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## Abstract

What factors explain the wave of adoption of the flat tax in Eastern Europe — a policy that was all but unmentionable in the rest of the world? We argue that, once the first few successes were underway, governments with liberal outlooks toward taxation adopted the reform through a process of rational learning: an often-radically new government will tend to adopt the policy based on successful implementation of its neighbors. Our contribution to the literature on the political economy of taxation is threefold. First, we show that, both theoretically and empirically, the existing work on taxation does not apply to the flat tax revolution in the post-communist countries. Second, we take into consideration the need and the difficulty of measuring ideology of Eastern European political parties. Third, we approach the issue of policy diffusion by explicitly modeling the different mechanisms that might underlie the process. We also find that the presence of other market-minded reforms do not predict adoption of the flat tax.

# 1 Introduction

In the past century, the flat tax seemed consigned to the category of potentially desirable but politically unattainable reform. Widely believed by neoliberal economists to offer huge revenue gains, both by reducing bureaucracy and increasing payments, it had been repeatedly deemed too tough a sell to voting publics who wanted to be taxed only according to their level of income.

But that all changed in 1994, when Estonia's youthful, liberal government pushed through a flat tax of 26 percent. Taken alone, this might have been just an anomaly, as the government had instated a basket of reforms that was the stuff of neoliberal dreams, including zero-tariff trade. Furthermore, small, open economies such as Hong Kong and the UK's Channel Islands had also embraced the flat tax (in 1947 and 1994, respectively) but did not have any followers.<sup>1</sup> But within a year, Estonia's Baltic neighbors followed suit. Ten years on, close to a dozen countries in Eastern Europe have joined the flat tax revolution, and several more seem poised to do so.<sup>2</sup>

How did governments as diverse as underachieving Romania, dynamic Slovakia, and rapidly growing yet far from liberal Russia push through this reform, long considered to be politically too sensitive to tackle? Researchers interested in extraordinary politics in the developing world are confronted with a dilemma. Most of the empirical work on the determinants of particular economic reforms has been done on OECD countries. The assumptions underlying those models may not be relevant for the developing countries, because of structural differences in those countries economies as well as in their politics. Furthermore, the literature on taxation is more concerned with predicting the *levels* of tax

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<sup>1</sup>Hong Kong's is not a pure flat tax; it has different marginal tax rates for a few different levels of income.

<sup>2</sup>The countries are, in order of adoption, Estonia, Lithuania, Latvia, Russia, Serbia and Montenegro, Ukraine, Slovakia, Georgia, Romania, and Albania.

under various circumstances, not on the adoption of particular tax regimes. Finally, diffusion processes have long been a subject of research in the social sciences, but empirically identifying the causal mechanism behind the spread of ideas has proven challenging.

We join the literature on the implementation of economic reforms that finds that politics matters for economic policy adoption.<sup>3</sup> We take the adoption of the flat tax in Eastern Europe as a natural experiment, where a rare constellation of a fluid environment for policy change as well as policy competition created conditions that made adopting the flat tax persuasive. In fact, the policy's obvious fit for the circumstances of the region made the case for adoption rationally compelling to policymakers. Though it is almost impossible to identify the trigger for the first country to adopt the flat tax, prediction becomes somewhat easier once diffusion kicks in.

We draw from the literature on the determinants of taxation as well as the literature on policy reform more generally to model the adoption of the flat tax as a process of policymakers' rational learning. Tax systems are vastly complex, and empirical and formal work – not all of it unified – has been done on taxation levels, value-added tax, social transfers, the ability to collect taxes, and non-tax incentives to attract revenue. Here we focus on the adoption of the flat tax as a previously rare event that now is close to becoming the standard for the region. We find that other types of policy reform do not predict adoption of the flat tax, nor do most of the variables in the standard models of taxation levels (save capital mobility). Given the right ideological environment, the flat tax has taken off in Eastern Europe not as a result of blind imitation, but by policymakers rationally updating their beliefs about the tax's appropriateness for their own country.

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<sup>3</sup>For example, on central-bank independence, see Franzese (1999) and Lohmann (2000); Franzese & Hays (2006) on labor market reforms; and Leblang (1999) and Cohen (1998) on determinants of exchange-rate regimes.

This finding contributes to the literature on diffusion and the ability of policies as well as ideas to cross borders, a topic that has been of concern to social sciences in the past several decades and has recently been tackled by political methodologists.<sup>4</sup> We also join the emerging literature on the determinants of policy diffusion.<sup>5</sup>

Note that we leave aside analyses of the impact of the flat tax on individual and state welfare, on the distributive implications of a flat tax, or on the merits or demerits of tax competition. Our goal is to focus on the flat tax as a policy instrument, and as an example of policy reform that was transmitted intraregionally rather than externally — unusually for countries in transition, where reform measures are often undertaken at the behest of the EU or an international financial institution. Thus, we seek to understand the implementation of the flat tax in the broader context of influences on policy reform, both exogenous and ideological (Williamson, 1994; Haggard & Kaufman, 1990; Rodrik, 1996; Swank & Steinmo, 2002; Swank, 2006).

Also, because of the region of focus, our work sits most comfortably in the strain of recent literature that seeks to use taxation as a means of understanding the nature of the modern state and its authority over its citizens (Bates & Lien, 1985; Tilly, 1975). Marginal taxation rates in general are a widely used proxy for the overall direction of fiscal policy (Lieberman, 2002). For developing countries, many of which suffer from weak state capacity, this is a particularly salient concern, and many researchers in comparative politics have focused on governments' ability to extract revenue from its citizens, as a

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<sup>4</sup>For just a few examples in economics, see Axelrod (1986); Bikhchandani, Hirshleifer & Welch (1992). In political science, see O'Loughlin et al (1998), Tam Cho (2002); Gleditsch & Ward (2000, 2006); Beck et al. (2006); Franzese & Hays (2006); Darmofal (2006).

<sup>5</sup>See Simmons & Elkins (2004); Brune & Guisinger (2006); Volden & Shipan (2006); Lutz & Sikkink (2000). Most saliently, in a recent paper, Swank (2006) investigated the dynamics of diffusion of the neoliberal tax policies in the OECD countries and found that highly visible tax reforms in the U.S. were important in instigating subsequent tax policy diffusion, but policy changes were constrained by domestic politics and political economy structures.



proxy for their overall aptitude.<sup>6</sup>

Our analysis starts with a background on the trajectory of the flat tax revolution in Eastern Europe. We then turn to the literature on taxation and policy reform to show the inadequacy of not only taxation studies but also of many of the most influential works on diffusion in explaining the flat tax wave in post-communist countries. After a discussion of the data as well as the methods used to analyze it, we test two models' ability to explain variation in the adoption of the flat tax, taking into account these alternate theories. We find strong support for a rational learning framework of diffusion: an often-radically new government will tend to adopt the policy based on successful implementation of its neighbors. The last section concludes with a discussion of policy implications and steps for future research.

## **2 Flatliners**

First, a definition: a flat tax regime means that every taxpayer is taxed at one, typically low, rate. The arguments in favor are several, including incentives to pay rather than to evade, as well as a reduction of costs in processing. In the 19th century most countries had a system of flat taxation, but the 20th century witnessed the gradual growth of the welfare state, with a majority of countries converging on progressive taxation.

Although the flat tax idea has been championed extensively among many libertarian economists, as well as discussed in the context of debates on tax cuts at the national policy level in the U.S. and other advanced democracies (Hall & Rabushka, 1995), it has been dismissed as politically infeasible, usually because potential taxpayers at the lower end of the spectrum want to be taxed less themselves, and to have the rich bearing a

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<sup>6</sup>See Chaudry (1997) on the Middle East and Cheibub (1998) on Africa.

greater share of the payment burden. The welfare states of Western Europe also fear a race to the bottom, as countries compete for mobile international investment by offering ever lower tax levels and, thus, greater return to that investment. Additionally, it was believed that a flat tax would create marginal disincentives to work and invest (Romich, 2006).

But what was deemed impossible in the entrenched welfare states of Western Europe seems to have become an imperative in the fluid context of economic transformation in the East. Estonia was the first to introduce a comprehensive tax reform in 1994, together with a flat tax of 26 percent. After his election victory of 1992, the then-32-year-old Mart Laar led his conservative-liberal coalition to push through many difficult shock-therapy reforms, guided by an extremely liberal economic outlook. Ignoring IMF advice to increase taxation levels in the existing system of graduated tax rates, Estonia instead implemented a flat income tax of 26 percent. In the words of Laar, “Especially in a transition country, where the economy has to move from a fully government-controlled system to a market-based one, it is very important to free the private initiative and give freedom of action to create economic value. The government must not punish entrepreneurial people; it has to encourage them, also through the tax system. The government must ensure fair play only.”<sup>7</sup> Estonia was swiftly followed by Lithuania and Latvia in their fiscal reforms the following year.

In 2001 the newly minted government of President Vladimir Putin of Russia replaced the previous three-bracket system with a top rate of 30 percent, with a low flat rate of 13 percent flat personal tax, followed by a 24 percent corporate tax in 2002. Russia has long suffered from widespread tax evasion and the new simplified tax system aimed at making

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<sup>7</sup>“The Cradle of the European Tax Rebellion: Estonia,” *TSC Daily*, 13 Oct 2004.

it easier to pay than to risk cheating.<sup>8</sup> One senior government tax official estimated that before the flat tax took effect at the beginning of 2001, Russians on average had declared as little as 25 percent of their income.<sup>9</sup> Ukraine swiftly followed suit, introducing a flat individual income tax of 13 percent, and reducing the tax rate on corporate profits from 30 to 25 percent.

The trend continued with Serbia introducing in 2003 a 14 percent flat tax rate on personal income and corporate profits, making it the lowest corporate profit tax rate in Europe. Serbia had 106 different taxes before introducing the flat tax—one of the first reforms the new government instituted.<sup>10</sup> Slovakia (whose prime minister Mikloš Džurinda frequently cited Estonia's Laar as a mentor) adopted a 19 percent flat income and corporate tax rate on Jan 1, 2004, replacing an old system that included 90 exceptions, 19 sources of un-taxed income, 66 tax-exempt items, and 27 items with specific tax rates. In 2005, flat tax reform continued to roll with Romania and Georgia going flat.

[FIGURE ONE ABOUT HERE]

Figure One shows the variation in individual taxation levels in the postcommunist countries. The top marginal income tax rates have declined in the past 15 years, from 40.9 on average in 1993 (standard deviation 7.56) to 28.9 (standard deviation 11.92) in 2005, yet the average rate was relatively stable in 1990s, and there are no visible regional differences between EU accession states and the others. For example, the countries with the highest levels of taxation are relatively rich EU member Slovenia and unreformed Belarus.

In a possible reversal of the policy catch-up that was part of EU accession, some

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<sup>8</sup>As discussed in the theory section, this is a common motivation for adopting a flat tax in Eastern Europe; data on tax evasion as well as tax compliance are unfortunately difficult to come by, however, so verification of these claims is largely anecdotal.

<sup>9</sup>"A Flat Tax Is Taking Root in, of All Places, Russia." *Newsweek*, May 26, 2003

<sup>10</sup>Author interview, Dragana Djurica, SIEPA investment agency, 18 July 2006.

western countries might follow the suit from the East, due to the obvious investment attraction of its Eastern neighbors and the global competition for capital. There are indications that Finland, Germany and Spain are currently discussing the flat tax idea.<sup>11</sup> Additionally, there are indications that flat-tax domino effect is still at work in the East.<sup>12</sup> Serious discussions are underway to implement a flat tax in Bulgaria, the Czech Republic, and Poland.<sup>13</sup> Across the border from “flat” Slovakia, the shadow finance minister of the Czech Republic, Vlastimil Tlustý of the center-right Civic Democratic Party, has drawn up plans for an integrated 15 percent flat tax on corporations and individuals, a reduction from the current top rates of 29 percent and 31 percent respectively. According to former Hungarian Prime Minister Viktor Orbán, leader of the main conservative opposition party FIDESZ, Budapest will have “no choice” but to jump on the “flat tax bandwagon” in order to maintain the country’s competitiveness and retain a fair share of foreign investments.<sup>14</sup>

### **3 Economic and Political Arguments for Tax Reform**

What factors influenced this diverse group of countries, across regions and income levels, to adopt the flat tax? We turn now to three families of arguments on the adoption of the flat tax, broadly divisible into categories of economics, both domestic and international; domestic politics, including policy flexibility and government ideology; and diffusion, focusing particularly on rational learning. It should be noted that these arguments are

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<sup>11</sup>In fact, the flat tax trial balloon could have cost the CDU their expected margin of victory in the 2005 elections: Paul Kirchhof, a strong advocate of the flat tax who was suggested as a possible finance minister by CDU/CSU, caused widespread controversy and had to leave politics.

<sup>12</sup>“The Outlook for Tax Competition,” Andrew Quinlan, *The Sovereign Individual*, March 2005.

<sup>13</sup>Indeed, Poland could have become the 11th flat country had the outcome of a close election swung the other way. During the 2005 electoral campaign, Civic Platform, a liberal-conservative opposition party, advocated a 15 percent flat tax rate in order to catch up with Slovakia (which has a flat tax rate of 19 percent), but lost the elections in a last-minute shift in the polls.

<sup>14</sup>“Tax developments in the European Union since 2004 Enlargement.” Svetlana Menn, *Tax Planning International Review*, November 2005.

not mutually exclusive, and many studies use similar variables to explain taxation levels, if not tax reform per se.

### **3.1 International and Domestic Economic Arguments**

There has been little empirical work on the determinants of flat tax adoption, largely because so few countries have adopted this form of taxation regime. Most scholarly work has focused instead on whether such a tax would offer gains to an economy in practice (Weisbach, 2000). Within the broader literature on the political economy of taxation, researchers have tended to find influence of domestic budgetary concerns as well as international competition. On the domestic side, countries with a high level of government spending will need relatively high levels of taxation to offset that debt. That government debt is a result of multiple pressures from the economy, including structural unemployment and an ageing population that is out of the workforce (Kormendi, 1983; Webb, 1985; Frenkel & Razin, 1985; Cukierman & Meltzer, 1988; Alesina & Tabellini, 1990; Swank & Steinmo, 2002; Swank, 2002). A country's competitiveness internationally also matters, both directly, as will be discussed below in the section on diffusion. Openness to trade and capital may increase the incentives of a country to develop a low taxation regime, to increase the competitiveness of their exporting sectors (Garrett & Mitchell, 2001). There is certainly reason to believe that taxes as a source of revenue were a concern in Eastern Europe: in the Western Newly Independent States, for example, the shrinking of the traditional tax bases and the problems in collecting taxes, added with the rise of the black-market economy (Hemming, Cheasty, & Lahiri, 1995).

There is, however, a problem in applying these arguments wholesale to the case of flat-tax adoption. They deal primarily with how different levels of taxation ought to affect

certain outcomes, such as financing, growth, and investment. Those arguments ought to hold true across cases and time: for example, the need to attract FDI does not speak to why a country would adopt that particular flat taxation regime, at the particular time at which it was adopted. We would want a theory that predicts why governments picked that particular flat tax tool rather than some other policy tool, such as eliminating sales tax or setting other taxes higher. Thus, we will include the variables suggested by this literature only as controls, and turn instead to political variables for greater illumination.

### **3.2 Domestic political variables**

First, government ideology seems a clear suspect for implementing the flat tax, an idea that is the darling of classical liberals and fiscal conservatives – what would be considered on the right end of the political spectrum in OECD countries. But political parties in Eastern Europe are often difficult to categorize in broad left-right strokes; many espouse a mix of different ideologies depending on the issue area. Indeed, at the time of adoption, in almost all “flat” countries at least one party in the coalition espoused economic liberal ideas (such as the Estonian Liberal Democratic Union or Serbian G17+) and/or there was a drastic change of government from left to right (Georgia and Romania). In Russia and Ukraine the incumbents and the parties supporting them in the parliaments were hardly liberal, yet based on the policies they supported they were clearly on the economic right. Thus, any empirical investigation must pay close attention to whether governmental ideology can be defined by a left-right continuum.

We also expect that rapid changes in ideology — that is, when reform governments come to power — would be associated with the adoption of flat tax regimes. Olson (2000) discussed why certain economies grew quickly after major societal shocks such

as wars or revolutions. Major shocks, he argued, broke up powerful vested interests that had previously blocked change, allowing new leaders to come to the fore. This would help explain why Slovakia, Serbia and Georgia, and to a large extent, Romania, which experienced drastic government changes in the late 1990s and early 2000s, were more quick to jump on tax reform than were, say, Hungary or the Czech Republic. The strength of the center-right after the toppling of the autocratic regimes of Vladimir Mečiar, Slobodan Milošević, and Eduard Shevardnadze had freer reign for policy experimentation, once the way was already paved by the Baltic countries (though Slovakia took some time to implement reforms due to the instability of the governing coalition). These countries thus were able to skip intermediary reform stages and could implement radical tax reforms, hereby overtaking more advanced economies with many vested interests. Thus, policymakers may have viewed the flat-tax reform as a strong and visible signal of a country's investor-friendly "type."

Because of the very highly visible and widely discussed flat-tax adoption in Estonia, a country that proved the most successful economy in Eastern Europe, if not Europe as a whole — in 2005 it ranked 12th most economically free in the world by the Heritage Foundation's Index of Economic Freedom, and first in Eastern Europe — other countries, especially those with new liberal governments that needed to make for the lost years under previous governments, saw flat-tax adoption as a shortcut, or a signal. Because of the flat tax policy's strong association with economic liberalism and the Estonian economic success, transition under-achievers used the flat tax to project their new reform-oriented and liberal credentials, regardless of whether the flat tax would ultimately prove a success.

It could also be argued that if other economic policy changes such as privatization and price liberalization were enacted at the same time as the flat tax, it might indicate a

greater penchant for reform in a ruling government, as well as public tolerance for reform. Thus, it is possible that the presence of other reforms would make it more likely for us to observe a government's adoption of the flat tax.

Additionally, there is broad agreement that, regardless of the ideological stripe of the policy in question, the difficulty of changing policies increases with the number of "veto players" who must agree to the changes (North & Weingast, 1989; Alesina & Tabellini, 1998; Henisz, 1999, 2000, & 2004; Tsebelis, 2000). This has proven true in a number of different environments: political constraints – be they coalition partners or political institutions – lead to policy stability, for better or for worse. Most recent empirical studies of policy change now take into account the presence of political constraints or checks and balances (Henisz, 2002; Stasavage, 2000), including on taxation levels (Hallberg & Basinger, 1999, 2004).

Thus, we can posit the above in the following hypotheses:

- $H_1$ : An economically liberal ideology should increase the probability of adopting the flat tax.
- $H_2$ : The enactment of other economic reforms should increase the probability of adopting the flat tax.
- $H_3$ : A greater number of veto players should decrease the probability of adopting the flat tax.



### 3.3 Diffusion

Diffusion is a phenomenon long observed in the social sciences.<sup>15</sup> The mechanism for these patterns is often ill-defined, both theoretically and empirically. It can be difficult to distinguish among imitation, learning, socialization, herd behavior, contagion, or any of the other commonly named drivers of diffusion, as many of those mechanisms generate similar predictions about how individuals would behave in the face of a fad.

One probable mechanism for the adoption of the flat tax is rational learning. In rational learning, individual countries' policies can converge on "a promising foreign model ... [through which] systematic, thorough cost-benefit analysis demonstrates its superiority over established policies."<sup>16</sup> This is the bedrock of the rational choice perspective, that individuals make informed judgements about their options, and through calculating their payoffs in all circumstances move toward the least painful one. In the laboratory of reform in postcommunist Europe, policymakers could learn from other countries' successes and failures. After observing the success of the flat tax in attracting FDI and encouraging tax collection, policymakers facing similar pressures would move to adopt the tax.

Governments in the post-communist countries borrowed shamelessly from the successes of other countries. Not just international organizations but also NGOs promoted this practice, through umpteen cross-border conferences that highlighted transition successes and failures, as well as exchange programs that put ministers and policymakers in

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<sup>15</sup>For just a few examples, see Case & Katz (1991) on how, for example, criminal activity and drug abuse patterns tend to be replicated within neighborhoods, as a result of "collective socialization" and "contagion"; Gleditsch & Ward (2006) on democratic diffusion; Gleditsch 2003 on civil wars; Brune & Guisinger (2003) on capital-account openness; Finnemore & Sikkink (1998) and Cortell & Davis (1996) on the spread of international norms; Rogers 1962 on the spread of innovations; Orenstein (2003) on the spread of pension reforms; Berry and Berry (1990), and Volden and Shipan (2006), on the spread of lotteries and anti-smoking policies in U.S. states, respectively; Simmons & Elkins (2004) on the international spread of liberalization; Lutz & Sikkink (2000), Sikkink & Walling (2006), and Kim (2005), on "cascades" in justice (holding heads of state accountable for past abuses)

<sup>16</sup>Weyland (2005) p. 271.

the offices of their foreign counterparts (Carothers, 1999). Countless well-attended conferences on “lessons learned” from other countries’ experiences in economic reform abounded throughout the region, providing a direct opportunity for policymakers to learn about the workings of the flat-tax.

One of the main architects of the Slovak flat tax reforms, L’udovit Ódor, described the presence of the flat tax reform in the prosperous Baltic countries as an empirical illustration for the reform. The flat tax had in fact been on the party platform of two of the parties in the Džurinda coalition. “There was huge political will to have a simpler tax system. ... We considered many reforms in those days, and the test cases in the Baltics and Russia provided some data points for the reform,” he says. “It is very hard to compare regions, but finally we had some empirical evidence that the flat tax worked in some cases. So we took the basic idea and then analyzed how far we could go with it.”<sup>17</sup> This supports the rational learning framework—in fact, Odor is a self-described good friend of Estonia’s Laar, and consulted him extensively throughout the period of adopting the tax.

Another motivation for flat-tax adoption is to encourage domestic collection of taxes. Compliance with tax payments after the introduction of the reform has been widespread and by some accounts staggering; one economist estimated a 79.7 percent increase in Russian tax revenues after the introduction of the flat tax.<sup>18</sup> As a recent IMF report put it, “the common circumstances and tax practices of these countries — creating market economies with little experience of tax payment by individuals and largely dysfunctional tax administrations — are relatively conducive to beneficial compliance effects” (Keen,

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<sup>17</sup>Author interview, L’udovit Ódor, National Bank of Slovakia, 23 July 2006.

<sup>18</sup>Alvin Rabushka, “The Flat Tax at Work in Russia: Year Three.” Hoover Institute comment, 26 April 2004.

Kim & Varsano, 2006). Though there are unfortunately no reliable data on effective tax collection, we can account for the attractiveness of neighboring countries through their success in drawing in international capital. Multinational corporations hoping to take advantage of the region's high levels of education and relatively cheap labor might be further swayed by favorable tax regimes.<sup>19</sup> Therefore, competition for foreign direct investment as well as for mobile capital may well be influential in a government's decision to adopt the flat tax.

Thus, we can set up a hypothesis for diffusion:

- $H_4$ : The presence of diffusion would increase the probability of flat tax adoption, through policymakers' rational observance of the increasing attractiveness of flat-tax countries.

Another schematic for thinking about diffusion is that countries would adopt a reform either because of pressure from powerful actors (the IMF, World Bank, or European Union)<sup>20</sup> This seems not to apply in the case under study here. As mentioned, the IMF explicitly opposed Estonia's adoption of the flat tax. In terms of other sources of external pressure, with the Central European and Baltic countries already in the EU, after a decade of reform and negotiation, and many in the Balkans poised to formally begin talks with Brussels, EU accession has been one of the driving sources of reform in the region over the past 15 years. But whatever else in Western Europe was attractive, the social welfare states and attendant high taxation were certainly not what that the postcommunist countries strove to emulate. Even though nearly all the countries in the region were oriented toward EU accession, the flat-tax reform was not a component of

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<sup>19</sup>This would be reflected more strongly in corporate taxation levels, but individual taxation regimes serve as a feasible proxy.

<sup>20</sup>For illustration, see Stallings (1992), Simmons (2001), or Henisz, Zellner and Guillen (2005).

negotiations — in fact, the Central European and Baltic states are being pressured to dismantle their tax systems now that they have become EU members. Thus, though the EU as well as international financial institutions are often the drivers of reform in developing countries, it may be that proximity to the EU would make a country less likely to champion a flat tax. The expectation here is mixed.

Other research that attempts to specify the mechanism behind spreads and fashions has often rejected rational learning in favor of a more pessimistic view of human nature. Bikchandani, Hirshleifer & Welch (1992, 1998) call these processes “informational cascades,” noting that after a certain point in the cascades, adoptees stop accumulating new information and simply adopt the trend blindly. Similarly, Weyland (2005) attributes the geographic and temporal pattern and substantive nature of pension reform in Latin America to “cognitive heuristics.”<sup>21</sup> Empirically as well as anecdotally, we hope to show that this is not the case for Eastern Europe.

We posit that countries signal their business-friendly ‘type’ to potential investors by adopting flat taxation. In turn, this adoption leads to increases in FDI inflows to “flat” countries and the latter and their policies become more attractive in the eyes of their peer group, in addition to foreign investors. On average, “flat” countries receive 4.3 percent of their GDP in FDI inflows after adoption, while non-flat countries receive 2.5 percent.<sup>22</sup>

Also, on average, FDI inflows increase by 2.5 percent after country adopts flat tax. As

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<sup>21</sup>Weyland delineates among four different theoretical frameworks that characterize diffusion processes, including external pressure, normative imitation, rational learning, and cognitive heuristics, championing the latter to explain most aspects of diffusion. Policymakers, he argues, adopted the reform not through a process of sober consideration, but through a three-fold psychological process in which, once an idea becomes available, individuals place exaggerated stock in a measure’s superiority and adopt it wholesale, regardless of its appropriateness for their own context. He also describes the temporal pattern of diffusion as an S-shaped curve, mapping a surge and then a levelling of policy adoption. It remains to be seen whether the path of the flat tax will take this shape, since, as we note below, ideology is also an important predictor of adoption, and indeed many opposition parties in both Eastern and Western Europe have dropped hints about the reform.

<sup>22</sup>Standard deviations are 2.7 and 2.7, respectively.

a result, non-flat countries will emulate their more successful peers and be inclined to adopt flat taxation.

The next section turns to the tests of these hypotheses on the likelihood of adoption of the flat tax regime.

## 4 Model Specification

In this section we isolate the rational learning pattern of diffusion from correlated domestic or external sources of that trend. We collect data from 20 Eastern European and EU applicant countries over a period of fifteen years, from 1990 to 2005; as such, the unit of analysis here is country-year. We confronted the potential bias caused by listwise deletion in the face of missing observations in our dataset by using Amelia (Honaker, Joseph, King, Scheve, & Singh, 2003) to impute for missing values based on patterns in the existing observations.<sup>23</sup> Reported coefficients and standard errors are averaged across ten imputed datasets. To correct for the serial correlation that plagues time-series, cross-section datasets, we employ year fixed effects, which also aid in ensuring that our results are not simply due to idiosyncracies of a particular year.<sup>24</sup>

In measuring ideology, we use expert survey data (Benoit & Laver, 2006) (in 2003 the surveys were applied to all countries in Eastern Europe, *inter alia*).<sup>25</sup> For each

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<sup>23</sup>Observations were not missing at random; earlier years as well as less-developed countries tended to have more missing values. This pattern makes it feasible to employ imputation based on existing relationships in the observed data. There was 16 percent missingness in our base model for imputation.

<sup>24</sup>Because of the high degree of correlation with our diffusion variables, we do not employ country or region fixed effects; it is superior to substantively model space rather than just to include dummy variables. Due to this diversity of flat tax countries and a battery of parameters which account for country characteristics in the model specification, we feel sufficiently confident that we address Galton's problem (1889) and are able to distinguish between effects arising out of diffusion and those out of clustering and domestic characteristics.

<sup>25</sup>There are several ways of measuring party policy positions, including methods based on content analysis (Budge et al., 2001), roll call voting patters (Hix et al., 2005; Poole, 2005; Poole & Rosenthal, 1997), computerized word scoring techniques (Laver, Benoit, & Garry, 2003; Benoit & Laver, 2003) or opinion surveys (Hug & Konig, 2002; Konig & Slapin, 2004), all of which have their advantages. But in

substantive policy dimension, each party was placed on a scale describing its position, using the Laver-Hunt (1992) metric of 1 to 20, with 1 generally corresponding the “left” position. To account for the impact of ideology on tax policy changes, we used Economic (Spending v. Taxes) policy dimension, with the following two extremes: (1) Promotes raising taxes to increase public services, and (20) Promotes cutting public services to cut taxes.

For governmental ideology, we use data from Benoit and Laver for 2000s, and Huber and Inglehart (1995) for the 1990s. In case of coalitions, we used the average coalition score, weighted by seats. We standardized the 10-point scale in the latter study make it be equivalent with the 20-point scale of Benoit and Laver. Though it would be ideal to have the same ideology data for all years, we checked for robustness by matching the economic left-right positions of parties from Benoit and Laver with those of Huber and Inglehart, the positions were within three points difference at most.<sup>26</sup> For consistency, we also included in some of the estimations indicators of party families (whether governing parties were liberal or conservative).<sup>27</sup> The problem with using party families in the context of Eastern Europe is that economic liberals are not necessarily social liberals.<sup>28</sup>

In keeping with the above hypotheses, we model diffusion in a few different ways. First, we measure regional competition for mobile investment, by calculating a country’s FDI as a share of that in its region (divided into Central Europe, Eastern Europe, the

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order to adjudicate the substantive validity of the results, expert knowledge can provide key insights and serve as benchmarks that give some systematic sense of the validity of alternative measures. (Benoit & Laver, forthcoming; Chapter 3 discusses this in detail)

<sup>26</sup>Basinger and Hallenberg (2004) used Laver and Hunt (1992) to estimate party ideology for 1980-97, thus they estimated party positions in 1980 using data collected in early 1990s. We think it preferable to use estimators collected for respective decades, instead of applying Benoit and Lavers data retrospectively.

<sup>27</sup> Chapel Hill Party Dataset 2002, taken from Gary Marks’s website. The estimation is omitted in this paper, please, contact authors if interested.

<sup>28</sup>Indeed, in the post-communist countries, unlike in the West, positioning on social liberalism is typically orthogonal to positioning on economic policy positioning. See Whitefield and Evans (1994), who found correlations between social and economic indices of just 0.33. See also Kitschelt (1999), p. 67.

Balkans, and the Baltics). Second, we measure the spread of policy ideas by counting the number of countries that have implemented the flat tax, for the regressions on flat tax, and calculating the average tax levels for the region, for the robustness checks on levels of individual taxation. We discuss these diffusion effects in more detail below. These effects are estimated by the binary time-series cross-section model with temporal controls (Beck et al., 1998; Beck et. al., 2001; Epstein et al., 2001). The model is thus a duration-dependent logit (restricted Markov transition) model.

Finally, following Franzese and Hays (2006), we specify a spatio-temporal lag model that includes weighted spatial lags to test whether policymakers observed and reacted to tax policy change in neighboring countries. To assess whether countries blindly adopted the policy or whether they did so on the basis of rationally evaluating the increasing attractiveness of nearby flat-tax countries, we weigh each neighboring flat country by FDI inflows. Thus, tax policy change in a country becomes a function of past flat-tax adoption in a neighboring country, as well as FDI competition. Each spatio-temporal lag model also includes other measures of diffusion, described above.<sup>29</sup>

The full spatio-temporal lag model to analyze the diffusion of flat tax policies throughout Central and Eastern Europe is:

$$P_{i,t} = \frac{\exp(\alpha \mathbf{Y}_{i,t-1} + \rho \mathbf{W} \mathbf{Y}_{i,t-1} + \gamma \bar{n} \mathbf{Y}_{t-1} + \mathbf{X}_{i,t-1} \beta + \epsilon_{i,t})}{1 + \exp(\alpha \mathbf{Y}_{i,t-1} + \rho \mathbf{W} \mathbf{Y}_{i,t-1} + \gamma \bar{n} \mathbf{Y}_{t-1} + \mathbf{X}_{i,t-1} \beta + \epsilon_{i,t})}$$

where  $\mathbf{Y}_{i,t-1}$  is a one-period temporal lag of the dependent variable and  $\alpha$  is the temporal-autoregressive coefficient;  $\mathbf{W}$  is an NxN spatial-weighting (standardized in-

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<sup>29</sup>See Gleditsch & Ward, 2006 estimation of democratic diffusion using four different measures of the latter).

verted distance) matrix;  $\mathbf{W}\mathbf{Y}_{i,t-1}$  is the spatial lag, which gives a weighted sum of  $\mathbf{Y}_{j,t-1}$  for each  $\mathbf{Y}_{i,t-1}$ ;  $\rho$  is the spatial-autoregressive coefficient;  $\bar{n}\mathbf{Y}_{t-1}$  is the ‘diffusion’ lag, where  $\bar{n}$  is the number of ‘flat’ countries in a given year;  $\gamma$  is the temporal-diffusion coefficient;  $\mathbf{X}$  is a matrix of observations on the independent variables and  $\beta$  is the vector of its coefficients;  $\epsilon$  is the residual vector. The temporal-autoregressive coefficient  $\alpha$  shifts depending on the value of  $\mathbf{Y}_{i,t-1}$  (1 or 0). We assume that all variables  $\mathbf{X}$  have the same independent effect on the dependent variable irrespective of the value of  $\mathbf{Y}_{i,t-1}$ , but  $\alpha$  captures the difference between effects arising from the transition from 0 to 1 (flat tax adoption) and those from 1 to 1 (flat tax persistence), by  $\alpha$ . Thereby we can distinguish between the impact of diffusion (adoption) and attraction, the probability of flat tax adoption given its persistence.

We construct  $\mathbf{W}$ , a standardized inverted distance matrix, to specify diffusion via distance, with zeros along the diagonal and elements  $W_{ij}$  reflecting the degree of connectedness from country  $j$  to  $i$ .<sup>30</sup> Due to the diversity of flat tax countries, we forsake alternative specifications of this matrix on the basis of EU membership status or regions and construct a distance matrix instead.

We estimate the spatial lag with no substantive weights, and we also weigh  $\mathbf{W}\mathbf{Y}_{i,t-1}$  by a variable that we expect to register the attractiveness of ‘flat’ countries to ‘non-flat’ countries: competition for foreign direct investment (measured as the ratio of a country’s FDI to that of its immediate region). We estimate separately several models: without spatial effects, with spatial effects, and with spatial effects weighted by FDI (all including

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<sup>30</sup>Each value in the matrix represents the distance between all capital cities in Eastern Europe. The values are inverted so that neighboring countries register higher values of  $W_{ij}$  and each row is standardized by dividing each cell in a row by that row’s sum, as common in the literature. Since we have 20 countries in the dataset, the  $N \times N$  matrix is  $20 \times 20$ . To compare and discuss short-run spatial effects in neighboring countries (Table 3), we also specify a border-contiguity matrix, with bordering countries coded as 1, 0 otherwise, and row-standardized as above. These two specifications produce very similar results.



FDI as the independent variable). If the latter model proves to be a better predictor than the former, it will suggest that rational observation of the attractiveness of flat tax countries does contribute to the explanation of a flat tax revolution.

We use these variables to estimate two different classes of models. The first (Table 1) models the overall reform environment, as described in Hypothesis Six. For this, we use measures of total revenue from privatization (*Privatization*), denominated in US dollars (Brune, 2005); European Bank for Reconstruction and Development measures of current-account liberalization (*Current-acct liberalization*) and the removal of price controls (*Price liberalization*) (EBRD, 1990-2005), and measures of *institutional reform* (Kostadinova, 2005). We also control for the ability to enact policy reform by including a measure of veto players (*Political Constraints*) and for *capital-account openness*. We also model the pull from Europe in terms of geography. We use the standard measure of kilometers from the Rhein valley (*Km from Rhein*) as a proxy for the pull of European commerce and culture, as is common in the literature (Sachs, 1999). The second (Table 2) uses many of the standard control variables that test arguments about taxation levels — but again, not adoption of particular taxation regimes. Both models include all measures of diffusion as well as economically liberal government leanings (*Ideology*).

Results in Table One show the results of a logit model on the adoption of the flat tax in a given country year (coded 0 if the tax was not adopted and 1 if it was).

[TABLE ONE ABOUT HERE]

As suspected, none of the reform measures here have consistently significant effects on the probability of flat tax adoption, though capital-account openness does. An economically liberal ideology, however, is associated with statistically significant increases in the probability of flat tax adoption. That the coefficient on ideology proves strong indicates

the primacy of rational learning over cognitive heuristics; in the case of the latter, all governments would adopt the reform regardless of their ideological bent. All four ways of modeling diffusion also have impact: proximity to Western Europe has positive and statistically significant effects. The number of flat tax countries in a given year (*Diffusion*) has the strongest effects, which are mitigated only slightly by including the spatial lags in the model. On its own, the effects of FDI competition are not statistically different from zero, but weighing the spatial lag by FDI competition has substantively less strong but statistically significant effects, suggesting the pull of interdependence among those neighboring flat-tax countries.

Next we control for flat-tax adoption through modeling the predictions on the literature on optimal levels of taxation. To correctly specify our model, following Swank and Steinmo 2002, we control for overall productivity, (GDP per capita, *Income*) structural unemployment as a share of GDP (*Unemployment*), and the demands placed on the public sector through measuring both public sector debt (*Public Debt*) and the percent of the population aged 65 and older (*Percent Elderly*). We control for international economic pressures by including openness to the world economy, as measured by trade as a share of GDP (*Trade*); we expect that greater openness to trade would lead to reduced or simplified tax systems to boost competitiveness (Garrett, 1998). We include *capital-account openness* to further take into account the pressures of mobile capital; a higher degree of capital mobility should increase the probability of adopting a flat tax. More industrialized countries will regard income tax collection as less pertinent than corporate tax collection because of a larger share of the latter in their revenue structure, and they could be more willing to risk experimenting with income tax policies; we include industry as a percentage of GDP (*Industry*) to control for this. All control variables are lagged,

since many reforms were introduced January 1, which indicates that policy decisions were taken the previous year. Furthermore, economic and political conditions, as well as government ideology, usually precede reform measures. Lagging our control variables makes us reasonably certain that we can make a case for the causal nature of the findings.

Table Two shows the results of our tests of the standard economic models in the taxation literature on the probability of flat tax adoption, with ideology and diffusion included.

[TABLE TWO ABOUT HERE]

On their own, few of the economic variables pass the standard cutoffs for statistical significance, though capital-account openness shows consistently strong and significant improvements in the likelihood of a country's adoption of the flat tax in a given year. Again, including diffusion and politics directly into the mix, however, changes the story somewhat. First, the model fit improves by including the political variables. Second, both the brute number of champions of the flat tax and the spatial lags, along with government ideology with respect to economics, are statistically significant.

The spatial-autoregressive coefficient,  $\rho$ , gives the impact of all other spatial units, weighted by  $w_{i,j}$ , on the outcome in country  $i$ ; if significant, it signals the presence of diffusion effects in the model, but it cannot be directly interpreted.<sup>31</sup> We address this problem and evaluate the spatial interconnectedness and diffusion in several ways.

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<sup>31</sup>Franzese & Hays (2003, 2006) suggest the use of spatial multipliers to calculate short term and long term spatial effects on the basis of the estimated OLS regression model. However, the calculation of such a multiplier does not translate directly to the logit context — functional form in logit is different, non-linear, and also, while the model with the continuous dependent variable includes the latter both on the left and right-hand side of the equation (lagged dependent variable), which allows the construction of a multiplier (see Franzese & Hays 2006, 5-11), in limited dependent variable model the dependent variable is the probability of an event occurring, while the spatial lag is based on the actual event, which does not translate into multiplier. At the moment, despite the advances in spatial econometrics in political science (Franzese & Hays, 2003, 2006) and literature on binary-time-series-cross-section (BTSCS) that emphasized the ways to address the serial dependence and cross-sectional heterogeneity in the data (Beck, Katz, Tucker, Jackman, various years), there is no literature on spatial aspects of TSCS data with a binary dependent variable.

First, we compare nested and non-nested models to evaluate whether the spatial lag has significant effects on flat tax adoption. Second, we estimate Model D from Table 1 as an ordinary least squares regression, specifying the dependent variable as a top marginal individual tax rate instead of flat tax change, calculate the multiplier and evaluate short-term effects. Further research will address the evaluation of spatial interdependence and diffusion, should the analytical solution for binary model becomes available.

Additionally, because it is difficult to interpret the coefficient on the spatial lag directly, we use the number of flat tax countries in a given year (*Diffusion*) instead, which is highly correlated with the spatial lag. Recall that only one country had gone flat in 1994, and two more (all in the Baltics) from 1995 to 2000; the count was five in 2001-2002, seven in 2003, and ten in 2004-2005. We estimate the probability of a flat tax policy change in a non-flat country, depending on the number of flat countries in the region and changes in governmental ideology. We estimated effects of two hypothetical changes in government: from the center to the center-left and to the center-right. We shift the value of ideology from the mean value of 10.4 by one standard deviation above and below this mean: to the left government (6.48) and to the right government (14.6).

Using the method of first differences and holding all other variables at their mean values, we estimate that when the center government is replaced by the left one, the probability of flat tax change in that country decreases by 0.06 (0.05) with three “flat” neighbors and by 0.15 (0.1) with seven “flat” countries (standard errors in parentheses). In contrast, when a right party or coalition comes into power, the probability increases by 0.07 (0.03) and by 0.24 (0.21) percent, given three to seven “flat” neighbors. When the number of flat countries is nine, the ideological change to the left does not decrease the probability: it goes up by 0.03 (0.03) percent. Likewise, the change to the right, given nine

“flat” countries, leads to 0.24 (0.21) increase, which is lower than when there are seven such countries. These results could suggest that the more countries adopt the tax, the less on the right a government has to be to adopt the reform; if diffusion is strong enough, adopting the flat tax may become more acceptable for center governments. Poland with its ideology of 12.5 in 2005 comes very close to a predicted implementation of the flat tax.<sup>32</sup>

[FIGURE TWO ABOUT HERE]

Figure 2 provides another view of factors affecting tax policy changes. Using Model C, we estimated the expected probability given increases by one standard deviation in each predictor from its mean. The Figure plots averaged predicted values, together with confidence intervals. If interval cross 0-line, the results are not statistically significant, at 0.05 level. This visualization supports our story that radical changes in government (*ideology*) and *diffusion* are the strongest factors to explain flat tax revolution: changes in governmental ideology increase the predicted probability by 29 percent, number of flat countries: by 36 percent, capital openness and FDI competition also have significant effects.

We stipulated that the increases in FDI inflows into ‘flat’ countries make the latter more attractive for their neighbors, and thus raise the probability of tax policy change in the latter. We can evaluate whether the spatial lag weighted by FDI inflows into flat countries has effects independent from the effects of FDI and spatial lag variables. In Table 1, Model A includes only the FDI variable, B includes a spatial lag, and C both of the former and spatial, FDI-weighted lag. We performed a likelihood-ratio test and obtained a highly significant  $\chi$ -squared of 32.3, which suggests that the increases in FDI

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<sup>32</sup>That said, running predicted probabilities for Poland adopting the flat tax in 2005 gives a prognosis of only 14 percent; see the conclusion for details.

inflows in flat neighboring countries affects the probability of flat tax change for their neighbors.

All flat tax policy changes not only radically simplified taxation and “flattened” the rates, but also reduced taxes considerably: on average, flat countries impose 30.5 percent of top marginal individual tax rate, while non-flat do 38 percent. Because we can estimate the effects of spatial lag in OLS regression model, we specify model D as the OLS regression and use the same variables to predict individual tax rates. Parameters that reduce tax rates should be associated with those increasing the probability of flat tax adoption. The estimate of the spatial-lag coefficient in the base model is statistically significantly positive. The spatial multiplier,  $(I - \rho W)^{-1}$  (Franzese & Hays 2006, 7-12) captures the effects from one Eastern European country on others closest to it, from those — on their neighboring countries, including back on that country. Multiplying  $(I - \rho W)^{-1}$  by a 20x1 column-vector with 0 in all rows except for example, Lithuania, which receives a 1, produces a 20x1 vector that contains the estimated effects of a unit-shock (1 percent change in taxation) in Estonia on the other 19 countries in their rows. We estimated standard errors via statistical simulation. The resulting matrix provides the estimated effects of a unit-shock to country *i* on tax policies in the other 19 countries *j*.

[TABLE THREE ABOUT HERE]

Table 3 reports the short-run spatial effects of marginal individual tax rates in Eastern Europe. The first number in each cell is the immediate effect of a unit-increase (1 percent) in the column country’s top marginal individual tax rate on other Eastern European nations (rows). The results suggest that a change in taxation levels in a “flat” country leads to a reduction in taxation in other countries. For example, decrease in taxation in Estonia brings about immediate tax changes in Latvia, Lithuania, Ukraine and Russia.

The effects are quite small because we estimated the short-run effects, we expect them to be larger in the steady state.

Finally, how does our model fare in terms of forecasting and reliability? As might be expected from such a rare event, it puts the probability of Estonia's adopting the flat tax in 1994 at .01. Russia's probability of flat tax adoption in 2001 is .39; Albania's for 2005 is also .39, Romania's is .17, and Georgia's is .99. The erratic nature of these predictions indicate that there is still much to be done in terms of model specification. That said, we might mention that the predicted probability for all countries in our sample of adopting the flat tax in 2005 is 75 percent. Overall, the model predicts 72.8 percent of observations correctly: if  $Pr > 0.5$  and  $y$  is 1, and if  $Pr < 0.5$  and  $y = 0$ .

## 5 Conclusion

We hope to have demonstrated that, when it comes to extraordinary politics, economic forces – either domestic or international – do not seem to be sufficient to get reform off the ground. In the presence of the right ideological environment, rational policymakers learn from other countries' successes with the flat tax and move to adopt the reform themselves. Both political constraints and peer pressure from neighboring countries are a powerful influence.

If diffusion is a strong force, though, it provokes an interesting policy question: though we have shown diffusion to matter intraregionally, could the flat tax revolution jump over to Western Europe as well? Eastern European countries for the most part kicked off the 1990s with ambitious reform agendas to reshape and open their economies. Policy reform in the West may be more difficult. But competition from the East may prove too strong a force. As Estonian Prime Minister Laar put it, “if ‘old Europe’ is to compete effectively

with ‘new Europe,’ it will have to lower taxes and rethink the social-welfare systems that high taxation support.” Although the welfare state is considered to be a core part of European identity, despite its unsustainability and its drag on European competitiveness, enlargement might prove a powerful catalyst for reform.<sup>33</sup> Again, this may prove politically difficult to push through Brussels, because of the unanimity requirement in any change in formal tax matters (according to Articles 94 and 95.2 of the EC Treaty).

That said, the initial conditions are far from analogous, as Eastern Europe had an unusually mercurial policy environment and a glaring need for reform. Furthermore, the costs to Western European governments of adopting the tax are far greater than to Eastern European ones. Recall the case of Kirchhof: the cost of his even mentioning the flat tax might have been so huge that he had to be quarantined from politics. If we were to include Western Europe in future analyses, it would be necessary to model the heterogeneity between the benefits and costs to each government, taking into account that the costs were relatively trivial for Eastern Europe and that the potential benefits (particularly with respect to tax collection) were high. Western Europe’s welfare states and path dependency would give it a rather different cost function.

What is required at this stage is a more complete articulation of the political mechanism through which neighbor influence works. We have shown that competition for investment does not suffice. It is possible that empirics would be less illuminating than formal theory. Work on collective action (Kuran, 1991) or information cascades (Lohmann, 2000) might be useful here, though those models usually require either that one outcome be truly optimal, or that most actors share, but suppress, a preference for a particular kind of outcome. As such, the parallels may be in policy reform more generally, such as the

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<sup>33</sup>Hans H.J. Labohm. *TSC Daily*. “The Cradle of the European Tax Rebelion: Estonia.” 13 Oct 2004. Available at <http://www.tcsdaily.com/article.aspx?id=101304A>



spread of school vouchers in the United States. It is crucial to identify what, exactly, is crossing borders here: if it is not competition for investment per se, it may be an idea. For now, however, we hope to have shown that reformer governments rationally factor in cross-border pressures in the political economy of policymaking, at least in this region and with this reform.

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Table 1: The Flat Tax Was Not Part of Other Reforms

Variable	A.	B.	C.	D.†
Constant	-32.65*** (4.49)	-35.36*** (9.39)	-37.06*** (9.64)	40.08*** (5.18)
Privatization	.23 (.17)	.20 (.21)	.16 (.24)	.62* (.25)
Current acct liberalization	.27 (.57)	.38 (.65)	.54 (.77)	-.18 (.48)
Price liberalization	-.0002 (.002)	-.0008 (.003)	-.002 (.003)	-.001 (.002)
Institutional reform	.002 (.05)	-.003 (.06)	.004 (.06)	-.02 (.03)
Capital-account openness	1.07*** (.27)	1.06*** (.35)	1.12** (.37)	-1.16*** (.22)
Political constraints	-.17 (2.06)	-.44 (2.04)	-.72 (2.56)	7.68* (3.17)
Ideology	.36*** (.13)	.48* (.26)	.53** (.27)	-.15** (.07)
Diffusion	16.5*** (1.93)	15.57*** (2.48)	14.59** (2.71)	-
Distance from Rhein	.002** (.001)	.002* (.001)	.002* (.001)	.004*** (.001)
FDI competition	-.95 (.63)	-.89 (1.05)	-.58 (1.02)	-3.06** (.61)
Spatial lag (unweighted)	-	13.06 (8.16)	-4.92 (12.14)	.11* (.07)
Spatial lag (FDI-weighted)	-	-	5.2** (2.30)	-
Pseudo-R <sup>2</sup>	.69	.81	.82	†.51
Log-Likelihood	-38.53	-23.47	-22.47	†P > F = .000

Dependent variable is adoption of the flat tax for a given country year. Standard errors in parentheses. Logit estimation via multiple imputation, with fixed effects for year, temporal controls and the lagged dependent variable are omitted. N=300. Pseudo-R<sup>2</sup> and log-likelihood are calculated from one single dataset, multiple imputation does not report them. \*Significant at p<.10 level, \*\*significant at p<.05 level, \*\*\*significant at p<.001 level. †OLS regression, dependent variable is the top marginal individual tax rate, same model specification as in Models A–C.

Table 2: **Traditional Taxation Models Plus Diffusion and Ideology**

Variable	<b>E.</b>	<b>F.</b>	<b>G.</b>	<b>H.</b>
Constant	-15.35** (6.62)	-33.21*** (8.3)	-31.38*** (8.78)	-32.94*** (10.53)
Percent elderly	.51* (.27)	.40 (.28)	.35 (.30)	.41 (.31)
Public Debt	.11 (.08)	.08 (.09)	.04 (.11)	.04 (.11)
Growth	.08 (.06)	.08 (.07)	.11 (.07)	.16* (.09)
Income	-.0001 (.0001)	-.0001 (.0001)	-.0001 (.0001)	-.0001 (.0001)
Trade	.008 (.01)	-.0001 (.01)	-.008 (.15)	-.014 (.02)
Industry	-.024 (.11)	.022 (.14)	.001 (.15)	-.027 (.19)
Unemployment	.003 (.08)	-.01 (.08)	-.003 (.09)	.01 (.09)
Political constraints	-	-.05 (1.8)	-.58 (2.1)	-1.2 (2.1)
Capital-account openness	.93*** (.26)	.99*** (.30)	.96** (.31)	1.05** (.36)
FDI competition	-.61 (.42)	-.76 (.54)	-.58 (.68)	-.33 (.76)
Diffusion	-	16.71*** (2.03)	16.11*** (2.7)	15.58*** (2.25)
Ideology	-	.28** (.10)	.36** (.15)	.44** (.21)
Spatial lag (unweighted)	-	-	8.71** (4.8)	-9.90 (8.2)
Spatial lag (FDI-weighted)	-	-	-	5.5** (2.2)
Pseudo-R <sup>2</sup>	.66	.70	.74	.78
Log-Likelihood	-42.62	-37.85	-31.81	-28.38

Dependent variable is adoption of the flat tax for a given country year. Standard errors in parentheses. Logit estimation via multiple imputation with fixed effects for year, temporal controls and the lagged dependent variable are omitted. N=300. Pseudo-R<sup>2</sup> and log-likelihood are calculated from one single dataset, multiple imputation does not report them. \*Significant at p<.10 level, \*\*significant at p<.05 level, \*\*\*significant at p<.001 level.



Figure 1: Individual Tax Rates in Eastern Europe, 2005

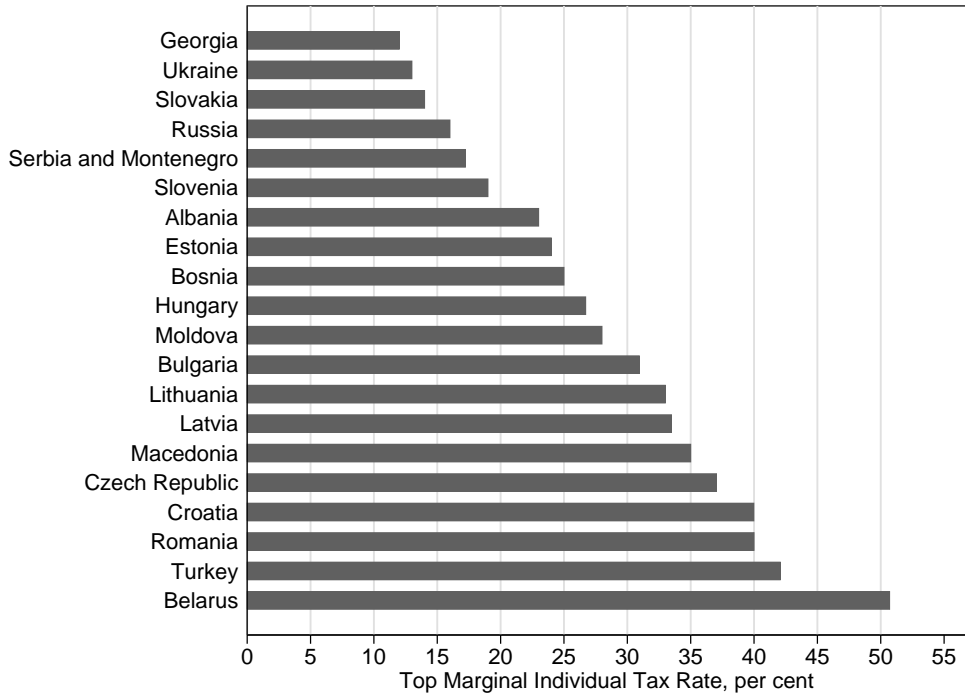
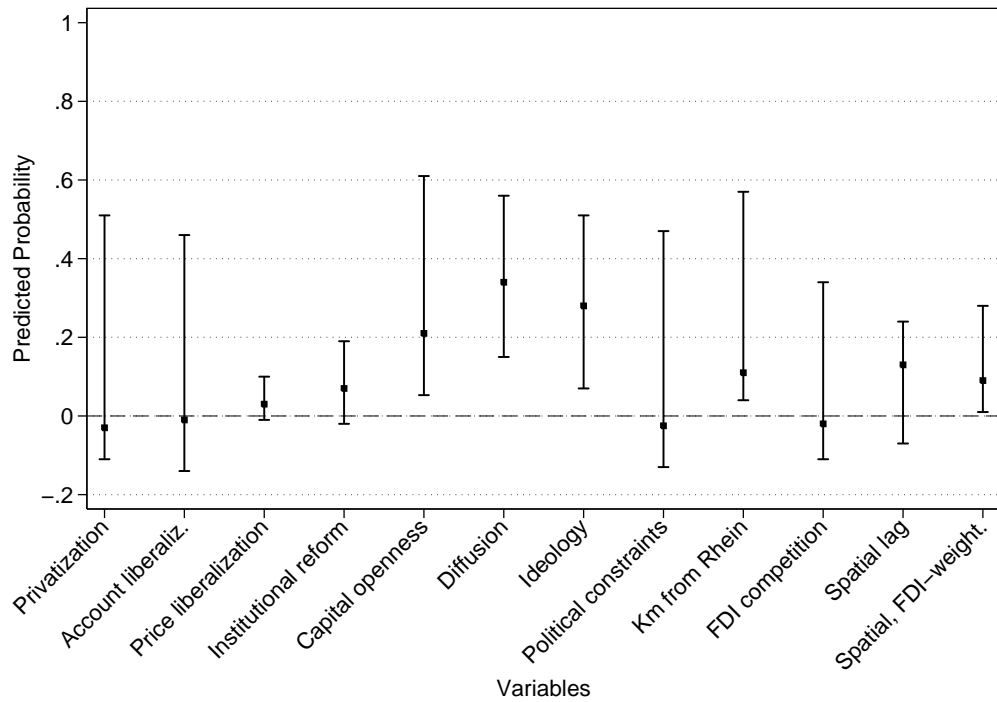
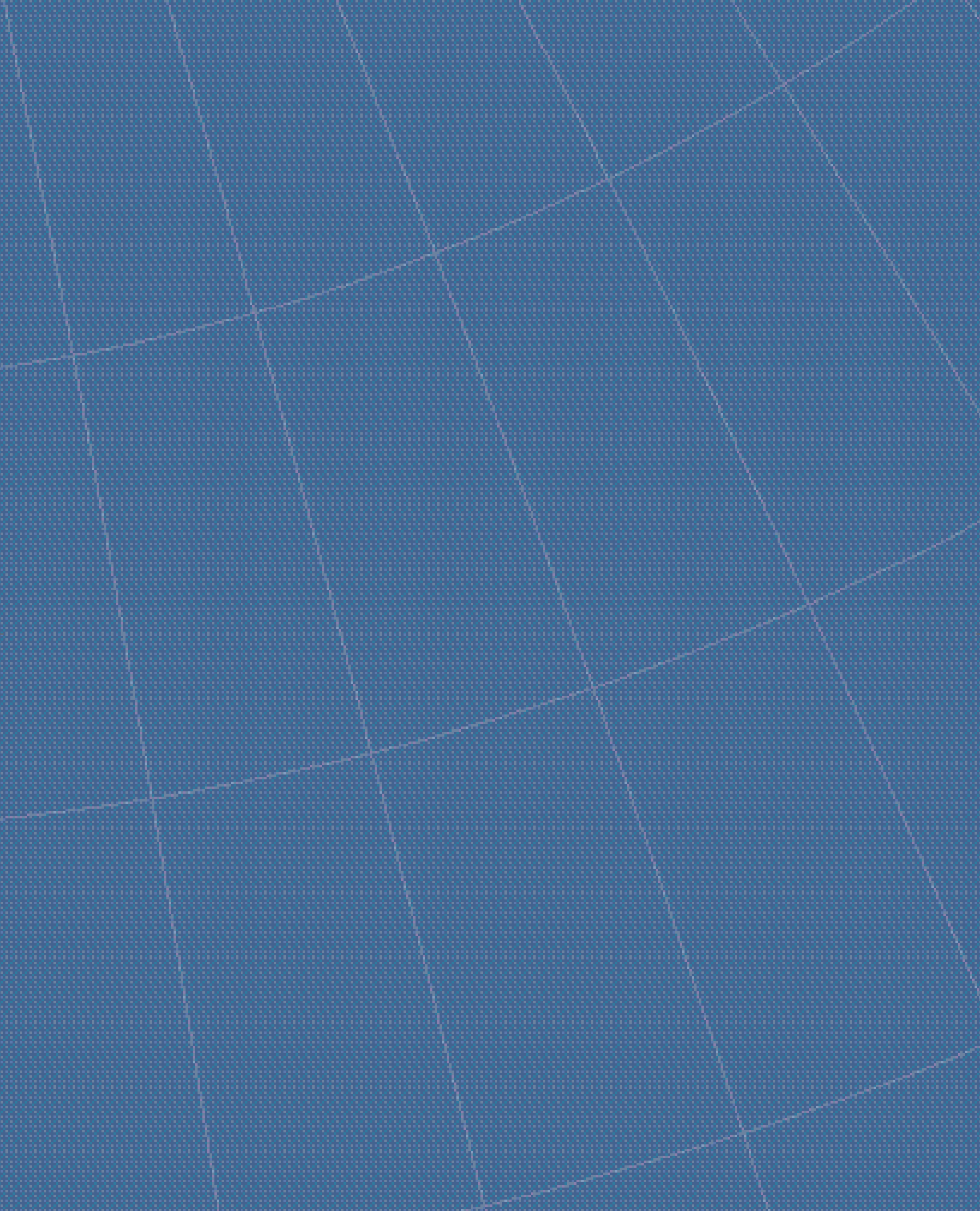


Figure 2: Changes in Predicted Probabilities of Flat Tax Adoption





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