investor have to pay a cost for acquiring information from the financial institutions in the other jurisdiction; that cost is $\phi p_f$ per unit of international investment and relates - a cost of auditing individual accounts - and increases with the quality of the information exchanged. Here it is thus up to the acquiring information government to pay that cost; and that also implies supervising the whole IE process.

That is actually the case of the US under the QI system and the initial FATCA one as well: the US negotiated directly with the banks all over the world without regard for corresponding public authorities; then the charge of supervising the auditing process of those banks in order to insure the quality...
of the information transmitted is for the US authorities and this case is an
application of the residence principle adapted to the issue at stake.

The Social Welfare Function of country $h$ becomes

$$\max_{p^f} W^h = \frac{r}{\rho} \left[ t^h_h a^h_h + p^f t^h_h (1 - a^h_h) \right] N_h - \frac{r}{\rho} \phi p^f N_h \quad (20)$$

where the cost of acquiring information implies screening all the accounts of the
the international investors resident of $h$, $N_h$, supposed, by definition, to have
an account abroad.

The f.o.c. is now such that the optimal quality of information acquired is

$$p^f = 1 + \frac{1 - a^h_{0,h} v}{2 t^h_h v} - \frac{\phi}{2 (t^h_h)^2 v} \quad (21)$$

It turns out that,

**Proposition 3** When information exchange is organised under the residence
principle, the quality of information acquired from the partner country - say the
banks all over the world in the QI or initial FATCA system - increases with the
fraction of domestic - say US - savings invested abroad and decreases with the
cost of acquiring that information.

### 5.3 When the cost of information is supported by the local
government: EU, Joint FATCA

We now analyze the IE process at work in the EU in accordance with the EU
Savings Directive; and that should apply to FATCA if the Joint Statement of
February 8, 2012, had come into application. The charge of supervising IE is in
the hands of the country where income is paid out: that country has to check
all the foreign accounts located on its territory; an adapted source principle is
at work.

Then the program of the investor is unchanged and she again determines

$$a^h_{h} = a^h_{0,h} - (1 - p^f) \frac{t^h_h}{v} \quad (22)$$

If IE is perfect, $p^h \to 1$ and the distribution of the location of savings is unaf-
fected by the resident jurisdiction tax rate. In contrast, if IE is imperfect, the
prospect to escape taxation when a tax differential is at work is an incentive to
locate more saving abroad.

The government decision variable is now $p^h$, the quality of information that
it delivers to its neighbor,

$$\max_{p^h} W^h = \frac{r}{\rho} \left[ t^h_h a^h_h + p^f t^h_h (1 - a^h_h) \right] N_h - \frac{r}{\rho} \psi p^h N_f \quad (23)$$

where the cost of delivering information is now $\psi p^h$, $\psi < \phi$ per international
investor to scrutinize (one can conjecture that auditing at home is less costly
than auditing abroad).
Two interesting results might be pointed out.

First, if the quality of information and the tax rates are similar - for the conditions for those values to hold, see the following Section - a comparison of equations (20) and (23) shows that a large country is better off under the source principle than under the residence principle applied to Information Exchange. Thus

**Proposition 4** A large country finds its best interest in moving from the residence to the source principle in matter of Information Exchange.

Second, inspection of Social Welfare Function (23) immediately reveals that the best interest of country \( h \) is not to transfer information. Nevertheless if it adheres an agreement of information exchange it will provide information but of poor quality.

In other words

**Proposition 5** An attractive tax haven, even if it adheres an agreement of information exchange, will provide poor quality information.

However that country will be prevented to adopt such behavior by the threat of retaliation, a device we investigate in the extension below and which also provides justification for the assumptions behind the penultimate proposition above.

### 6 Costly Information Exchange and Threat of Retaliation

Let us now consider that game participating countries may revise their strategy in the second period of the game but not later.

In the first period country \( h \) can either provide high quality information \( p_H^h \) or low quality information \( p_L^h \). However if it provides low quality information, the other country, which in first period produces high quality information \( p_H^f \), will retaliate producing also low quality information.

Then the intertemporal social welfare per unit of saving in country \( h \) will be either

\[
\frac{W^h}{N_h} = r \left[ t_h^h a_h^h + p_H^f t_h^h (1 - a_h^h) \right] - \psi p_H^h \frac{N_f}{N_h} + \frac{r}{\rho} \left[ t_h^h a_h^h + p_H^f t_h^h (1 - a_h^h) \right] - \frac{1}{\rho} \psi p_H^h \frac{N_f}{N_h} \tag{24}
\]

if it sends high quality information, or, if it produces low quality information,

\[
\frac{W^h}{N_h} = r \left[ t_h^h a_h^h + p_L^f t_h^h (1 - a_h^h) \right] - \psi p_L^h \frac{N_f}{N_h} + \frac{r}{\rho} \left[ t_h^h a_h^h + p_L^f t_h^h (1 - a_h^h) \right] - \frac{1}{\rho} \psi p_L^h \frac{N_f}{N_h} \tag{25}
\]
To keep the model as simple as possible, let us assume that in both countries \( p_L = 0 \) and \( p_H = 1 \). Then the equations above become

\[
\frac{W^h}{N_h} = rt^h - \psi \frac{N_f}{N_h} + \frac{r}{\rho} t^h - \frac{1}{\rho} \psi \frac{N_f}{N_h}
\]

and

\[
\frac{W^h}{N_h} = rt^h + \frac{r}{\rho} v^h u^h
\]

so that the compliant or cooperative strategy pays if

\[
\frac{r}{\rho} t^h - \left(1 + \frac{1}{\rho} \right) \psi \frac{N_f}{N_h} > \frac{r}{\rho} v^h u^h
\]

or

\[
N_h > \frac{(1 + \rho) \psi}{(1 - \psi^h u^h) \rho} rt^h N_f
\]

which is more likely to hold the larger is country \( h \).

Then

**Proposition 6** Information exchange is globally welfare enhancing; but for small countries adopting such strategy may incur welfare loss which can be offset through a side payment from larger countries.

### 7 Conclusion and avenues for further research

In this paper, using a two-country three-step modelling strategy, we have shown that, although information exchange is globally welfare enhancing, unlike large countries, small countries adopting such strategy may incur welfare losses which can be offset by side payments from larger countries. In more political terms, that means that the current trend in international savings taxation, driven by large countries like the members of the G20, which is based on progresses in the exchange of information, is for sure welfare enhancing at world level. However it is more welfare enhancing for large countries and may even incur welfare losses for small countries. Therefore an avenue to avoid smaller countries to remain outside the exchange of information area is to insure that they receive their part of the global welfare gain possibly through side payments. That helps understanding why the US proposed the largest EU member states to join them in a IE network based on the IE view of the source principle. That also highlight that small countries may not have an interest in joining that coalition but will do forced by the larger and especially the threat to be excluded by the US authorities from transactions on the US financial markets.

In terms of research this paper remains tentative. Developments should aim to achieve a joint determination of tax rates and quality of information in a dynamic context.
References


