

Flatliners: Ideology and Rational Learning in the Adoption of the Flat Tax

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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.¹ 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.²

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.

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

²The countries are, in order of adoption, Estonia, Lithuania, Latvia, Russia, Serbia and Montenegro, Ukraine, Slovakia, Georgia, Romania, and Albania. This paper does not analyze adoption after 2005, but in 2006-07 four more postcommunist countries adopted flat tax, as discussed below.

Furthermore, the literature on taxation is more concerned with predicting the *levels* of tax under various circumstances, not on the adoption of particular tax regimes. Finally, the spread of ideas has long been a subject of research in the social sciences, but empirically identifying the underlying causal mechanism has proven challenging.

We join the literature on the implementation of economic reforms that finds that politics matters for economic policy adoption.³ 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 aggregation 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

³For 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.

rationally updating their beliefs about the tax's appropriateness for their own country.

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 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 and 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 have focused on governments' ability to extract revenue from its citizens, as a proxy for their overall aptitude.⁴

This finding also 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.⁵ We also join the emerging literature on the determinants of policy diffusion.⁶ But we diverge

⁴See Chaudry (1997) on the Middle East and Cheibub (1998) on Africa.

⁵For 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); Meseguer (2002) and Darmofal (2006).

⁶See 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

from the conclusions of those studies in arguing that both learning and emulation can be rational.

Our paper starts with a description of the flat tax phenomenon 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. We use the trajectory of the flat tax revolution in Eastern Europe to argue that rationality can be argued to drive all stages of diffusion after initial adoption of a policy — both learning and emulation. 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: often, a 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

important in instigating subsequent tax policy diffusion, but policy changes were constrained by domestic politics and political economy structures.

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 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.”⁷ Estonia was swiftly followed by Lithuania and Latvia in their fiscal reforms the following year.

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

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 it easier to pay than to risk cheating.⁸ 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.⁹ 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.¹⁰ 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 1 January 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. Additionally, there are indications that flat-tax domino effect is still at work in the East.¹¹ Serious discussions are underway to implement a flat tax in Bulgaria, the Czech Republic, and Poland.¹² According to former Hungarian Prime Minister Viktor Orbán, leader of

⁸As 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.

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

¹⁰Author interview, Dragana Djurica, SIEPA investment agency, 18 July 2006.

¹¹"The Outlook for Tax Competition," Andrew Quinlan, *The Sovereign Individual*, March 2005.

¹²Indeed, 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

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.¹³

Central Asia is currently ahead of the game, however, with the lowest tax rates of all the post-communist countries. In February 2006, Kyrgyzstan established a 10 percent flat tax. Effective January 1, 2007, Mongolia introduced a flat tax on personal income of a 10 percent flat, and neighboring Kazakhstan is slated to adopt a flat tax in 2007. Macedonia’s center-right government VMRO-DPMNE — the main party in the coalition government from 1998 to 2002, which then returned to power in July 2006 — enacted in January 2007, at 12 percent a flat tax, and is scheduled to drop to 10 percent in 2008. In April 2007, Czech Prime Minister Mirek Topolanek announced a package of tax reforms whose hallmark was a flat personal income tax at 15 percent as of 2008, against the current progressive tax of 12-32 percent.¹⁴

The flat tax may be spreading to the developing world as well. Mauritius’s 2006 budget feature promised a 15 percent flat tax on personal and corporate income to be implemented in July 2009. In May 2006, Kuwait indicated that it was studying a proposal to introduce an income tax at a flat rate of 10 percent. Mexico’s President Felipe Calderón has also promised to introduce a flat tax to simplify Mexico’s tax code. Though it made few headlines, a flat tax has technically been in operation in Iraq since 2003, when the US tax administrator for the country imposed a 15 percent flat tax on the country. China is currently considering dropping its complicated personal income tax system with a flat tax.

of 19 percent), but lost the elections in a last-minute shift in the polls.

¹³ “Tax developments in the European Union since 2004 Enlargement.” Svetlana Menn, *Tax Planning International Review*, November 2005.

¹⁴The plan has yet to be approved by parliament but is expected to pass in some form.

In a possible reversal of the policy catch-up that was part of EU accession, some 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.¹⁵ The reform is even making strides not only in the developed world, but in one state where tax reform should be taboo. In February 2007, Iceland introduced a welfare-state-friendly flat tax, with a relatively high rate of 22.75 percent. Additionally, several states in the US — among them Illinois, Indiana, Massachusetts, Michigan, Pennsylvania, Rhode Island and Utah — have partial flat-tax systems in place.

To illustrate the trajectory of flat-tax reform both visually as well as theoretically, Figure One below illustrates the adoption of the flat tax.

FIGURE ONE ABOUT HERE

This graph depicts three theoretically distinct stages in the diffusion process that we will elaborate on below. In the first, “trendsetters” push through an innovation in their own environments. In the case of the flat tax, this group was led by Estonia, and the other Baltic states adopted this policy relatively quickly thereafter. In the second stage, “rational adopters” wait until the policies have taken effect in other states before evaluating it for their own purposes. In the third stage, “rational emulators” pick up the policy after its economic benefits has become clear. Again, imitation can be a rational strategy of pursuing FDI. In an era when post-communist countries were competing with other countries adopting flat taxation could signal their business-friendly “type” to potential investors. In turn, this adoption leads to increases in FDI inflows to “flat”

¹⁵In 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.

countries and the latter and their policies become more attractive in the eyes of their peer group as well as to foreign investors. At this stage, we observe multiple adoptions of the tax in a relatively short period of time.

In the sections below, we elaborate on the existing theoretical arguments for the spread of this tax reform and propose our own hypotheses.

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 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, 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. For example, the Czech Republic, Hungary, and Moldova all responded to competitive pressures not by adopting a flat tax, but by lowering their taxation rates. 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: Ideology

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 champion 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. Russia’s flat tax was championed not by Putin but by his liberal economic advisers, led by Andrei N. Illarionov, an adviser to Yeltsin’s early architect of reform and a disciple of libertarian writer Ayn Rand (“Every tariff and every limit on foreign-exchange transactions is a blow to our consciousness. Every tax acts against our freedom,” he has said).¹⁶ 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.¹⁷ This would

¹⁶“The Stars of Europe: Andrei Illarionov.” *Business Week*, 17 June 2002.

¹⁷This is in evidence in the imposition of the flat tax in Iraq: “Somehow, it’s easier when you start from scratch,” noted one commentator (“U.S. Administrator Imposes Flat Tax System on Iraq,” *Washington Post*, 2 November 2003).

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. In Romania, though the government of Ion Iliescu — previously part of the former Communist elite but refashioned as a social-democratic party — had long put the flat tax on the table but failed to push it through.¹⁸ Within 48 hours of taking office, Calin Popescu Tariceanu's National Liberal Party instituted a flat tax. 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, we can posit the above in the following hypothesis:

- H_1 : An economically liberal ideology should increase the probability of adopting the flat tax.

¹⁸“Ion Iliescu ends talks of flat tax. Again,” *Ziarul Financiar*, 30 January 2004

3.3 Diffusion

Diffusion is a phenomenon long observed in the social sciences.¹⁹ 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.

Previous studies on diffusion have juxtaposed two types of learning processes: so-called “rational” versus “bounded” learning.²⁰ Rational actors observe events and practices in the world, evaluate their relevance to their own circumstances and adopt them where appropriate. 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.

This process is often pitted against bounded learning, or cognitive heuristics. Here, individuals place exaggerated stock in a measure’s superiority and adopt it wholesale, regardless of its relevance for their own context. Bikchandani, Hirshleifer & Welch (1992, 1998) call this type of bandwagoning “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,”

¹⁹For 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 & Berry (1990) and Volden & 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)

²⁰Meseguer (2002, 2004) discusses these two types of learning processes and uses a Bayesian model to test whether politicians show evidence of updating their beliefs.

claiming that policymakers followed trends in that reform blindly, without evaluating whether the policy was appropriate for their country.

But these types of explanations often depending more on whether a policy or trend appeared to have worked well after the fact, than on what policymakers may have been thinking at the time of adoption. In many existing studies, rationality is often evaluated post-hoc: if a policy is successful and others successfully adopt it, this is often taken as evidence of the latecomers' rational behavior. But just because a decision is rational does not mean it will prove to have a successful outcome. Due to asymmetries or deficiencies in information, a policymaker may well make a rational decision based on available information that even a policy that failed in one country may work in his own.

Furthermore, rationality can prevail regardless of whether learning takes place incrementally or in concert. It is entirely possible that learning can produce the same kind of outcome, and in fact those outcomes would be observationally equivalent. Because of the 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. Thus, policymakers may have viewed the flat-tax reform as a strong and visible signal of a country's investor-friendly "type." Though this motivation may be considered evidence of emulation rather than learning, there is no theoretical reason to

believe that both of these processes are not rational.

In the laboratory of reform in postcommunist Europe, policymakers could learn from other countries' successes and failures. Governments in the those 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 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 (2002-2006). "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."²¹ 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

²¹ Author interview, L'udovit Ódor, National Bank of Slovakia, 23 July 2006.

and by some accounts staggering; one economist estimated a 79.7 percent increase in Russian tax revenues after the introduction of the flat tax.²² 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, Kim & Varsano 2006). Unfortunately, however, although informal estimates can be found, no reliable cross-national data on effective tax collection exists. This makes it impossible to test empirically whether policymakers learned from successful tax collection in their neighboring countries.

We can, though, 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. On average, “flat” countries receive 4.3 percent of their GDP in FDI inflows after adoption, while non-flat countries receive 2.5 percent.²³ Also, on average, FDI inflows increase by 2.5 percent after country adopts flat tax. As a result, non-flat countries will emulate their more successful peers and be inclined to adopt flat taxation. In fact, the Czech trade ministry’s spokesman chalked up his country’s planned adoption of the tax solely to “regional tax competition,” noting that lower taxes in neighboring countries have lured investment away.²⁴ Therefore, competition for foreign direct investment may well be influential in a government’s decision to adopt the flat tax.

Thus, we can put forward our diffusion hypotheses as follows:

²²Alvin Rabushka, “The Flat Tax at Work in Russia: Year Three.” Hoover Institute comment, 26 April 2004.

²³Standard deviations are 2.7 and 2.7, respectively.

²⁴“Tax plan unlikely to boost growth,” *The Prague Post*, 25 April 2007.

- H_2 : Rational learning, through policymakers’ observance of the increasing attractiveness of flat-tax countries, would increase the probability of flat-tax adoption.
- H_3 : Rational emulation, where countries hoped to signal their business-friendly “type,” would increase the probability of flat tax adoption.

We discuss modeling these dynamics in the sections to follow.

3.4 Alternative Hypotheses

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. This can also help test whether rationality was in place when policymakers adopted the flat tax; if they were simply adopting the policy blindly, they would have thrown the flat tax into their basket of reforms regardless of whether it was appropriate. If policymakers were rational, however, the flat tax would not necessarily have been adopted in the context of other reforms.

- H_4 : If policymakers do not rationally emulate or learn, the enactment of other economic reforms may increase the probability of adopting 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).

- H_5 : A greater number of veto players may decrease the probability of adopting the flat tax.

Another schematic for thinking about diffusion is that countries would adopt a reform either because of pressure from powerful external actors; in this case the IMF, World Bank, or European Union would be likely culprits.²⁵ External coercion, however, seems not to apply in the case under study here. As mentioned, the IMF explicitly opposed Estonia's adoption of the flat tax, and in Russia Boris Yeltsin had *raised* taxes up to 30 percent, on IMF advice. 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 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, we would not expect that either the prospect of EU accession or participation with IMF programs would make

²⁵For illustration, see Stallings (1992), Simmons (2001), or Henisz, Zellner and Guillen (2005).

a country more or less likely to adopt a flat tax.²⁶

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.²⁷ 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.²⁸

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*).²⁹ For each

²⁶In fact, in our empirical tests we ran models including a variable that measured distance from Western Europe, with no statistically or substantively significant results.

²⁷Observations 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.

²⁸Because 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.

²⁹There are several ways of measuring party policy positions, including methods based on content analysis (Budge et al., 2001), roll call voting patterns (Hix et al., 2005; Poole, 2005; Poole & Rosenthal, 1997), computerized word scoring techniques (Laver, Benoit, & Garry, 2003; Benoit & Laver, 2003) or opinion surveys (Hug & König 2002; König & Slapin 2004), all of which have their advantages. But in order to adjudicate the substantive validity of the results, expert knowledge can provide key insights and

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.³⁰ For consistency, we also included in some of the estimations indicators of party families (whether governing parties were liberal or conservative).³¹ The problem with using party families in the context of Eastern Europe is that economic liberals are not necessarily social liberals.³²

In keeping with the above hypotheses, we model diffusion in a few different ways. 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

serve as benchmarks that give some systematic sense of the validity of alternative measures. (Benoit & Laver forthcoming; Chapter 3 discusses this in detail)

³⁰Basinger 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.

³¹ Chapel Hill Party Dataset 2002, taken from Gary Marks’s website. The estimation is omitted in this paper, please, contact authors if interested.

³²Indeed, 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.

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 competition, by calculating a country's FDI as a share of that in its region (divided into Central Europe, Eastern Europe, the Balkans, and the Baltics). We weigh the spatial lag by this measure of FDI competition first lagged by one year, then by three years, interacted with ideology (lagged by one year). The variable lag years for FDI competition indicate whether rational learning versus emulation took place; emulation would presumably occur in a shorter time frame (one year) than learning (three years). Thus, tax policy change in a country becomes a function of past flat-tax adoption in a neighboring country as well as FDI competition and the potential adopting country's ideology in the previous year.

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

$$P_{i,t} = \frac{\exp(\alpha \mathbf{Y}_{i,t-1} + \rho \mathbf{W}\mathbf{Y}_{i,t-1} + \mathbf{X}_{i,t-1}\beta + \gamma \mathbf{W}\mathbf{Y}_{i,t-1}X_{i,t-1} + \delta \mathbf{W}\mathbf{Y}_{i,t-3}X_{i,t-1} + \epsilon_{i,t})}{1 + \exp(\alpha \mathbf{Y}_{i,t-1} + \rho \mathbf{W}\mathbf{Y}_{i,t-1} + \mathbf{X}_{i,t-1}\beta + \gamma \mathbf{W}\mathbf{Y}_{i,t-1}X_{i,t-1} + \delta \mathbf{W}\mathbf{Y}_{i,t-3}X_{i,t-1} + \epsilon_{i,t})}$$

where $\mathbf{Y}_{i,t-1}$ is a one-period temporal lag of the dependent variable and α is the temporal-autoregressive coefficient; \mathbf{W} is an $N \times N$ spatial-weighting (standardized inverted 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 $\mathbf{Y}_{i,t-1}$; ρ is the spatial-autoregressive coefficient; \mathbf{X} is a matrix of observations on the independent variables and β is the vector of its coefficients; ϵ is the residual vector. Some models are specified to include one or two spatial weighted interaction terms, lagged by 1 and 3 years: $\mathbf{W}\mathbf{Y}_{i,t-1}(\text{or } t-3)X_{i,t-1}$. The temporal-autoregressive coefficient

α 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 α 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 α .

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 .³³ 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, to evaluate whether simple bandwagoning was at work — thus, observation of a neighboring country adopting the flat tax would be sufficient. To test for a more rational model of policymaking, 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 and interacted with ideology (all including 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. These effects are estimated in a binary time-series cross-section model with temporal controls (Beck et al. 1998; Beck et al. 2001; Epstein et al. 2001).

³³Each 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 20×20 . 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.

The model is thus a duration-dependent logit (restricted Markov transition) model.

We use these variables to estimate two different classes of models. The first (Table 1) models the overall reform environment, as described in Hypothesis Four. 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). If these reforms prove significant in adopting the flat tax, it would indicate that policymakers irrationally picked up the flat tax in the process of adapting several other pro-market reforms. We also control for the ability to enact policy reform by including a measure of veto players (*Political Constraints*) and for *capital-account openness*. 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*).

In both specifications, we include several different models to test the arguments outlined above. The base models exclude any explicit measures of diffusion. The “bounded learning” models include the spatial lag as described above, with no weights — if those prove significant, it would indicate that the sheer fact of flat-tax adoption in one country would be sufficient to spur its adoption in the next. The “rational emulation” models, by contrast, weight that spatial lag by a neighboring flat-tax country’s share of regional FDI in the previous year, interacted with the economic ideology of the governing party in the potential adopting country. If the spatial lag thus constructed is significant, it points to a liberally inclined government adopting the policy once a competitor adopts

the tax. The “rational learning” models include a spatial lag constructed as described above, but in this case, FDI competition is lagged by three years, indicating that an economically liberal government would wait to evaluate the impact of FDI inflows in neighboring flat-tax countries before adopting the policy for themselves. Because spatial lags cannot be interpreted substantively in binary models, the fifth OLS model in Table One puts individual tax levels as the dependent variable.³⁴

Table One shows 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 economic 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. Note, as well, that the ideology variable remains statistically significant even after controlling for the pressures of diffusion. 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.

Additionally, though diffusion effects do play a strong role, including the correct measurement of diffusion is crucial in understanding the nature of those effects. The unweighted spatial lag is positive and significant in the first model, but that significance

³⁴We use one-year lags in this model in order to estimate the short-run spatial effects, reported in Table 3.

goes away, and the sign even flips, once weighted measures of diffusion are introduced. Though rational emulation (the spatial lag weighted by a one-year lag of FDI competition, interacted with ideology) goes some way toward predicting flat tax adoption, rational learning (the same spatial lag, but with FDI competition weighted by three years) has more substantive magnitude.

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 on the first day of January, 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 rational versus bounded 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, as in Table One, the blunt measurement of diffusion (the unweighted spatial lag) compares unfavorably with the rational learning and rational emulation models.

The spatial-autoregressive coefficient, ρ , 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.³⁵ We address this problem and evaluate the spatial interconnectedness and diffusion in several ways. First, we compare nested and non-nested models to evaluate whether the spatial lag has significant effects on flat tax adoption. Second, we estimate the Model Five from Table 1 as an ordinary least squares regression, specifying the dependent variable as

³⁵Franzese & 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.

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.

[FIGURE TWO ABOUT HERE]

Figure Two visualizes the relative impact of factors affecting tax policy changes. Using the Rational Learning model from Table 1, 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 the interval cross the line at zero, the results are not statistically significant at the 0.05 level. This visualization supports our story that radical changes in government (*ideology*) and *rational learning* are the strongest factors that explain the flat tax revolution: changes in governmental ideology increase the predicted probability by 16.5 percent, while increases in relative FDI inflows (in three-year lags) into flat tax countries combined with shifts to the right on ideology scale by ‘learning’ governments (*spatial weighted 3-year lag*) increases the probability by 42 percent, and capital openness also has significant effects.

We stipulated that the increases in FDI inflows into ‘flat’ countries, combined with liberal economic ideology of ‘learning’ governments make flat tax changes 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, ideology and spatial lag variables. In Table 1, Base Model includes only the FDI and ideology variables; the second model includes a spatial lag; and the third all of the former and spatial, FDI-weighted and interacted with ideology lag. We performed a likelihood-ratio test and obtained a significant χ -squared of 12.3,

which suggests that the increases in FDI 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 Five 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 Lithuania 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 .26; Serbia's for 2003 is 0.16, Slovakia's for 2004 is .70, Romania's is .90, and Georgia's is .89. 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 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.³⁶ 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

³⁶Hans H.J. Labohm. *TSC Daily*. “The Cradle of the European Tax Rebellion: Estonia.” 13 Oct 2004. Available at <http://www.tcsdaily.com/article.aspx?id=101304A>

the 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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Figure 1: Flat Tax Adoption in Eastern Europe

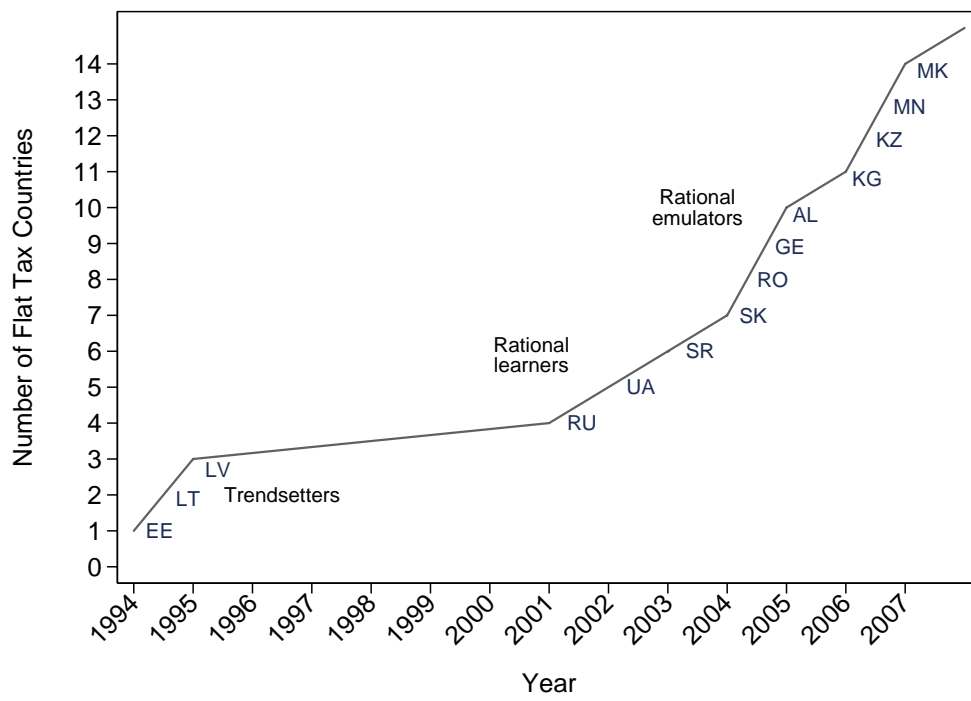


Figure : 2 Changes in Predicted Probabilities of Flat Tax Adoption

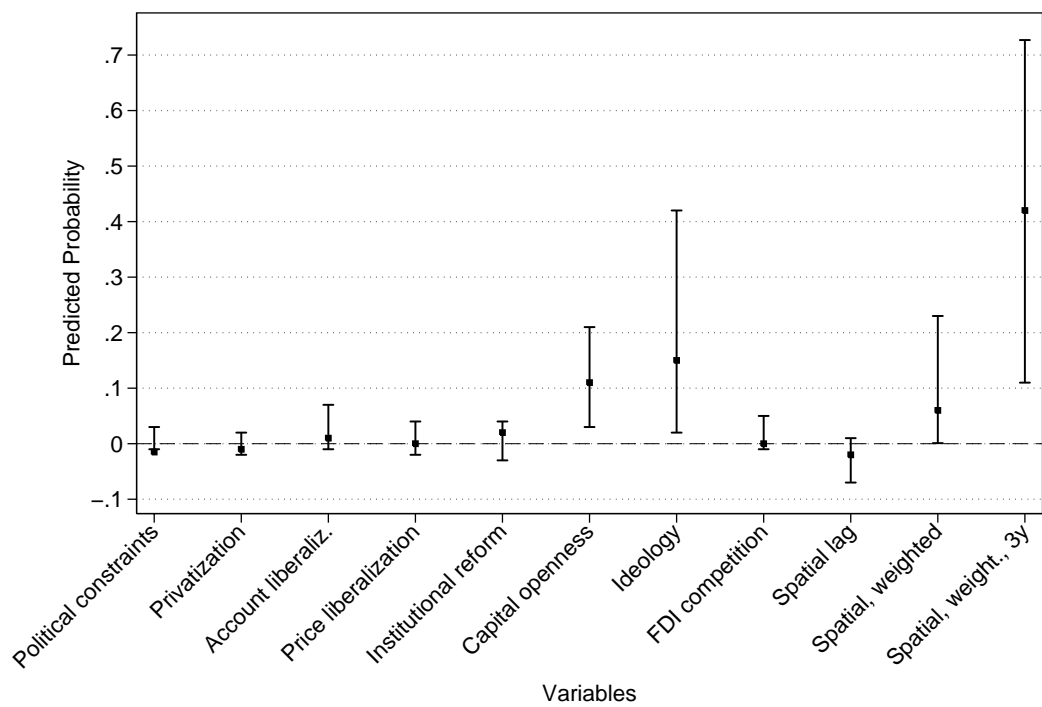


Table 1: The Flat Tax Was Not Part of Other Reforms

Variable	Base Model	Bounded Learning	Emulation	Rational Learning	†OLS Regression
Political constraints	-2.090 (1.67)	-2.102 (1.78)	-2.447 (2.08)	-4.029 (3.42)	-7.906** (2.45)
Privatization	0.246 (0.19)	0.253 (0.21)	0.236 (0.21)	0.416 (0.38)	0.210 (0.44)
Current acct liberalization	0.415 (0.37)	0.488 (0.40)	0.581 (0.43)	0.593 (0.63)	-0.556 (0.68)
Price liberalization	0.000 (0.00)	0.000 (0.00)	0.000 (0.00)	0.001 (0.00)	-0.003 (0.00)
Institutional reform	-0.012 (0.04)	-0.019 (0.05)	-0.021 (0.05)	-0.039 (0.06)	0.053 (0.06)
Capital account openness	0.943*** (0.21)	0.865*** (0.22)	0.883*** (0.24)	1.525** (0.62)	-1.283*** (0.28)
Ideology	0.410** (0.14)	0.439** (0.17)	0.483** (0.18)	0.533** (0.21)	-0.375* (0.17)
FDI competition	-0.639 (0.60)	-0.588 (0.60)	-0.487 (0.56)	-0.135 (0.79)	-0.908 (0.86)
Spatial lag	-	8.077* (3.88)	-2.910 (8.53)	-29.330 (19.56)	-0.183 (0.12)
Spatial (weighted) lag	-	-	0.763* (0.54)	0.672* (0.81)	0.401* (0.10)
Spatial (weighted) 3-year lag	-	-	-	3.887*** (1.51)	-
Constant	-14.511*** (3.68)	-14.384*** (3.89)	-15.484** (4.83)	-19.953** (9.37)	59.159*** (7.39)
N	300	300	300	260	300
Pseudo-R ²	.60	.64	.65	.73	†.45
Log-Likelihood	-52.994	-47.707	-47.336	-33.974	†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. Pseudo-R² and log-likelihood are calculated from one single dataset. *Significant at p<.10 level, **significant at p<.05 level, ***significant at p<.001 level. † The DV is the top marginal individual tax rate.

Table : 2 Traditional Taxation Models Plus Diffusion and Ideology

Variable	Base Model	Incl. Ideology	Bounded Learning	Emulation	Rational Learning
Political constraints	-0.517 (1.39)	-0.128 (1.68)	-0.177 (1.79)	-0.255 (1.83)	0.169 (3.61)
Percent elderly	0.452* (0.22)	0.335 (0.21)	0.262 (0.23)	0.238 (0.24)	0.379 (0.42)
Public debt	0.107 (0.07)	0.081 (0.08)	0.075 (0.08)	0.067 (0.09)	0.195 (0.23)
FDI competition	-0.581 (0.38)	-0.712 (0.50)	-0.656 (0.54)	-0.573 (0.54)	-0.299 (1.18)
Income	-0.000 (0.00)	-0.000 (0.00)	-0.000 (0.00)	-0.000 (0.00)	-0.001 (0.00)
Trade	0.001 (0.01)	-0.007 (0.01)	-0.013 (0.01)	-0.011 (0.01)	-0.030 (0.05)
Industry	0.003 (0.08)	0.043 (0.09)	0.050 (0.10)	0.058 (0.10)	0.238 (0.30)
Capital acct openness	0.893*** (0.19)	0.965*** (0.23)	0.939*** (0.24)	0.936*** (0.24)	2.498** (1.04)
Unemployment	0.006 (0.07)	-0.001 (0.07)	0.012 (0.07)	0.011 (0.07)	0.040 (0.22)
Growth	0.056 (0.05)	0.042 (0.07)	0.051 (0.07)	0.051 (0.07)	0.196 (0.23)
Ideology	–	0.353** (0.11)	0.402** (0.13)	0.430** (0.14)	0.597** (0.21)
Spatial lag	–	–	6.575* (3.35)	-1.411 (7.12)	-5.151 (49.74)
Spatial (weighted) lag	–	–	–	0.549* (0.44)	1.099 (1.66)
Spatial (weighted) 3-year lag	–	–	–	–	6.945** (2.05)
Constant	-14.109*** (4.26)	-17.576*** (4.97)	-17.083** (5.28)	-17.601** (5.50)	-40.540** (30.89)
N	300	300	300	300	260
Pseudo-R ²	.62	.65	.68	.68	.82
Log-Likelihood	-51.177	-45.616	-42.672	-42.549	-42.068

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. Pseudo-R² and log-likelihood are calculated from one single dataset. *Significant at p<.10 level, **significant at p<.05 level, ***significant at p<.001 level.

Table : 3 Short-Run Spatial Effects of Marginal Individual Tax Rates in Eastern Europe (Binary Contiguity Matrix)

	AL	BY	BA	BG	HR	CZ	EE	GE	HU	LV	LT	MK	MD	PL	RO	RU	RS	SK	SI	UA
Albania	.00 (.00)	.01 (.00)	.04* (.01)	.01 (.00)	.01* (.01)	.00 (.00)	.00 (.00)	.00 (.00)	.01 (.01)	.00 (.00)	.00 (.00)	-.20* (.06)	.00 (.00)	.00 (.00)	.01* (.00)	.00 (.00)	-.19* (.06)	.00 (.00)	.00 (.00)	.00 (.00)
Belarus	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.01 (.00)	.00 (.00)	.00 (.00)	-.07* (.02)	-.06* (.02)	.00 (.00)	.00 (.00)	-.07* (.02)	.00 (.00)	-.07* (.02)	.00 (.00)	.00 (.00)	.00 (.00)	-.08* (.02)
Bosnia	.01 (.01)	.00 (.00)	.00 (.00)	.00 (.00)	-.20* (.06)	.00 (.00)	.00 (.00)	.00 (.00)	.03* (.01)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	-.19* (.05)	.00 (.00)	.01 (.01)	.00 (.00)
Bulgaria	.03 (.02)	.00 (.00)	.01 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.02* (.01)	.00 (.00)	.00 (.00)	-.14* (.04)	.01 (.00)	.00 (.00)	-.13* (.04)	.00 (.00)	-.12* (.03)	.00 (.00)	.00 (.00)	.00 (.00)
Croatia	.01* (.00)	.00 (.00)	-.07* (.03)	.01* (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	-.06* (.02)	.00 (.00)	.00 (.00)	.01* (.00)	.00 (.00)	.00 (.00)	.01 (.00)	.00 (.00)	-.06* (.02)	.00 (.00)	-.07* (.03)	.00 (.00)
Czech R.	.00 (.00)	.01 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.01 (.01)	.00 (.00)	.01 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.01 (.00)	-.13* (.05)	.00 (.00)	.02 (.01)
Estonia	.00 (.00)	.02 (.01)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.01 (.00)	.00 (.00)	.00 (.00)	-.13* (.05)	.02 (.01)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.01 (.00)
Georgia	.00 (.00)	.01 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.01 (.00)	.00 (.00)	.00 (.00)	.05 (.01)	.01 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.01 (.00)
Hungary	.01* (.00)	.00 (.00)	.01 (.00)	.01 (.00)	-.05* (.02)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.01 (.00)	.01 (.00)	-.05* (.02)	.01* (.00)	-.05* (.02)	-.05* (.02)	.00 (.00)	-.05* (.02)
Latvia	.00 (.00)	-.06* (.02)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	-.07* (.03)	.00 (.00)	.00 (.00)	.00 (.00)	-.06* (.02)	.00 (.00)	.00 (.00)	.01 (.00)	.00 (.00)	-.05* (.02)	.00 (.00)	.00 (.00)	.00 (.00)	.01 (.00)
Lithuania	.00 (.00)	-.06* (.02)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.02* (.01)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	-.07* (.03)	-.06* (.02)	.00 (.00)	.01* (.00)	.00 (.00)	.01 (.00)
Macedonia	-.09* (.04)	.00 (.00)	.01* (.00)	-.09* (.04)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	-.07* (.02)	.00 (.00)	.00 (.00)
Moldova	.00 (.00)	.01 (.00)	.00 (.00)	.01 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.01 (.01)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.01 (.00)	.01 (.00)	.01 (.00)	.01 (.00)	.00 (.00)	.00 (.00)	-.20* (.05)
Poland	.00 (.00)	-.04* (.02)	.00 (.00)	.01* (.00)	.00 (.00)	-.04* (.02)	.00 (.00)	.00 (.00)	.01 (.00)	.01 (.00)	-.04* (.02)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.01 (.00)	-.05* (.02)	-.05* (.02)	.00 (.00)	-.06* (.02)
Romania	.00 (.00)	.00 (.00)	.01* (.00)	-.05* (.02)	.01 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	-.05* (.02)	.00 (.00)	.00 (.00)	.01 (.00)	-.05* (.02)	.00 (.00)	.00 (.00)	.00 (.00)	-.05* (.02)	.01 (.00)	.00 (.00)	-.06* (.02)
Russia	.00 (.00)	-.04* (.01)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	-.04* (.02)	-.05 (.02)	.01* (.00)	-.03* (.01)	-.04* (.02)	.00 (.00)	.00 (.00)	.01 (.00)	.01* (.00)	.00 (.00)	.00 (.00)	.01* (.00)	.00 (.00)	-.07* (.02)
Serbia	-.04* (.01)	.00 (.00)	-.04* (.02)	-.03* (.01)	-.03* (.01)	.00 (.00)	.00 (.00)	.00 (.00)	-.03* (.01)	.00 (.00)	.00 (.00)	-.03* (.01)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.02* (.00)	.00 (.00)	.00 (.00)
Slovakia	.00 (.00)	.01 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	-.07* (.03)	.00 (.00)	.00 (.00)	-.07* (.03)	.00 (.00)	.01* (.00)	.00 (.00)	.00 (.00)	-.06* (.02)	.00 (.00)	.00 (.00)	.01 (.00)	.00 (.00)	.00 (.00)	-.09* (.02)
Slovenia	.00 (.00)	.00 (.00)	.01 (.00)	.00 (.00)	-.20* (.05)	.00 (.00)	.00 (.00)	.00 (.00)	-.13* (.05)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.01 (.00)	.00 (.00)	.02 (.01)	.01 (.00)	.00 (.00)	.01 (.00)
Ukraine	.00 (.00)	-.04* (.01)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.01* (.00)	.00 (.00)	-.04* (.01)	.00 (.00)	.01 (.00)	.00 (.00)	-.04* (.01)	.00 (.00)	-.03* (.01)	-.04* (.01)	.01 (.00)	-.04* (.01)	.00 (.00)	.00 (.00)

The off-diagonal elements of the table report the effect of a one-unit increase (1 percent) in the column country's top marginal individual tax rate on other Eastern European nations. The immediate spatial effects are calculated using the spatial multiplier matrix $(I - \rho W)^{-1}$ (Franzese and Hays 2006, 7-12). Standard errors are in parenthesis. Effects exceeding twice their standard errors are in bold and starred.