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**The effect of Income Shifting on the Local Income Tax Revenues  
of Flemish Municipalities**

*(under construction, please do not quote)*

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**Abstract**

Income shifting refers to the transfer of the tax base to a tax characterised by lower average or marginal rates. In the literature the focus is mostly on the shift from corporate taxes to income taxes and the effects of this shift on central governments revenues. In this paper, we focus on the effect on local tax revenues. In Belgium the local governments do not have access to the tax income from the corporate tax, which is levied on corporate income from specific legal persons. Only when a business is set up as a sole proprietorship, local governments' income is affected, through the impact on the local income tax (LIT). We test whether the shift to other corporation forms influences the local government tax revenue per capita for 308 Flemish municipalities for the period 2005-2013. The cross-section fixed effects panel estimations show that the exit of sole proprietorships significantly impacts the creation of legal persons, which is in line with what is expected if income shifting should occur. In addition, the per capita revenues from the local income tax (LIT) are negatively affected by the exit of natural persons. Importantly, the analysis shows that the establishment of new corporations results in a significant decrease in the local per capita revenues of the local income tax (LIT), when controlling for community fixed effects and economic conditions.

**Keywords:** income shifting, local income tax, corporations, natural person

**JEL Classification Code:** H24, H25, H32, C23

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## INTRODUCTION

During the period 2009-2013 Flemish local governments were facing challenging budget problems. Tax revenues were decreasing due to the economic recession that resurged in the aftermath of the 2008 financial crisis. Increasing unemployment, resulted in lower tax revenue income from the local income tax, that represented on average 41% of total local tax revenues. Budget pressure also resulted from the reform of the local fire departments, the implementation of new regulation regarding the treatment of polluted water and the ageing of the staff (Belfius, 2012). Between 2009 and 2012 the annual growth rate of the local expenditures (1,8%) exceeded that of the regional (0,9%) and federal governments (1,4%). Local councils were facing deficits representing 0,21% of GDP in 2012 (HRF, 2014).

To avoid further budget derailment, local governments needed to monitor what moved the tax revenues over time. It is well established that the local income tax revenues are sensitive to changes in the business cycle and to fiscal reforms. Due to the fact that the revenues are collected by the federal government, the timing of the intergovernmental transfers of tax revenues is affecting the balance (HRF, 2014). Since the local income tax is a surcharge tax, vertical tax externalities might also matter: federal governments deciding to reduce tax rates or increase tax reductions, will generate a loss in tax income for local governments (Smolders & Goeminne, 2005).

Up to now, there has been surprisingly little attention for yet another determinant, which, in a way, is related to the fiscal federalism structure of Belgium. That is, income shifting. Income shifting refers to the fact that citizens have different opportunities to pay taxes. In case of businesses, earnings are either taxed as profits in the corporate tax (CIT), or they might be filed as income in the personal income tax (PIT). In Belgium, average and marginal tax rates are much more favourable in the Belgian corporate tax system. And, which tax applies predominantly depends on the company's legal form. Though limited liability, capital attraction, business continuity, easy transfer of ownership rights are probably the main reasons, fiscal windfalls might well be an ancillary motive for shifting from sole proprietorship to a corporation form.

How could this possibly affect local government's tax revenues? In fact, this results from the allocation of taxing powers over the different government levels. The shifting from sole proprietorship to corporation forms end up in a removal of the businesses' tax base from the income tax, the revenues of which are partially allocated to local governments. In turn, the entry of corporations will increase the corporate income tax base, but the resulting tax revenues are entirely reserved for the federal government. As such, fundamental changes in corporation form might have budgetary implications for local governments.

The main contribution of this paper is that it is the first to investigate the matter. Based on panel data analysis covering 308 municipalities and a 9 year time period, we look for the effects of the exit of the self-employed sole proprietorships on the per capita local income tax revenues (LIT) in general. In addition the impact of the entry of start-ups is analysed. We use data aggregated at the municipal level, as more appropriate firm level data reflecting why and when exactly firms decide to change corporate form for tax reasons are not available.

The paper is organized as follows. The next section gives a brief overview of the literature closest to the subject. The third section discusses the methodology. The empirical results are presented in the fourth section; section 5 contains the conclusions of this paper.

# 1. LITERATURE REVIEW

## 1.1. Income shifting

Entrepreneurs are free to choose how to set up their business. Either they prefer to start as a natural person, being the sole proprietor, or they choose to install a corporation. In general, limited liability, accounting standards and reporting rules, the degree of investor protection and corporate rules are the most important factors influencing this decision (Egger et al., 2009). The mentioned elements do not only determine the discretionary power of the management, but are equally essential for the access to external financial resources. Moreover, corporations generally are more easily transferred to next generations compared to sole proprietorships, that often disappear in case of the decease of the CEO (Gravelle & Kotlikoff, 1993). Yet, starting a corporation generally implies higher start-up investments (e.g. the cost of the notarial deed and financial plan, etc.). In addition, corporations are facing more extensive obligations related to tax filing and accounting (Egger et al., 2009). As Egger et al., 2009; de Mooij & Nicodème, 2008; MacKie-Mason & Gordon, 1997 and Gravelle & Kotlikoff, 1993 illustrated, fiscal motives may be an important driver too. Choosing for a corporation might result in a more favourable tax regime. This might induce the so called income shifting.

In the literature, income shifting refers to different types of tax payer behaviour. According to Alstadsæter & Jacob (2014) income shifting is the process of legally shifting assets or income across time, income categories, or tax brackets with the major objective to decrease the tax burden. Different types of income shifting occur (Stiglitz, 1985; Alstadsæter & Jacob, 2012). First, income shifting results from postponing capital gains (Ivkovic et al., 2005; Jacob, 2011) or dividend payments (Chetty & Saez, 2005; Jacob & Jacob, 2012). Secondly, Stephens & Ward-Batts (2004) point to the intra-familial transfer of income and assets. Finally, income shifting is defined as the switch from labour income to capital income. Firms transfer income through dividends rather than wages and adopt the organizational form best suited to do so (de Mooij & Nicodème, 2008; Thoresen & Alstadsæter, 2010).

The impact of taxes on the choice of the organizational form has been the subject of many papers (among others Gentry, 1994; Goolsbee, 1998 & 2004; Gordon & MacKie-Mason, 1990 & 1994; MacKie-Mason & Gordon, 1997; de Mooij & Nicodème, 2008). In theory, it is the minimum rate of both taxes that determines the tax payer's choice for a specific type of corporation (Feldstein & Slemrod, 1980). Or, according to MacKie-Mason & Gordon (1997) and Goolsbee (1998 & 2004) the choice of the juridical form of a company results from comparing the net tax loss with the net non-tax gain of income shifting. The tax loss or gain depends not only on the tax rate, but also on the deductions and reductions.

The empirical studies mostly apply for the US and investigate income shifting from the PIT to the CIT (Gordon & Slemrod, 2000; Gordon & MacKie-Mason, 1994; MacKie-Mason & Gordon, 1997; Goolsbee, 1998 & 2004; Cullen & Gordon, 2007). The majority of these studies report statistical significant effects from a change in the tax rate on the way businesses are organised. Goolsbee (1998) finds for example that a one percent increase in the CIT rate causes a rise in the capital not belonging to corporations with 0,02 to 0,03 percentage points. As in most of these older time series studies, the effects are rather limited. More recent studies, like that of Egger et al. (2012) indicate larger effects: an increase in the effective CIT tax burden with 1 percent point results in a decrease of the chance of

income shifting with 0,1 to 0,3 percent points. These effects are more in line with the earlier studies on cross-sectional company data (Goolsbee, 2004).

For Europe, the number of studies is rather limited and mostly related to Scandinavian countries. Pirttilä & Selin (2011) focus on the effects of the introduction of the dual income tax system in 1993 in Norway, which decreased the marginal rates on capital income in a considerable way. The key finding of the study is that though employees exhibit modest, if any, responses to the significant cuts, the opposite is true for the self-employed. Since the authors could not discern any corresponding surge in the total income of the self-employed, they argue that this should be an indication of income shifting. Alstadsæter & Jacob (2014) set up a difference-in-difference analysis to look for income shifting by owner-managers in closely held corporations after the introduction of the 10% dividend tax cut in Sweden in 2006. They find that individuals with a high ownership share, and thus stronger influence on dividend pay-out policies and wage structure, shift more income across bases than owners with minority interests.

More related to the topic of this paper is the study of De Mooij & Nicodème (2008). Based on Eurostat-data for 60 sectors in 17 European countries for the period 1997-2003, they investigate the effect of a change in the CIT rate on the shifting of businesses to more tax favourable corporation forms. In fact, the average European CIT rate decreased between 1985 and 2008 from about 50% to 30%, while CIT-revenues increased in the same period from 2% to 3% of GDP. De Mooij & Nicodème (2008) conclude that a 1% tax rate increase shifts 1% of the businesses to other juridical forms of corporations. Yet, in case of a decrease in the CIT rate equivalent to € 1, net CIT revenues raise with 76 cents, indicating that 24 cents are compensated by a shift of income from PIT to the CIT. However, shifting from the PIT to the CIT is not a budgetary neutral operation: the decrease in the PIT revenues dominates the increase in the CIT revenues.

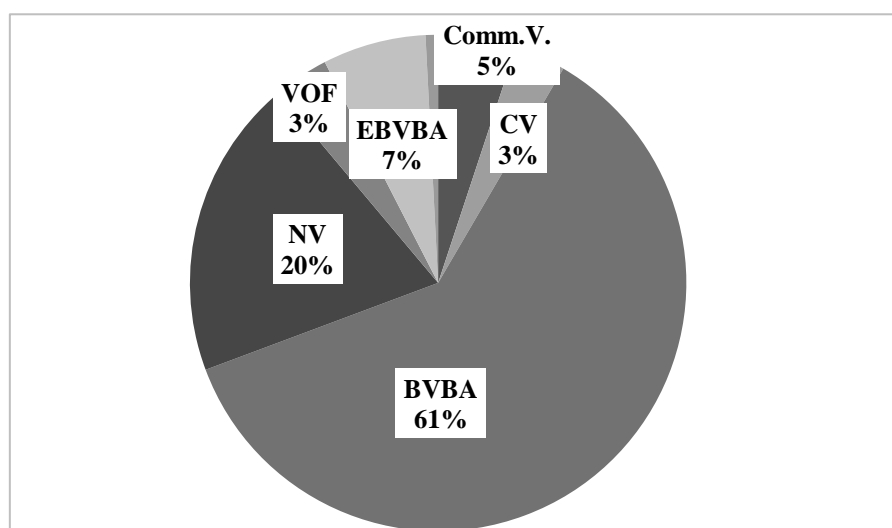
Da Rin et al. (2011) also provide relevant findings. Their study focusses on how the CIT-rates impact on the entry rate of corporations, using Amadeus corporate data for 17 European countries for the period 1997-2004. The study demonstrates that increasing CIT rates result in a drop of the entry rate in a non-linear way.

For Belgium in particular, we do not know of any studies exploring the effects of fiscal reforms on the choice of the corporation form. In this contribution, we focus on the shift from sole proprietorship to corporations who enjoy a more favourable tax treatment. Contrary to former studies, we look for secondary effects of the choice of the corporation form, that might result from tax induced income shifts. Due to the specific allocation of taxing powers in Belgium, changing from one corporate type to another might also affect tax revenues of lower government levels. In fact, sole proprietorships are taxed in the personal income tax, the revenues of which are partially distributed to local governments. Yet, corporations are taxed in the CIT, which uniquely benefits the federal government. Though the determinants of the local income tax were documented before by Bastiaens et al. (2001), Gérard et al. (2010), Goeminne (2009), Goeminne et al. (2009), Heyndels & Vuchelen (1998), Richard et al. (2005) and Van Parys & Verbeke (2007), no attention was given to the specific impact of the changes in corporation forms.

## 1.2. Corporation form and taxes in Belgium

In Belgium, sole proprietorships are distinguished from corporations. According to the Corporation Code, corporations can be run by one or more persons, but the most distinguishing feature is the limited liability. Limited liability implies that the estate of the partners is separated from that of the corporation. In this case the corporation itself has rights and duties resulting in debts and possessions of its own. In corporations going into default, the private estate of a partner of the corporation cannot be addressed to pay the debts of the corporation, contrary to sole proprietorships where the private and the company estate intertwine. Limited liability is the basis of “legal personality”. Several legal persons are identified: a private company with limited liability (‘BVBA’), a public company limited by shares (‘NV’), a limited partnership (with or without share capital) (‘COMMANDITAIRE VP’), a general partnership (‘VOF’), a cooperative society (‘CBVBA’) a private company with limited liability starter (‘S-BVBA’) or a one-man private company with limited liability (‘Eenmanszaak’). Figure 1 illustrates that private companies with limited liability make up more than 60% of all corporate forms.

Figure 1: types of legal persons as a% of the total number of commercial corporations (2013)



Importantly, the tax treatment of sole proprietorships differs from that of corporations. Each corporation with the headquarters located in Belgium is subject to the corporate income tax (CIT) if it possesses legal personality and if its objective is to generate profits. In the CIT, profits are generally taxed at a statutory flat rate of 33,99%. Small and medium enterprises (SME) with a taxable income inferior to € 322.500 enjoy the progressive marginal tax shown in table 1. CIT are due to the Flemish federal government.

Table 1: Belgian corporate income tax brackets for SME (fiscal year 2013)

%	from	Till
24,25	€ 0	€ 25.000
31,00	€ 25.000	€ 90.000
34,50	€ 90.000	€ 322.500

Clearly, the statutory tax rates in table 1 do not reflect the effective PIT rate, due to the large number of deductions and reliefs (Valenduc, 2011; Decoster et al., 2012). Notice that the CEO of corporations remains liable to the personal income taxes (PIT) for the revenues enjoyed as the company manager. In general however the corporation's tax base in the PIT is much smaller than that of sole proprietorships.

Sole proprietorships are only taxed in the personal income taxes (PIT). PIT marginal tax rates are between 25% and 50% (table 2). PIT is a residence-based surcharge tax, levied by the federal, the regional and the local governments. The federal government decides on the tax brackets, the rates and the tax deductions. It is also responsible for the collection of the tax revenues. The regional governments are allowed to increase or decrease, within certain limits, the taxes paid<sup>1</sup>. Local governments levy a surcharge, by means of the so called "aanvullende personenbelasting" (LIT). Due to this local component of the PIT the effective tax rate for corporations can spatially differ to a high extent.

In general, the local income tax mirrors the progressive nature of the federal income tax, affecting the rich proportionally more than the poor. Income shifting leads to a loss of resources for the local governments via the local income tax, when self-employed persons shift from sole proprietorship to corporations. In that case they become liable to pay CIT instead of PIT and local governments do not share the CIT revenues with the federal government, nor are they allowed to levy a surcharge tax on the federal CIT.

Table 2: The Belgian personal income tax brackets (fiscal year 2013)

%	from	till
25,00	€ 0,01	€ 8.350
30,00	€ 8.350	€ 11.890
40,00	€ 11.890	€ 19.810
45,00	€ 19.810	€ 36.300
50,00	€ 36.300	

Figure 2 illustrates that, over time, the implicit rate<sup>2</sup>, reflecting the average effective tax burden for the CIT is definitely inferior to that of the PIT. Based on micro data, the average PIT for self-employed tax payers in Flanders was situated at 10,41% for the fiscal year of 2010 (based on the revenues of 2009)<sup>3</sup>. In addition, important differences between the PIT and the CIT are related to the tax credits, reliefs and deductions. The PIT rates are calculated using IPCAL-data<sup>4</sup> (De Swerdt &

1 However, up to now, only the Flemish regional government has used its taxing power by installing the so called 'jobkorting', a tax reduction of 200-300 euro given from 2007 to 2009 to Flemish citizens active at the labor market.

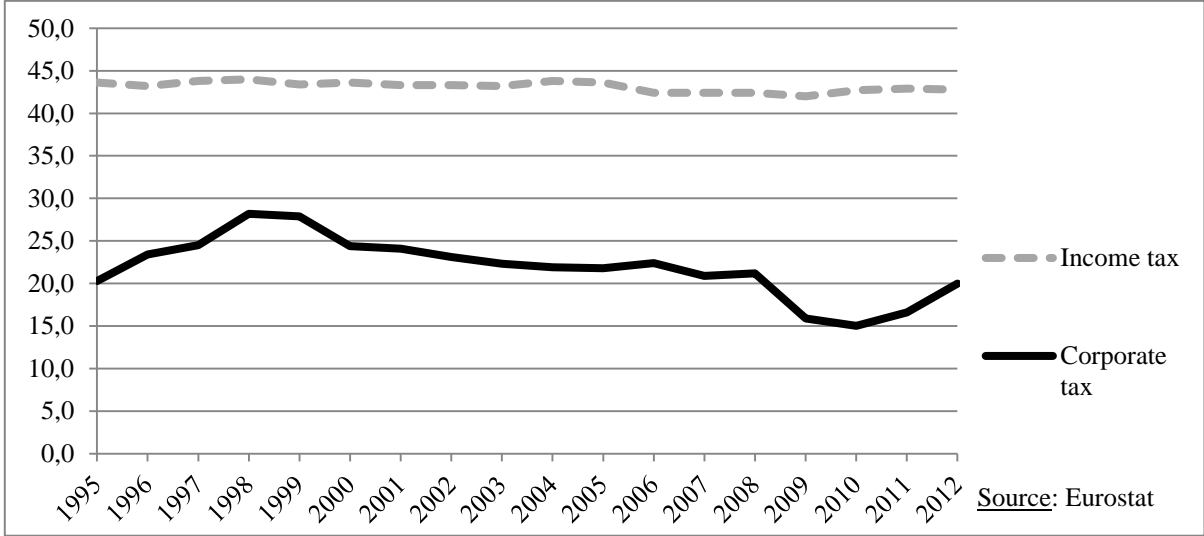
<sup>2</sup> Source: Eurostat, via <http://appsso.eurostat.ec.europa.eu/nui/show.do>

<sup>3</sup> For Belgium as a whole, the average tax rate in the PIT for self-employed tax payers is 11,81%.

<sup>4</sup> The IPCAL-database contains the information of approximately 36.483 PIT tax returns randomly sample within each Region.

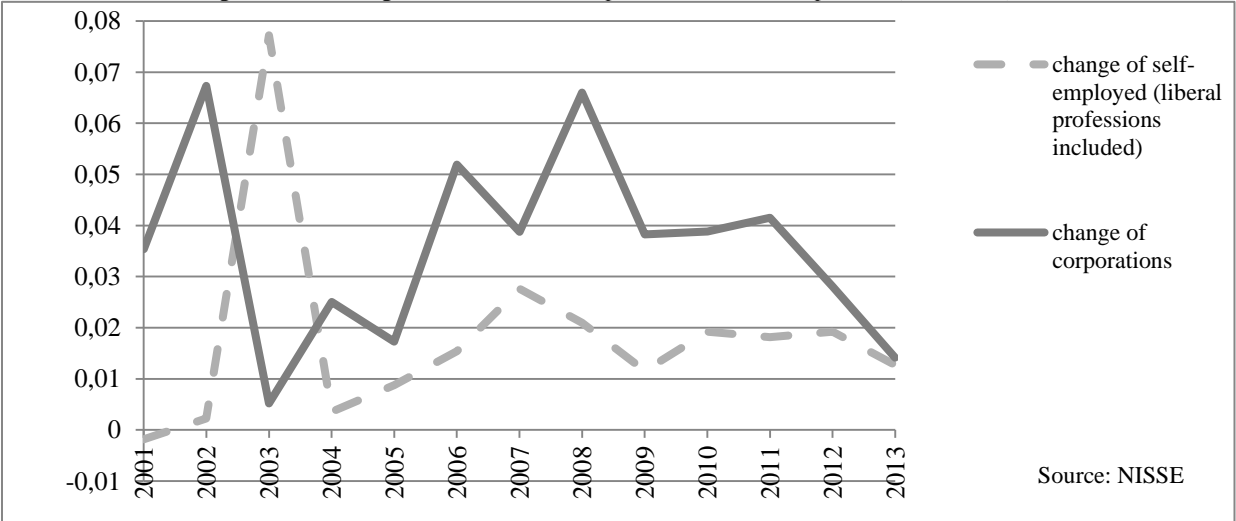
Decoster, 2014). Given the differences in tax burden, entrepreneurs might be driven to shift their income from the PIT to the CIT.

Figure 2: Comparison of the average implicit tax rates in the personal income tax and the corporate income tax



Is there evidence of this kind of corporation shift in Belgium? Clearly, the total number of corporations in Belgium has increased with 51,6% between 2000 and 2011<sup>5</sup>. The number of self-employed persons also shows an increasing though less steep trend (+22% between 2000 and 2011). Looking at the year-to-year change in the number of self-employed persons and corporations, we can conclude that, except for the year 2003, the annual growth in the number of corporations is larger than the growth in the number the self-employed persons (figure 3). As this is a rather rough indication of corporation shift, an econometric analysis was set up to clarify whether this corporation shift might have changed local income tax (LIT) revenues.

Figure 3: The change in the number of corporations and natural persons (2001-2011)



<sup>5</sup> Source: the Statistics Department of the National Institute for the Social Security of the Self-Employed (NISSE).

## 2 METHODOLOGY

To investigate whether income shifting from the PIT to the CIT has affected the local revenues from the income tax, the following general specification was estimated:

$$\begin{aligned}
 LIT\_CAP_{i,t} &= \alpha + \beta_1 LIT\_RATE_{i,t-1} + \beta_2 LIT1\%_{i,t-2} + \beta_3 LIT\_DEP_{i,t-1} + \beta_4 NCY\_CAP_{i,t-2} + \\
 &\beta_5 NP\_STOP_{i,t-2} + \beta_6 LP\_START_{i,t-2} + \beta_7 INHAB_{i,t} + \beta_8 DEBT_{i,t} + \beta_9 UNEMPL_{i,t} + \\
 &\beta_{10} YOUNG_{i,t} + \beta_{11} OLD_{i,t} + \beta_{12} Y09 + \beta_{13} Y10 + \beta_{14} Y11 + \beta_{15} Y12 + \beta_{16} Y13 + u_{i,t}
 \end{aligned}$$

i representing the municipality and t the time component (2005 - 2013) and

LIT_CAP	Per capita revenues of local income tax (in euro)
LIT_RATE	The local income tax rate
LIT1%	The revenue of 1% of the LIT per capita (in euro)
LIT_DEP	The percentage of the LIT revenues in relation to the total revenues
NCY_CAP	The total number of companies (natural persons and legal persons) per capita
NP_STOP	The percentage of natural persons that stopped the business
LP_START	The percentage of start-ups of legal persons
INHAB	The number of inhabitants
DEBT	The per capita long term debts in € 1.000
UNEMPL	The percentage of inhabitants that are unemployed
YOUNG	The percentage of inhabitants that are below 20
OLD	The percentage of inhabitants that are over 64
Y09	Dummy variable: equals 1 for the data of year 2009 and 0 else
Y10	Dummy variable: equals 1 for the data of year 2010 and 0 else
Y11	Dummy variable: equals 1 for the date of year 2011 and 0 else
Y12	Dummy variable: equals 1 for the data of year 2012 and 0 else
Y13	Dummy variable: equals 1 for the data of year 2013 and 0 else

To indicate the level of tax shifting, data is needed at the company level revealing when the business started up under which regime, and when, eventually, it changed its corporate statute. However such specific micro data on the individual behaviour of firms concerning entry, exit or the switch to other corporate forms is not available. Therefore we do not directly measure the effect of income shifting. Rather, we use proxies to indicate the effect of the shift in corporation form that might be induced by income shifting motives.

The variables of interest in the analysis are NP\_STOP (% of natural persons that terminates the business) and LP\_START (% of start-ups of legal persons). Both were lagged 2 years to take into account the process of tax filing. When a natural person stops his activities in year t-2, this will affect the revenues of the natural person in the same year, but depending on the precise moment of exit, this will be recorded in the tax declaration of year t-1 or year t. According to the fiscal administration a 2 year lag is the most appropriate one.

As for NP\_STOP, a negative coefficient is expected. Since natural persons are taxed in the local income tax, a higher percentage of exits by this type of companies will result in lower revenues from the local income tax (LIT) for communities. If the business is not continued the LIT base might also



be affected by the loss of local employment. Yet, it might also be realistic to find no effect at all. This might be the case if natural persons were generating losses instead of profits in the past.

The percentage of company start-ups of a legal person (LP\_START) contains totally new start-ups as well as companies shifting from sole proprietorship to a corporate form. Whereas the first type of starters only influences the potential growth of the tax base, the latter might clearly decrease the LIT. Yet, in case the start-up of a corporation leads to a local increase in employment, this might generate higher revenues of the local income tax per capita. The sign is therefore inconclusive a priori.

Obviously, local tax revenues do not only depend on the tax rate (LIT\_RATE), but also on the community's fiscal capacity. For the local income tax, this is measured as the tax revenue per capita of one percent local income tax (LIT1%). This measure is preferred to the average income per capita as it allows to take into account the progressiveness of the federal income tax (Van Parys & Verbeke, 2007). Both coefficients are expected to show positive signs.

The dependence on the income tax by the local government (LIT\_DEP(-1)) and the level of debt (DEBT) are introduced in the regressions based on Goeminne et al. (2009). This study revealed that the local income tax rate of Flemish communities is clearly related to the mix of tax revenues and to the locality's solvency rate. Since the higher dependence on income tax coincided with higher tax rates we expect this to result in higher tax revenues when controlling for the tax base. The same holds for the level of debt.

Former studies on Flemish/Belgian local taxes showed that the level of the income tax revenues reflects the needs of the citizens living in the community, in terms of schools, services for elderly and social support for the unemployed (Bastiaens et al., 2001; Gérard et al., 2010; Goeminne, 2009; Heyndels & Vuchelen, 1998; Richard et al., 2005; Van Parys & Verbeke, 2007). Hence three indicator variables (YOUNG, OLD, UNEMPL) were adopted. The coefficients for the % of citizens younger than 20 (YOUNG) and older than 64 (OLD) showed positive signs in former analyses. For UNEMPL a negative sign is expected, as this group generally pays very little or no income tax. INHAB, representing the number of inhabitants, controls for scale effects.

NCY\_CAP controls for the total number of companies (natural persons and legal persons) per capita in a community. It indicates the local policy towards entrepreneurship. A positive sign is expected: an increase in the number of companies might increase the number of jobs and local income.

The dummy variables Y09, Y10, Y11, Y12, Y13 were introduced to capture possible effects of the crisis.

The data used in this analysis cover the period 2005-2013<sup>6</sup> for all 308 Flemish municipalities. Descriptive statistics and data sources were reported in Appendix 1 and 2.

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<sup>6</sup> Data for earlier periods are not trustworthy according to the administrative body that collects the data.

### 3 EMPIRICAL RESULTS

Before estimating the main specification, panel regressions were set up to more closely identify the relation between starters and terminated businesses. Given the rupture in the number of corporations raised since 2008 (see figure 3), we explicitly control for the post-financial crisis era. Based on the Hausman-test, cross-section fixed effects estimations including different time lags were adopted.

The results in table 3 support the fact that the trend of the number of start-ups of legal persons is significantly related to the trend in shutting down the business by natural persons. The effect of NP\_STOP is identified in the same year, but also for the lagged variables. The positive sign indicates that when natural persons are disappearing, the number of legal persons on the contrary increases. This is what we expect to find in a context of income shifting.

Table 3: Fixed cross sections panel estimation results<sup>7</sup>  
Dependent variable = LP\_START

Independent variables	beta	sign.
Intercept	-0,01 (0,01)	
NP_STOP	0,18 (0,06)	***
NP_STOP(-1)	0,10 (0,06)	*
NP_STOP (-2)	0,78 (0,06)	***
NP_STOP (-3)	0,30 (0,07)	***
Y09	-0,03 (0,00)	***
Y10	-0,02 (0,00)	***
Y11	-0,02 (0,00)	***
Y12	-0,04 (0,00)	***
Y13	-0,05 (0,00)	***
R-squared		0,26
Adjusted R-squared		0,16
N		2464
Period		2005 – 2013
Cross sections		308

<sup>7</sup> Standard errors in parentheses; \*\*\*= p<0,001; \*\*=p<0,05; \*=p<0,10.

Next, we tested the main effects without specifying the control variables. Table 4 shows that the NP\_STOP variable has a negative coefficient. As sole proprietorships are closing down, the per capita local tax income is negatively affected with a time lag of two years. The second variable of interest, NP\_START equally shows a negative sign, but the coefficient is not statistically significant (p=0,58).

Table 4: Fixed cross section panel estimation results  
Dependent variable= LIT\_CAP

Independent variables	beta	sign.
Intercept	247,31 (2,31)	***
NP_STOP(-2)	-73,45 (36,7)	**
NP_START(-2)	-6,92 (12,47)	
Y09	61,19 (1,72)	***
Y10	43,86 (1,72)	***
Y11	55,00 (1,75)	***
Y12	26,61 (1,71)	***
Y13	12,80 (1,77)	***
R-squared		0,88
Adjusted R-squared		0,86
N		2411
Period		2005 – 2013
Cross sections		308

We now proceed with including the specific control variables that affect the local tax revenues as identified in the literature (see table 5). Related to the key variables, we find that the exit of sole proprietorships (NP\_STOP(-2)) negatively affects local income tax revenues. Next, LP\_START(-2) now shows the expected significantly negative coefficient but only at the 0.10 level (p-value=0,09). An increase in the number of starting corporations decreases the per capita income tax revenues of the local governments.<sup>8</sup>

<sup>8</sup> Leaving out the cases with zero income tax revenues per capita (n=2329) did not change the outcomes of the regression in a substantial way. The results of this robustness check are reported in Appendix 3.

Table 5: Fixed cross section panel estimation results  
 Dependent variable= LIT\_CAP

Independent variables	beta	sign.
Intercept	72,99 (41,89)	*
LIT_RATE (-1)	36,02 (1,87)	***
LIT1% (-2)	0,28 (0,17)	*
LIT_DEP (-1)	-3,76 (3,79)	
NP_STOP (-2)	-116,22 (32,9)	***
LP_START (-2)	-24,36 (12,59)	*
NCY_CAP (-2)	36,07 (228,29)	
INHAB	0,00 (1,80)	
DEBT	6,82 (1,82)	***
UNEMPL	-1641,03 (216,09)	***
YOUNG	-246,19 (113,62)	**
OLD	-60,95 (93,07)	
Y09	62,80 (1,65)	***
Y10	44,95 (1,78)	***
Y11	50,34 (2,39)	***
Y12	21,67 (2,35)	***
Y13	9,57 (2,82)	***
R-squared	0,91	
Adjusted R-squared	0,90	
N	2337	
Period	2005 - 2013	
Cross sections	308	

As for the control variables, the analysis shows that the income tax revenues are larger in more populated localities (INHAB), but the locality's scale has no significant impact. As expected, higher tax rates (LIT\_RATE) and more fiscal capacity (LIT1%) increase the locality's tax revenues. Increasing numbers of young citizens (YOUNG) and higher unemployment rates (UNEMPL) coincide with lower levels of income tax revenues. The variable representing the debt levels (DEBT) shows the expected sign and significantly affect the local tax revenues from the income tax. The coefficients of the degree of tax dependency (LIT\_DEP(-1)) and the density of companies (NCY\_CAP) are not significant.

## 4 CONCLUSION

Income shifting induced by non-neutral tax systems has received considerable attention in the US and in Scandinavian countries. As Alstadsæter & Jacob (2014) stated, income shifting might affect the economy in several ways. First, there is the general decrease in tax revenues. Secondly, they point to the increase in income inequality, as more wealthy individuals seem to benefit to a larger extent from the benefits of income shifting. Finally, they also refer to the fact that it results in misleading statistics when tax base are evaluated for specific taxes, rather than looking to the tax system more globally.

In this study, we focus on yet another aspect of income shifting. We argue that the change in corporation form due to the more favourable tax treatment of certain company forms might also affect the revenues of other levels of government. We focus on the effects on the revenues of the local income tax (LIT). We investigate how the discontinuation of sole proprietorships and start-ups of legal persons influence the revenues of the local income tax (LIT) for the local governments.

Ideally, this analysis should be based on firm level data, identifying when an enterprise came into business and when it switched to a corporate form or left the sector. Unfortunately, this kind of data is not available for Belgium. Therefore the impact of income shifting was investigated using data aggregated at the level of the community. The panel contains information on the number of start-ups and the number of exits of natural and legal persons for all 308 Flemish communities. It covers the period 2005-2013.

Based on these aggregated data we find that the exit of sole proprietorships significantly impacts the creation of legal persons, which is in line with what is expected if income shifting should occur. In addition, the per capita revenues from the local income tax (LIT) are negatively affected by the exit of natural persons. Importantly, the analysis shows that the establishment of new corporations results in a significant decrease in the local per capita revenues of the local income tax (LIT), when controlling for community fixed effects and economic conditions.

Though the analysis suggests that the corporate form matters for the local tax revenues, a lot of issues need further investigation. Further research should focus on how the shift in corporate forms affects the local labour market. Up to now it is not clear whether natural and legal persons show comparable levels of job creation. Could it be the case that legal persons themselves are no longer included in the income tax base but that this is compensated by the income of their employees living in the community? In addition, distinguishing specific legal persons should further increase the insights concerning the effect of the choice of the corporate form on local tax revenues.

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## APPENDIX 1: DESCRIPTIVE STATISTICS

	LITR_REV/P...	LITR(-1)	TBASE_LIT(-2)	TDEP_LIT(-1)	OND_LS_T...	OND_LS_N...	OND_LS_R...	POP	DEBTC1000	UNEMPL	YOUNG	OLD
Mean	266.6958	7.148267	35.81541	0.246032	0.073286	0.067575	0.063497	19953.39	0.998388	0.019565	0.222467	0.179581
Median	264.3646	7.500000	34.78000	0.246934	0.070681	0.067233	0.060976	14094.00	0.940622	0.018648	0.223202	0.178369
Maximum	733.9463	9.500000	94.10000	6.283162	0.212500	0.181818	2.000000	507911.0	7.567602	0.050026	0.276350	0.307493
Minimum	0.000000	0.000000	0.000000	0.000000	0.038416	0.000000	0.000000	80.00000	0.000000	0.007196	0.082353	0.075000
Std. Dev.	66.54416	1.140910	8.852689	0.143148	0.017103	0.019307	0.044644	31368.70	0.584000	0.006217	0.018112	0.022473
Skewness	0.021459	-2.688758	0.537844	32.06613	1.437079	0.208236	35.00008	10.53889	1.831298	1.109780	-0.804631	1.176358
Kurtosis	5.884895	15.63650	5.188545	1355.107	8.291017	3.676959	1516.327	142.3933	14.14342	5.039444	6.909068	7.730145
Jarque-Bera	810.5941	18364.81	579.0727	1.78E+08	3530.393	61.51391	2.23E+08	1935305.	13397.86	884.7278	1740.144	2717.692
Probability	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	623268.0	16705.50	83700.61	574.9779	171.2688	157.9218	148.3932	46631077	2333.232	45.72311	519.9057	419.6799
Sum Sq. Dev.	10344102	3040.715	183072.6	47.86750	0.683290	0.870742	4.655916	2.30E+12	796.7077	0.090279	0.766313	1.179790
Observations	2337	2337	2337	2337	2337	2337	2337	2337	2337	2337	2337	2337

## APPENDIX 2: DATA SOURCES

<u>Data</u>	<u>Source</u>
The revenues of the local income tax (the dependent variable in the analysis)	Statistics from the Flemish government, <a href="http://aps.vlaanderen.be/lokaal/beleidsplannen/gemeentelijke-profielschets.html">http://aps.vlaanderen.be/lokaal/beleidsplannen/gemeentelijke-profielschets.html</a>
The data concerning the period 2006-2011	Statistics from the Flemish government, <a href="http://aps.vlaanderen.be/lokaal/beleidsplannen/gemeentelijke-profielschets.html">http://aps.vlaanderen.be/lokaal/beleidsplannen/gemeentelijke-profielschets.html</a>
The number of corporations and self-employed or sole proprietorships.	Statistics Department of the National Institute for the Social Security of the Self-Employed
The implicit rates of the personal income tax (PIT) and corporate income tax (CIT).	Eurostat, <a href="http://appsso.eurostat.ec.europa.eu/nui/show.do">http://appsso.eurostat.ec.europa.eu/nui/show.do</a>
Micro data of the tax rate of the PIT. The IPCAL-database contains the information of approximately 36.483 personal income tax files; random sample for each Region.	Federal Department of Finance

### APPENDIX 3: ROBUSTNESS CHECK

Fixed cross section panel estimation results for subsample (LIT\_CAP>0)  
 Dependent variable= LIT\_CAP

Independent variables	beta	sign.
Intercept	75,83 (41,90)	*
LIT_RATE(-1)	36,14 (1,87)	***
LIT1%(-2)	0,03 (0,19)	
LIT_DEP(-1)	-3,83 (-1,01)	
NP_STOP(-2)	-117,80 (-3,58)	***
LP_START(-2)	-23,83 (12,59)	*
NCY_CAP(-2)	57,50 (228,92)	
INHAB	8,55E <sup>-05</sup> (0,00)	
DEBT	7,03 (1,81)	***
UNEMPL	-1650,69 (216,09)	***
YOUNG	-255,77 (113,64)	**
OLD	-34,05 (93,87)	
Y09	63,06 (1,66)	***
Y10	44,99 (1,79)	***
Y11	52,61 (2,53)	***
Y12	23,10 (2,42)	***
Y13	11,41 (2,91)	***
R-squared	0,901	
Adjusted R-squared	0,89	
N	2329	
Period	2005 - 2013	
Cross sections	307	