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COMMENTARY

RE-USING TAXPAYER'S DATA: SCENARIOS FOR WEALTH MANAGEMENT FOR THE PUBLIC

Eleonora Johanna Kuiper and Marijn Janssen[1]

Abstract

Tax Administrations have a huge amount of tax-related data that can be re-used for the benefit of the taxpayers, similarly to the way private banks and wealth managers use their clients' financial information. However, usage of tax data is not trivial, as Tax Administrations have to adhere to legislation that does not allow them to compete with private actors. Public organizations cannot simply provide financial advisory services, even though it could be a way to increase tax compliance. This raises the question of how taxpayer's data can be used in the future. Our objective is to explore future scenarios to empower the public in a fiscal and financial sense and improve wealth by re-using tax data. Future scenarios are described along two axes. One axis contains the content of the advice, and the other axis the participating actors. Concepts from wealth management, the wealth management pyramid and client segments, are used and extended for this purpose. To realize scenarios, barriers must be overcome in the field of law, workload, privacy, permission, quality of service and accountability, liability, consumer protection, the rights of citizens concerning data and funding. Implications are indicated in the scenarios and in further investigations. The value of this paper lies in exploring an original idea of re-using taxpayers' data and to stimulate innovation in this area.

Keywords: financial crisis, financial health, financial wealth, fiscal compliance, tax data, wealth management

1. INTRODUCTION

Tax Administrations from all over the world collect data that can provide insights for personal financial management and can be used to help the public. This data can be used to answer questions like: Are your loans in balance with your income level? Should you build up more reserves for retirement or emergencies? Are you using allowances to which you are entitled? We entered the conversation on wealth management for the public at large at a seminar in London in 2011, where the lead author discussed the future role of the Tax Administrations in relation to financial crises with a participant, who worked for a company delivering wealth management software to private banks. In this discussion the idea was developed that in the future Tax Administrations could become the wealth managers of the public by using software for the taxpayer, comparable to the software that private bankers use to advice their wealthy clients. The initial vision was "to make the Tax Authority the wealth advisor for the person in the street" (Chief enterprise architect, e-mail, September 10, 2012). However, other scenarios are possible to re-use tax data.

Tax Administrations have financial information on taxpayers and their households and gather more and more information every year to fulfil their tasks. This data might be re-used to provide

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financial advice to the public to improve their financial management, although there are barriers preventing this. In this vision, a society should be able to develop a situation in which not only the wealthy few would get proper financial advice, but every taxpayer in need of such advice. However, currently the income tax data is gathered for tax purposes only and may not be used for other purposes. The data are both personal and confidential. Data protection and privacy laws apply. Tax Administrations are tied by fiscal laws and laws on competition and have to deal with the changing tax regulations imposed upon them every year. Thus, Tax Administrations cannot simply extend their scope of work into a domain which is currently dominated by commercial actors.

The traditional roles of the government are changing. Janssen and Estevez (2013) describe three waves of government: e-government, t-government and l-government. E-government uses ICT to improve services to the public, t-government is transforming itself to reform bureaucracy, and l-government strives after lean government, doing more with less, and using actors in the environment and platforms. In the latter the government facilitates and steers rather than doing everything itself.

Roller (1995) considers wealth as a policy goal for government. In policy, wealth is associated with items such as fighting rising prices and ensuring energy supplies are maintained, but not with wealth management as such. Wealth management might empower the public and contribute to the policy goals of government.

Were government to enter the area of wealth management it would compete, to some extent, with the market. "Demands for government intervention thrive on failures of the capitalist economy" (Borre & Viegas, 1995, p. 276). Tanzi (2011) also recognizes that market failure is a guiding principle for government to act upon, but he suggests that governments should direct their efforts more to promote market efficiency and market equity, instead of trying to replace the market. According to Buchanan, cited in (Tanzi, 2005), government intervention to correct shortcomings of the market can make things worse rather than better.

Tax Administrations have the data to enable the provision of wealth advice for the public. Implementation of wealth management for the public can take various forms. The objective of this paper is to explore future scenarios using concepts from wealth management. This work is explorative in nature and wants to raise awareness of this new venue and to provide a basis for further thinking and discussion.

The following questions are asked:

- What are future scenarios to re-use income tax data for wealth management?
- Which barriers prevent realization of these scenarios?

Section 2 provides definitions and an extension of a wealth management concept as a basis for common understanding. Section 3 provides information on the method. Section 4 presents a rationale for the need for wealth management for the public based on literature review. In section 5 scenarios to implement wealth management for the public are developed. Section 6 presents a preliminary identification of barriers. In section 7 conclusions and research perspectives are provided.

2. DEFINITIONS

In this section the background and definitions of key terms are provided as a basis for mutual understanding and further discussion. New client segments and an extended wealth management pyramid are developed to make the target group larger than only the wealthy few.

"'*Financial health'* is that the money coming in is greater than the money going out when the necessary expenses are paid for" (Anonymous, 2014).

Wealth management is often associated with wealthy people and the management of their investment portfolios. Maude (2006) defines *wealth management* as "Financial services provided to wealthy clients, mainly individuals and their families. Private banking forms an important, more exclusive, subset of wealth management. At least until recently, it largely consisted of banking services (deposit taking and payments), discretionary asset management, brokerage, limited tax advisory services and some basic concierge-type services, offered by a single designated relationship manager." (Maude, 2006, p. 1). Maude's definition shows that wealth management is much broader than only managing investment portfolios, that a relationship manager provides the services to the client, and that wealth management is provided only to wealthy clients.

Wealth management is traditionally only for the rich clients. If wealth management were to become available to all, it would require a different client segmentation. *Client segmentation* is "the art and science of tailoring and delivering products and services to distinct client groups" (Maude, p. 54). The financial sector works with a client segmentation, based on the net worth of individuals or families. *Net worth* is the value of assets minus liabilities. "Private banking targets only the very wealthiest clients or high net worth individuals (HNWIs): broadly speaking, those with more than around $1 million in investable assets. Wealth management, by contrast, targets clients with assets as low as $100,000, i.e. affluent as well as high net worth (HNW) clients." (Maude, 2006, p. 2). The most basic approach is to segment the client base based on the amount of wealth (Maude, 2006, p.55), for example: Affluent, High Net Worth, Very High Net Worth, and Ultra High Net Worth, see the wealth management pyramid (PricewaterhouseCoopers, 2005) depicted in Figure 1 on the left hand side. Client segmentation typically varies in time, per organisation and per country, for instance IMCA uses a minimum net worth of $5 million in order to be considered a high-net-worth client (IMCA, 2012). More elaborate client segmentations use multiple criteria such as asset size, account age, tax situation, life-cycle status, event, product stage, risk readiness and geography (Maude, 2006, p. 61).

Wealth management could target other segments than the wealthy few, for instance segments with a lower net worth or lower income class than the affluent. These clients are particularly in need of services and regular advice on how to reach a healthy financial situation and become wealthier. Therefore, we introduce new client segments: Medium Net Worth (MNW), Low Net Worth (LNW), and Negative Net Worth (NNW) clients. The amount of wealth associated with these segments may vary. As an initial indication for western countries the following amounts can serve: MNW ($50,000 - $100,000), LNW ($0 - $50,000) and NNW (less than $0). For non-western countries this will be different. The extension of the client segmentation results in a new wealth management pyramid, as shown in Figure 1 on the right hand side.

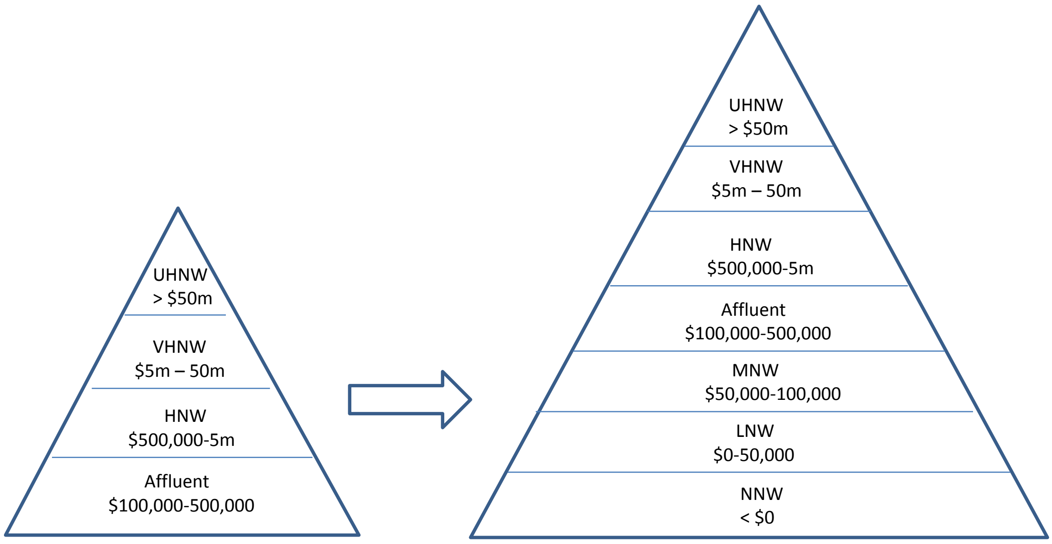

Fig. 1: Wealth management pyramids. On the left the traditional pyramid, see (Pricewaterhouse Coopers, 2005), on the right a new pyramid with an extended client segmentation for wealth management for the public.

Wealth management for the public is the provision of financial services provided to the public at large. It consists of tax advisory services to improve their fiscal self-reliance, regular signals on their financial position to remain or become financially healthy or wealthy, and references to relevant public and private actors on the financial market to follow up on advice given.

Personalized financial advice is bespoke financial advice to a taxpayer, which is based on the current fiscal and financial situation and the relevant history of that taxpayer over the past year(s). The advice may also provide a prognosis for the future by extrapolating the trends of the past and taking into account the upcoming government measures with taxes, welfare etcetera.

Fiscal self-reliance is "Being able to handle fiscal matters in an independent way, using the available information channels, understanding the fiscal rules, having a support network, knowing how to organize it and having control over one's fiscal issues" (Dutch Tax Administration, 2014).

Fiscal compliance is the "Degree to which a taxpayer complies (or fails to comply) with the tax rules of his country, for example by declaring income, filing a return, and paying the tax due in a timely manner" (MoneyControl, 2018).

3. METHOD

The suggestion to re-use tax data for wealth management for the public was further developed in discussions with managers, policy makers and employees at a Tax Administration using presentations and discussions in the period 2012-2013. One session with about ten participants took place with high level management and external people from academia.

The participants were selected based on the diversity of their roles in the Tax Administration. Some could be potential sponsors of the idea, others were policy or legal advisors. The selection of people materialized in this way because this Tax Administration asked people with innovative ideas to find a sponsor at the management level in order to proceed with the implementation of the idea and to claim resources. These discussions served to develop the two axes of the scenario logic, see Figure 2, and enriched the initial idea of wealth management for the public with implementation options related to whom was involved, how extensive the advice could be, and with descriptions of barriers to be addressed.

Scenario thinking (Schwarz, 1996) was used to explore the directions by structuring the information obtained from literature and discussions, since scenarios can describe uncertain futures. The steps for scenario development used here are, modified from (Ringland, 1998, p. 228-233):

1. Identify the focal issue or decision. Which important decision has to be made?
2. List key forces in the environment. Which key forces influence the success or failure of that decision?
3. List driving forces in the environment. Which forces are predetermined, which are uncertain?
4. Rank these key factors and driving forces by importance and uncertainty. Which factors are most important and most uncertain?
5. Select the scenario logic. Which axes can be used to depict the scenarios? The previous ranking exercise results in axes for the scenarios, which allow the selection of the most important scenarios in order to prevent proliferation of scenarios.
6. Describe the scenarios. A narrative with a scenario title should capture the dynamics of the situation and communicate the point.
7. Explore implications. What does the main decision look in each scenario?
8. Select leading indicators. Which indicators can be identified to monitor the scenarios?

These steps are described in section 5. This approach resulted in nine scenarios from which two scenarios, resulting from the discussions, will be described in detail section 5.

Subsequently barriers were identified during discussions with policy and legal advisors of a Tax Administration, see section 6.

4. RATIONALE FOR WEALTH MANAGEMENT FOR THE PUBLIC

Why is another way of looking at wealth management desirable? In this section we connect the need for wealth management to recurring financial crises, financial illiteracy of the public and fiscal self-reliance by means of a literature review. Then we describe some other initiatives to strengthen citizens to identify a hiatus.

Financial crises occur throughout history. Kindleberger & Aliber (2008) derived a timeline of nearly forty financial crises in the period 1618 till 1998. The most recent crisis has engulfed Europe since 2008. Financial crises often last for several years and have a profound negative impact on society. The citizens are often badly hit by financial crises. Despite income tax data being available at the Tax Administrations, tax intermediaries and households, this data is not re-used to empower taxpayers and improve their wealth, such that they can better withstand new financial crises.

Over the past decades there has been a shift in responsibilities concerning financial and social care from the government to the citizens in various countries. Politicians view this as less of a job for the government and as a consequence the government provides less support. However, it is questionable whether the citizens are capable of taking financial decisions autonomously, given the complex products and regulations of the financial markets (Schoneville & Verhage, 2012). Citizens are vulnerable to financial crises. Van Rooij, Lusardie and Alessie state that

"Most households lack knowledge of fundamental financial concepts" (Rooij, van, Lusardi & Alessie, 2011, p. 594). The Dutch Bank, DNB, performed research on the financial literacy of citizens and found that financial literacy of Dutch households was below the norm (Rooij, van, Lusardi & Alessie, 2007). A similar conclusion was arrived at by Schoneville and Verhage (2012). The Dutch Financial Capability Survey of the Treasury Department showed, that "the financial situation of large groups of consumers is vulnerable: one in ten consumers has difficulty in making ends meet and four in ten consumers do not have sufficient buffers to deal with large unforeseen expenditures or income shocks caused by unemployment, divorce or the onset of a chronic illness" (Rooij, van, et al., 2011, p. 604). This research showed that most Dutch households lack knowledge of financial concepts, and that "women and those with low educational attainment display the lowest levels of financial knowledge", see (Rooij, van, et al., 2011, p. 594).

Many citizens are not fiscally independent as one Tax Administration employee commented: "20 % of the citizens do not make use of their rights. This also concerns other public organizations" (Senior policy advisor of a Tax Administration, December 5, 2012).

There already exist initiatives to strengthen the citizen financially. For example in the Netherlands the following initiatives are available:

- Help to people who have debts by budget coaches, city credit banks and nutrition banks of local authorities;
- Help to survive the financial crisis by trying to lower the costs for fixed costs such as costs for energy and water of households by entrepreneurs;
- Assistance by budget institutes with general (non-personalized) advice, information and guidelines.

In the United Kingdom an organization exists, sponsored by government, where citizens can obtain advice on their financial health, see (Citizens Advice Bureau, 2016). In the United States and Austria, income tax preparation software can provide personalized financial advice in addition to fiscal advice (Peak & Buckner, 2003). Some patents are in place. For instance in (Peak & Buckner, 2003) a solution is proposed for tax preparation software, provided by private organizations, that generates a personalized tax advice based on tax return data. The contents of the personalized advice ranges from fiscal advice such as child care tax credits, financial advice such as a saving strategy for retirement, saving for children's study, and general advice to make use of certain governmental services such as a nutrition bank.

There are relatively cheap wealth management services from third parties – that accompany brokerage accounts. In the United States, annual statements are provided that disclose portfolio holdings, short/long term capital gains and losses. Social security is collected from taxpayers, and then forecasts can be obtained from the Social Security Administration (Reviewer, e-mail, January 17, 2018).

However, none of the initiatives above reaches the public at large. This hiatus can be imbued by wealth management for the public re-using tax data.

5. FUTURE SCENARIOS FOR WEALTH MANAGEMNT

The scenarios explore ways to realize wealth management for the public, taking into account the information gathered during interviews and presentations in a Tax Administration. The scenarios serve to open up and to broaden the thinking and discussion on providing personalized wealth management to the public in the sense that actors other than the Tax Administration can be involved in the implementation of this policy idea.

Sardar's third law is "Futures studies need to be sceptical of simple, one dimensional solutions to wicked problems as well as of dominant ideas, projections, predictions, forecasts and notions of truth to ensure that the future is not foreclosed and colonised by a single culture" (Sardar, 2010, p. 183). The scenarios below implicitly question the following dominant assumptions:

- The need for withdrawal of the government. Do technological developments enable new services without costing much effort of civil servants, keeping government lean?
- The legal setting on the division of tasks between public and private actors in the financial sector, and the forms of cooperation between public and private actors. Should public and private actors cooperate more, or in different ways, to keep the public financially healthy / wealthy?
- Wealth management is only needed by the wealthy few. Why not use it for the public at large to address financial crises pro-actively?

In the text below the eight steps for developing scenarios are described.

Step1: The scenarios focus on the issue of improving the wealth of the public, such that the public can better withstand difficult financial situations. How can the fiscal / financial situation of the public be improved on a regular basis, and by which actors? Once this question can be answered and acted upon, it is likely to have a long-term, positive influence on the welfare of society and on tax revenue. The main decision to take is: Shall we provide wealth management to the public by re-using income tax data?

Step 2: The financial vulnerability of households and the financial crisis have created a difficult situation for many people in many countries. Key forces are the ongoing financial crisis combined with financial illiteracy of households. The financial crises inspire reflection on the future role and scope of Tax Administrations.

Steps 3, 4 and 5: We have identified the following driving forces:

- Personalization, or 'the action that tailors the experience to a particular user or set of users', modified from (Mobasher, Cooley & Srivistava, 2006).
- The technology hype on data. There is a trend to use data in other ways, see for instance (Shadbolt & O'Hara, 2013). This trend brings along new technologies like data analytics enabling us to move forward from general advice to the public by budget institutes to personalized advice.
- The need for fiscal compliance and fiscal self-reliance.

If we rank the key factors and driving forces in order of importance in a subjective way, the result is:

1. Financial crisis and illiteracy;
2. Need for fiscal compliance and fiscal self-reliance;
3. Personalization and the technology hype on data.

Ranking will be country specific. In the Netherlands, the financial crisis is considered to have the largest impact of all forces. Only 4% of the Dutch taxpayers is estimated to be non-compliant. This is still a large number of households to deal with for a Tax Administration. In other countries non-compliant taxpayers may be a higher percentage and a stronger force. Personalization and the technology hype on data serve as enablers for the scenarios.

The key factors and driving forces are in a way predetermined. For instance we expect that financial crises will occur again, but we do not know where and when. In derogation from Schwarz's step 5 (Schwarz, 1996), we do not base the scenario logic on the most important key factors and driving forces. Instead we base the scenario logic on what is uncertain in the solution space: first, it is uncertain which actors will provide wealth management to the public, and second, it is uncertain what the scope and content of the personalized financial advice will be, given the different legal and political settings in the countries.

The axes considered in the scenario logic are: x - Which actors provide wealth management to the public? y - What is the scope and type of content of the advice? Figure 2 shows the two axes used for the scenario logic.

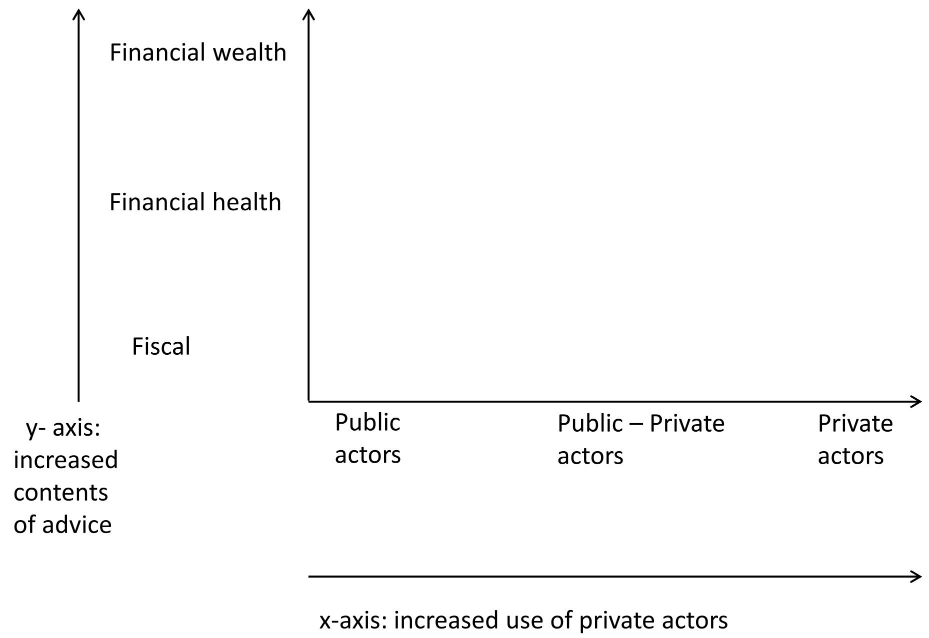

Fig. 2: Two axes for scenario logic relating to actors (x-axis) and to the scope and type of contents of the advice (y-axis)

The x-axis depicts three options on which actors provide wealth management advice to the public:

1. Public actors. These public actors can be the Tax Administration in cooperation with other public organizations such as public budget institutes, which can provide a follow-up with the taxpayers on the automatically generated advice.
2. Public-private actors, each exercising its role according to what the current legal setting in the specific country allows them to do. This can be Public Private Partnerships (PPP), Public Private People Partnerships (PPPP), see (Ng et al., 2013), or other cooperation forms between public and private actors.
3. Private actors, for instance tax preparation software providers, fiscal advisors, or financial organizations see (Peak & Buckner, 2003; H&R Block, 2014; Turbo Tax, 2014).

These options are described below.

Public actors option: By doing something in return for the data in the income tax form and the tax payment, a Tax Administration can change the relationship with the taxpayer in a positive way. The Tax Administration then uses the reciprocity principle in order to stimulate cooperation between the taxpayer and the Tax Administration for tax compliance, see (Axelrod, 1984) on using reciprocity to stimulate cooperation between actors by doing something in return for services provided. Barriers to address are first, that Tax Administrations cannot simply start an advisory service since they are bound by law in what they can and cannot do, and second, that "Tax Administrations are occupied already by their primary tasks for handling taxes and changes in laws concerning tax" (Manager in a Tax Administration, discussion, February 7, 2013).

Public-private actors option: Is the current division of tasks between public and private actors in the financial sector beneficial for addressing financial crises? The long time it takes to overcome financial crises renders that unlikely. Many financial advices do not take the interest of the client as the focal point, but are a way of selling financial products. A combination of public and private actors may bring some balance in the financial services sector and more focus on the interests of the citizens and the economy as a whole. Table 1 provides a non-exhaustive list of differences between banks and Tax Administrations. Similar to private banks, which follow the financial position of their clients during their lifetime, Tax Administrations have a lifetime overview of the financial position of the taxpayers. Banks and Tax Administrations could complement one another, especially in obtaining a more complete picture on the financial position of a taxpayer to base a proper, personalized financial advice on. Combining the financial knowledge of the private financial actors with the re-use of income tax data of the Tax Administrations may lead to increased wealth of the public and new remedies to financial crises.

Table 1: Comparison of banks and Tax Administrations

Criterion	**Banks**	**Tax Administrations**
View of the clients	Have a transactional view of their clients based on incoming and outgoing payments.	Have a lifetime and relatively complete overview of the financial position of the taxpayer based on the income tax data.
Type of actor	Private actor.	Public actor.
Client base	Clients can choose their bank. The bank only addresses its clients, so not the public.	Taxpayers have to work with their national Tax Administration. The Tax Administrations address the public.
Commercial interest	Commercial interest to sell financial products to clients, possibly leading to sub-optimal advice.	No commercial interest.

Private actors option: Private actors can provide wealth management to the public based on the income tax data made available to them by the taxpayers.

The initial suggestion was that the Tax Administration could become the wealth manager for the public, but a Tax Administration can take on various roles, for instance as:

- A public advisory actor;

- A data broker to the taxpayer and the taxpayer's advisory actors;
- A guardian, who puts requirements on the potential uses of the data by advisory actors that would safeguard the social goal of wealth management for the public.

From a broader perspective the Tax Administration can assume the role of an enabler or driver of social innovation. The role of data broker of a Tax Administration is mentioned since income tax data over the years is required to base a personalized advice on. This data need not be retrieved from a Tax Administration, but may also be directly retrieved from the taxpayers, who may have the data on their home computers. However, many taxpayers will not have these data available over all the years, only the most recent data due to computer upgrades etcetera. Then a Tax Administration may provide historical income tax data from its archives to the taxpayer, or to the taxpayer's advisory actors at the request of the taxpayer.

The y-axis represents an increased content of the advice ranging from advice for fiscal self-reliance advice to a financial wealth advice. The y-axis depicts three options on the type and contents of the advice:

1. Fiscal advice to maintain or improve fiscal self-reliance. The citizen is made aware of fiscal options that were wrongly overlooked and can then take advantage of these options.
2. Financial health advice to maintain or improve the financial health of the citizen. The citizen is made aware of a healthy balance between debts and income for the relevant income level.
3. Financial wealth advice to maintain or improve the financial wealth of the citizen. The citizen receives advice on wealth issues such as pensions, reserves needed, saving or investing etcetera.

Step 6: The two axes, each with three options, enable the creation of nine scenarios to realize wealth management for the public, as shown in Table 2.

Table 2: Scenarios

Actors -> **Area of advice**	**Public actors**	**Public – private actors (PPP, PPPP or other)**	**Private actors**
Fiscal advice	Scenario 1	Scenario 4	Scenario 7
Financial health advice	Scenario 2	Scenario 5: Tax Administration cooperating with start-ups.	Scenario 8
Financial wealth advice	Scenario 3: Tax Administration as a driver of social innovation.	Scenario 6	Scenario 9

Scenarios 4-6 conform to the lean government wave (Janssen & Estevez, 2013), since they describe a way of doing more with less and involving private actors. Countries can choose a suitable scenario or design their own scenarios. In scenarios 4-6 public actors provide input to private actors, but only at the request of the taxpayer. The taxpayers remain in control over their data. Below we describe only two scenarios, 3 and 5. We leave the other scenarios to the imagination of the reader.

"I would like to propose to first incorporate in the advice to the citizen the regulations of which the citizen has a right to use, but does not yet exercise that right. 20 % of the citizens do not make use of their rights. This also concerns other public organizations (than the Tax Administration). This is meant to increase the self-reliance of taxpayers. Subsequently we can start giving advice on the financial position of the citizens." (Senior policy advisor, discussion, December 5, 2012). In the Netherlands some tax regulations for the benefits of citizens require, that the citizen explicitly asks for it. When citizens do not ask, since they are not aware of (or knowledgeable on) these tax regulations, they do not receive the money associated with the regulation. This quote reveals a roadmap concerning the content of the advice, ranging from increasing fiscal self-reliance, to financial health and ultimately to financial wealth. A roadmap for the content of the advice is based on the time dimension. The personalized advice can start by looking at the past year, and then proceed to the present and future years, taking into account the tax regulations of the government for the present and future years.

The scenarios describe a way of working in analogy to what wealth managers do for their wealthy clients, but now for the public at large. The software of wealth managers compares the financial situation of a wealthy individual or family to a profile for a certain wealth and income class. Then personalized advice is generated using software for the relationship manager of the private bank as a basis for a discussion with the wealthy client. The client is advised on how to stay wealthy or, if possible, become wealthier. For wealth management for the public the solution suggested here is to provide a regular, automated advisory service based on income tax data to the taxpayers, which works with software that does not require relationship managers. The software required can be adapted wealth management software, or software that is specifically designed for this purpose. The role of the relationship managers in current wealth management can be fulfilled by public bodies, like budget institutes, or actors on the financial market if the taxpayers subsequently want more extensive explanations or follow up actions on the automated personalized advice they receive. Table 3 compares traditional wealth management and wealth management for the public.

Table 3: Comparison between traditional wealth management and wealth management for the public

	Traditional wealth management	**Wealth management for the public**
Client segment	Affluents, HNW, VHNW, UHNW.	NNW, LNW, MNW, Affluents, HNW, VHNW, UHNW.
Communication with the client	Via relationship or wealth managers.	Via an automated advice, possibly extended with public bodies and / or financial advisors for follow up.
Generation of advice	Partially automated using wealth management software, client profiles and the expertise of a wealth manager.	Fully automated using client profiles, specific software and income tax data.
Advice is based on	Data on investment portfolios, knowledge of family assets, culture etcetera.	Income tax data of households over the years, government regulations.

The public also contains affluents, HNWs, VHNWs and UHNWs. It is likely that these citizens will continue to need traditional wealth management for their assets and investment portfolios. Wealth management for the public is a way to extend traditional wealth management to other client segments with less net worth than the affluents. These segments now only have basic banking services available.

Figure 3 shows a common information exchange between the taxpayer and the actors who provide advice. The taxpayer makes tax data available to advisory actors and issues a request for an advice. The data may be the most recent tax data, or a tax data archive. The advice is returned by the advisory actors. The scenarios are created by changing the advisory actors and the content of the advice, depicted by the ovals in Figure 3.

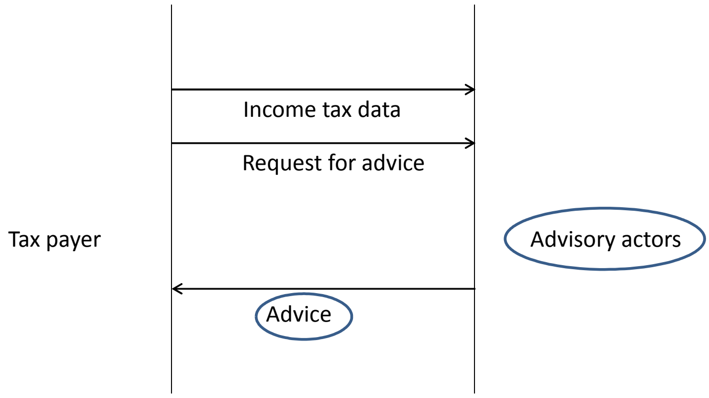

Fig. 3. Exchange between taxpayer and advisory actors, triggered by the receipt of income tax data

Scenario 3: Public actors become wealth advisors

This scenario seeks to improve the taxpayer's financial wealth in a personalized way. The following scenario description is a hypothetical implementation scenario of the policy idea.

Example of scenario 3: The Tax Administration driving social innovation

The policy idea of wealth management for the public needs to be discussed at the political and legal levels, since Tax Administrations are executing services of the Ministries of Finance and perform their tasks according to laws. To provide wealth management to the public re-using tax data is a decision to be taken by the relevant political bodies in a country. These discussions should have as an outcome whether the policy idea is accepted or not, and if it is accepted, what the preferred scenario is.

When the policy idea is accepted at the political and legal levels and scenario 3 is chosen, a possible implementation can take into account the following steps:

- Implementation of a Government Finance Database (Pierson, Hand & Thompson, 2015);
- Use of a Regulatory Sandbox, when fiscal and market laws require adjustments to enable the implementation and testing of the policy idea;
- Adjustments to fiscal and market laws;
- Education on the possibilities of re-using tax data for wealth management;
- Cooperation with organizations active in wealth management and implementation of the extension of the Wealth Management Pyramid in software;
- Cooperation with a public Budget Institute in order to enable follow up actions on the automated advice of the Tax Administration;
- Execution of a Proof of Concept at a limited scale in which security and privacy issues are addressed;
- Evaluation of the social innovation aspects to prepare decision making on scaling up to the public at large, involving user groups of taxpayers and other relevant actors in the evaluation;
- Monitoring of the effects on financial / fiscal awareness and wealth levels of the public over the years and estimating the changes in the public's resistance to new financial crises.

The Tax Administration and a public budget institute are the advisory actors, see Figure 4.

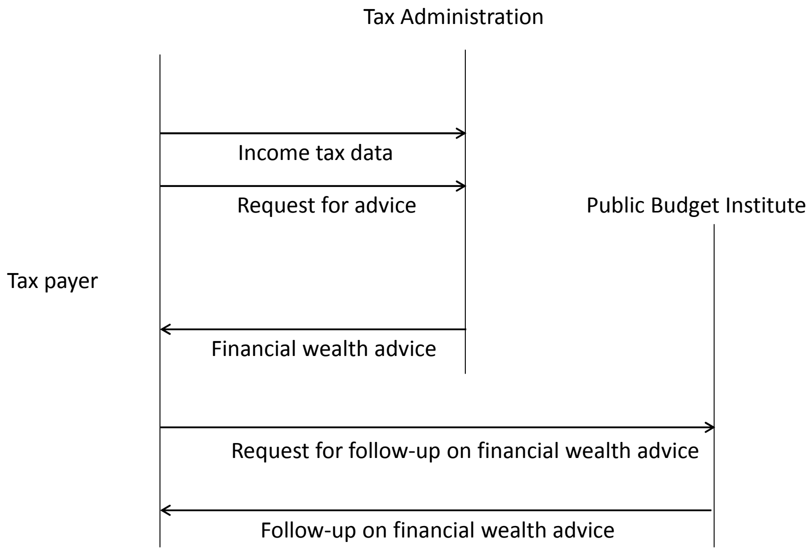

Fig. 4. Example of an exchange for scenario 3: Public actors (Tax Administration and Budget Institute) as financial wealth advisors

Scenario 5: Public-private actors become financial health advisors for the public
In this scenario a Tax Administration cooperates with a start-up, which offers a financial health service to the taxpayers, see Figure 5. This hypothetical scenario can be developed as a solution for a country, where many people are having too high loans for their income levels.

Example of scenario 5: The Tax Administration cooperates with a start-up company

When the policy idea is accepted at the political and legal levels and scenario 5 is chosen, a possible implementation can take into account the following steps:

- Implementation of a Government Finance Database (Pierson, Hand & Thompson, 2015);
- Use of a Regulatory Sandbox, when fiscal and market laws require adjustments to enable the policy idea;
- Adjustments to fiscal and market laws;
- Education on the possibilities of re-using tax data for financial health management;
- Selection and cooperation with one or more start-up companies;
- Execution of a Proof of Concept at a limited scale in which security and privacy issues are addressed;
- Evaluation of the financial health innovation aspects to prepare decision making on scaling up to the public at large involving user groups of taxpayers and other relevant actors in the evaluation.
- Monitoring the effects on financial health levels and financial literacy of the public over the years and estimating the public's resistance when new financial crises occur.

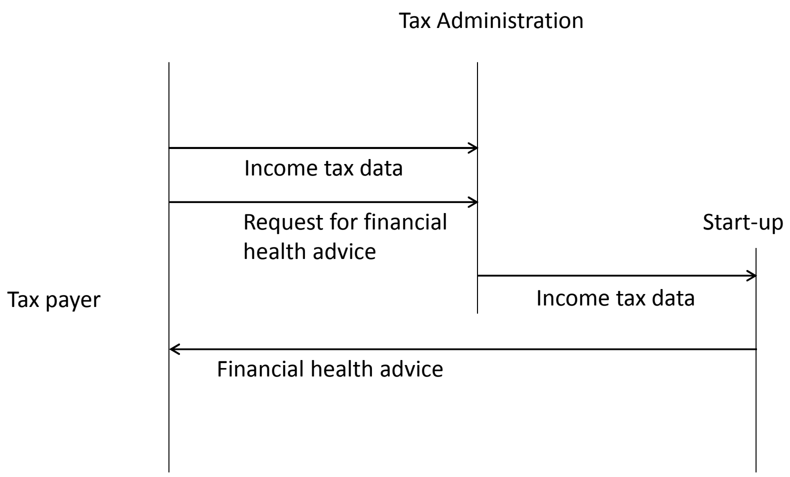

Fig. 5. Example of an exchange for scenario 5: Public actor (Tax Administration) and a private actor (start-up company) cooperate as financial health advisors

Steps 7 and 8: Implications and indicators to measure the effects of the scenarios are described in Table 4. Tax Administrations usually have a larger customer base than private organizations, and then the impact on society of scenarios1-3 and 4-6 can be expected to be larger than the impact of scenarios 7-9. Scenarios 4-6 have the advantage that tasks can be more easily allocated to the appropriate actors taking the current legislation into account. Less legal changes will be required for these scenarios.

Table 4: Implications of scenarios and indicators. Direction of effect: + means increase, - means decrease.

Implication	Relevant for scenario	Indicator	Direction of effect
Increased fiscal self-reliance	1, 4, 7	% of fiscal self-reliant taxpayers	+
Increased financial literacy	2, 3, 5, 6, 8, 9	% of financial literacy of taxpayers	-
Less calls to help desks of Tax Administrations	1, 4, 7	Number of calls to help desk for fiscal of Tax Administrations / number of taxpayers	-
More state money will be needed to pay for a 100 % usage of regulations	1, 4, 7	Government expenses on regulations for citizens / number of taxpayers	+
Improved relationship between Tax Administrations and taxpayers	1-6	Client satisfaction of the taxpayers	+
More financial health, less debts and more compliance	2, 3, 5, 6, 8, 9	% healthy households, % households with debts, % compliance	+, -, +
More financial wealth, less debts and more compliance	3, 6, 9	% wealthy households, % households with debts, % compliance	+, -, +
Increase in income tax collected	3, 6, 9	Income tax / number of taxpayers	+
Boost of the financial market	4-9	Number of services using income tax data of financial actors	+

6. BARRIERS

The realization of scenarios involving an active role of Tax Administrations encounters barriers. Barriers identified in a discussion with a company lawyer of a Tax Administration for the question: Which barriers prevent realization of these scenarios? are as follows.

Tax Administrations are bound by law in what they can and cannot do. In addition, there are laws that regulate the position of the public sector and the private sector to avoid unfair competition and to create a level playing field.

"Tax Administrations are fully occupied by their primary tasks for handling taxes and changes in laws concerning tax" (Manager of a Tax Administration, discussion, February 7, 2013).

"I have discussed wealth management for the public with an IPR lawyer. … He foresaw possible problems with the competition laws we have here. I think we can find a way out of it, but it must be investigated. Privacy issues and goal issues can be taken care of. " (Lawyer, discussion, October 1, 2012). In the Dutch privacy law, data may only be gathered for a specific, predetermined goal according to the principle of goal binding of personal data. When personal data of the Tax Administration is used for purposes other than tax, this should be made clear in advance to citizens.

Problems may arise related to permission. When a Tax Administration would enter into wealth management activities, then in the Netherlands a permit is required of the Dutch Bank (DNB). In order to advise on investment portfolio's a permit is required of a supervising authority like the Authority for Consumers and Market, the ACM. This may result in legal issues such as: Is a government organization like the Tax Administration subject to decisions of an organization like the ACM?

With respect to quality of service and accountability. Which guarantees does the taxpayer get to ensure that the advice is correct and appropriate? In the financial sector financial planners need qualifications and ongoing education to do advisory work. A similar mechanism is required for the scenarios involving personalized financial advice by public actors.

How is liability addressed in case a financial advice results in damage? Commercial parties are ensured for liability, but public sector organizations are not.

How is consumer protection arranged? When a taxpayer asks a commercial organization for financial advice, the taxpayer is protected according to the consumer laws. This is not the case when the taxpayer is advised by the Tax Administration.

Citizens should have stronger rights on data such as access and correction of personal data, a right to be forgotten, a right to object to data processing and the right to be informed when data security is breached (EU, 2015). This needs to be arranged.

Shortage in funding may also prove to be an important barrier in the sense that advisory services cannot be made available to individual taxpayers due to funding cuts[2].

In summary there are barriers in the field of law, workload, privacy, permission, quality of service and accountability, liability, consumer protection and funding. The barriers are different for each scenario. These barriers, and the measures that can be taken to address them, require further investigation per country. The barriers might prevent the realization of certain scenarios.

7. CONCLUSIONS AND FURTHER RESEARCH

To re-use tax data for wealth management for the public, we developed nine scenarios and investigated barriers and measures to take. The scenarios can be used in different countries to

[2] As pointed out by a reviewer.

make implementation plans for the scenario of their choice. Since the Tax Administrations are executing organizations of the government, it is important that the government and the political bodies embrace a certain scenario for wealth management for the public, and clarify, or redefine, the role of the Tax Administration in their country.

Our first question is: What are future scenarios to re-use income tax data for wealth management? To answer this question nine future scenarios have been identified along two axes:

1. Which actors provide wealth management to the public? These are public actors, public-private actors or private actors, and
2. What is the scope and type of content of the advice? These are fiscal self-reliance advice, financial health advice and financial wealth advice.

Scenarios 1-3 adopt a role for the public sector and require a change in the scope and role of Tax Administrations. Scenarios 4-6 use a combination of public and private actors (such as a Public Private People Partnership) and are in line with the wave of lean government (Janssen & Estevez, 2013). These scenarios seem more likely in countries where public and private actors can cooperate according to the legal and political setting, and public and private actors keep each other in balance. Scenarios 7-9 are more likely for countries, where the role of the government is kept limited.

The second question is: Which barriers prevent realization of these scenarios? The barriers for the implementation of personalized financial advice are the high workload of the Tax Administrations, which prevents them from broadening the scope of their work, and the law, regulating the tasks of Tax Administrations. Tax Administrations are positioned as executing service of the Ministries of Finance and not as entrepreneurs in the financial market. Further barriers lie in privacy, permission, quality of service and accountability, liability, consumer protection, the rights of citizens concerning data, and funding.

The following questions and topics require further research. What is the economic impact at the household and at the national level? Which multi criteria client segmentation is required, since ‘amount of wealth’ may be insufficient to segment the client base? Which technical solutions are suitable for the various scenarios?

The information on barriers should be expanded upon with lawyers, familiar with the fiscal and market laws in a country. The adoption of the policy idea and measures to address the barriers, scope and content of the advice in relation to the national financial issues, laws and regulations, require further investigation. For instance, in the UK a relation with the Making Tax Digital[3] agenda is considered relevant, and especially the idea of a personal tax account (Reviewer, e-mail, January 17, 2018).

Using taxpayer data for wealth management for the public at least entails some element of education or increased knowledge about tax and wealth management at the Tax Administrations and in the countries[4]. A suitable way of educating the relevant actors on tax and wealth management and the new possibilities enabled by technology needs to be found.

[3] https://www.gov.uk/government/publications/making-tax-digital/overview-of-making-tax-digital

[4] As pointed out by a reviewer

What we are proposing is to think and discuss further on the topic of wealth management for the public re-using tax data.

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