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Sophie Paradis

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diplomatische akademie wien
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ABSTRACT

The past decades have witnessed increasing concern over the rate of corporate taxation imposed by national governments. The global trend of decreasing corporate taxation lends support to the theory that jurisdictions are lowering their rates in proportion to that of their neighbors in order to maintain what has become an increasingly mobile tax base. This has instilled fear in some policy makers that corporate tax rates could be competed down to zero, thereby limiting national governments' ability to provide public goods and shifting the tax burden to less mobile tax bases such as that of labor.

This concern is one held by the European Commission who along with the OECD is the greatest supporter of increased coordination in the area of corporate taxation. However, the European Commission has yet to make any leeway in this area across the European Union. One of the main factors limiting the Commission's ability to progress is the unanimity rule. So far, member states have not been able to come to a unanimous decision on relinquishing some powers over direct taxation to the European Union. This not only reflects the wish of many states to retain full control over their tax policies, but also puts to question whether member states themselves view tax competition as harmful, an opinion that has steadily been contended by the European Commission.

While corporate tax rates have indeed been on the decline across the European Union over the past decades, empirical research has shown that corporate tax revenues have remained fairly stable. Thus far, the dreaded race to the bottom has not materialized and there remains a great degree of variation between the different statutory tax rates of individual member states.

This study begins with a review of the theoretical literature on corporate tax competition in order to identify a multitude of economic and political factors that may help explain these differences. We then put tax competition theory to the test by conducting an empirical investigation of the relationship between domestic factors and statutory corporate tax rates across all 28 EU member states for the years 1995 through 2014. Our findings suggest that while population size, openness and an aging population are all significantly correlated to the statutory tax rate set by governments, political constituency costs such as partisan politics have no effect. On the other hand, we find the complexity of a member state's political structure to be positively and significantly correlated to statutory corporate tax rates. With these results in mind, we conclude with a short discussion on the future of corporate tax coordination within the European Union.

Keywords: Corporate Tax Rates, Asymmetric Tax Competition, Capital Mobility, Openness, Integration, Political Constituency Costs, Political Transaction Costs

RESÜMEE

In den vergangenen Jahrzehnten zeigte sich eine zunehmende Besorgnis über die Besteuerung von Firmen durch die nationalen Regierungen. Der globale Abwärtstrend bei der Unternehmensbesteuerung, der auf der ganzen Welt stattgefunden hat, unterstützt die Theorie, dass die Staaten ihren Steuersatz im Verhältnis zu denen ihrer Nachbarn senken, was zu einer zunehmend mobilen Steuerbemessungsgrundlage geworden ist. Dadurch befürchteten einige politische Entscheidungsträger, dass die Körperschaftssteuersätze auf Null fallen könnten, wodurch die Fähigkeit der nationalen Regierungen öffentliche Güter zur Verfügung zu stellen begrenzt werden würde. Dies würde wiederum die Steuerbelastung auf weniger mobile Steuerbemessungsgrundlagen wie Arbeitnehmer verlagern.

Das besorgt die Europäische Kommission, die zusammen mit der OECD einer der größten Unterstützer einer verstärkten Koordination im Bereich der Unternehmensbesteuerung ist. Allerdings machte die Europäische Kommission bis jetzt noch keinen Fortschritt in diesem Bereich. Einer der Hauptfaktoren, welcher die Fortschritte der Kommission einschränkt, ist die Einstimmigkeitsregel. Bisher konnten die Mitgliedsstaaten nicht zu einer einstimmigen Entscheidung über die Abtretung einiger Befugnisse über die direkte Besteuerung in die Europäische Union kommen. Dies spiegelt nicht nur den Wunsch vieler Staaten wider, die volle Kontrolle über ihre Steuerpolitik zu behalten, sondern wirft auch die Frage auf, ob die Mitgliedsstaaten selbst den Steuerwettbewerb als schädlich ansehen. Eine Meinung, die auch von der Europäischen Kommission vertreten wird.

Während die Körperschaftssteuersätze in den vergangenen Jahrzehnten in der gesamten EU rückläufig waren, hat die empirische Forschung gezeigt, dass die Körperschaftssteuereinnahmen relativ stabil geblieben sind. Bisher ist der gefürchtete "Race to the bottom" nicht zustande gekommen, und es bleibt, in einem hohen Maße, bei Abweichungen zwischen den gesetzlichen Körperschaftssteuersätzen der einzelnen Mitgliedsstaaten.

Diese Studie beginnt mit einer Besprechung der theoretischen Literatur über den Körperschaftsteuerwettbewerb, wodurch eine Vielzahl von wirtschaftlichen und politischen Faktoren identifiziert werden können, die dazu beitragen, diese Unterschiede zu erklären. Danach wird die Steuerwettbewerbstheorie überprüft, indem eine empirische Untersuchung der Beziehung zwischen länderspezifischen Faktoren und den gesetzlichen Körperschaftssteuersätzen in allen 28 EU-Mitgliedstaaten für die Jahre 1995 bis 2014 durchführt wird. Die Ergebnisse deuten darauf hin, dass während Bevölkerungsgröße, Offenheit und Alterung der Bevölkerung alle signifikant mit dem Steuersatz von Regierungen korrelieren, politische Wahlkreise so wie politische Ideologien jedoch keine Wirkung haben. Auf der anderen Seite korreliert die Komplexität der politischen Struktur eines Mitgliedstaates positiv und signifikant mit den gesetzlichen Körperschaftssteuersätzen. Mit diesen Ergebnissen vor Augen, beschließen wir das Thema mit einer kurzen Diskussion über die Zukunft der Körperschaftsteuerkoordination in den Mitgliedsstaaten der Europäischen Union.

Schlagwörter: Körperschaftssteuersätze, Asymmetrischer Steuerwettbewerb, Kapitalmobilität, Offenheit, Integration, Politische Ideologie, Politische Struktur

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CHAPTER 1: INTRODUCTION

1.1. BACKGROUND & SIGNIFICANCE OF STUDY

Over the past several decades, both policy makers and academics alike have been tied up in trying to explain the trend of falling corporate tax rates.[1] While capital has become more mobile than ever and with multinational corporations growing in importance, national tax policy has become very consequential.[2] Countries have been persuaded to reduce their tax rates to compete for mobile capital and foreign direct investment. This has especially been the case within the European Union where policy makers are becoming increasingly concerned about the effects of corporate tax competition. According to Devereux and Fuest (2009), the average corporate tax rate in the EU has fallen from 35% to 23% between 1995 and 2009.[3]

Supporters of increased international coordination in corporate taxation claim that tax competition will lead to a race to the bottom, creating one of two potential welfare effects.[4] For one, there is the fear that it will restrain the government's ability to provide public goods.[5] Secondly, as governments reduce tax rates on mobile capital, the tax burden may be shifted to less mobile tax bases such as labor in order to ensure budget neutrality.[6] Both of these effects have a negative impact on income inequality.[7] Though statutory tax rates have indeed declined in the European Union, the empirical research conducted so far shows that corporate tax revenues have remained fairly stable. Nevertheless, the belief that tax competition is harmful is one that is still held by the European Commission. As recently as 2015, the Commission adopted an Action plan on Corporate Taxation, which involved "re-launching the Common Consolidated Corporate Tax Base (CCCTB).[8]

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[1]Michael P. Devereux and Simon Loretz, "What Do We Know About Corporate Tax Competition?," National Tax Journal 66, no. 3 (2013): 745.
[2]Michael P. Devereux and Clemens Fuest, "Corporate income tax coordination in the European Union," Transfer: European Review of Labour and Research 16, no. 1 (2010): 24.
[3]Ibid.
[4]Philipp Genschel, "The Political Foundations of Tax Competition," In 22nd International Conference of Europeanists. Ces, (2015): 2.
[5]Ibid.
[6]Ibid.
[7]Ibid.
[8] "Action Plan on Corporate Taxation," European Commission Taxation and Customs Union, accessed April 2,2017, http://ec.europa.eu/taxation_customs/business/company-tax/action-plan-corporate-taxation_en

Although the Commission has made several attempts over the past decades at coordination in the area of corporate taxation, fiscal policy and in particular the level and types of taxes levied, has retained an individual country control. Nicodème (2006) explains how the European Union's scope of involvement on tax matters remains fairly limited to indirect taxation and tax state-aid.[9] For one, its ability to take action specifically in the area of is constrained by the treaty establishing the European Community.[10] As taxation is not an exclusive competence of the European Union it must abide by the principle of subsidiarity introduced in Article 5 of the *Treaty Establishing the European Community* when taking action in this area.[11] According to Article 5 this means "In areas which do not fall within its exclusive competence, the Community shall take action, in accordance with the principle of subsidiarity, only if and in so far as the objectives of the proposed action cannot be sufficiently achieved by the Member States and can therefore, by reason of the scale or effects of the proposed action, be better achieved by the Community."[12] Another factor, which has restrained the European Commission's ability to progress in this area, is the unanimity rule.[13] So far, it has been impossible to come to a unanimous decision on relinquishing some powers in regards to direct taxation to the European Union. This deadlock reflects the wish of many "member states to retain full control of their tax policies."[14]

If tax competition is in fact as harmful to the member states as the European Commission so strongly believes, one must question why member states have not been able to come to any agreement on better coordination in the area of corporate taxation. As the overall welfare effect of tax competition on income inequality is believed to be negative, it is also puzzling that the democratically elected governments of member states have not felt more pressure from their constituents to agree on a common policy.[15]

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[9]Gaëtan Nicodème, "Corporate Tax Competition and Coordination in the European Union: What Do We Know? Where Do We Stand?," Brussels, Belgium: European Commission, Directorate-General for Economic and Financial Affairs (2006): 8.
[10]Ibid., 7.
[11]Ibid., 7.
[12]Consolidated Version of the Treaty Establishing the European Community art. [5], 2006 O.J. C 321 E/37, at [C325/41] [hereinafter EC Treaty].
[13]Nicodème, 8.
[14]Ibid.
[15]Genschel, "The Political Foundations of Tax Competition", 2.

The answer that seems to best explain the failure of member states to agree on a common policy in the area of corporate taxation can be derived from the asymmetric tax competition model. Tax rates are ultimately only one of many factors multinational corporations take into consideration when deciding where to invest. Nicodème (2007) lists many other features including a country's size, factor endowment, and the existence of agglomeration economies as also having an impact on a firm's investment decisions.[16] The literature on corporate tax competition specifically mentions how the size of an economy strongly affects a country's tax policy preferences.[17] The findings suggest that smaller regions tend to set lower corporate tax rates and that their citizens are essentially under tax competition.[18] Large countries, on the other hand, are faced with a lower elasticity of capital supply then small countries and can therefore afford to set higher rates.[19]

In 1957, six countries signed the treaty of Rome establishing the European Economic Community (EEC) now known as the European Union. Over the next decades it would transform into a union comprising of 28 members. As the union expanded so have the asymmetries between different member states especially in terms of their "economic and financial structures as well as living standards."[20] The first four enlargements, which took place between 1957 and 1995 brought together most of Western Europe. Following the fall of the Berlin Wall in 1989 the European Union was met with the opportunity to finally unite all of Europe. Appel (2011) explains how it not only provided support to the new democracies of Central and Eastern Europe but also offered the prospect of EU Membership.[21] Wanting to fulfill the condition necessary for joining the European Union, post-communist governments began to design their new institutions in a way that would allow them to easily integrate into the European Community as well as emulated the laws and structures of their western neighbors.[22]Appel (2011) goes on to describe

[16]Nicodème, 13.
[17]Sam Bucovetsky, "Asymmetric tax competition," Journal of urban economics 30, no. 2 (1991): 167-181. ; John Douglas Wilson. "Tax competition with interregional differences in factor endowments." Regional science and urban economics 21, no. 3 (1991): 423-451
[18]Ibid.
[19]Ibid.
[20]Lucas Papademos, "Economic Heterogeneity, Convergence and Monetary Policy in an Enlarged Euro Area," The Journal of Economic Asymmetries 1, no. 2 (2004): 2.
[21]Hilary Appel, Tax Politics in Eastern Europe: Globalization, Regional Integration, and the Democratic Compromise (Ann Arbor: University of Michigan, 2011), 2.
[22]Appel, 42.

how even tax policy making in these countries 'began to reflect and ultimately mirror the tax structures required by EU legislation."[23]

Eastern European countries conferred a great deal of policy-making authority to the European Union in the period leading up to accession.[24] This was especially the case in the area of indirect taxation and more specifically taxes levied on consumption.[25] According to Appel (2011), because these states had to follow the *acquis communautaire* when setting their indirect taxes if they wanted to join the European Union "taxes on tens of thousands of goods stood within the EU's domain and aspiring EU members lacked the right to diverge from the EU tax laws and regulations."[26] Appel (2010) further explains how losing autonomy over this particular area of taxation was immense considering taxes levied on consumption make up a large proportion of a countries total tax revenues.[27] This was however not the only area of taxation in which the European Union had input. The EU also had authority over certain areas of direct taxation. East European policymakers, for example, worked hand in hand with the European Commission when developing their tax incentives for corporations in order to ensure that they fell in line with the European Union's competition policy.[28] Ceding some policy-making control especially in the area of taxation somehow was seen by these states as the right price to pay for European Union membership.

After over a decade of negotiations, the European Union underwent its largest single expansion welcoming ten new member states. Of the 10 member states three were "former Soviet Republics (Estonia, Latvia and Lithuania), four were former satellites of the USSR (Poland, Czech Republic, Hungary and Slovakia), one a former Yugoslav Republic (Slovenia), and two were Mediterranean Islands (Cyprus and Malta)."[29] It would then grow again in 2007 with the accession of Romania and Bulgaria. The fact that all of the new members states had low levels of economic development and wealth in comparison to most Western European members meant the EU as a whole would find it increasingly difficult to achieve the goals laid out by the European Council in its Lisbon Strategy. The strategy was aimed at making "the EU the world's most

[23]Ibid., 42.
[24]Ibid., 2.
[25]Ibid., 3.
[26]Ibid., 2.
[27]Ibid., 3.
[28]Ibid., 3.
[29]"The 2004 enlargement: the challenge of a 25-member EU," EUR-Lex, January 23, 2007. http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=URISERV:e50017, paragraph 1.

competitive" economy by 2010."[30] For one, the strategy laid out "the groundwork for a transition to a more competitive, dynamic, knowledge-based economy.[31] Secondly, it looked to "modernize the European social model" by requiring member states "to invest in education and training, and to conduct an active policy for employment."[32] As stated by Slay (2009), "within the European Policy context, tax reform can be seen as consistent with the European Union's Lisbon Agenda for jobs and growth, which seeks to increase economic competitiveness while maintaining traditional European emphases on social cohesion and solidarity."[33] In line with this statement, many of the new EU member states had already started adopting ambitious tax reforms especially in the area of corporate income taxation prior to their accession to the European Union.[34] For reasons previously mentioned this happened to be one area of taxation in which the European Union could not influence at all.

Nevertheless, the ambitious tax reforms taken by post communist states raised concern among West European leaders who feared that business would flee to those countries in order to take advantage of the lower tax burden.[35]Appel (2001) however states that East European leaders insisted that low corporate tax rates were necessary if they were to be able to compete against the larger more developed members for foreign direct investment.[36] Though many of the West European members initially condemned the low tax policies of their Eastern neighbours and pushed for greater harmonization, they eventually followed suit.[37] The fear became that this would lead to a race to the bottom in corporate tax rates. A large proportion of the academic literature supports this belief describing tax competition as an almost inevitable process in which governments are essentially forced to reduce their corporate tax rates in response to increasing capital mobility or tax cuts in neighbouring countries.

Although studies conducted by Ruding (1992) and Genschel, Kemmerling and Seil (2011) have found that statutory tax rates across Europe have indeed been falling over the past decades,

[30]"Glossary Lisbon Strategy," Eurostat, accessed April 25, 2017, http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Lisbon_Strategy.
[31]Ibid.
[32]Ibid.
[33]Ben Slay, "Some Early Lessons on Tax and Social Policy Reform from New EU Member States,"(discussion paper prepared for the "Tax Policy Options in the Wake of EU Accession for Turkey" conference Ankara, January 11-12, 2009).
[34]Appel, 78.
[35]Ibid.
[36]Ibid.
[37]Ibid., 80.

there still remains large differences in corporate tax rates across member state. [38]While some of the variation in corporate tax rates across Europe may be explained by economic asymmetries between different member states there is also reason to believe that political factors may also contribute to the variation in patterns of corporate taxation within the European Union. Partisan politics, for one, tells us that normally left-wing parties look to please a poorer electorate and therefore "promote redistributive spending and a higher level of public expenditure."[39]On the other hand, right wing parties normally promote "efficiency of the market by minimizing the size of government."[40] One would, therefore, expect a left wing government to pursue a "high-tax, large spending policy" while a right wing party would be more likely to pursue a "conservative low tax policy."[41] Though partisan politics may help explain the patterns of corporate tax competition its effect may not be a large as one would expect. This is because the ability of a left wing government to impose a higher tax, especially on corporations may be somewhat constrained by the threat of capital flight. The effect may be even weaker if the size of the capital stock in the country is small.[42] If the tax base is not big enough to fund redistribution, one may expect left wing parties to also pursue a more conservative low tax policy.[43] Ganghof (2006) adds that when "socio-economic constraints are tight, parties policy preferences are likely to converge."[44] For all the reasons mentioned above, we may therefore expect partisan politics to have little influence on the corporate tax policy decisions of European Union Member States.

Partisan politics is however only one of many political factors that could help explain the variation in corporate tax rates across Europe. Buchanan (2008) for one, outlines different elements of a country's political structure that may influence a government's ability to achieve its objectives.[45] Some of these political structures include the separation of power, federalism,

[38]Ruding Committee, Report of the Committee of Independent Experts on Company Taxation, Office for Official Publications of the European Communities, Luxembourg, (1992); Philipp Genschl, Achim Kemmerling, and Eric Seils, "Accelerating downhill: How the EU shapes corporate tax competition in the single market," JCMS: Journal of Common Market Studies 49, no. 3 (2011): 585-606.
[39]Steffen Osterloh and Marc Debus, "Partisan Politics in Corporate Taxation," European Journal of Political Economy 28, no. 2 (2012): 194.
[40]Hyeon S.Park, "Partisan politics and corporate tax competition for foreign investment," (Ph.D. Doctor of Philosophy thesis, University of Iowa, 2012), 9.
[41]Ibid.
[42]Ibid., 71.
[43]Ibid., 9.
[44]Steffen Ganghof, The Politics of Income Taxation: A Comparative Analysis (Colchester: European Consortium for Political Research Press, 2006), 141.
[45]James M. Buchanan, "Same Players, Different Game: How Better Rules Make Better Politics," Constitutional Political Economy 19, no. 3 (2008): 171-79.

legislative supremacy, and the limits placed on legislators by the constitution and the legal system.[46]Therefore along with economic factors and the influence of partisan politics, the political structure of countries may also have an effect on corporate tax rates across Europe.

This thesis will analyze whether economic and political factors may help explain the differences in statutory corporate tax rates across European Union member states between 1995 and 2014. Although, many studies have analyzed the economic and political determinants of corporate tax rates, few have analyzed both in unison. Of those studies that have taken both economic and political factors into consideration most have focused on either OECD countries or developed nations. Unlike these other studies, this study will concentrate solely on changes in statutory corporate tax rates across European Union member states. Of course analyzing only statutory tax rates has its limitations and drawbacks. As Devereux and Loretz (2013) explain, normally "flows of capital depend on effective marginal tax rates" while "discrete investment decisions depend on effective average tax rates and profit shifting on statutory tax rate." [47]Despite the obstacles imposed by using this method, observing changes in statutory corporate tax rates is still useful. For one, it has been proven that tax competition over statutory tax rates "significantly affects national tax policy".[48]Mintz (2002) also states that when marginal effective tax rates were used "to measure the impact of taxation on capital investment… that statutory corporate tax rates were far more important in explaining the differences among countries, than differences in the tax base."[49] Furthermore, Huizinga and Laeven (2008) have found evidence that multinational corporations take statutory tax rates into consideration when deciding on where to allocate their profits.[50]

As the European Commission continues to push for greater coordination in the area of corporate taxation, there seems to be some merit in analyzing the domestic determinants of corporate tax rates across European Union member states. The fifth and sixth enlargement of the European Union is believed by some academics to have intensified tax competition. Though this may be the case there remains large differences in the level of statutory corporate tax rates set

[46]Ibid.
[47]Devereux and Loretz, "What Do We Know About Corporate Tax Competition", 753-754.
[48]Michael Overesch and Johannes Rincke, "What Drives Corporate Tax Rates Down? A Reassessment of Globalization, Tax Competition, and Dynamic Adjustment to Shocks," Scandinavian Journal of Economics (2011): 580.
[49]Jack M. Mintz, "Company taxation and the internal market," CESifo Forum, vol. 1, no. 2002, 2002: 4.
[50]Harry Huizinga and Luc Laeven, "International Profit Shifting within Multinationals: A Multi-country Perspective," Journal of Public Economics 92, no. 5-6 (2008): 1180.

across member states. Can these be explained by domestic economic and political factors? If this is the case, and governments are designing corporate tax policy to best suit the socio-economic position of their country and preferences of their constituents, then they may not themselves view corporate tax competition as harmful.

Many previous empirical studies have analyzed the legitimacy or corporate tax competition theory. A large majority of these studies have done so by analyzing the economic or political determinants of corporate tax rates across developed nations. The study sample used in the majority of this empirical research often consists of either a range of OECD countries or European Union member states. Few have however examined both economic and political determinants[51] in unison and none as we can tell have done so solely across European Union member states. Unlike the miniscule amount of studies, which have examined, both sets of determinants we focus solely on the effects they may have on the statutory corporate tax rates of European Union member states. This study therefore contributes to the existing empirical literature on corporate tax competition by providing a more comprehensive image of the domestic determinants of corporate tax policy in the European Union. By analyzing, which domestic determinants seem to most influence the corporate tax burden we hope to get a better image of whether coordination across the European Union is likely to gain unanimous support in the future.

1.2. RESEARCH QUESTION

Can the differences in statutory corporate tax rates across European Union member states be explained by domestic economic and political factors?

1.4 ORGANIZATION OF STUDY

The structure of this thesis is as follows: the second chapter presents a review of the theories of tax competition. It further dives into the different empirical studies of tax competition, primarily focusing on the different factors that affect corporate tax policy decisions. The third chapter focuses on the research design. The results of the study are presented in the fourth chapter. The fifth and final chapter concludes with a short discussion on the future of corporate tax coordination within the European Union.

[51]Political determinants refers to both constituency and transaction costs

CHAPTER 2 - LITERATURE REVIEW

2.1. THEORIES OF TAX COMPETITION

Academic literature on the effects of uncoordinated tax policies between different jurisdictions can be traced back over decades. As early as 1956, Tiebout proposed a model where different local jurisdictions had distinct revenue and expenditure patterns.[52] His theory was that given these patterns, citizens ultimately vote with their feet and move to the community that best satisfies their preference in terms of taxes and public goods.[53]

Baskaran and Lopes da Fonseca (2014) explain how "the modern literature on tax competition" has moved away from Tiebout's model, with the focus shifting to the idea that jurisdictions poach each other's tax bases by lowering their tax burdens.[54] The idea was first introduced by Bradford and Oates (1971) and Oates (1972).[55] Though both do not provide formalized tax competition models, they arrive at similar conclusions, explaining that tax competition leads to an under provision of public goods.[56] The idea put forward by Bradford and Oates (1971) is that under a federal system, states and local governments must compete to attract both new residents as well as business investment.[57] Therefore, a fear arises among governments that raising tax rates would discourage new entrants.[58] While this may sound quite logical, such a pessimistic conclusion relies heavily on the assumption that governments act as benevolent dictators whose primary interest is to maximize the welfare of their citizens.[59] It is also difficult to declare what actually constitutes an under provision of public goods without any knowledge of what the optimal level of public goods is. [60]

Brennan and Buchanan (1980) present an opposing view to the above theory.[61] Rather than portraying governments as benevolent dictators, they argue that governments are revenue-

[52]Charles M.Tiebout, "A Pure Theory of Local Expenditures," Journal of Political Economy 64, no. 5 (1956): 420.
[53]Ibid., 418.
[54]Thushyanthan Baskaran and Mariana Lopes Da Fonseca, "The Economics and Empirics of Tax Competition: A Survey and Lessons for the EU," Erasmus Law Review, no.1 (2014): 5
[55]David F. Bradford and Wallace E. Oates, "The Analysis of Revenue Sharing in a New Approach to Collective Fiscal Decisions," The Quarterly Journal of Economics 85, no. 3 (1971): 416-439; Wallace E. Oates, Fiscal Federalism (New York: Harcourt Brace Jovanovich, 1972).
[56]Baskaran and Lopes Da Fonseca, 5.
[57]Bradford and Oates, 432.
[58]Ibid.
[59]Devereux and Loretz, "What Do We Know About Corporate Tax Competition", 747.
[60]Ibid.
[61]Geoffrey Brennan and James M. Buchanan, The power to tax: Analytic foundations of a fiscal constitution (Cambridge: Cambridge University Press, 1980).

maximizing Leviathans.[62] Their model assumes that governments look to maximize revenues from all sources of taxation accessible to them and that if there are no rules on how this revenue is to be spent then it simply falls into the pockets of government officials.[63] In this case, tax competition is seen as being beneficial as it prevents governments from getting too big.

It was not until the mid 1980's that formal models of tax competition arose. One model introduced by Zodrow and Mierskowski (1986), commonly referred to in the literature as the "standard tax competition model", complies with the general belief that governments are benevolent actors.[64] In this model, a large number of identical jurisdictions look to provide a public good in which the only method of financing it is through a tax on mobile capital. Talpos and Crâsneac (2010) explain that the model is oversimplified as it makes several restraining assumptions.[65] For one, it assumes "a large number of homogeneous jurisdictions", in which the population of each is fixed and "residents have identical tastes and incomes."[66] The model also assumes that there is "a fixed national capital stock that is perfectly mobile across jurisdictions" and that labor is immobile.[67] The model predicts that the result of such a scenario will be a reduction in tax rates across jurisdictions and therefore an under provision of public goods.[68]

Over the years, many have extended or altered the standard tax competition model in different ways while maintaining the view that tax competition leads to sub-optimally low rates on mobile factors. Wildasin (1988) analyzes strategic interaction between only a small number of identical jurisdictions. The model takes into consideration that competitive pressure can influence not just tax rates but also expenditure levels. As both tax rates and expenditure levels go hand in hand, it is plausible that governments actually choose the level of expenditures first and then set the tax rate accordingly. Governments would therefore avoid raising expenditures, as it would entail an increase in the tax rate causing capital to flee the jurisdiction. In a scenario where there are few jurisdictions, and public expenditures are used as the strategic variable, tax rates become strategic substitutes. Therefore, if a neighbor reduces its tax rate rather then try and compete for

[62]Ibid.,26.
[63]Ibid.,26.
[64]George R. Zodrow and Peter Mieszkowski, "Pigou, Tiebout, Property Taxation, and the Underprovision of Local Public Goods," Journal of Urban Economics 19, no. 3 (1986): 356-70.
[65]Ioan Talpos, and Alexandru O. Crâsneac, "The Effects of Tax Competition," Theoretical & Applied Economics 17, no. 8 (2010): 42.
[66]Ibid.
[67]Ibid.
[68]Ibid.

mobile capital by doing the same, one would rather increase its rate to maintain its expenditure level.[69]

Bucovetsky (1991) and Wilson (1991), on the other hand, analyze strategic interaction between asymmetric jurisdictions.[70] Both establish that size, in terms of population, is an important factor in determining whether a jurisdiction will benefit from tax competition. As large countries are essentially faced with a lower elasticity of capital supply then small countries they can afford to set a higher tax rate.[71] Smaller regions on the other hand set lower tax rates on mobile factors in equilibrium and their citizens are essentially better off than those of larger jurisdictions under tax competition.[72] Kanburi and Keen (1993) also investigate asymmetric tax competition and conclude that if tax competition is unrestricted, smaller countries have a tendency of setting lower tax rates than larger countries. Though this may initially lead to a loss in corporate tax revenues this is normally more then offset by the revenue gains from cross-border shopping. On the other hand if a large country were to reduce its tax rate it would only receive a small amount of capital in per capita terms.[73]

Gordon (1992) establishes a Stackelberg leadership model to analyze tax competition. A large capital exporter, for example the United States, provides a tax credit to its domestic companies for any capital income taxes they have already paid abroad. In such a scenario, small capital importing countries are encouraged to tax capital imports at the same rate as the large capital exporter. This allows the large country to set the capital income tax rate worldwide, as well as prevents its residents from investing their entire capital abroad.[74] Haufler and Wooton (1999) also argue that it is possible for large countries to maintain a positive tax rate.[75] They attribute this to transport costs, which incentivize firms to set up base in larger markets.[76] Ferrett and Wooton (2010) explain that in a case where there are two firms in an industry rather then one

[69]David E. Wildasin, "Nash equilibria in models of fiscal competition," Journal of public economics 35, no. 2 (1988): 229-240.
[70]Sam Bucovetsky, "Asymmetric tax competition," Journal of urban economics 30, no. 2 (1991): 167-181. ; John Douglas Wilson, "Tax competition with interregional differences in factor endowments," Regional science and urban economics 21, no. 3 (1991): 423-451.
[71]Wilson, "Tax competition with interregional differences in factor endowments",424.
[72]Ibid.
[73]Ravi Kanbur, and Michael Keen, "Jeux Sans Frontières: Tax Competition and Tax Coordination When Countries Differ in Size," The American Economic Review 83, no. 4 (1993): 877-92
[74]Roger H. Gordon, "Can Capital Income Taxes Survive in Open Economies?," The Journal of Finance 47, no. 3 (1992): 1159-1180.
[75]Andreas Haufler and Ian Wooton,"Country Size and Tax Competition for Foreign Direct Investment," Journal of Public Economics 71, no. 1 (1999): 121-39.
[76]Haufler and Wooton, 136.

monopolist, both countries are able to impose positive tax rates, as these firms are likely to avoid competition deriving from co-location. [77]

Another interesting branch of literature uses new economic geography models to analyze tax competition in the presence of agglomeration forces. Baldwin and Krugman (2004) explain how rich nations with generous welfare systems funded by high taxes often offer an attractive location for investment. These nations can afford to apply higher tax rates than smaller less developed nations without fear of losing mobile factors of production.[78] Studies conducted by Ludema and Wooton (2000), Kind et al (2000), Anderson and Forslid (2003) similarly concur that due to agglomeration forces greater integration may not necessarily lead to a race to the bottom in corporate taxation.[79]

Persson and Tabellini (1992) evaluate the implications of "economic integration on tax competition."[80] In this model capital is mobile, wealth is distributed unevenly across the population and policymakers are elected democratically.[81] As wealth is unevenly distributed, policymakers are pressured to set positive tax rates and redistribute the revenues collected.[82] These policymakers must also take into account the capital taxes set by other countries.[83] Hence, integration does in fact induce greater capital mobility, lower tax rates as well as limits on government transfer payments.[84] The central message here is that integration has both "economic and political repercussions."[85] Though at first a right wing government may be inclined to lower its capital tax rate, fearing political repercussions, it is likely to shift its political spectrum to the left avoiding further reductions.[86]

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[77]Ben Ferrett and Ian Wooton,"Competing for a Duopoly: International Trade and Tax Competition," Canadian Journal of Economics/Revue canadienne d'Economique 43, no. 3 (2010): 778.
[78] Richard Baldwin and Paul Krugman,"Agglomeration, Integration and Tax Harmonization,"European Economic Review 48, no. 1 (2004): 1-23.
[79]Rodney D. Ludema, and Ian Wooton,"Economic Geography and the Fiscal Effects of Regional Integration," Journal of International Economics 52, no. 2 (2000): 331-57. ; Hans J. Kind, Karen Helene Midelfart Knarvik, and Guttorm Schjelderup, "Competing for capital in a 'lumpy'world," Journal of Public Economics 78, no. 3 (2000): 253-274.; Fredrik Andersson and Rikard Forslid, "Tax Competition and Economic Geography," Journal of Public Economic Theory 5, no. 2 (2003): 279-303.
[80]Devereux and Loretz, "What Do We Know About Corporate Tax Competition",750.
[81]Torsten Persson and Guido Tabellini, "The Politics of 1992: Fiscal Policy and European Integration," The Review of Economic Studies 59, no. 4 (1992): 690.
[82]Ibid.
[83]Ibid.
[84]Ibid.
[85]Persson and Tabellini, 700.
[86]Ibid., 700.

Besley and Case (1995) develop a yardstick competition model where tax rates are determined only by the political process.[87] The model assumes that voters evaluate the performance of their policy maker by comparing them to that of neighboring jurisdictions. The probability of re-election, therefore, depends on both "the jurisdiction's own tax policy as well as that of its neighbors."[88] Besley and Case (1995) assess the probability that voters compare their tax rates to those of other jurisdictions prior to voting by analyzing data on the re-election bids of US governors between 1960 and 1988.[89] They find that an increase in a states tax rate increases the probability of defeat.[90] However, the effect is annulled if neighboring states increase their tax rates at the same time. [91]

While Persson and Tabellini (1992) and Besley and Case (1995) emphasize the effect of constituency costs on corporate tax policy, Buchanan (2008) believes that political transaction costs may have a greater effect on the ability of policy makers to pass legislation. Buchanan (2008) states that "the disparate success of differing political communities in achieving objectives that seem to be commonly shared may be primarily due to the mix of elements in the basic structure of rules, and not the differences among the political players." [92] Therefore a government's ability to implement tax reforms is likely to also be constrained by the rules in which political actors must abide by. Buchanan (2008) outlines "the elements of political structure that clearly influence the outcomes of the process."[93] The first of these is the separation of powers. When authority is granted to a single unit, rather then divided amongst several, the ability to take political action is facilitated. Buchanan (2008) asserts that this helps explain why European welfare states are more extensive then that of the united States where authority is divided between the executive, legislative and judicial branches of government. Political authority may also be distributed between the central government and its subordinate units. Federal states, in which a great deal of decision-making power is allocated to regional government, may also find it more difficult to take political action and achieve objectives. Additionally, voting rules may affect the probability of enacting certain policies. The majority-

[87]Timothy Besley and Anne Case, "Incumbent Behavior: Vote-Seeking, Tax-Setting, and Yardstick Competition," The American Economic Review 85, no. 1 (1995): 25-45.
[88]Ibid., 25.
[89]Ibid., 25.
[90]Ibid., 34.
[91]Ibid., 39.
[92]Buchanan, 173.
[93]Ibid.

voting rule used in many legislative assemblies forges coalition between parties. This generally leads to the majority coalition taking action in areas that benefit their constituents, often neglecting the effects the decisions may have on the constituencies of minority coalition members. Finally, the constitution and rule of law of a country may also impose some constraints on legislators. [94]

Though most of the above formal models share the view that governments are benevolent maximizers of their citizen's welfare, some have studied the Leviathan hypothesis. Edward and Keen (1996) establish a model where government can play both the role of revenue maximizing Leviathan and benevolent actor. This model is then used to determine whether tax coordination is welfare enhancing or not. The explanation apparently depends on the balance of two effects, the first of these being the "income effect". In the case where coordination leads to an increase in the tax rate in a jurisdiction, citizens become worse off. However, considering the policy maker is now better off, one would expect that part of the additional revenue collected would be used to increase citizens' welfare by "adjusting other tax and spending instruments." As stated by Edward and Keen (1996) "the second effect of coordination is on the relative price that the policy maker perceives between tax revenues diverted to her own uses on the one hand and the welfare of the citizen on the other." While the direction of the price effect is normally unclear, the income effect usually leads to the policy maker overcompensating for the citizen's loss. This overcompensation leads to an excessive distribution of public goods, which in turn reduces the citizen's valuation of these goods. It, therefore, becomes more attractive for the policy maker to hold on to the money rather then spend it on public goods. In this case, coordination may not be so beneficial after all. [95]

To conclude, another branch of literature analyzes the consequences associated with corporate tax coordination. Peralta & Ypersele (2006) determine that the imposition of a minimum tax reform among asymmetric countries is never unanimously accepted; as such a reform would ultimately create winners and losers.[96]

[94]Buchanan, 173-177.
[95]Jeremy Edwards and Michael Keen, "Tax competition and Leviathan," European Economic Review 40, no. 1 (1996): 130-131.
[96]Susana Peralta and Tanguy Van Ypersele,"Coordination of Capital Taxation among Asymmetric Countries," Regional Science and Urban Economics 36, no. 6 (2006): 708-26.

2.2. EMPIRICAL EVIDENCE OF TAX COMPETITION

The empirical literature used in this text on tax competition will be classified into five main categories. The first of these categories will discuss taxation as a determinant of Foreign Direct Investment. The second category will be dedicated to studies that focus on country size as a determinant of corporate tax rates. The third will present the studies, which have examined the effects of increasing openness, integration and capital mobility on corporate tax policy. The fourth will review the empirical literature on strategic tax policy interdependence between jurisdictions. The fifth and final category will focus on the political determinants of corporate tax rates.

2.2.1. TAXATION AS A DETERMINANT OF FDI

There is an extensive amount of empirical literature on the determinants of foreign direct investment (FDI), many of which include taxation. Several of these studies are of qualitative nature. They make use of questionnaires, requiring multinational firms to describe and rank the importance of various factors on their choice of investment location decision.[97] Devereux and Pearson (1989), for example, handed out a questionnaire to a large sample of UK firms in which they asked whether taxes and grants are "always, usually, sometimes or never" a major factor "when deciding in which country to locate an investment."[98] Of the 173 firms that completed the survey, around 40% did not answer the question. This was likely due to the fact that some respondents had never invested abroad. However, "55% of those who answered the question said that taxes and grants were always a relevant consideration."[99] Devereux and Pearson (1989) also asked companies to rank which aspects of the international tax system influenced their business decisions the most. The results revealed "that tax rates were most important, followed by withholding tax rates and deprecation rates, and then by tax loss provisions."[100] Grants were found to have the least effect on business decisions.[101] Wilson (1991) conducted a field study on how "taxes influence nine firms' location and sourcing decisions" and came to a quite similar

[97]Ruding Committee, 96.
[98]Michael P. Devereux and Mark Pearson, Corporate tax harmonisation and economic efficiency. (London: Institute for Fiscal Studies, 1989), 62.
[99]Devereux and Pearson, Corporate tax harmonization and economic efficiency, 62.
[100]Ibid., 64.
[101]Ibid.,64.

conclusion.[102] His findings suggest that tax considerations "largely dictate location decisions for business activities."[103] However, they rarely dominate the decision making process when deciding on where to locate manufacturing facilities. [104]

Over the past decades there has also been an increasing amount of econometric studies conducted on the effects of corporate taxation on firm investment location decisions. Papke (1991) uses data comprising of "a cross section time series panel of 22 U.S. states and five manufacturing industries from 1975-1982"[105] in order to "examine the impact of state and local tax differentials on the location of industry."[106] The results of the study reveal that different industries base their location decisions on diverse state characteristic.[107] However, when the author controls for state and industry effects, she finds that " a high state and local marginal effective tax rate reduces the number of firm births for most of the industries examined."[108]

The Ruding Committee (1992) was one of the first to analyze whether taxation influenced business location decisions across European Union member states. If this proved to be the case, then differences in taxation among European Union member states could potentially cause major distortions to investment flows within the internal market. The study not only found that statutory corporate tax rates of European countries had fallen in the 1980's, but also that tax differences across member states did influence foreign location decisions among multinational corporations. Although the committee was able to prove that tax differences do in fact cause distortions in competition they were unable to precisely estimate the misallocation of resources caused by these differences. The Ruding Committee (1992) concludes that though there has been some convergence in tax regimes in the 1980s, major differences still persist distorting the functioning of the market. Though they acknowledge that greater coordination in corporate tax policy would be disadvantageous for some members they nevertheless suggest a minimum level for statutory corporate tax rates and common rules for a minimum tax base.[109]

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[102]Peter G. Wilson, "The Role of Taxes in Location and Sourcing Decisions," (paper prepared for the NBER Conference on the International Aspects of Taxation, New York, September 26-28,1991): 228.
[103]Ibid., 196.
[104]Ibid., 229.
[105]Leslie E. Papke, "Interstate Business Tax Differentials and New Firm Location," Journal of Public Economics 45, no. 1 (1991): 51.
[106]Ibid., 48.
[107]Ibid., 49.
[108]Ibid., 49.
[109]Ruding Committee, Report of the Committee of Independent Experts on Company Taxation, Office for Official Publications of the European Communities, Luxembourg, (1992).

A further study conducted by Carstensen and Toubal (2004) examined "the determinants of foreign direct investment into Central and Eastern European Countries (CEECs)." [110] The authors used statutory corporate tax rates as a measure of the tax burden. Unlike in the aforementioned studies their findings suggest that corporate tax rates have little to no effect on FDI flows.[111] This may, however, be attributed to the fact that statutory tax rates suffer from numerous shortcomings in explaining FDI. As Devereux and Griffith (1999) explain, "the effective average tax rate of corporate income tax that a firm might expect to face on an investment project is an empirically significant factor for US multinational firms choosing where within Europe to set up a production facility."[112]

The latest studies to investigate the effects of corporate taxation on foreign direct investment have accounted for the limitations of using statutory corporate tax rates by using effective average tax rates as a measure of the tax burden. Bénassy-Quéré, Fontagné and Lahrèche-Revil (2005) investigated the effects that tax differentials and agglomeration forces have on the foreign direct investment flows of 11 OECD countries.[113] Their findings uncover that while agglomeration factors prove to be a strong determinant of FDI, tax rates are also influential.[114] Bellak and Leibrecht (2009) conducted a similar study in which they examined whether "a high corporate tax burden acts as a deterrent to FDI flows in Central and Eastern Europe."[115] Their empirical results show that the tax lowering strategies undertaken by CEEC governments between 1995 and 2003 did in fact have a significant "impact on foreign firms location decisions."[116]

[110] Kai Carstensen, and Farid Toubal,"Foreign Direct Investment in Central and Eastern European Countries: A Dynamic Panel Analysis," Journal of Comparative Economics 32, no. 1 (2004): 3.
[111]Ibid., 15.
[112]Michael P. Devereux and Rachel Griffith, "The Taxation of Discrete Investment Choices," The Institute For Fiscal Studies, No.W98/16 (1999): 2.
[113]Agnès Bénassy-Quéré, Lionel Fontagné, and Amina Lahrèche-Révil. "How does FDI react to corporate taxation?" International Tax and Public Finance 12, no. 5 (2005): 583-603.
[114]Ibid., 583.
[115]Christian Bellak and Markus Leibrecht, "Do low corporate income tax rates attract FDI? –Evidence from Central- and East European countries," Applied Economics 41, no. 21 (2009): 2701.
[116]Ibid., 2691.

2.2.2. COUNTRY SIZE AS A DETERMINANT OF CORPORATE TAX RATES

The theory of asymmetric tax competition introduced by Bucovetsky (1991) and Wilson (1991) proclaims that country size in terms of population has an effect on a country's corporate tax rate.[117] Many empirical studies on corporate tax competition have been dedicated to analyzing various determinants of corporate tax rates. However, very few have focused solely on population size, but rather included it in their econometric models as a control variable. Winner (2005), for one, uses a sample of 23 OECD countries to investigate whether greater capital mobility leads to a shift in the tax burden from capital to labor, and whether this effect is more pronounced depending on the size of the country in terms of population.[118] Employing data from 1965 to 2000 he finds that the shift in the tax burden from capital to labor that arises due to greater capital mobility is in fact greater in small open economies.[119]

In a similar study, Hinnes and Summers (2009) also examine whether there has been a more substantial shift in taxation to less mobile tax bases in smaller countries.[120] Their finding suggest that small countries rely a lot less than larger countries on income taxes imposed on individuals and corporations.[121] Instead these countries tend to rely more heavily on consumption type taxes.[122] The authors however suggests that the use of consumption taxes is likely to increase even in larger countries, as globalization will force all countries to adopt the same features as small open economies. [123]

Genschel, Kemmerling and Seils (2011) compare the effects of country size on statutory corporate tax rates across 27 European union member states between 1997 and 2007. The authors also test whether the effect of country size became more pronounced following the 2004 eastern enlargement. Using the natural log of the population as a measure of country size they're findings suggest that corporate tax rates are positively and significantly related to country size. The authors however point out that this relationship was rather weak in 1997 and became much

[117]Bucovetsky, 167-181; Wilson, "Tax competition with interregional differences in factor endowments", 423- 451.
[118]Hannes Winner, "Has Tax Competition Emerged in OECD Countries? Evidence from Panel Data," International Tax and Public Finance 12, no. 5 (2005): 667-87.
[119]Ibid.
[120]James R. Hines and Lawrence H. Summers, "How Globalization Affects Tax Design," Tax policy and the economy 23, no. 1 (2009): 123-158.
[121]Ibid., 123.
[122]Ibid., 123.
[123]Ibid., 125.

stronger and more significant in 2006. This implies that the 2004 eastern enlargement may have in fact exasperated tax competition.[124]

Although several studies have used population as a measure of country size some academics have controlled for size in their models using GDP. Devereux, Lockwood and Redoano (2007) use GDP as a measure of size in their model when analyzing whether OECD countries compete "over effective marginal tax rates (EMTR) for capital and over statutory rates for profits." [125]Effective marginal tax rates represent the rate at which the next dollar of profit is to be taxed. Therefore the higher the EMTR, the less likely a firm is willing to continue to invest. Devereux, Lockwood and Redoano findings suggest that country size has little effect on both the statutory rates and effective marginal tax rates of 21 OECD countries.[126]

A more recent study conducted by Azémar, Desbordes and Wooton (2015) focused primarily on whether the differences in statutory corporate tax rates across the European Union during the period 1981 to 2005 can be explained by market size measured by GDP.[127] They find evidence that member states " set their statutory corporate tax rates in accordance with their market size, such that large countries set higher corporate taxes than their smaller competitors for FDI."[128] The authors also uncover that doubling GDP increases the statutory tax rate of a country by 12 percentage points. [129]

[124]Philipp Genschel Achim Kemmerling, and Eric Seils, "Accelerating Downhill: How the EU Shapes Corporate Tax Competition in the Single Market," JCMS: Journal of Common Market Studies 49, no. 3 (2011): 585-606.
[125]Michael P. Devereux, Ben Lockwood, and Michela Redoano, "Do countries compete over corporate tax rates?," Journal of Public Economics 92, no. 5 (2008): 1210.
[126]Ibid., 1225.
[127]Céline Azémar, Rodolphe Desbordes, and Ian Wooton, "Country Size and Corporate Tax Rate: Rationale and Empirics," Hitotsubashi Institute for Advanced Study, No. HIAS-E-11 (2015).
[128]Ibid., 3.
[129]Ibid., 18.

2.2.3. THE IMPACT OF INCREASING GLOBALIZATION, OPENESS & INTEGRATION ON CORPORATE TAXATION

Several empirical studies on corporate tax competition have investigated the effects of increased capital mobility on corporate taxation. This has been achieved by analyzing whether there is any correlation between an economies level of openness or integration and different measures of its corporate tax rate. Tax competition theory predicts that the more open and integrated a country's economy, the greater the downward pressure imposed on its tax rate. However, the results have so far been mixed and seem to be somewhat dependent on what measure of the corporate tax rate is used.

To begin, many academics have found there to be a negative relationship between openness and the statutory corporate tax rate. Swank and Steinmo (2002) use data on 14 advanced capitalist economies from 1981 to 1995 to analyze the impact of greater openness on tax policy.[130] Their findings suggest that an increase in "capital mobility and trade are associated with cuts in statutory corporate tax rates."[131] Similarly, Slemrod (2004) examined the effects of openness on statutory corporate tax rates and corporate tax revenues of OECD countries.[132] The author finds openness to be negatively correlated to "statutory corporate tax rates, although not to corporate tax revenues",[133] suggesting that cuts in the statutory rate have been offset by increases in the tax base. The fact that statutory tax cuts seem to have been accompanied by increases in the tax base may help explain why studies, which use a measure of the tax rate based on tax revenues, often find a positive or weak relationship between openness and corporate taxation.[134]

Quinn (1997) analyzed whether international capital liberalization has led to an erosion of the corporate tax base using data from 64 countries covering the period 1958 to 1989.[135] More specifically he examined the effect it has had on corporate tax revenues as a percentage of individual taxation, as a percentage of GDP and as a percentage of total tax revenues. His finding

[130]Duane Swank and Sven Steinmo, "The new political economy of taxation in advanced capitalist democracies," American Journal of Political Science (2002): 642.
[131]Ibid.
[132]Joel Slemrod, "Are Corporate Tax Rates, or Countries, Converging?," Journal of Public Economics 88, no. 6 (2004): 1169-186.
[133]Ibid., 1169.
[134]Devereux and Loretz, "What Do We Know About Corporate Tax Competition", 757.
[135] Dennis Quinn, "The Correlates of Change in International Financial Regulation," The American Political Science Review 91, no. 3 (1997): 531-51.

suggests that financial liberalization increases capital taxation while trade openness lead to a shift towards greater capital taxation. [136]

Many empirical studies have used implicit tax rates of the form introduced by Mendoza, Razin and Tesar (1994) to analyze the relationship between openness and corporate taxation.[137] The method first involves classifying all forms of tax revenues at the federal government level into one of three tax categories including; labor income, consumption and capital income.[138] These are then "expressed as a fraction of a precise estimate of the corresponding tax base."[139] This method therefore entirely ignores the statutory rate. The majority of studies, which have used implicit tax rates, have found a positive or weak relationship between increased openness and corporate taxation. [140]

Basinger and Hallerberg (1998), for example, consider the effects of economic integration on the tax policies of OECD countries from 1986 to 1990.[141] They find no significant relationship between capital market liberalization and changes in the implicit tax rate on capital or labor.[142] Swank (1998) uses data on 17 developed countries from 1966 to 1993 to examine whether the globalization of capital markets has lead to a decrease in capital and labor taxation.[143] His findings suggest that greater capital mobility has increased taxes on capital and labor.[144] While Garrett and Mitchell (2001) find that increased integration and financial openness have not lead to a reduction in capital tax rates or a shift in the tax burden from capital to labor for their sample of 18 industrialized countries.[145] Rodrik (1997) is one of the few who has used implicit tax rates of this kind and not found a positive or weak relationship between openness and capital taxation.[146] Using data collected from a sample of 18 OECD countries he finds that implicit tax

[136]Dennis Quinn, "The Correlates of Change in International Financial Regulation," The American Political Science Review 91, no. 3 (1997): 531-51.
[137]Devereux and Loretz, "What Do We Know About Corporate Tax Competition", 757.
[138]Enrique G. Mendoza, Assaf Razin, and Linda L. Tesar, "Effective tax rates in macroeconomics: Cross-country estimates of tax rates on factor incomes and consumption," Journal of Monetary Economics 34, no. 3 (1994): 299.
[139]Ibid.
[140]Devereux and Loretz, "What Do We Know About Corporate Tax Competition ", 757.
[141]Scott Basinger and Mark Hallerberg, "Internationalization and Changes in Tax Policy in OECD Countries," Comparative Political Studies 31, no. 3 (1998): 323.
[142]Ibid., 346.
[143]Duane Swank, "Funding the Welfare State: Globalization and the Taxation of Business in Advanced Market Economies," Political Studies 46, no. 4 (1998): 671-92.
[144]Ibid., 686.
[145]Geoffrey Garrett and Deborah Mitchell, "Globalization, Government Spending and Taxation in the OECD," European Journal of Political Research 39, no. 2 (2001): 145.
[146]Dani Rodrik, Has Globalisation gone too far? (Washington: Institute for International Economic, 1997)

rates on labor responded positively to openness while the implicit tax rate on capital responded negatively. [147]

Finally, more recent studies have begun using forward looking effective average corporate tax rate (EATR), of the type introduced by Devereux and Griffith (2003), when analyzing the relationship between increased openness and corporate tax policy.[148] Klemm (2008) defines the EATR "as the ratio of the present discounted value of taxes over the present discounted value of the profit of a project in the absence of taxation." [149]According to Devereux and Griffith (2003), this is a superior measure of the tax burden as the impact of taxation on a firm's location decision "is through its effect on the post tax net present value (NPV)" of an investment project, which is reflected in the EATR.[150]

Studies that have used EATRs as a measure of the tax burden have overwhelmingly found a significant negative relationship between increased openness and corporate taxation. Bretschger and Hettich (2002), for example, find that globalization has had a negative effect on the capital tax rates of 14 OECD countries during the period 1967 to 1996.[151] Krogstrup (2004) determines that increased capital mobility has put "downward pressure on corporate tax burdens in the European Union since the early 1980s."[152] Schwarz (2007) uses data on 20 OECD countries over the period 1979 to 2000 to investigate whether increasing capital mobility has pressured governments to reduce their corporate tax rates.[153] He emphasizes that the effect of capital mobility is dependent on what corporate tax burden measure is used.[154] His findings suggest that greater capital mobility has a strong negative effect on effective average tax rates and little to no effect on implicit rates.[155]

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[147]Ibid.
[148]Michael P. Devereux and Rachel Griffith, "Evaluating tax policy for location decisions," International Tax and Public Finance 10, no. 2 (2003): 107-126.
[149]Alexander Klemm, "Effective average tax rate for permanent investment," Journal of Economic and Social Measurement 37, no.3 (2012): 254.
[150]Devereux and Griffith, "Evaluating tax policy for location decisions", 108.
[151]Lucas Bretschger and Frank Hettich, "Globalisation, Capital Mobility and Tax Competition: Theory and Evidence for OECD Countries," European Journal of Political Economy 18, no. 4 (2002): 708.
[152] Signe Krogstrup, "Are corporate tax burdens racing to the bottom in the European Union?," EPRU Working Paper Series, No. 2004-04 (2004): 27.
[153]Peter Schwarz, "Does capital mobility reduce the corporate-labor tax ratio?," Public Choice 130, no. 3-4 (2007): 363-380.
[154]Ibid., 378.
[155]Ibid., 378.

All of the studies presented in this section so far do not only differ in terms of the measure of the tax rate used but often also in their treatment of the variable openness. One of the most common methods used to quantify openness is to divide the sum of a country's exports and imports by its gross domestic product (GDP). Another popular approach uses the sum of inward and outward foreign direct investment as a percentage of GDP. Devereux and Loretz (2012) explain how these particular measures are imperfect, as they do not really measure "the extent of openness at all, but rather the result of openness."[156]

Many studies also base there measurement of openness on a set of indices created by Quinn (1997).[157] Quinn (1997) developed coding rules to measure a countries level of openness. A country's "inward and outward capital account transactions" are "scored on a 0 to 4 scale", while their "inward and outward current account transactions" are "scored on a 0 to 8 scale". Quinn also takes into account "international legal agreements that constrain a nation's ability to restrict exchange and capital flows." This is scored on a 0 to 2 scale "ranging from not at all to very constrained." These are then added up to determine a country's level of openness, which can range from 0 to 14.[158] Though several different measures of openness have been used across studies Devereux and Loretz (2012) explain that these differences do not seem to be accountable for the diversity in results. [159]

[156]Devereux and Loretz, "What Do We Know About Corporate Tax Competition", 759.
[157]Quinn, 535.
[158]Ibid.
[159]Devereux and Loretz, "What Do We Know About Corporate Tax Competition", 760.

2.2.4. STRATEGIC TAX POLICY INTERDEPENDENCE BETWEEN JURISDICTIONS

Recently, there has been a growing amount of empirical literature aimed at determining whether jurisdictions take the tax rates of their neighbors into account when setting their own tax rate. Tax competition theory suggests that a jurisdiction would set its tax rate below that of its neighbor with the aim of maintaining its mobile tax base. If this is the case then tax reaction functions should have a positive slope and tax rates would be considered strategic complements. Wildasin (1988) however suggests that governments may decide on their level of expenditures first and set their tax rates accordingly.[160] If this were the case then we would expect tax reaction functions to have a negative slope and tax rates to be strategic substitutes. Several empirical studies on strategic tax policy interdependence between jurisdictions have therefore been focused on determining whether tax rates are strategic complements or substitutes. The majority of this research has been conducted at the local and state level. [161]

There are some studies that have found evidence of strategic interaction between local and state authorities. Buettner (2001) studied a large panel of more then 1,000 jurisdictions in Baden-Wuerttemberg, Germany.[162] His findings suggest that strategic interaction does exist between German municipalities and that tax rates are in fact strategic complements.[163] Other studies have produced similar results. Brueckner and Saavedra (2001) find evidence of strategic interaction in the property tax setting behavior of cities in the Boston metropolitan area.[164] Charlot and Paty (2007) find that French municipalities often mimic each other when deciding on their rate of local business tax.[165] Feld and Reulier (2009) discover that the income tax rates of Swiss cantons are very much dependent on that of their neighbor.[166] Brett and Pinkse (2000) find

[160]Wildasin, 230.
[161]Baskaran and Lopes da Fonseca, 7.
[162]Thiess Buettner, "Local Business Taxation and Competition for Capital: The Choice of the Tax Rate," Regional Science and Urban Economics 31, no. 2-3 (2001): 215-45.
[163]Ibid., 236.
[164]Jan K. Brueckner and Luz A. Saavedra, "Do Local Governments Engage in Strategic Property—Tax Competition?," National Tax Journal (2001): 203-229.
[165]Sylvie Charlot and Sonia Paty, "Market Access Effect and Local Tax Setting: Evidence from French Panel Data," Journal of Economic Geography 7, no. 3 (2007): 247-63.
[166]Lars P. Feld and Emmanuelle Reulier, "Strategic tax competition in Switzerland: Evidence from a panel of the Swiss cantons," German Economic Review 10, no. 1 (2009): 91-114.

some evidence that municipal governments in British Columbia, Canada, respond to tax changes in neighboring jurisdictions.[167]

There are however some studies which have found tax rates to be strategic substitutes. Chirinko and Wilson (2011) study the tax setting behavior of 48 US states for the period from 1965 to 2006.[168] Unlike the above studies on strategic interaction, they take into consideration aggregate shocks affecting all states and allow for lagged responses.[169] Contrary to popular belief, they determine that the "slope of the reaction function is negative."[170] They argue based on their results that "declines in state capital taxation" over the past decades is not caused by tax competition "but rather aggregate shocks"[171] that affect all states rather equally. Parchet (2012) derives similar results between Swiss municipalities.[172] His findings suggest that Swiss municipal "tax reaction functions have a negative slope and hence that tax rates are strategic substitutes."[173]

According to Devereux and Loretz (2012) there are limitations to analyzing local corporate tax competition, which may help explain this deviation in results. For one, tax competition at the local level may be influenced by vertical tax competition deriving from their respective federal governments. As Devereux and Loretz (2012) explain, " deductibility of local taxes from the federal tax base or revenue sharing mechanisms may imply that local and federal tax rates are strategic substitutes."[174] If horizontal and vertical tax competition do in fact interact it may be quite difficult to determine how much of the total tax burden can be attributed to local taxes. A second limitation of these studies is that they fail to take into account the pressure put on these jurisdictions from locations abroad. These localities and states are often not only competing against one another for foreign direct investment, but also against jurisdictions located in other parts of the world.[175]

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[167]Craig Brett and Joris Pinkse, "The determinants of municipal tax rates in British Columbia," Canadian Journal of Economics/Revue canadienne d'économique 33, no. 3 (2000): 695-714.
[168]Robert S. Chirinko and Daniel J. Wilson, "Tax competition among US states: racing to the bottom or riding on a seesaw?," CESIFO Working Paper, No. 3535 (2011).
[169]Ibid., 4.
[170]Ibid., 24.
[171]Ibid., 2.
[172]Raphaël Parchet, "Are local tax rates strategic complements or substitutes?," (paper presented at the 52nd Congress of the European Regional Science Association: "Regions in Motion – Breaking the Path", Bratislava, August 21 – 25, 2012):
[173]Ibid., 4.
[174]Devereux and Loretz, "What Do We Know About Corporate Tax Competition", 761.
[175]Ibid., 761-762.

Fewer empirical studies have analyzed strategic tax policy interdependence between national governments. One of the main objectives of this line of research has been to determine which countries are driving corporate tax rates down. Another being to determine what "type of tax rates" countries are competing over. In a similar fashion to those studies that have examined the effects of increasing openness on corporate tax policy, these also differ in terms of the measure of the tax rate used.[176]

Altschuler and Goodspeed (2003) were amongst the first to estimate tax reaction functions between national governments. [177]To do so, they develop a model of tax competition, where one large country acts as a Stackelberg leader and then estimate the reaction functions of the followers.[178] Using tax revenue data covering the period 1968 to 1996 they "calculate a measure of average corporate tax rates" for EU countries and the US.[179] This measure is derived by dividing corporate tax revenues by gross domestic product.[180] The model is then used to test whether European countries compete with one another and whether they view the United States, the United Kingdom or Germany as a Stackelberg leader.[181] Their findings suggest that European countries act as though the United States is a Stackelberg leader when setting their rates.[182] Their results also seem to indicate that European countries compete less intensely amongst themselves. There are, however, a few problematic issues with this particular study. The first issue being that the study preceded the fifth and sixth enlargement of the European Union.[183] This involved the accession of thirteen relatively small member states between 2004 and 2013, many of which began adopting ambitious corporate tax reforms prior to accession. Based on tax competition theory there is therefore reason to believe that strategic interaction between European Union member states may have intensified post 2004. As discussed in the previous section, using tax measures based solely on tax revenues can also be problematic.[184] This is especially the case when analyzing strategic tax policy interdependence between national

[176]Devereux and Loretz, "What Do We Know About Corporate Tax Competition", 762-763.
[177]Rosanne Altschuler , and Timothy J. Goodspeed, "Follow the leader? Evidence on European and US tax competition," Department of Economics working paper, No.200226, Rutgers University, 2002, 485.
[178]Ibid., 489.
[179]Ibid., 491.
[180]Ibid.,491.
[181]Ibid.,485.
[182]Ibid., 500.
[183]Devereux and Loretz, "What Do We Know About Corporate Tax Competition", 762.
[184]Ibid.

governments.[185] While governments can actively set their statutory corporate tax rate this is not the case with corporate tax revenues.[186]Therefore, as stated by Devereux and Loretz (2012) "using revenue to infer something about strategic behavior in different countries is likely to only capture common macroeconomic shocks or regional spillovers in business cycles."[187]

Following the fifth enlargement of the European Union a number of empirical studies on strategic corporate tax policy interdependence has been dedicated to analyzing who is to blame for the falling corporate tax rates across Europe. Particular focus has been given the low corporate tax rates of Eastern European countries. Most of these studies have used statutory corporate tax rates or forward-looking effective tax rates to test for strategic interaction.[188] Crabbé and Vandenbussche (2008), examined whether EU15 countries that are located closer to the new low tax member states find themselves "subject to more intense tax competition."[189] Their findings suggest that countries of the former EU15 which share a border with new Central and Eastern European member states experience more tax competition than countries located further to the west of the new member states.[190] Cassette and Patty (2008) also "investigate the existence of strategic interactions between the former EU15 countries and the CEECs."[191] They not only find evidence of strategic interaction between the two regions but also determine that while corporate tax interdependence within Western Europe is quite strong, it is sparse between Eastern European countries.[192]Their findings also suggest that the degree of strategic interaction between pairs of countries depends on different country characteristic.[193] While strategic interaction between two Western European countries seems to be dependent on demographics and economic leadership, corporate tax interdependence between Western and Eastern Europe seems to be strongly connected to the relative economic characteristics of the countries.[194] Unlike Crabbé and Vandenbussche (2008) they however find no relationship between strategic

[185]Devereux and Loretz, "What Do We Know About Corporate Tax Competition", 762.
[186]Ibid.
[187]Ibid.
[188]Ibid.
[189]Karen Crabbé and Hylke Vandenbussche, "Are your firm's taxes set in Warsaw? Spatial tax competition in Europe," Département des Sciences Économiques de l'Université catholique de Louvain, Discussion Paper, No.2008-5, 2008, 3.
[190]Ibid., 17.
[191]Aurélie Cassette, and Sonia Paty, "Tax competition among Eastern and Western European countries: With whom do countries compete?," Economic Systems 32, no. 4 (2008): 307.
[192]Ibid., 323.
[193]Ibid., 308.
[194]Cassette and Paty, "Tax competition among Eastern and Western European countries", 308.

interaction and geographic proximity.[195] Finally, Chatelais and Peyrat (2008) suggest that strategic interaction is "stronger between smaller EU countries."[196] They also find evidence that larger member states react stronger to changes in the statutory corporate tax rates in the center of the EU, than to those of small countries located in the periphery.[197]

Apart from analyzing which countries may be driving corporate tax rates down many empirical studies have also focused on the type of tax rates countries compete over.[198] Egger, Pfaffermayr and Winner (2007), for example, examine whether countries compete over both corporate tax rates and personal income tax rates.[199] Employing data from 30 OECD countries between 1985 and 2005 they "estimate the response of a country's corporate and personal income tax rates to the corresponding tax changes of its neighbor."[200] Their findings suggest that there is strategic interaction in both corporate and personal income taxation between OECD countries.[201] Devereux, Lockwood and Redoano (2008) analyze whether national governments take part in two-dimensional tax competition.[202] This being that they "compete over effective marginal tax rates for capital and over statutory tax rates for profits."[203] Using data from 21 OECD countries between 1982 and 1999 they find there to be a strong interdependence between countries in both of these measures.[204] Overesch and Rincke (2011) also find evidence of strategic interaction over statutory rates, however, not over effective tax rates.[205]

[195]Ibid.
[196]Nicolas Chatelais and Mathilde Peyrat, "Are Small countries leaders of the European tax competition?," Documents de Travail du Centre D'Economie de la Sorbonne, No.2008.58 (2008).
[197]Ibid.
[198]Devereux and Loretz, "What Do We Know About Corporate Tax Competition", 763.
[199]Peter Egger, Michael Pfaffermayr, and Hannes Winner, "Competition in corporate and personal income taxation," (In meeting of the European Tax Policy Forum, London, April 18, 2007):2.
[200]Ibid.
[201]Ibid.
[202]Michael P. Devereux, Ben Lockwood, and Michela Redoano. "Do countries compete over corporate tax rates?." Journal of Public Economics 92, no. 5 (2008): 1210.
[203]Ibid.
[204]Ibid.
[205]Overesch and Rincke, 598.

2.2.5. POLITICAL DETERMINANTS OF CORPORATE TAX RATES

Persson and Tabellini (1992) emphasized that increasing economic integration alters "the politico-economic equilibrium that determines fiscal policy." [206]They explain that while greater capital mobility may put downward pressure on capital taxation and reduce government transfer payments, constituents react by electing "a new policymaker further to the left", which mitigates the "reduction in capital taxation."[207] Over the past years, a number of empirical studies have examined whether domestic politics erases the race to the bottom in corporate taxation. Basinger and Hallerberg (2004), for example, analyze the capital tax policies of OECD countries over the period 1980 to 1997 and determine that while countries are sensitive to tax reforms in comptetitor countries, "their responses to reforms are mediated by their own domestic" political costs.[208] The authors establish a distinction between two different types of costs: transaction costs and constituency costs.[209] Basinger and Hallerberg (2004), explain that transaction costs "arise from and increase with the decentralization of the legislative process" and "may be due to formal checks and balances, including the constitutional separation of powers in a political system."[210] On the other hand constituency costs are said to "arise from the governing parties' potential opposition to tax reforms or its policy repercussions."[211]

Of the studies, that have analyzed the political determinants of corporate tax rates, several have used the ideological position of political parties to measure constituency costs. One would traditionally expect leftwing governments to pursue a "high tax large spending policy" and right wing parties a "conservative low tax policy."[212] This hypothesis has been tested by numerous academics, many of which have found contrasting results about the role of partisan politics on corporate tax policy. Garrett and Mitchell (2001), for example, found that pro-welfarist Christian democratic governments across 18 OECD countries did tend to impose higher rates of capital taxation and have higher ratios of capital to labor and consumption taxation during the period 1961 to 1993.[213] Osterloh and Debus (2012) examined whether partisan politics could help

[206]Persson and Tabellini, 689.
[207]Ibid., 690.
[208]Scott J. Basinger and Mark Hallerberg, "Remodeling the Competition for Capital: How Domestic Politics Erases the Race to the Bottom," American Political Science Review 98, no. 02 (2004): 261.
[209]Ibid., 267.
[210]Ibid., 267.
[211]Ibid., 267.
[212]Park, 9.
[213]Garrett and Mitchell, 173.

explain corporate taxation at the national level for a sample of 32 European countries over the period 1980 to 2006.[214] Their findings suggest that political ideologies have impacted corporate tax rates in Europe and that this effect is more pronounced for statutory tax rates than effective marginal tax rates.[215]

A greater proportion of empirical studies have however found political ideology to have no significant impact on corporate tax rates. Devereux, Lockwood and Redoano (2008) examined whether the ideological position of parties holding a majority in parliament had a decisive influence on the corporate tax rate.[216] Using a sample of 21 OECD countries they find that the political persuasion of the party in power does not have a significant effect on the tax rate.[217] Contrary to what one would expect they find evidence that both left and right wing parties have set higher statutory corporate tax rates between 1982 and 1999.[218] Appel (2011) examines the role of domestic politics on tax policy in Eastern Europe over the period 1995 to 2007.[219] She concludes that corporate income tax rates of Eastern European countries have been less subject to domestic political pressure due to constraints imposed by regional and global economic integration.[220] Her findings suggest that lower corporate taxes are associated with left wing governments in Eastern Europe.[221] This implies that the decline in corporate tax levels initiated when the right was in power were maintained or further reduced by the left wing governments that succeeded them.[222] Hansson, Porter and Williams (2012) also do not find any correlation between the ideological position of the governing party and corporate tax rates for a sample of 19 developed countries. [223]

In regards to constituency costs, some academics have analyzed whether being in an election period influences the probability of tax reform. This is based on the idea that governments have a tendency of being generous leading up to an election.[224] Heinemann,

[214]Osterloh and Debus, 193.
[215]Ibid., 204.
[216]Devereux, Lockwood, and Redoano, "Do countries compete over corporate tax rates?", 1224.
[217]Ibid., 1226.
[218]Ibid., 1226.
[219]Appel, 144.
[220]Ibid., 143.
[221]Ibid., 148.
[222]Ibid., 148-149.
[223]Åsa Hansson, Susan Porter, and Susan Perry Williams, "The Effect of Political and Economic Factors on Corporate Tax Rates," IFN Working Paper, No.942 (2012).
[224]Friedrich Heinemann, Michael Overesch, and Johannes Rincke, "Rate-Cutting Tax Reforms And Corporate Tax Competition In Europe," Economics & Politics 22, no. 3 (2010): 507.

Overesch and Rincke (2010) explain that while election periods seem like a strategic time for tax cuts, "the election year effect is less clear for corporate tax policy because tax cuts for companies might be criticized by voters from a distributive point of view and thus less popular in the course on an ongoing election campaign."[225] Using data from a sample of 32 European countries Heinemann, Overesch and Rincky (2010) find that the probability for a cut in corporate taxes is "10 to 13 points more likely in election periods." [226]

Plümper, Troeger and Winner (2009) take another approach to analyzing the effect of constituency costs on corporate tax policy.[227] They explain that while increasing capital mobility does put downward pressure on corporate tax rates, this may be to an extent constrained by the political objective of needing to maintain a balanced budget while also meeting societal demand for tax equity.[228] They therefore suggest that in countries where both budget rigidities and fairness norms are high, tax competition will have less influence on government tax policies.[229] As a measure of fairness norms the authors use the "initial pre-tax income inequality in a country" and "survey data from the International Social Surveys Program" on the responsibility of government to reduce income inequality.[230] In order to gauge a government's responsiveness to fairness norms they measure "the change in the Gini coefficient between pre-tax and post-tax inequality."[231] Budget rigidities are measured as the share of central government debt to GDP.[232] The authors analyze data from 23 OECD countries between 1975 and 2004 and find that both budget constraints and fairness norms have a significant impact on the capital tax burden.[233] They also find that while the tax burden shifts from capital to labor when tax competition escalates, this shift is smaller in countries where governments face stringent budget constraints and fairness norms.[234]

While many have analyzed the effects of constituency costs on corporate tax policy, fewer have controlled for transaction costs. Those academics that have analyzed the effects of

[225]Ibid.,507.
[226]Ibid., 512.
[227]Thomas Plümper, Vera E. Troeger, and Hannes Winner, "Why Is There No Race to the Bottom in Capital Taxation?," International Studies Quarterly 53, no. 3 (2009): 761-86.
[228]Ibid., 762.
[229]Ibid., 763.
[230]Ibid,. 774.
[231]Ibid., 774.
[232]Ibid., 774.
[233]Ibid., 778.
[234]Plümper, Troeger and Hannes Winner, 778.

transaction costs on corporate tax policy have mostly done so by examining whether the probability of policy change declines with the number of veto players involved in the legislative process. Tsebelies (1995) defines veto players as "individual or collective actors whose agreement is required for a change of the status quo."[235] Wagschal (1999) examined whether countries whose institutional structure consists of several veto players tended to suggest and implement fewer tax policy reforms.[236] He finds that the veto player effect does explain some of the variation in corporate tax rates across OECD countries during the period 1980 to 1997.[237] Basinger and Hallerberg (2004) extend the model to include the ideological distance between the veto players.[238] They find that states with a single veto player or where the ideological distance between veto players is small tend to be more responsive to corporate tax reforms undertaken in competitor countries.[239]

Rather than use the amount of veto players in the legislative process as a measure of transaction costs, some academics have focused on the effects of political fragmentation. Kontopoulous and Perotti (1999) explain that government fragmentation arises when "several agents or groups participate in the fiscal decisions making process, each with its own interests and constituency to satisfy, and each with some weight in the final decisions."[240] Ashworth and Heyndels (2002) use data on 18 OECD countries over the period 1965-1995, to analyze whether governmental fragmentation impedes the ability of governments to change the tax structure.[241] To do so they establish a model in which they examine a country's tax turbulence or "how much a country's tax structure has changed from one year to another."[242] They find that tax turbulence is negatively affected in cases where the government is composed of four or more parties.[243] This

[235]George Tsebelis, "Decision making in political systems: Veto players in presidentialism, parliamentarism, multicameralism and multipartyism," British journal of political science 25, no. 03 (1995): 289.
[236]Uwe Wagschal. "Blockieren Vetospieler Steuerreformen?." Politische Vierteljahresschrift 40, no. 4 (1999): 628-640.
[237]Ibid.
[238]Basinger and Hallerberg, "Internationalization and Changes in Tax Policy in OECD Countries", 345-346.
[239]Ibid.
[240]Yianos Kontopoulos and Roberto Perotti, "Government fragmentation and fiscal policy outcomes: Evidence from OECD countries," Fiscal Institutions and Fiscal Performance. University of Chicago Press (1999): 81.
[241]John Ashworth and Bruno Heyndels, "Tax structure turbulence in OECD countries," Public choice 111, no. 3 (2002): 347-376.
[242]Ashworth and Heyndels, 348.
[243]Ibid., 363.

insinuates that greater government fractionalization decreases the likelihood of tax system reforms.[244]

To conclude, there are very few studies, which have investigated the effects of several different features of a country's political structure on corporate tax policy simultaneously. Gérard and Ruiz (2009), for example, use data from a large sample of 53 countries to analyze which features of a country's political structure affects its statutory corporate tax rate.[245] They find that countries with parliamentary systems and plurality election systems tend to have higher corporate tax rates.[246] Hansson, Porter and Williams (2009) attempt to examine the effects of all five of the elements of political structure outlined by Buchanan (2008) on corporate tax policy.[247] Using data from 19 developed countries for the years 1979 through 2005 they find that countries with greater legislative fractionalization tend to have higher statutory corporate tax rates.[248] Furthermore, they determine that the level of institutional constraints and separation of powers is both positively and significantly correlated to the level of corporate tax rate. [249]

[244]Ibid., 363.
[245]Marcel Gérard and Fernando MM Ruiz, "Corporate taxation and the impact of governance, political and economic factors," CESifo Working Paper, No2904 (2009).
[246]Ibid., 3.
[247]Hansson, Porter, and Williams, 18.
[248]Ibid., 16.
[249]Ibid., 15.

CHAPTER 3: RESEARCH DESIGN

3.1 THEORETICAL FRAMEWORK & HYPOTHESES

The review of the main theories of corporate tax competition and analysis of the characteristics of political structure that influence a government's ability to implement its policies has allowed us to identify the main domestic determinants of corporate tax rates. There are several theories that may provide some insight into why we have yet to witness a race to the bottom in corporate taxation across the European Union. From these we have developed several hypotheses that we wish to quantitatively assess.

3.1.1. ASYMMETRIC TAX COMPETITION

The model of asymmetric tax competition introduced by Bucovetsky (1991) and Wilson (1991) suggests that country size strongly affects a country's tax policy preferences.[250] Tax competition theory explains that raising the corporate tax rate will lead to an erosion of the tax base. However, under the asymmetric tax competition model this effect is believed to be more consequential for smaller countries. As emphasized by Bucovetsky (1991), "large jurisdictions perceive this cost as less than small jurisdictions do, since each unilateral tax increase loses them less capital per capita."[251] Correspondingly large countries have less to gain in per capita terms than small countries do by reducing their corporate tax rate. In this respect, smaller countries are expected to set lower corporate tax rates and their citizens are essentially believed to be better off under tax competition.[252] We would, therefore, expect small European Union member states to set lower corporate tax rates then larger members

Hypothesis 1: Small European Union member states set lower statutory corporate tax rates than larger member states.

[250]Bucovetsky, 167-181; Wilson, "Tax competition with interregional differences in factor endowments", 423- 451.
[251]Bucovetsky, 178.
[252]Ibid.

3.1.2. CAPITAL MOBILITY

Tax competition theory also suggests that greater economic integration or openness increases capital mobility and in turn induces countries to lower their tax rates in order to compete for mobile capital and foreign direct investment. The establishment of the European Single Market allowed for the free movement of people, goods, services and capital between member states.[253] Those countries that acceded to the European Union during the fifth and sixth enlargement ultimately agreed to the terms of the European Single Market.[254] This implies that their markets and economies became more open and integrated to the rest of Europe. We therefore analyze whether greater economic openness is associated with lower corporate tax rates across European Union member States.

Hypothesis 2: A greater level of economic openness puts downward pressure on a country's statutory corporate tax rate.

3.1.3. POLITICAL CONSTITUENCY COSTS

Traditionally, one would expect left wing parties to "promote redistribution through taxation" and right wing parties to "promote the efficiency of the market by minimizing the size of government."[255] As a result, a left wing government should pursue a "high tax large spending policy" while a right wing party would be more likely to pursue a "conservative low tax policy."[256] Persson and Tabellini (1992) however explain how the fear of political repercussion can dilute partisan politics.[257] Although a right wing government may at first follow party lines and reduce its corporate tax rate, it is likely to shift its political spectrum to the left and avoid reducing the rate even further if its constituents respond negatively.[258] Conversely left wing

[253]"One market without borders," European Union, accessed April 27, 2017, https://europa.eu/european-union/topics/single-market_en
[254]These countries include Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, and Slovenia.
[255]Park, 1.
[256]Ibid.
[257]Torsten and Tabellini, 700.
[258]Ibid.

governments may pursue conservative low tax policies if "socio-economic constraints are tight" [259]or the corporate tax base in the country is to small to fund redistribution.[260]

Hypothesis 3: The effect of partisan politics on statutory corporate tax rates is weak across European Union member states.

3.1.4. POLITICAL TRANSACTION COSTS

Buchanan (2008) stressed that a country's political structure and rules influence the outcome of the political process. Some examples for this conclusion are: government fractionalization, institutional constraints, and the number of veto players involved in the legislative process, federalism, and the separation of powers.[261] We may therefore expect countries with a more complex political structure, to have higher corporate tax rates due to the challenges faced when implementing policy changes.

Hypothesis 4: EU member states with more complex political structures are likely to have higher statutory corporate tax rates.

[259]Ganghof, 141.
[260]Park, 71.
[261]Buchanan, 171-79.

3.2. METHODOLOGY

3.2.1 THE ECONOMETRIC MODEL

In a similar fashion to previous empirical studies on corporate tax rate determinants, we use longitudinal data or panel data in our analysis, where all European Union member states are observed on a yearly basis over the period 1995 to 2014. Our dataset is however unintentionally unbalanced. This is primarily due to some observations being unavailable for newer member states in the mid 1990's.[262] Biørn (2017) explains the advantages of using panel data rather than time-series or cross-section data in empirical research. While "pure time series data contain no information about individual differences, and pure cross section data contain no information about period specific differences"[263], panel data allows to "eliminate unobserved individual or time-specific effects".[264]Keeping with the precedent established by other empirical studies on this matter, we control for year effects in our panel regression, which is denoted as θt in the model presented below.

We model statutory corporate tax rates as follows:

$$TAX_{it} = \beta_1 lnSIZE_{it} + \beta_2 OPEN_{it} + \beta_3 KA\_OPEN_{it} + \beta_4 IDEOLOGY_{it} + \beta_5 ELECTION_{it} + \beta_6 VETO_{it} + \beta_7 STRUCTURE_{it} + \beta_8 POCO_{it} + \beta_9 UNEMP_{it} + \beta_{10} POPOLD_{it} + \beta_{11} DEBT_{it} + \theta t + \varepsilon_{i,t}$$

[262] More specifically we are missing one year of observations (1995) of KA_OPEN for the Czech Republic, Estonia, Slovenia, Latvia, Slovakia, Lithuania and Croatia. We are also missing data on KA_OPEN for Luxembourg in which we account for through interpolation. Besides this we are missing observations between 1995 and 1999 for Croatia regarding the variables IDEOLOGY, ELECTION and DEBT. Bulgaria is also missing two years of observations (1995-1996) for the variable DEBT.

[263]Erik Biørn, Econometrics of Panel Data: Methods and Applications (Oxford: Oxford University Press, 2017), 33.

[264]Ibid., 45.

3.2.2. DATA SOURCE

For the purpose of this study, we employ secondary data, which has been retrieved from a number of different sources. For one, the statutory corporate tax rates of member states have been compiled from the Taxation and Customs Union department of the European Commission's (TAXUD). Secondly, data on demographic, socio- and economic- characteristics have been collected from Eurostat, the OECD, the IMF and the World Bank's databases. Thirdly, we gather information on member states degree of capital account openness from the Chinn-Ito Index. Lastly, information regarding political constituency and transaction costs has been retrieved from Armingeon et al.'s (2016) Comparative Political Dataset (CPDS) and Henisz's (2017) Political Constraint Index Dataset (POLCON). The CPDS is composed of "a collection of political and institutional data"[265], while the POLCON dataset's purpose is to measure the feasibility of policy change based on "the number of independent branches of government with veto power"[266] The Comparative Political Dataset also provides us with data on member state's gross general government debt.

3.2.3. DESCRIPTION OF VARIABLES

MEASURE OF CORPORATE TAX RATES

In this study, we use the statutory corporate tax rate as the dependent variable and measure of the tax burden. The statutory rate represents the legal rate imposed by central governments on corporate income. This measure was chosen over the effective average tax rate (EATR) due to the lack of data on EATRs for Eastern Europe, especially covering the period 1995 to 2001. We however recognize that using this measure rather then the EATR poses some limitations. As discussed in the review of the empirical literature, the EATR reflects the rate a firm is likely to face on a hypothetical investment project and is therefore more likely to influence firm investment decisions, then statutory corporate tax rates are.[267] While Effective Average Tax Rates may represent a superior measure for analyzing whether countries compete for Foreign Direct Investment, statutory rates are what seem to matter for profit shifting.[268] Huizing and

[265]Klaus Armingeon et al., "Codebook: Comparative Political Data Set 1960-2014," (University of Berne: Institute of political science, 2016), 1.
[266]Witold J. Henisz, "The Institutional Environment for Infrastructure Investment," Industrial and Corporate Change 11, no.2 (2002): 363.
[267]Devereux and Griffith, "The Taxation of Discrete Investment Choices", 2.
[268]Devereux, Lockwood and Redoano, "Do countries compete over corporate tax rates?", 1210.

Laevan (2006) state " the semi-elasticity of reported profits with respect to the top statutory rate… is large enough for international profit shifting to be a serious issue for European tax authorities."[269] Considering the Common Consolidated Corporate Tax Base (CCCTB) reform package proposed by the European Commission focuses in part on tackling loopholes "associated with profit shifting for tax purposes"[270] and multinationals are believed to make profit location decisions based on statutory rates, using this measure in our analysis is warranted.

MEASURES OF COUNTRY SIZE

There are two measures of country size that have been exhausted in the empirical literature on corporate tax rate determinants, these being population and GDP. Influenced by Genschl, Kemmerling and Seils (2011) we use the natural log of the population as a measure of country size to test the legitimacy of the theory of asymmetric tax competition.[271]

MEASURES OF OPENESS & INTEGRATION

This study will analyze the effect of two different measures of economic openness and integration on the corporate tax rates of member states. The first of these variables, OPEN is quantified by dividing the sum of a country's exports and imports by GDP. To account for the imperfections of this measure we include a second measure of openness. The variable KA_OPEN is derived from the Chinn-Ito index and measures " a country's degree of capital account openness."[272] The variable measures the "extensity of capital controls" within a country on a zero to one scale and is "based on the binary dummy variables that codify the tabulation of restrictions on cross-border financial transactions reported in the IMF's Annual Report on Exchange Restrictions (AREAR)".[273] This includes a " variable indicating the presence of multiple exchange rates", a "variable indicating restrictions on current account transactions", another

[269]Huizinga and Laevan, 1166.
[270]"Commission Proposes Major Corporate Tax Reform for the EU," European Commission, News release, October 25, 2016. accessed April 27, 2017. http://europa.eu/rapid/press-release_IP-16-3471_en.htm.
[271]Genschel, Kemmerling, and Seils, "Accelerating Downhill", 585-606.
[272]Menzie D. Chinn and Hiro Ito, "What Matter for Financial Development? Capital Controls, Institutions, and Interactions," National Bureau of Economic Research Working Paper, No. 11370 (2005): 30.
[273]Menzie D. Chinn and Hiro Ito, " A New Measure of Financial Openness?," Journal of Comparative Policy Analysis, Volume 10, Issue 3 (2008): 311.

"indicating restriction on capital account transactions", and a final "variable indicating the requirement of the surrender of export proceeds."[274]

MEASURE OF POLITICAL IDEOLOGY & ELECTION YEAR

The variable IDEOLOGY measures the ideological position of the cabinet. It ranks from 1 to 5, where 1 is hegemony of right wing and center parties, and 5 is hegemony of social democratic and other left parties.[275] As denoted by Armingeon et al. (2007) in the CPDS Codebook, left refers to "social democratic parties and political parties to the left of social democrats" while right represents "liberal and conservative parties".[276] Center parties on the other hand are characterized as "moderate social amelioration in a location to the left of conservative or conservative-neoliberal parties."[277]

We also use the election year as another measure of political constituency costs. The variable ELECTION is a dummy variable, which takes the value 1 in an election year and 0 otherwise.

MEASURES OF POLITICAL STRUCTURE

We include two measures of transaction costs in our model in order to account for most of the factors outline by Buchanan (2008) that may affect the government's ability to pass corporate tax reforms. The independent variable VETO is derived from the POLCON data set and measures the "feasibility of policy change" which depends on "the number of independent branches of government with veto power over policy change".[278] It also takes into consideration "the preferences of each of these branches and the status quo policy."[279] The measure is then adjusted to account for "the extent of alignment across branches of government using data on the party composition of the executive and legislative branches." and "the extent of preference heterogeneity within each legislative branch."[280] The measure can take any value between 0 and 1, where 0 means that a policy can be implemented with ease and 1 implies that veto powers make it impossible to pass legislation.

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[274]Ibid.
[275]Armingeon et al., "Codebook: Comparative Political Data Set 1960-2014", 3.
[276]Armingeon et al., "Codebook: Comparative Political Data Set 1960-2014", 35.
[277]Ibid., 35.
[278]Henisz, 363.
[279]Ibid.
[280]Henisz, 363.

The variable STRUCTURE, originating from the Comparative Political Dataset is also included in the model to account for another range of political transaction costs. It is composed of several different components including "federalism and bicameralisms and whether the government is presidential or parliamentary."[281] As it is an additive index, the greater the value it holds the more complex the political structure of the country. We also include the dummy variable POCO, which takes the value 1 if the member state is a post communist nation and 0 otherwise.

FURTHER SOCIO-ECONOMIC VARIABLES

Finally, we include a range of different socio- and economic variables that we believe may have an effect on the tax policy decisions of member states. The first of these is the unemployment rate denoted in the model as UNEMP. We also include the fraction of elderly in the population captured by the variable POPOLD as well as debt over GDP, denoted as DEBT in the model.

[281]Hansson, Porter and Williams, 12.

CHAPTER 4: RESULTS

This chapter provides a review of the regression results, which can be found in Annex 2. Our findings fall in line with several of the theories of corporate tax competition. For one, we find significant evidence of a positive relationship between country size and statutory corporate tax rates, implying that our first hypothesis is correct and that smaller member states do in fact set lower rates then larger members. This lends support to the theory of asymmetric tax competition, which suggests that as larger countries are faced with a lower tax elasticity of capital they can afford to set higher corporate tax rates.[282] On the other hand, smaller countries set lower tax rates on mobile factors such as capital and their citizens are better off under tax competition.[283]

Tax competition theory also suggests that greater economic integration and openness increase capital mobility, thereby increasing the elasticity of the tax base and inducing countries to reduce their corporate tax rates in order to compete for capital and FDI. This may help explain why many CEECs that joined the European Union during the fifth and sixth enlargement rounds began adopting ambitious corporate tax reforms prior to their accession. In order to test the legitimacy of this theory we include two measures of openness in our model. Our expectations were that both of these measures would have a negative impact on statutory corporate tax rates. Though both of the measures prove to be significantly correlated to statutory corporate tax rates they have contrasting effects.

The first measure of openness (OPEN), which has been commonly used in previous empirical studies, was computed by dividing the sum of a country's exports and imports by GDP. Contrary to what we predicted and what several previous empirical studies have found, this measure of openness is positively correlated to statutory corporate tax rates. This entails that the greater the sum of a country's exports and imports as a fraction of GDP, the higher the statutory tax rate imposed on corporations. It is, however, important to point out that while this measure is statistically significant, its magnitude (0.000612) is not economically significant.

Devereux and Loretz (2012) point out some issues with this particular measure of openness, which may help explain our results. For one, the measure itself does not really capture a country's degree of openness, "but rather the result of openness."[284] Another issue is that the

[282]Wilson, "Tax competition with interregional differences in factor endowments", 424.
[283]Ibid.
[284]Devereux and Loretz, " What Do We Know About Corporate Tax Competition", 759.

measure reflects openness to trade instead of openness to capital flows.[285] Whether a country open to trade becomes "more or less attractive as a location for investment" depends on different factors including "where the market and factors of supply are located."[286] Therefore as Devereux and Loretz explain "greater trade openness may lead to higher location specific rent and hence higher tax rates".[287]

We included a second measure of openness in our model (KA_OPEN) that does not suffer from these limitations. It reflects a countries degree of capital openness based on the extensity of capital and financial controls it has in place. Unlike our first measure of openness this one seems to better reflect openness to capital flows. As statutory rates affect profit shifting decisions we believe that this measure is superior when it comes to analyzing the relationship between openness and the statutory corporate tax rate of member states. As expected, our results indicate that KA_OPEN is negatively correlated to statutory corporate tax rates, lending support to Hypothesis 2. This suggests that an increased level of openness achieved by loosening capital and financial controls does seem to put downward pressure on statutory corporate tax rates across EU member states.

Consistent with the results of many previous empirical studies, our findings suggest that political ideology has no significant impact on statutory corporate tax rates. This confirms our third hypothesis that the effects of partisan politics on corporate tax rates are weak across the European Union. In theory, one would expect left wing governments to pursue a "high tax large spending policy" and right wing governments to pursue a "conservative low tax policy."[288] However, the theoretical literature on corporate tax competition provides us with some explanations as to why this may not necessarily always be the case. For one, the fear of voter backlash may decrease the effects of partisan politics. A negative response from constituents often has the power to shift a government's political spectrum. Secondly, socio-economic constraints as well as the size of a country's corporate tax base may also influence government's corporate tax policy decisions, independent of its political ideology.[289] We also find no significant relationship between our second measure of political constituency costs ELECTION

[285]Ibid.
[286]Ibid.
[287]Ibid.
[288]Park, 9.
[289]Ganghof, 141; Park, 71.

and the statutory corporate tax rate, suggesting that corporate tax policy reform does not suffer from an election year effect.

While political constituency costs may have no significant effect on statutory corporate tax rates, this does not prove to be the case for all of our measures of political transaction costs. Surprisingly enough we find "the number of independent branches of government with veto power over policy change"[290] to have no impact on corporate tax rates. However, political structure (STRUCTURE) is both significantly and positively correlated to statutory corporate tax rates, suggesting that countries with more complex political structures have higher rates. Although this may be the case for statutory corporate tax rates, we would have perhaps found contrasting results had we used a different measure of the corporate tax rate. The reason for this is that it is often seen as politically more difficult to implement changes to the statutory rate then it is to alter the definition of the tax base. When taking a closer look at the data itself, one clearly notices that several countries, which hold higher values for the independent variable STRUCTURE, have statutory corporate tax rates significantly higher than the 2014 EU average of 22.9%. Those countries, which particularly stand out, are Germany and France, two countries that have strongly vocalized their support for the European Commission's corporate tax coordination efforts.[291] On the other hand, Germany's effective tax rates are rather moderate in comparison to those of other EU members.This may suggest that countries with complex political structures resort to less visible parts of taxation such as the tax base to remain competitive.

Due to these contrasting results we cannot entirely accept our fourth hypothesis. We can however deduct that countries with certain specific political structures tend to have higher statutory corporate tax rates. The elements of political structure, which are encompassed in the variable STRUCTURE, include the separation of powers, federalism, parliamentary sovereignty and frequent referenda.[292]

As discussed in our introductory chapter, many of the CEEC countries that acceded to the European Union in 2004 and subsequent years were post-communist states. These countries conferred a great deal of policy-making authority, especially in the area of indirect taxation, to

[290]Henisz, 363.
[291]"Germany, France say EU must speed up tax coordination," EUbusiness, accessed May 2, 2017, http://www.eubusiness.com/news-eu/finance-public-debt.elt/
[292]Armingeon et al., "Codebook: Comparative Political Data Set 1960-2014", 11.

the European Union leading up to their accession.[293] These countries have also cooperated with the European Commission when developing their tax incentives for corporations in order to ensure they did not fall counter to the European Union's competition policy.[294] While the EU was able to influence these countries in many areas of taxation, they had no say over the statutory rate these countries chose to impose on corporations. Appel (2011) explains that after having lost so much autonomy over several areas of taxation many of these states began adopting ambitious tax reforms in the area of corporate taxation.[295] In the opinion of many of their leaders this was the only way they could compete for foreign direct investment against the larger more developed members.[296] As predicted, we find a negative relationship between our dummy variable POCO and statutory corporate tax rates, suggesting that post-communist member states have maintained relatively lower corporate tax rates then the rest of the members over the past two decades.

To conclude, only one of our socio-economic variables, fraction of the population over the age of 65 (POPOLD), is significantly correlated to statutory corporate tax rates. Our findings indicate a positive relationship between the two variables. This suggests that governments understand to an extent the implications attributed to having to support a large aging population and take these into account when setting tax rates. On the other hand, level of debt and the unemployment rate do not significantly affect member states corporate tax rate decisions.

[293]Appel, 2.
[294]Ibid., 3.
[295]Ibid., 78.
[296]Ibid.,78.

CHAPTER 5: CONCLUSION

This thesis has put tax competition theory to the test by investigating the determinants of statutory corporate tax rates within the European Union. While a few empirical studies have analyzed the economic and political determinants of corporate tax rates in unison, to our knowledge none have done so solely across European Union member states. Our findings not only confirm our research question but also provide a more comprehensive image of the domestic determinants of corporate tax policy across the EU, allowing us to render some insight into the future of corporate tax coordination in the region.

Firstly, our results lend support to the theory of asymmetric tax competition, which suggests that country size strongly affects a country's tax policy preferences. That is to say, as larger member states are faced with lower tax elasticity of capital they can afford to apply higher rates. On the other hand, smaller countries hold on to their mobile tax base by setting lower rates and are believed to be better off under tax competition. One can expect greater coordination in the area of corporate taxation to be more consequential for smaller countries and it is, therefore, not likely to garner much support from these specific member states.

Secondly, our analysis of the economic determinants of corporate tax rates provides us with some interesting results. For one, our findings indicate that greater capital openness does seem to put downward pressure on statutory corporate tax rates. On the other hand, the effect of trade as a proportion of GDP is not economically significant. Surprisingly enough, a country's levels of debt and unemployment rate also do not seem to significantly influence member state corporate tax policy decisions. Nevertheless, an aging population is both significantly and positively correlated to statutory corporate tax rates. This suggests that governments may to an extent be constrained in their corporate tax policy decisions by the large welfare costs associated with supporting a large aging population.

Thirdly, our results suggest that the effects of political constituency costs on statutory corporate tax rates are weak across the EU. To elaborate, the effect of partisan politics on statutory corporate tax rates seems to be diluted within the European Union. We also find no evidence that corporate tax policy reform suffers from an election year effect. While the effects of political constituency costs seem to be unimportant, this is not necessarily the case for political transaction costs. Our results indicate a significant and positive relationship between certain

elements of political structure and statutory corporate tax rates notably the separation of powers, federalism, parliamentary sovereignty and frequent referenda. Although members with more complex political structures may have higher statutory corporate tax rates, this may be attributed to the political challenges associated with making a change to the statutory rate. As emphasized by Hannson, Porter and Williams (2012), "the political structure of the federal government has a significant impact on the form of economic stimulus given."[297] Therefore, we may expect member states with more complex political structures to resort to making changes to the more hidden parts of taxation such as the definition of the tax base for the sake of making their markets a more attractive location for investment.

In regards to the European Commission's efforts in achieving greater coordination in the area of corporate taxation, at the end of 2016, they re-launched their Common Consolidated Corporate Tax Base (CCCTB) project.[298] The initial proposal, which was first unveiled in 2011, was blocked in the European Council as a result of objections from various countries.[299] The new project provides a "single set of rules to calculate a company's taxable profits in the EU".[300] The consolidation part of the proposal implies that the principle taxpayer of a group of companies operating across different member states would only be required to file a tax return with "one principle authority".[301] Using an apportionment formula, the tax base is then distributed among the different member states "in which the group is active."[302] These member states can "then tax its share of profits at its own national rate." [303]

As emphasized by Bettenford et al. (2009), "the common consolidated corporate tax base centers around the issue of base broadening versus rate reduction."[304] While we have only studied the relationship between domestic factors and the statutory rate, there is ample empirical

[297]Hannson, Porter and Williams, 19.
[298]"Briefing EU Legislation in Progress: Common Consolidated Corporate Tax Base," European Parliament, accessed May 26, 2017, http://www.europarl.europa.eu/RegData/etudes/BRIE/2017/599395/EPRS_BRI(2017)599395_EN.pdf
[299]"Common Consolidated Corporate Tax Base (CCCTB)," European Commission, accessed May 26, 2017, https://ec.europa.eu/taxation_customs/business/company-tax/common-consolidated-corporate-tax-base-ccctb_en
[300]"Briefing EU Legislation in Progress: Common Consolidated Corporate Tax Base," European Parliament, accessed May 26, 2017, http://www.europarl.europa.eu/RegData/etudes/BRIE/2017/599395/EPRS_BRI(2017)599395_EN.pdf
[301]"Common Consolidated Corporate Tax Base (CCCTB)," European Commission, accessed May 26, 2017, https://ec.europa.eu/taxation_customs/business/company-tax/common-consolidated-corporate-tax-base-ccctb_en
[302]Ibid.
[303]Ibid.
[304]Bettendorf et al., " The economic effects of EU-reforms in corporate income tax systems," Study for the European Commission Directorate General for Taxation and Customs Union, Contract No. TAXUD/2007/DE/324 (2009):2.

evidence suggesting that these factors also influence other measures of the tax burden that take into account the tax base, such as the EMTR and the EATR. As mentioned in Chapter 2, countries compete over different measures of the tax burden, namely the statutory tax rate for profits and the effective marginal tax rate for capital[305], while the effective average tax rate is more likely to influence a firm's investment decisions.[306] We have also discussed, in regards to our findings, how political structure in particular may impact a country's ability to lower its statutory rate, leaving politicians to resort to less visible parts of taxation such as the tax base to remain competitive.

By effectively controlling the composition and size of the tax base, the EU would be limiting tax competition to a country's effective tax rate. As the tax base is the same for all EU countries, the only other variable in calculating the EATR and EMTR of any country would be a progressive tax rate and the apportionment formula, the latter being outside the control of any one country. In a perfectly competitive environment, this may be a recipe for a race to the bottom in effective rates. The central problem is that the apportionment formula would likely make any small country's effect on a global investor's aggregate EATR and EMTR immaterial, thereby eliminating the effectiveness of current measures leading to profit shifts.

To conclude, the CCCTB would likely severely curtail all effective corporate tax competition for investments between countries and would be a fundamental shift in the uploading of tax policy to the EU umbrella. Considering the need of a unanimous decision amongst the member states for, not only the principle of such a sovereignty shift but also the intricate details such as an apportionment formula, adoption of such changes is seemingly not likely. What might be lost in these recurring attempts to curtail current tax competition is the impact on the EU as a whole as capital and investments find more motivated suitors in the global market place.

[305]Devereux, Lockwood, and Redoano, "Do countries compete over corporate tax rates", 1210.
[306]Devereux and Griffith, " The Taxation of Discrete Investment Choices", 2.

Annex 1: Definitions of Variables, Sources and Expectations

VARIABLES	DESCRIPTION	SOURCE	EXPECTATIONS
TAX	Statutory Corporate Tax Rate	Taxation and Customs Union department of the European Commission's (TAXUD)	
lSIZE	Natural log of the population	Eurostat	POSITIVE CORRELATION
OPEN	The sum of exports and imports of goods and services measured as a share of GDP	World Bank national accounts data, and OECD National Accounts data files.	NEGATIVE CORRELATION
KA_OPEN	Can take any value between zero and one, where the larger the number the more open the country	The Chinn – Ito Financial Openness Index[307]	NEGATIVE CORRELATION
IDEOLOGY	Ranked on a scale of 1 to 5, where 1 represents a right wing government 5 a left wing government	Comparative Political Dataset[308]	NO SIGNIFICANT EFFECT
ELECTION	Dummy Variable, which takes the value one during an election year and zero otherwise	Comparative Political Dataset	NEGATIVE CORRELATION
VETO	Can take any value between zero and one, where zero means that policy can be implemented with ease and one implies that veto powers make it impossible to pass legislation	Political Constraint Index Dataset[309]	POSITIVE CORRELATION
STRUCTURE	Additive index composed of several different components, including system of government and the separation of powers. The greater the value it holds, the more complex the political structure of the country.	Comparative Political Dataset	POSITIVE CORRELATION

[307] Menzie D. Chinn and Hiro Ito, "What Matters for Financial Development? Capital Controls, Institutions, and Interactions," Journal of Development Economics, Volume 81, Issue 1 (2006): 163-192

[308] Klaus Armingeon, Christian Isler, Laura Knöpfel, David Weisstanner and Sarah Engler, "Comparative Political Data Set 1960-2014," Bern: Institute of Political Science, Univer-sity of Berne, 2016.

[309] Witold J. Henisz, "The institutional environment for infrastructure investment," Industrial and corporate change 11, no. 2 (2002): 355-389.

POCO	Dummy Variable, which takes the value one if member is a post communist state and zero otherwise.	Enlargement of the European Union Factsheet – European Commission[310]	NEGATIVE CORRELATION
UNEMP	Unemployment, total (% of total labor force)	World Bank; International Labour Organization, ILOSTAT database	NEGATIVE CORRELATION
POPOLD	Population ages 65 and above (% of total population)	World Bank Estimates	POSITIVE CORRELATION
DEBT	Gross general government debt (financial liabilities) as a percentage of GDP.	Comparative Political Dataset; OECD & Eurostat	POSITIVE CORRELATION

[310] "Enlargement of the European Union FACTSHEET: From 6 to 27 members," European Commission, accessed April 27, 2017, https://ec.europa.eu/neighbourhood-enlargement/sites/near/files/pdf/publication/elarg-factsheet_en.pdf

Annex 2: Regression Results

Dependent Variable: TAX
Method: Panel Least Squares
Date: 05/26/17 Time: 14:02
Sample: 1995 2014
Periods included: 20
Cross-sections included: 28
Total panel (unbalanced) observations: 544

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.271143	0.053752	-5.044354	0.0000
LSIZE	0.021153	0.002896	7.304563	0.0000
OPEN	0.000612	6.03E-05	10.14199	0.0000
KA_OPEN	-0.057452	0.011182	-5.137988	0.0000
IDEOLOGY	-0.001923	0.001608	-1.195796	0.2323
ELECTION	-0.000580	0.004962	-0.116991	0.9069
STRUCTURE	0.011107	0.002634	4.217215	0.0000
VETO	-0.014676	0.023072	-0.636078	0.5250
POCO	-0.063153	0.007010	-9.009217	0.0000
UNEMP	-0.008954	0.060077	-0.149040	0.8816
POPOLD	1.382039	0.127355	10.85184	0.0000
DEBT	0.010813	0.009880	1.094450	0.2743

Effects Specification

Period fixed (dummy variables)

R-squared	0.690535	Mean dependent var	0.276974
Adjusted R-squared	0.672437	S.D. dependent var	0.087324
S.E. of regression	0.049978	Akaike info criterion	-3.099152
Sum squared resid	1.281396	Schwarz criterion	-2.854175
Log likelihood	873.9692	Hannan-Quinn criter.	-3.003373
F-statistic	38.15659	Durbin-Watson stat	0.198583
Prob(F-statistic)	0.000000		

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PLEDGE OF HONESTY

On my honour as a Student from the Diplomatic Academy of Vienna, I submit this work in good faith and pledge that I have neither given nor received unauthorized assistance on it.

Vienna, June 16th 2017
Sophie Paradis
MAIS 2