

After State Socialism: Regime Change and Transformational Recessions

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Abstract

Transitions from state socialism generated a startling array of early economic outcomes, ranging from severe economic crises to steady economic growth, and igniting debates about the causal role of policy choices, institutional design, and initial economic circumstances. We depart from prior explanations in two ways. First, we distinguish between causes of initial recessions and causes of variation in subsequent growth rates. Second, we link early recessions to regime change, which presented unusual risks for state socialist economies. Because communist parties enforced state control over assets, regime change created economy-wide uncertainty about ownership. The most severe recessions occurred in new states that emerged after a prolonged deterioration of communist party authority, creating widespread uncertainty over ownership, prolonged conflict over the control of assets, a sharp decline in tax revenues, and weakened state regulatory capacity. More abrupt political transformations—regardless of their form—created a shorter window of uncertainty and more limited dislocations. Comparative accounts of regime change and economic reform frame an analysis of panel data from 31 countries from 1989 to 2007. The prior decline of party capacity had a large impact on the depth and duration of initial economic downturns, even after controlling for other disruptive dimensions of regime change: interstate military conflict, civil war, and hyperinflation due to the division national states.

The worldwide transformation of state socialism during the 1990s yielded a series of surprises, generating widespread controversy and an enduring intellectual puzzle. The distortions typical of Soviet-style economies led most analysts to expect short-run hardship as manufacturing was downsized to correct decades of overinvestment in heavy industry, and as a shift to market pricing in economies of shortage led to price inflation and lowered living standards (Clague 1992, Kornai 1994, Leitzel 1995, Winiecki 1991). All but one of 28 post-communist nations suffered immediate economic downturns, but their severity and depth usually went far beyond prior expectations (Ericson 1998, Hanson 1998). Sharp recessions in the first states to emerge from the revolutions of 1989 were followed by much deeper and prolonged economic crises in states that emerged from the breakup of the Soviet Union. In contrast, the few surviving communist autocracies enjoyed sustained economic growth without a similar downturn, despite once being considered the least promising soil for market reform.

The differences in initial economic outcomes were enormous and appeared to have profound long-run implications. Figure 1 charts trends in per capita gross domestic product (GDP) for three groups of economies: reform communist states (China, Laos, Vietnam), fifteen successor states of the former Soviet Union, and thirteen other post-communist states, ranging from Czechoslovakia and Poland in the west to Mongolia and Cambodia in the far east. Steady growth is evident in the reform communist states without a hint of recession. By 2008 their per capita GDP had more than doubled. At the opposite extreme were the Soviet successor states, whose economies collapsed, shrinking almost by half until 1996, at which point they once again began to grow. Not until 2005 did these economies regain 1990 levels of GDP per capita. The remaining post-communist states also suffered recessions, but they were shorter and much less severe. As a group, their economies shrank by some 20 percent before growing again in 1993.

They returned to their 1990 levels by 1999, six years earlier than the Soviet successor states.

Why did these three groups of nations diverge so dramatically? An extensive literature across several disciplines has reached little consensus (See Orenstein 2009). Explanations fall into three broad categories. The first emphasizes policy choice during the course of market reform: the extent, timing, and pace of foreign trade and price liberalization, financial deregulation and privatization—though there are strong disagreements about the impact of different approaches to reform. The primary issue of contention is about the impact of rapid liberalization and privatization—an approach far more prevalent in the former USSR than elsewhere. A second emphasizes varied economic starting points: basic economic endowments, geographic location, initial levels of urbanization and industrialization, and accumulated economic distortions under state socialism. The reform communist states were viewed as having the most favorable starting points and geographic location, while the former Soviet Republics, with a few exceptions, started with the largest disabilities. A third views these trajectories as a function of interest group politics during the course of reform, and emphasizes the political barriers to the formulation and implementation of effective reform policies.

We propose a new explanation that focuses on features of state socialism that made it unusually vulnerable to regime change. First, we emphasize the central role of communist parties in defining and enforcing a state's property rights over assets in an economy where almost all assets initially are the property of the state. Second, we identify the disruption of economic activity that occurs when a communist party's capacity to perform this role declines for a prolonged period before its eventual collapse. Third, we demonstrate the ways in which the political trajectory of the Soviet Union in its final years differed from that of the other communist states that experienced regime change, and the ways that these, in turn, differed from

the surviving communist autocracies. In so doing, we shift attention from the course of reform to developments in the immediately prior period; from initial economic conditions to initial political transformations; and from the optimal definition and allocation of property rights to the more fundamental question of a state's capacity to enforce property rights of any kind.

SPECIFYING THE PROBLEM

Before we propose our solution we need to clarify the nature of the problem. Because the dependent variable in the research literature is a country's growth rate, two separate issues are commonly conflated: the causes of sudden and deep recessions, and the sources of higher or lower rates of economic growth. The familiar growth trajectories displayed in Figure 1 are misleading about the nature of the problem, because they focus our attention on cumulative long-run trends. Figure 2, which displays annual changes in real GDP per capita, provides a more accurate indication of what it is that we need to explain. Growth rates in reform communist states slowed in 1990 and 1998, but they never experienced recession. Almost all of the post-communist states experienced sharp contractions beginning in 1990.¹ The decline began in 1990 in the Soviet Union and continued to worsen in its successor states until 1992, when the economies of the entire group shrank by more than 20 percent in a single year. These economies continued to contract until 1996 when they began to grow once again. The economic crises in the other post-communist states began at the same time, reaching their low point two years earlier, in 1991. By 1994 they were growing once again. After 1996, the massive differences across these groups disappear, and after 2000 the highest growth rates are in the Soviet successor states.

Figure 2 makes clear that the long run differences that appear to be so large in Figure 1

¹ The sole exception is Cambodia, which did not experience a recession, but whose political transformation had exceptional features that we will describe below. The mildest post-communist recession was in Poland, where the economy shrank by 7.3 percent before growing again after one year.

are purely an expression of severe short-run in the early 1990s. The problem, then, is to explain why the recessions of the Soviet successor states were so much worse than those of all of the other communist regimes that fell from 1989 to 1991, and why the communist regimes that survived to orchestrate market reform were somehow able to avoid them entirely. As we evaluate competing explanations, we need to keep firmly in mind two things: the timing of the proposed causes relative to the onset of the recession, and the relevance of suggested explanations to the question of economic collapse. As we shall see, most prior explanations are more suited to explaining variation in long run growth rather than unusually severe short-run downturns.

There are four foundations for this argument. The first is an analysis that reminds us of the crucial role that communist parties played in the coordination of state socialist economies—a role whose implications for this question have been overlooked. Regime change in this context entails risks that are absent when dictatorships collapse in established market economies. The second is a comparative account of varied paths of political change—with special attention devoted to the distinctive Soviet case. The third is an examination of the retrospective literature on paths of reform across a range of these countries. The fourth is a time series analysis of period-specific changes in GDP in thirty-one of these economies.

POLITICAL ORIGINS OF INITIAL RECESSIONS

The key role of communist parties in integrating economic activity under state socialism is widely recognized. Most analysts have seen this role to be the core feature that needs to change through a shift toward market mechanisms and private property. This has led to an overwhelming emphasis on the design of new institutions and the implementation of economic policy, while the implications of a country's initial trajectory of political transformation have

been overlooked. It seems counter-intuitive that a reform that requires a reduction in communist party control can be deeply undermined by a prior deterioration in the party's capacity, but this is precisely the point. Economies that embarked on reform during the 1990s were deeply disrupted when prior political changes undermined the party's coordination of an economy, greatly complicating the subsequent path of economic transformation.

Under state socialism, even where tentative early reforms were carried out, communist parties enforced state property rights and ensured compliance with contracts between firms. In so doing, they ensured the delivery of tax revenues that funded the state. When the party's capacity to perform this function deteriorated for a prolonged period before its eventual collapse, asset ownership became unclear throughout the economy, with a range of actors competing for control over them. Under these circumstances successor states faced a protracted struggle to rebuild the capacity to define and enforce property rights and collect taxes. This, in turn, undermined state administrative capacity by weakening its revenue base, frequently compensated for by inflationary monetary policies and extreme levels of inflation. Economic activity under these conditions suffered a severe decline, and recovered only slowly thereafter.

This decline in a party's ability to define and enforce property rights is distinct from the widely noted blurring or ambiguity of property rights in some of these countries during the 1980s and before. Hungarian firms engaged in various forms of internal subcontracting that blurred the boundaries between plan and market and effectively granted certain rights to the flow of income to private actors (Stark 1986, 1989). These innovations, and related concessions to essentially private "second economies", were commonly viewed as weakening the party-state and anticipating later political transformations (Róna-Tas 1995, 1997; Stark and Bruzst 1998; Walder 1994) The first stages of market reform in rural China saw decentralization of state property

rights to local levels and the creation of various “hybrid” or mixed public-private property forms that were viewed as anomalous from the perspective of microeconomic theory (Nee 1992, Walder 1995; Walder and Oi 1999). Much earlier, Yugoslavia created a decentralized form of planning that granted significant rights to the employees of government firms (Rusinow 1977).

We make a distinction between the features of property rights and their enforcement—between their “clarity” or “ambiguity” on the one hand, and uncertainty about their enforcement and future survival. This uncertainty applies to any form of existing property arrangements under state socialism—whether conventional state ownership, nominally “collective” or community ownership, or some state-designed or tolerated alternative property form. Our argument involves uncertainty over ownership claims—whether current arrangements are enforceable and will survive—not ambiguity about the boundaries between state and private.

What matters for our analysis is a decline in the party’s ability to define and enforce property rights *of any kind*. This can occur through deliberate policy choices well in advance of regime change, through a disintegration of the party as a coherent political organization, or through expectations that the party will soon be out of power. Under such circumstances ownership claims become unclear in a very different sense. Regardless of the property form, it is no longer clear that the party has the ability or will to enforce ownership claims, and it is manifestly uncertain what will come next. This applies equally to standard state and collective property, and to widely noted experiments with blurred or decentralized ownership. Ownership itself is thrown into doubt, setting into motion moves by enterprise managers, local officials, and other actors to advance completely new claims—ranging from a novel rearrangement of firm boundaries by incumbent managers (Stark 1992, 1996), to asset stripping or insider privatization by managers or others (Åslund 2007; Blasi, Kroumova and Kruse 1997), competition among

local, regional, and central governments to assert ownership claims and the associated rights to tax revenues (Barnes 2006; Gelbach 2008; Treisman 1999), and even moves by new actors to seize assets through organized coercion and violence (Varese 2005; Volkov 2002).

Our distinction between property forms and enforcement also distinguishes our argument from microeconomic analyses of enterprise reform. Like many analyses we place the definition and enforcement of property rights at the center of attention. This emphasis is unavoidable in a transformation premised on a shift away from the state's monopoly of productive assets. But our emphasis differs from the microeconomic literature and agency theory, which focuses on incentives for managers and firms (e.g. Shleifer and Vishny 1998). That tradition seeks an optimal allocation of property rights and emphasizes the need for clear and enforceable expectations regarding the security of ownership claims and the incentives that come from stable expectations about flows of income from productive assets. In these analyses, incentives are undermined when ownership claims are vague and the threat of government predation is real. Enduring controversies about privatization have been about the speed of change, methods of implementation, and ultimately the viability of state ownership as a transitional form.

A focus on the incentive features of property rights leads to a preoccupation with institutional design. The core idea is that insufficiently clear protections against government predation will undermine an economy's transformation (Brown, Earle, and Gelbach 2009; Shleifer and Vishny 1998). The analysis rests on the assumption that a state has the capacity to define and enforce property rights. Our analysis relaxes this assumption, and explores the implications of situations where this capacity is deeply undermined as an economy initiates economic transformation. Our core message is that a state that has the capacity to enforce property rights that are suboptimal from the perspective of microeconomic theory is still vastly

better off than a state that has lost its capacity to either define or enforce property rights and must struggle to regain that capacity in the course of reform. Institutional design matters only to the extent that states retain the capacity to define and enforce.

Our explanation focuses on the extent to which a party's capacity to enforce property rights declines on the eve of economic transformation. The depth and duration of decline matters because it provides a time window of varying length for enterprise managers, government officials, or other actors to seize control of assets, convert them into alternative forms, and create local alliances designed to mask and defend their seizure of assets from re-appropriation and control by new governments. Post-communist governments that proceed with economic reforms after a prolonged decline and a large window of opportunity for asset appropriation by various actors face a more difficult task of clarifying, codifying, and enforcing ownership under new circumstances (Walder 2003). This multiplies the inherent difficulty of creating new institutions to regulate a privatizing market economy, and the equally fundamental problem of how to collect taxes. Where communist parties do not suffer a prolonged decline prior to a regime change the window of opportunity for asset appropriation and related actions is shorter. Post-communist governments that proceed with reforms under these circumstances face a much less daunting task of building the foundations for a market economy—and these post-communist states retain the capacity to guide the restructuring and privatization of firms (King and Sznajder 2006).

Our claims also differ from superficially similar ones emphasized in the literature on the impact of state breakdown, civil strife, and transitions to and from authoritarian rule on economic growth (Alesina et. al. 1996; Przeworski and Limongi 1993; Rodrik and Wacziarg 2005). Most post-communist states experienced some form of state breakdown, and all represent transitions from one form of authoritarian rule. Moreover, a number of the states that emerged from these

breakdowns—in the former Yugoslavia and Soviet Union—went through a period of interstate warfare or civil war as new national boundaries were drawn. Hyperinflation is often a byproduct of state breakdown. Even if all of the countries we are examining already had well-established market economies, we would expect some short-run economic costs due to political disruption. Our argument emphasizes a separate dimension of political transformation that is independent of the generic impact of political instability and state breakdown, and that operates alongside phenomena like military conflict and hyperinflation that are also evident here.

Disruptive political change in established market economies creates economic uncertainty, negatively affecting business environments and undermining foreign investment and the purchasing and investment decisions of firms and households. Regime change in communist states, however, was more deeply disruptive because communist parties integrated economic activity. These states claimed ownership over almost all productive assets and enterprises—and decided which alternative forms to tolerate—and the primary instrument for enforcing these rights was the communist party hierarchy, which linked central and regional governments directly with local governments and economic enterprises. State enterprises were directly integrated into the fiscal structure of the socialist state (Ellman 1989; Kornai 1992; Walder 1992). Tax collection occurred through mandated transfers out of enterprise accounts in the state banking system. Party committees were organized within every office and enterprise. Their superiors at the next higher level appointed and fired managers, controlled budgets and bank transfers, and prevented the private expropriation of state assets. They enforced state plans, product deliveries and payments, and ensured the transfer of revenues to state coffers. These arrangements stripped enterprise managers of autonomy and incentives and undermined firm performance. But these parties did effectively exercise control over managers, enterprises and

assets, ensuring the flow of revenue to state coffers. As communist states began to unravel, what mattered was how long the party's capacity to perform its economic role was disrupted.

THREE POLITICAL TRAJECTORIES

In reform communist states the communist party initiated market reforms and their structures remained intact as reforms proceeded, relinquishing their economic role gradually. Their economies responded positively to early price changes for farm output, openings to small-scale private enterprise, and to the price and profit incentives offered to state firms. During the 1990s their reforms accelerated: state enterprises were restructured and the vast majority of them privatized (Naughton 2008, 2012). None experienced recessions; all sustained high rates of growth. China experienced nationwide protests during the spring of 1989 that came close to splitting the party, resulting in a draconian military crackdown and the imposition of martial law. These events cut growth rates during 1989 and 1990, but they never turned negative.

In the Soviet Union, which eventually split into fifteen separate states, the party's capacity to regulate economic activity began a steep decline four years before the USSR's collapse. A reform decree in early 1988, designed to overcome bureaucratic resistance to reform, withdrew party organizations from oversight over state enterprises and their managers. Retrospective analyses mark this decision as the turning point that threw the Soviet economy onto a downward trajectory (Ellman and Kontorovich 1998; Gregory 2004: 246). This is reflected in Figure 2, which shows that the Soviet economy began to contract two years before the state's collapse. By 1989 the Soviet Communist Party was openly fragmented along regional lines, with the party committees of many constituent republics declaring sovereignty over their own assets and populations, and with separatist movements gaining momentum in regional

republics in the Baltics, the Caucasus and Central Asia (Beissinger 2002). During this period ownership claims over state assets became unclear, contract enforcement and related expectations suffered, asset stripping and appropriation of state property accelerated, and the state's capacity to collect revenue was deeply eroded. After the final collapse of the Soviet state at the end of 1991, fifteen successor states struggled for years to clarify and enforce ownership claims and rebuild fiscal systems, and the resulting economic downturns resembled great depressions more than the anticipated transformational recessions.

Between these two extremes were thirteen other post-communist regimes. On the surface this highly diverse group—which ranged from Poland and Albania in the west to Mongolia and Cambodia in the east—would seem to share almost nothing in common. Their political transformations took a variety of forms (Bunce 1999). But their varied paths to regime change shared one crucial characteristic that distinguished them from the Soviet successor states. Their communist parties all maintained their capacity to organize economic activity until the eve of regime change, which took place much more abruptly than in the Soviet Union. In none of these states was there an effort to pull apart the planned economy analogous to Gorbachev's disruptive reforms in the Soviet Union. They approached regime change with party structures still largely intact. This was true regardless of wide variations in the way that regime change occurred. Sometimes new governments were formed through negotiations that involved cooperation between incumbents and challengers. In Poland, Czechoslovakia and Hungary, the transfer of power was negotiated beforehand and power passed quickly through elections (Bruszt 1990; Bruszt and Stark 1992; Gross 1992; Judt 1992). In Romania and Bulgaria, internal party factions suddenly ousted longstanding leaders and held multiparty elections in less than a year (Bell 1997; Tismaneanu 1997; Verdery and Kligman 1992). In Albania and Mongolia, large street

protests led rapidly to regime capitulation and multiparty elections (Biberaj 1992; Pano 1997; Rossabi 2005). In Yugoslavia the heads of the Slovenian and Croatian parties abruptly withdrew from federal institutions, precipitating a rapid breakup into separate states that held competitive elections and declared independence in short order (Banac 1992; Miller 1997). In Cambodia, the Vietnamese-installed communist party negotiated an agreement through the United Nations to subject itself to internationally supervised elections, placing its transitional government under United Nations auspices during the transitional period and receiving massive international aid (Chandler 2008; Gottesman 2002). In none of these cases did it take more than one year from the point when it became clear that the party's dictatorship would soon end.² With ownership claims, contract enforcement, and fiscal capacity intact until shortly before the handover to a post-communist government, these regimes did not enter their period of post-communist reform with economies and taxation systems that were as severely disrupted as in the Soviet Union. When they subsequently initiated transitions to market economies they did so with governments that were not heir to a legacy of prolonged institutional collapse. Their problems were analogous, but much less severe.

ECONOMIC CONSEQUENCES OF COMMUNIST PARTY DECLINE

The core of our argument is that the prolonged failure of communist party organizations in the years leading to regime change initiated a self-reinforcing process that undermined economic activity. For a period of variable length, it became unclear who owned assets—managers and workers who control them in the short run, regional and local governments who

² The shortest period was in Czechoslovakia, where the transfer of power took only one month (Judt 1992). The longest were in Macedonia and Serbia, where competitive elections occurred 10 to 11 months after the collapse of Yugoslav federal institutions. The Geneva agreements to hold monitored elections in Cambodia preceded them by almost two years, but the institutional support and massive foreign aid provided by the United Nations ensured that the country was the only post-communist state that did not experience initial recession (Hughes 2003).

make claims against higher levels of government, or private citizens and former officials who have maneuvered to claim personal ownership. Initially, none of these actors could be confident of the future of their claims, creating strong incentives to hide assets and convert them to other forms, and strong disincentives to restructure firms and invest. In the meantime, the ability of the state to extract revenues and fund its operations was badly weakened, and its efforts to recoup this ability could take arbitrary and predatory forms that made matters worse.

This self-generating process of disorder has been extensively documented in the case of Russia. The literature on Russia's transition stands in sharp contrast with studies of reform in non-Soviet post-communist economies, where new regimes implemented a variety of reform programs that restructured firms and rapidly altered patterns of ownership (Hanley, King and János 2002, King and Sznajder 2006), Russia struggled for years to create the foundations for a market economy. This is evident in several areas—the prolonged contest for control over state enterprises, the privatization program and its outcomes, the rise of insider control over firms, the spread of barter trade, the decline of tax revenues, and the increased reliance on private protection services and violence to defend property claims and enforce contracts.

When the Soviet Union was disbanded at the end of 1991 enterprise managers had been freed of Party supervision and control for several years, exercising widespread if insecure control over their firms. A form of “spontaneous privatization” occurred through much of the Soviet Union in the late 1980s (Åslund 2007; Blasi et. al. 1997; McFaul 1995; Stoner-Weiss 2006: 28-32; Woodruff 1999: 56-78). Asset stripping, the diversion of company resources to related private entities owned by managers, and capital flight became common (Varese 2005: 31-36).

Former Soviet officials who had seize control of assets provided formidable resistance to subsequent reform policies that ran counter to their interests. The Russian mass privatization

program of the early 1990s was an attempt by a badly weakened state to provide a clear legal basis for the illicit insider privatization that had already occurred. The intention was to prevent further asset stripping and capital flight by reducing uncertainty over ownership (Shleifer and Treisman 2000, 27-34; Stoner-Weiss 2006, 33-37). The program failed to achieve these objectives, setting off a new round of struggle over assets, pitting incumbent managers and employees against former bureaucrats in ministries (who wanted to consolidate firms into holding companies or corporations that they controlled), local governments, foreign investors, private bankers, and even mafia-connected entrepreneurs, all of whom maneuvered for control (Barnes 2006, Blasi et. al. 1997: 38-49). Instead of preventing asset stripping by conceding ownership to officials who controlled enterprises, mass privatization permitted even greater extraction of income at the expense of minority shareholders and the diversion of gains to offshore accounts and shell corporations (Stoner-Weiss 2006, 37). The privatization law granted majority shares to employees, enabling managers, in the absence of effective unions, to reinforce insider control and prevent the restructurings and layoffs that would ensue if outside investors were to take control (Blasi et. al. 1997: 50-85; Varese 2005: 31-36). Insider control blocked the planned restructuring of the firms, limited layoffs (Brown and Earle 2002; Brown, Earle, and Telegedy 2010; also Brown, Earle, and Vakhitov 2006) and created wage arrears (Gerber 2006), driving state firms deeper into technical insolvency (Gustafson 1999: 35-57).

The barter trade that originated in the last years of the Soviet Union became more widespread, growing from 10 percent of all payments in 1991 to an estimated 50 percent in 1997 (Gustafson 1999: 23-26; Woodruff 1999: 146-176). Payments in kind did not go through bank accounts, hampering tax assessments. Local governments helped firms evade taxes to the central government. Enterprises provided many of the social services and infrastructure for local

residents. Tolerating tax evasion kept firms in operation, permitting them to pay at least some of the salaries owed workers, and helping to maintain the sewage systems, water supplies, and heating for homes and offices (Woodruff 1999: 132-33).

This eroded the state's tax base and further weakened state capacity. The competition between government jurisdictions over taxation led to arbitrary and punitive approaches to tax assessment (Gustafson 1999: 192-215). Overlapping tax jurisdictions and aggressive and confiscatory approaches to recouping back taxes were one result (Shleifer and Treisman 2001: 113-136). Efforts by regional governments to retain larger shares of tax revenues often masqueraded as ethnic separatism, creating regional fragmentation (Treisman 1997, 1999). One enduring result of these problems is that former Soviet republics ended up with tax systems that relied on large firms for revenue, while post-communist states in Eastern Europe created new tax systems with a greater emphasis on individual income (Easter 2012; Gehlbach 2008).

Under these circumstances the state's role as an impartial protector of property rights was undermined and it became "an erratic, predatory, and non-impartial supplier of protection" (Varese 2005: 7). One early symptom was an increased demand for private protection services, provided by current or former state security agents who were affected by the rapid downsizing of these Soviet-era agencies, or by new "mafia" groups populated by army veterans or ex-convicts that specialized in private protection (Frye 2000: 143-160, Varese 2005: 55-72, Volkov 2002). Another symptom was a spate of assassinations of leading business executives from 1993 to 1995 (Blasi et. al. 1997: 119; Volkov 2002).

The weakened capacity of former Soviet republics to enforce property rights—in contrast to other post-communist states—was documented in surveys of enterprise managers in 1,500 firms across five states in 1997. Enterprise managers were asked to report whether they found it

necessary to make extralegal payments for licensing, protection, business registration, tax inspections, or safety inspections—measures of the extent to which property rights are secure from predation. The contrast between the post-Soviet states of Russia and Ukraine and the others—Poland, Romania, and Slovakia—were extreme. The average across the five items ranged from 6.2 to 15.2 percent in Poland, Slovakia, and Romania, while it ranged from 81.6 to 85.9 percent in Russia and Ukraine (Johnson, McMillan and Woodruff 2002).

ALTERNATIVE EXPLANATIONS

The wide differences in economic outcomes across these states have long been acknowledged and debated. Three broad groups of explanations have dominated a massive literature. The first—and most controversial—attributes varied outcomes to policy choices made by political elites early in the process of reform. The most vigorously contested claim is that “neo-liberal” reform policies of the kind pursued in Russia (“shock therapy” or “big bang”) account for the most negative outcomes, while the gradual approach of reform communist states are a successful counterpoint. The second—often seen as a counter-argument to the first—is that different economic outcomes are due to widely divergent prior conditions—economic structures and levels of prior industrial development, differences in accumulated economic distortions, basic economic endowments, and location in the global economy. The third explanation emphasizes the political economy of reform: the capacity of new political institutions to formulate and implement economic policies that threaten vested interests.

Policy Choice

The first type of explanation focuses on features of reforms as defined by policy choices of national elites. The intensity of the long debate about reform policy its implementation

reflected a conviction that the impact of policy choice was large. One strongly-stated early view was that a rapid and coordinated set of changes—price liberalization, deregulation of foreign trade, market entry by private enterprise, and privatization of state assets—would be painful in the short run, but were essential for sustained recovery (Sachs 1993; 1994; Summers 1994).

Others strongly objected, arguing that such policies were unnecessarily radical and not based on sound economic theory or area knowledge (Murrell 1991, 1995, Stark 1992). As economic crises in the region deepened, some attributed them to the pursuit of neoliberal policies (Amsden, Kochanowicz, and Taylor 1994, Burawoy 2001, Cohen 1998, Gerber and Hout 1998, Kogut and Spicer 2002, Nolan 1995, Reddaway and Glinski 2001). Burawoy (1996, 2001) argued that Russia's neoliberal economic policies destroyed state capacity to regulate the economy and led to its downward economic spiral, while China's gradual reforms and continued reliance on state direction led to rapid growth. Hamm, King, and Stuckler (2012) further developed this argument in a cross-national analysis of 25 post-communist economies during the 1990s that found a negative impact of mass privatization and rapid liberalization on state capacity, corporate restructuring, and long-run growth rates. They argued that these policies deeply eroded the state capacity that sociological accounts emphasize as an important foundation of economic development (Block and Evans 2005; Campbell 1993; Campbell and Lindenberg 1990; Carruthers and Ariovich 2004; Evans 1995; Evans and Rauch 1999).

Initial Economic Circumstances

An alternative argument is that economic outcomes are primarily a function of initial economic circumstances. From this perspective the favorable outcomes in reform communist states and the difficulties of the former Soviet Union are due to widely divergent economic

fundamentals. This line of explanation minimizes the impact of policy choice and served as a rebuttal to claims that the worst outcomes were due to ill-advised policies (Sachs 1994).

The first such circumstance is prior level of industrial development. Economies that were still primarily agrarian—especially China, Laos and Vietnam—generate growth more easily by moving labor from agriculture to industry. Standard growth theory predicts higher growth rates at lower levels of industrialization (Barro 1998; Kuznets 1973). It follows that reform communist states should have higher growth rates, *ceteris paribus* (Sachs and Woo 1994; Woo 1994). More industrialized economies also faced a heavier burden of readjustment. The longer that an economy industrialized under central planning the greater the underlying distortions, and the more severe would be the disruptions as market mechanisms take hold. These economies had larger welfare states and more extensive subsidies to unproductive enterprises that were propped up to maintain employment and deliver social services. These deeper underlying imbalances would require more painful restructuring than elsewhere (Åslund 1989, de Melo et. al. 2001, Popov 2000, Sachs and Woo 1994).

A second circumstance is geographic location. Countries that bordered the European Union had advantages in market access, investment, credit, and technical assistance from prosperous market economies. Favorable location provides direct economic and trade advantages, and also indicates historical legacies favorable to the revival of stable democracy and the rule of law (Böröcz 2012, Fish 1997, Kopstein and Reilly 2000, Pop-Eleches 2007). Similarly, reform regimes in East Asia reaped advantages from location in a rapidly developing region that provided ready export markets, foreign investment, and alternative models of regulation, corporate governance, and state-led industrial policy. With the exception of the Baltic region former Soviet republics lacked these advantages (de Melo et. al. 2001, Popov 2007).

A fourth circumstance is mineral wealth, especially energy resources. Five Soviet successor states have large reserves of petroleum and natural gas. Energy prices were depressed in the 1980s and 1990s, a fact sometimes cited as a factor in the collapse of the Soviet Union and a contributor to early recessions (Gustafson 1999). The rapid rise in oil prices after 2000 is also widely credited for rapid economic recovery (Gustafson 2012, Jones Luong and Weinthal 2010).

This perspective has gained credibility in an econometric literature that has struggled to demonstrate the impact of policy choice net of initial economic circumstances. Work in this vein has sought to gauge the impact of reform policy, represented by a wide range of indices that gauged progress toward liberalization and privatization, controlling for the variety of exogenous initial conditions that affected the severity of initial recession. The depth of initial recessions is understood to be a function of varied economic endowments, geographic location and initial levels of “over-industrialization”, while the speed of economic recovery is understood to be a function of policy choice and institutional circumstances like the successful creation of democratic institutions and a predictable system of law (Babecky and Campos 2011, Campos and Coricelli 2002, de Melo et. al. 1996; 2001; Falcetti, Lysenko and Sanfey 2006, Falcetti, Raiser and Sanfey 2002; Popov 2000). Researchers have been frustrated by an inability to find empirical support for the idea that policy choice accounted for wide variations in economic outcomes. There followed a debate about whether policy choice mattered at all in the early period, and the effects that were uncovered were usually very small (Babecky and Campos 2011; Campos and Coricelli 2002; Falcetti, Lysenko and Sanfey 2006).

Others persist in efforts to identify substantial policy effects. Hamm, King, and Stuckler (2012), one of the rare sociological contributions to this literature, found that rapid liberalization had a negative impact on economic growth in a sample of 25 post-communist states. They

estimated that mass privatization lowered annual growth rates by 2 percent and left these countries with 17 percent lower GDP per capita by the end of the 1990s.

Reform-era Political Economy

A third type of explanation focuses on political processes during the course of reform and the evolving features of the governments that carry them out. The analysis hinges on a political system's capacity to formulate a consensus about reform measures and to overcome resistance by powerful vested interests and large social constituencies (Murphy, Shleifer and Vishny 1992; Roland 2002). The approach is prevalent in political science, public choice economics, and some varieties of sociological analysis. Much of it focuses on the features of post-communist electoral systems, which face the problem of implementing socially unpopular policies. It emphasizes the impact of early elections, the dynamics of reform coalitions, barriers presented by vested interests, and the perils of political polarization (Fish 1997; Frye 2002; Hellman 1998; Orenstein 2001; Przeworski 1991), issues relevant in altered form in non-electoral systems (Lau, Qian, and Roland 2000; Shirk 1993). One common argument is that a multiple transition—from dictatorship to democracy and from plan to market—is inherently more difficult than a single one (Elster, Offe, and Preuss 1998). Some claim that authoritarian regimes have a better capacity to implement painful reform and refer to democracy as a “curse” (Cheung 1998).

One influential view emphasizes the importance of institutions that create predictability and security of property rights, essential for the operation of markets. State power is seen as the primary threat to property rights, necessitating institutions that credibly constrain governmental power (Krueger 1974; North and Weingast 1989). During transitions from state socialism pluralistic political institutions are essential to restrain the “grabbing hand” of corrupt governments, thereby creating the predictability of the rule of law and strong foundations for

market activity and private property (Shleifer and Vishny 1998). A contrary line of analysis claims that stable dictatorships with long time horizons can provide functionally adequate substitutes for the security of property rights when they have an “encompassing interest” in economic development and the generation of tax revenues (Brown, Earle, and Gehlbach 2009; Clague et. al. 1996; Gehlbach and Keefer 2011; McGuire and Olson 1996; Olson 1993, 2000). The sociological variant of this literature emphasizes the relative strength of communist-era elites versus technocrats and dissident outsiders in formulating post-communist economic policy. One line of analysis is that the lingering power of old regime elites steered a country toward policies that diverted assets into their hands and blocked beneficial restructuring, while states where this was blocked by coalitions of technocrats and dissident challengers fared better (King 2002; King and Széleányi 2005; King and Sznajder 2006).

EXPLANATORY RELEVANCE AND CAUSAL ORDER

Before examining cross-national evidence we should closely examine the relevance of these competing explanations to the problem at hand. We have emphasized the distinction between the causes of deep recessions in post-communist states and the causes of recovery and growth in the medium to long run. Many of the explanations that have been offered for the performance of these transitional economies are actually about the conditions that favor growth in the medium to long run, not the sudden onset of severe recessions or economic collapse. These explanations are driven to explain the long-run trajectories in Figure 1, not the abrupt disjuncture so evident in Figure 2, which define the puzzle that we address in this paper.

This is especially true regarding the analysis of reform-era political economy. These analyses bear on the types of reforms that new political systems are able to formulate, and on

their subsequent capacity to implement them. They also bear on the development of political institutions with certain features: the predictability of legal institutions, protections for property rights, the capacity to regulate economic activity and collect taxes. These processes take time to work out, and they seem more relevant to explaining the specific content of reform policies over the course of the first decade, and in particular the evolution of political systems, but they seem tangential to the question that we ask here.

Somewhat more relevant are claims about the geographic advantages of countries located near the heart of Europe or in the high-growth East Asian region. Access to markets, foreign investment, technology transfer, and exposure to successful models of corporate governance and regulation could well play a role in earlier recovery from initial recessions—though the causes of recession would of clearly lie elsewhere.

On the other hand, arguments about initial economic circumstances seem directly relevant to explaining recessions. The reform communist states were heavily agricultural at the outset. They were able to achieve growth by shifting to household agriculture and by moving labor from farm to factory without the disruptive privatizations and price liberalizations that affect state enterprise, which occupied a smaller initial share of economic activity. The highly industrialized socialist economies typical of parts of Eastern Europe and the former USSR relied more heavily on state enterprises for employment, housing and welfare, a legacy of socialist “over-industrialization” and its welfare state. This is a highly plausible explanation for the differences between the reform communist and post-communist states, and perhaps also for differences among post-communist states of varied initial economic structures.

Arguments about the impact of “neoliberal” economic policy also seem highly relevant, but they face a major difficulty: timing. There was a lag between the formation of post-

communist governments and their initial decisions about economic policy. This was particularly true for mass privatization, an approach that was controversial and often carried out haltingly after an additional period of delay and resistance. Hamm, King, and Stuckler (2012) found that the eleven countries that carried out mass privatization had significantly lower growth rates during the 1990s. These reforms, however, did not begin until well after these countries were deeply mired in their initial recessions. Nine of the eleven states that carried out mass privatization in their sample were in the former Soviet Union. Only one (Russia) began mass privatization by the end of 1992; two began in 1993; five in 1994, and one in 1995. By this point virtually all of them were in deep recession, in most cases at or near the bottom. Russia's economy had already shrunk by almost 30 percent, and the others in the former Soviet zone had already suffered economic declines ranging from 25 to 70 percent (See Table 1). Given the timing of the policy and its implementation, mass privatization appears to have taken place too late to account for deep recessions already well underway.

CROSS-NATIONAL EVIDENCE

Our argument implies that the differences across these countries that we attribute to their pattern of decline in communist party capacity are not confounded with other dimensions of their political transformations—the breakup of national states into separate new entities. All of the former Soviet republics are the product of state division, which could have two severely negative consequences. The first is armed warfare over new national boundaries, or a civil war that follows from the collapse of political institutions. Five of the fifteen Soviet republics experienced one or another form of warfare, and three successor states of Yugoslavia. The second is the hyperinflation that follows when newly independent states delay the creation of separate

currencies. Most of the former Soviet republics initially maintained the ruble as a common currency. This touched off a competitive issuance of ruble credits between 15 new central banks, touching off hyperinflation. Twelve of them continued to use the ruble until mid-1993, when Russia finally declared the old ruble null and void. The long delay in establishing separate currencies led to hyperinflation in ten of the twelve states in the ruble zone during 1993 (Åslund 2007, 203-207). Average annual inflation in the Soviet republics from 1991 to 1996 was 873 percent; in the thirteen other post-communist states it was 277 percent; and in the reform communist states 23 percent. If our argument has validity, differences across country categories should be evident even after taking into account armed conflict and hyperinflation.

A second implication is that large initial differences across these country categories—during the first half of the 1990s—will remain large even after taking into account the impact of a wide range of indicators of policy choice, initial economic circumstances, or reform-era political economy. It does not imply that the other covariates have no net impact. We find it plausible that accumulated imbalances under socialist development and geographic location affect initial economic outcomes. Whatever impact these variables may have, we do not expect controls for them to eliminate group differences during the period of recession. Moreover, while we are skeptical of the strong claims made for the negative impact of certain policy choices, we recognize that they may well have a marginal impact on recovery. Our only claim is that policy choice cannot account for the massive group differences in the early years, and that its early impact will be small compared to the impact of political trajectories.

To assess our explanation we assembled a dataset for 31 former socialist economies for the years 1989 through 2007. The primary source for national-level economic data is the World

Bank's World Development Indicators Database (World Bank 2012).³ For some of the newly independent countries, the World Bank did not provide economic data for the years 1989, 1990, and 1991. In these cases the data series was supplemented with retrospective data about these years provided by the European Bank for Reconstruction and Development (European Bank 1999: 71).⁴ Variables indicating different dimensions of reform-era political institutions were obtained from the Polity IV database (Marshall, Gurr and Jaggers 2010; Polity IV 2013). Measures of initial economic circumstances and policy choice were adapted from published studies, sometimes supplemented by additional coding decisions as indicated below.

We compare countries over the same time period to ensure that comparisons are not confounded by differences in the international economic environment. How to date the onset of a country's "transition", and how to ensure that comparable periods are being examined? Some claim that the reform communist states began market reform much earlier, and that their comparable period began prior to the 1990s. This is debatable. Vietnam and Laos did not begin market reforms until 1988, largely in response to the impact of the loss of trade and economic assistance from the Soviet Union. Household agriculture did not become a national policy in China until 1982; the first modest reforms of state sector firms were initiated in 1984; the first tentative steps toward market prices in urban areas were in 1988; the decisive effort to systematically liberalize prices and privatize the vast majority of state enterprises did not begin until the mid-1990s (Naughton 2008, 2012). The intensification of reform in the 1990s makes these countries directly comparable to the post-communist economies.

A second issue is the starting point for comparisons. Political change swept across Eastern Europe in late 1989. The trend continued in the region and culminated in the collapse of

³ Bosnia-Herzegovina is excluded from the analysis because data for its economy are not available. Cuba and North Korea did not embark on reform in the 1990s and do not release economic data to the World Bank.

⁴ Cambodia does not enter the dataset until 1993, the first year of its new U.N.-sponsored government.

the Soviet Union at the end of 1991. We begin in 1989—as Figure 2 makes clear, this is the year when economies began to contract in countries that eventually made a transition to post-communism. This captures the disruptions that accompanied regime change in Eastern Europe in 1989 and also the deterioration of the Soviet economy and political system after 1988. While conceptually we find these periods directly comparable, we conduct sensitivity checks in the findings that we report below, and our conclusions are not affected by different starting dates.

Our outcome variable is annual change in real GDP per capita from the previous year. Some note that official GDP figures overstate the true extent of economic collapse in many countries. GDP per capita across the former Soviet Union shrank by close to 50 percent during the early 1990s before beginning to recover, yet mass unemployment and plant closings did not follow, and electricity consumption, another indicator of economic activity, did not drop at similar rates.⁵ Official data was surely biased downward by the spread of barter trade and the collapse of the tax system (Åslund 2007: 63-69). We acknowledge that official data may overstate the degree of economic hardship, but no one has argued that the differences in the cumulative decline in official GDP between countries like Ukraine (57 percent) and Georgia (71 percent) on the one hand, and Slovenia (13.8 percent) and Poland (7.3 percent) on the other, were not large and very real even after adjusting for downward bias.

Measures of Political Trajectory

Our measure of political trajectory is straightforward: dummy variables indicating reform communism, former USSR, and other post-communist states that directly represent the three patterns of decline in communist party capacity. In our model estimates, “other post-communist”

⁵ Some suggest that electricity consumption is a better measure of economic activity, but data on usage and pricing are even more distorted than data on output and are less comparable.

is the excluded contrast category. Absent any proposed explanation that would give these country categories theoretical meaning, the previous literature has treated these group differences as expressions of underlying heterogeneity along other dimensions. We have provided a theoretical rationale for interpreting these categories in causal terms, and so the question for us is whether controls for variables representing these underlying dimensions diminish the impact of these categories when included in the same model.

These categories may be confounded with other important features of regime change, in particular interstate or civil wars or hyperinflation in the course of state division, obviously having a major economic impact. The variable “armed conflict” is coded as “1” for any year in which a country experienced major interstate or civil war, and 0 otherwise.⁶ We include this variable in all of our models in order not to confound our country categories with one of the most severe negative consequences of state division. Hyperinflation is represented by an indicator variable coded as “1” for any year that a country’s inflation rate exceeded 1,000 percent. There were 32 country-years prior to 1997 coded “1”.⁷ All of our models include this control.

Measures of Initial Economic Circumstances

Two variables represent the initial level of development and structure of the economy.

Initial GDP per capita is a measure of economic development: it accounts for the higher growth

⁶ Armenia and Azerbaijan fought over national boundaries from 1990 to 1994 (Dudwick 1997; Hunter 1997); Serbia and Croatia did so from 1991 to 1995 (Cohen 1997; Miller 1997), and Serbia fought another war over Kosovo in 1998 and 1999. Georgia was embroiled in civil war almost continuously from 1990 to 1994 (Jones 1997). Moldova faced two separate ethnic separatist movements that controlled more than 20 percent of its territory, leading to brief hostilities in 1992 (Crowther 1997). A coup in Tajikistan ignited a bloody civil war in 1992 and 1993 (Atkin 1997). Russia conducted military operations against a separatist insurgency in Chechnya from 1994 to 1996 and again in 1999 and 2000, but we have not coded Russia as “1” during these years because of the restricted geographic scope of the insurgency and the huge imbalance in the capacities of the combatants.

⁷ There is no fixed economic definition for “hyperinflation”, but the most common is a month during which the inflation rate is 50 percent. Because our data are annualized, our dummy variable is simply an indicator of the most extreme levels of inflation in our database. Other indicators of inflation—for example the log of annual inflation—perform essentially the same function in our equations, and do not alter the findings presented below when substituted for our measure of hyperinflation or when included in the same equation.

rates that are more typical in early industrialization, and also for the higher living standards threatened by industrial restructuring. Initial percent of GDP in agriculture is a separate measure, designed to account for the argument that agricultural reform is easier to implement.⁸ These two variables are highly correlated with one another and with two others frequently used in econometric studies—percent of population in urban areas and levels of education. They perform the same function in model estimations and including them does not change the results. We do not include them in our models because no one has claimed that they affect the onset and depth of initial recessions. Initial GDP per capita and percent agriculture are fixed constant numbers rather than time-varying covariates because our purpose is to account for the first years of transition, and claims for the impact of these variables are about initial starting points.

A separate measure is designed to capture more directly the distortions in a socialist economy at the outset of reform. We employ an index of “over-industrialization” developed at the World Bank to estimate a country’s deviation from the expected industry share of GDP based on its total population, per capita GDP, and level of urbanization (de Melo et. al. 1996, 2001). Higher values represent distortions typical of advanced socialist industrialization. Cambodia and Vietnam had the lowest values (-7), and Bulgaria and Slovakia the highest (+23). Like the previous measures, this is a fixed constant number, because proposed explanations are about initial starting points for economies. Geographic advantages are indicated by a dummy variable coded “1” for states that had ready access to the European Union or were located in East Asia. We adopt the coding in de Melo et. al (2001), except for Russia (see Appendix 1 for details).

Five of nations had major petroleum reserves. Fluctuations in world oil prices influenced the economies of major exporters like Azerbaijan, Kazakhstan, Russia, Turkmenistan, and

⁸ We record the value for 1989, or the first year thereafter that the figure was available. We used post-1990 data for only three cases.

Uzbekistan, while other countries (China, Romania, Vietnam) had more modest domestic oil industries. In order to control for the influence of oil revenues on the exporting economies—five of which are in the former Soviet Union—we include the annual per capita value of oil production in our equations.⁹ The per capita value of oil production gauges the capacity of an economy to satisfy internal demand and to export into world markets. The variable captures both levels of production and fluctuations in world prices, and dividing by current population provides a measure of export capacity. This is a time-varying covariate.

Measures of Policy Choice

Policy choices are typically defined on two dimensions. “Liberalization” refers to the freeing of price and foreign exchange controls, openings to external markets, ease of private sector entry, and the curtailment of subsidies to state enterprise. Liberalization indices vary according to the weight accorded to different dimensions. We employ two such indices that represent contrasting approaches. The scores are designed to indicate the extent of economic liberalization during the first five years of market reform. The first index, adapted from Popov (2000: 50-51), ranges from 0 to 5, gives heavier weight to the freeing of farm prices and to the size of the small-scale private sector, and scores the reform communist economies as relatively liberalized compared to former Soviet republics (See Table 4).¹⁰ The second is derived from de Melo et. al (2001: 17), which is more heavily weighted toward liberalization of domestic prices, foreign trade, and foreign exchange, and gives reform communist states low scores (Table 4).¹¹ These indexes are fixed averages that indicate the “cumulative stock” of liberalization carried out

⁹ This is defined by the annual oil production for a nation divided by its population that year, multiplied by the annual oil price at year’s end. Data sources are listed in Appendix 1.

¹⁰ Serbia and Cambodia are missing. Laos was added to the dataset by setting it at the same level as Vietnam.

¹¹ We converted the scale of the index to a maximum of 100 points. Scores for Cambodia and Serbia are missing. Laos was given the same value as Vietnam.

prior to 1996. Higher scores indicate a faster process of liberalization.¹² In the models below, we report estimates for the Popov index; the results are not changed by the alternative measure. There is reasonable doubt about what these indices actually measure, and some suspect that the subjective judgments behind them are biased in favor of finding that early and decisive liberalization favors more rapid recovery and growth (Stuckler, King and Patton 2009). Despite these ambiguities these indices are the only way to represent policy choice in cross-national comparisons.

Hamm, King, and Stuckler (2012) constructed a less ambiguous measure of rapid reform, one that is directly relevant to our analysis of property rights—the speed with which state enterprises were converted to private ownership. “Mass privatization” is an approach that was prevalent in post-Soviet republics, and is one of the key distinctions that analysts make about reform in the region (Walder 2003). We adopt the measure employed by Hamm, King, and Stuckler (2012), which is defined as a privatization program covering at least 25 percent of large enterprises. This is a dummy variable, constant through time.¹³

Measures of Reform-era Political Economy

There are a variety of similar indices that try to quantify relative levels of political and economic freedom, procedural democracy, and rule of law. Our interest is not in adjudicating disagreements about the impact of democratization or the rule of law on growth. Our purpose is to control for the initial features of a nation’s political economy that might have affected the onset and depth of early recessions. We employ two measures that are common in the literature

¹² For our larger number of country cases we are unable to use the same index of liberalization employed in Hamm, King, and Stuckler (2012), derived from the European Bank (1999), because the European bank did not produce indices for any of the Asian states in our database.

¹³ We adopted the country codes in Hamm et. al. (2012, online supplement, Table C1). We coded values for six additional countries based on published studies (See Appendix 1).

and that are available through public websites or published studies. The first is a scale for “democracy-autocracy” adapted from the Polity IV database. The index is constructed by combining qualitative judgments about the presence of institutions through which citizens can express preferences about alternative policies and leaders; institutionalized constraints on executive power; and the guarantee of civil liberties to all citizens, with separate measures for autocratic rule (Marshall, Gurr and Jagers 2010: 13-15). The variable “Polity2” is a combined index that ranges from +10 (full democracy) to -9 (full autocracy), which we transform into a 100-point “democracy” scale. We treat “democracy” as a fixed variable that characterizes the features of political institutions in the early 1990s. This is calculated as the average score over the first four years after the transition to post-communist governments, or the four years after 1988 for the reform communist regimes.¹⁴

A separate index for “rule of law” is adapted from Popov (2000: 50-51). This is a subjective measure of the predictability and stability of procedures that govern property and contracts.¹⁵ This is a fixed average for the period before 1997, on a 100-point scale, with a high of 88 for Slovenia and a low of 30 for Armenia. One interesting feature is that the average score for reform communist states is higher on average than that for the former Soviet republics and close to the score for other post-communist states. This fits with our understanding that property rights enforcement was more stable and predictable in reform communist regimes than in severely disrupted states in the early years of reform. Variable definitions and their sources are

¹⁴ These scores are highly correlated with those used in other published studies, whose procedures are less clearly articulated. The correlation of our index with that employed in de Melo et. al. (2001) is .84 and with Popov (2000) is .88.

¹⁵ Most of the scores were from Campos (1999b) to which Popov added scores for China, Mongolia, and Vietnam from the International Country Risk Guide (See Popov 2000: 51-52). We have added an estimated score for Laos, assuming that it was equal to that for Vietnam, and for Serbia, assuming that it was equal to that for Croatia. Cambodia is coded as missing.

summarized in Appendix 1. All of the covariates have different values for the countries within each category. Appendix 2 displays mean values across country categories.

ANALYTIC STRATEGY

Our sole interest is the determinants of initial recessions, and we focus our attention on the period before 1997. We expect the paths of regime change to sharply differentiate economies during the early 1990s, but not afterwards. We expect that the impact will be large even after taking into account armed warfare and hyperinflation. Alternative explanations all imply that differences across country categories are a spurious expression of unobserved heterogeneity in initial economic circumstances, policy choices, and reform-era political economy. Our strategy, therefore, is to include in our equations plausible measures for these features.

We generate period-specific estimates of for annual changes in GDP per capita. We report estimates for the early period during which recessions took place, and a subsequent period of recovery. Sociologists have often employed random effects models for this kind of analysis, although it is now widely understood that random effects models generate biased estimate—regressors are correlated with individual heterogeneity. In this set of variables country-specific characteristics are clearly related to key model predictors. Hausman tests conducted on random effects models with this set of variables indicate serious violations of the model assumptions.¹⁶ An additional concern is that random effects models do not properly control for time-varying covariates. Fixed effects models are viewed as superior: because they assume that individual characteristics are correlated with model predictors they produce consistent estimates of time-

¹⁶ A Hausman test for random effects models that correspond to the models presented below rejected the null hypothesis that there is no difference in coefficient estimates from a fixed effects model ($\chi^2 = 13.21$, $p < 0.05$).

varying covariates. Many of our variables of interest do not vary through time, meaning that standard fixed effects models are not an option.

A variety of estimation techniques incorporate information for time-invariant covariates alongside a fixed-effects component in the model (Halaby 2004). In order to obtain more confident estimates of coefficients we employ an alternate “hybrid” method proposed by Allison (2009: 23-25) that centers values of time varying covariates by their means, and then estimates the impact of deviations from their means. We estimate the models with the *xtmixed* command in STATA, which is implemented as a multilevel mixed-effects linear regression. The equation for the mixed-effects model is: $y = X\beta + Zv + \varepsilon$, where y is a vector of dependent outcomes, β is a vector of fixed effects, v is a vector of random effects, ε is the error term, a vector of white noise with mean 0, and X and Z are matrices of regressors (constant or stochastic) associated with β and v respectively. We use group mean centering (by country) to transform the time-varying covariates included in the fixed-effects part of the model as recommended by Allison (2009), so that that $X\beta = \bar{X}\gamma + \Delta X\delta$, where $\bar{X}\gamma$ is the mean of regressors in matrix X , and $\Delta X\delta$ is the deviation from the mean for each regressor value. In Table 2, we are mainly interested in interpreting the effects of deviations from the mean (i.e. δ), since the mean is a constant whereas the deviation is a random variable.

In Table 2, the full model in column 3 is:

$$Y_t = \beta_0 + I_{year > 1996} \beta_1 + I_{reform communist} \beta_2 + I_{former USSR} \beta_3 + I_{reform communist} I_{year > 1996} \beta_4 \\ + I_{former USSR} I_{year > 1996} \beta_5 + \Delta I_{milconflict} \beta_6 + \Delta I_{loginflation} \beta_7 + \Delta I_{hyperinflation} \beta_8 + controls + \varepsilon_t$$

Where $I_{year > 1996}$ is an indicator function which takes the value of 1 if a given year is greater than 1996 and 0 otherwise. $I_{reform communist}$ and $I_{former USSR}$ are indicator functions for reform communist and former USSR, and $I_{reform communist} I_{year > 1996}$ and $I_{former USSR} I_{year > 1996}$ are interaction terms between the year and country type indicators. Note that the variables for military conflict, hyperinflation,

and log inflation are demeaned following the method recommend by Allison (2009), e.g.

$\Delta X_{\loginflation} = X_{\loginflation} - \bar{X}_{\loginflation}$. The term for controls is a vector of variables that are measures of initial economic conditions, policy choice, and a country's political economy during the early 1990s. Like the measures for inflation and military conflict, all time-varying control variables are expressed as deviations from country means. Also included in the vector of controls are coefficients for the country mean of all time-varying covariates. Following Allison (2009), these coefficients are not of substantive interest and are not reported.

Because the dummy variables for reform communism, former USSR, and other post-communist represent different paths of regime change, we have strong prior expectations about the net effects. In the early period we expect that the coefficient for reform communism will be large and positive, and that the coefficient for USSR will be large and negative. We expect these differences to disappear in the later period: the interaction term with the later period should be negative for reform communism and positive for former USSR.

That cross-group differences should disappear in the later period should be already obvious in Figure 2: growth rates for these three groups of countries converge rapidly after 1996. Our interest is in the early period—in the determinants of initial recessions in the early 1990s. The other variables in the model function purely as controls—our interest is in determining whether the effect in the early period for the dummy variables representing a trajectory of regime change survive the inclusion of a large vector of variables associated with competing explanations. We do have strong prior expectations that the impact of armed conflict and hyperinflation will be large and negative. We also expect that favorable geographic location and petroleum exports will have a positive impact, though this expectation is not derived from our theory. We do not have prior expectations about the effects of policy choice, initial economic

circumstances, and reform-era political economy: their effects have been subject to a good deal of controversy in the past and the evidence derived from past studies has been mixed. Whatever their marginal effects, we do not view them as explanations for severe initial recessions.

The only function of these variables is to dispel suspicions that the effect of our country categories are simply a spurious expression of unobserved heterogeneity along dimensions favored by alternative explanations. Our models are not designed to adjudicate the relative impact of the other variables in the model. First of all, many of them are highly correlated with one another, as we shall indicate below. Second, many of them are time-invariant in order to account for claims about initial circumstances, but they in fact vary through time, creating particularly acute problems of endogeneity. For all of these reasons, we refrain from drawing strong conclusions from these coefficients, because our models are not designed to adjudicate claims about the impact of policy choice, initial conditions, or a country's evolving political economy over time. Our only expectation is that the impact of these variables will be small in the early 1990s relative to the immediate impact of regime change.

FINDINGS

Table 2 reports estimates for nested mixed models in columns 1 through 3, and a trimmed model in column 4 that eliminates sources of severe multicollinearity. The first five variables are designed to capture the period-specific effects, while the estimates for the other covariates are averaged overall effect for both periods. In all models, the coefficient for the “year>1996” dummy expresses the baseline difference in the growth rate for the 1997-2007 period compared to that in the preceding period. The coefficients for Reform communist and Former USSR are estimated difference from the excluded category (other post-communist) in the average annual

change in GDP per capita during the period through 1996. The interaction terms for Reform communist and Former USSR with year > 1996 plus the main effects of Reform communist and Former USSR expresses differences from the excluded category in the post-1996 period.

The estimates in all of the models are consistent with our expectations. The effects for the Reform communist dummy are large and positive across all models and are unaffected by the inclusion of any of the control variables. In the early period the reform communist economies expanded faster than the “other post-communist” economies at an annual average rate that ranges from 6.3 percent (column 2) to 8.7 percent (column 3). The negative coefficients for the interaction term with year > 1996 suggest that this gap was cut by more than half in the later period. Whereas the difference in GDP per capita growth rates between reform communist and other post-communist economies was 8.7 percent in the early period, the difference shrank to 3.7 percent afterwards (column 3). The negative coefficients for the former Soviet states indicate that in the early period they declined at an annual average rate that ranged from 3.7 percent (columns 2 and 4) to 4.9 percent (column 1) more than “other post-communist” states. The large and positive coefficients for the interaction term with year > 1996 across all of the models suggests that the contrast with the other post-communist states was actually reversed in direction in the later period. The coefficients are all positive and close to double the magnitude of the negative coefficients for the earlier period, which indicates that the former USSR grew more rapidly than the other post-communist states after 1996. Whereas the difference in growth rates between Former USSR and other post-communist economies was -3.8 percent before 1996, the difference was reversed in direction and became +2.7 percent after 1996 (column 3, Table 2). The negative impact of military conflict was huge and the estimates stable across all models—an economy

contracted by more than 10 percent during a year in which military conflict occurred. The impact of inflation, as expected, was negative and highly significant across all models ($p < 0.001$).¹⁷

Column 3 represents the most challenging test to our argument about the impact of paths of regime change, because it includes a long list of controls variables that represent alternative explanations. These controls, however, are highly correlated with one another, and the model estimated in column 3 suffers from severe multicollinearity.¹⁸ The model estimated in column 4 eliminates 6 variables that are the source of multicollinearity in column 3.¹⁹ This trimmed model yields a positive estimate for the impact of petroleum exports, the same as the coefficient estimated in column 3. Interestingly, mass privatization has the same negative and statistically significant coefficient as in model 3—a country that carried out mass privatization grew over the entire period of observation at an annual rate that was 1.4 percent lower than countries that did not carry out mass privatization. This is an intriguing replication of the main finding of Hamm, King and Stuckler (2012), and it suggests that their argument about the negative impact of that policy may have some merit, even if it does not account for the large transformational recessions (given the timing of implementation relative to the onset of recession—recall Table 1). What is important for our purposes is that taking into account mass privatization does not account for the cross-group differences central to our argument. Estimates for all dimensions of regime change are large and highly stable across models, and are unaffected by the inclusion of control variables representing a wide range of alternative explanations.²⁰ The

¹⁷ The results were the same for log annual inflation or the raw annual inflation rate.

¹⁸ A random effects model estimated with this set of variables has a mean vif score of 9.1, and 10 of the variables in the model had vif scores well in excess of 5, with some scores well above 20.

¹⁹ A random effects model estimated with this set of variables has a mean vif score of 2.6, with no vif score for any individual variable higher than 4.86.

²⁰ The estimate for mass privatization, however, is sensitive to model specification. It is collinear with favorable geographic location, and including location in the model eliminates the effect for mass privatization.

bic statistic (Table 2) indicates that the model estimated in column 1, which includes only indicators for regime change, is the best fit with the data among the four alternatives.

Figure 3 is a visual representation of the period-specific estimates not otherwise obvious in Table 2. The figure displays the average predicted annual growth rate, by country category, for each of the two time periods. During the early period (1989-1996), which coincides with the period of deep recessions, the predicted annual growth rate for the reform communist states is close to 6 percent, while it is close to negative 7.5 percent for the former USSR, and close to negative 2 percent for the other post-communist states. The error bars indicate 95 percent confidence intervals, indicating that the large group contrasts are statistically significant. During the later period (1997-2007) these contrasts disappear. The predicted growth rates for the former USSR and reform communist states are on the order of 6 to 7 percent, but the confidence intervals overlap. The economies of the other post-communist states have significantly lower predicted growth rates than the other two, roughly 4 percent annually.

Our findings for different dimensions of regime change are highly robust across different model specifications. The findings for country categories are not sensitive to starting dates, ending dates, or the year that divides the two periods.²¹ The findings are not sensitive to the inclusion or exclusion of any individual country from the sample.²² Random effects models that

²¹ The findings are unaffected whether the first year for the second period is set at 1995, 1996, 1997, or 1998. When the first year of the second period is set at 1997 (as in Table 2), the findings are unaffected by later starting dates of 1990, 1991, or 1992. When the first year of observation is set at 1993, the interaction term for reform communist*year>96 is no longer statistically significant, which is likely due primarily to the fact that there are only three countries in this category. When the last year of observation is set earlier, we obtain the same results for every year after 1999. When the last year of observation is 1999, the interaction term for former USSR with time period is no longer statistically significant.

²² Of particular concern is the possibility that the effect for “reform communist” is primarily an expression of the impact of China’s consistently high growth rates. To examine this possibility we ran a jackknife procedure that repeatedly re-estimated the model in column 3 by excluding, in turn, each of the countries in our sample. The findings that we report in Table 2, column 3 are not altered by the exclusion of any single country case, and in particular the findings for reform communist states are not altered by the exclusion of China.

correspond to the ones estimated in Table 2 yield the same results for the variables representing the impact of regime change, although the findings for the covariates are often different.

CONCLUSIONS

Our theory about the origins of transformational recessions alters the definition of the problem in three ways. First, we have insisted that the problem is not to explain variations in growth rates, but the causes of an immediate rapid decline in economic output. To frame the problem as one of explaining the sources of faster or slower economic growth is to seek answers to the wrong question. Second, we have shifted attention from the preoccupation with institutional design and institution building to a different and more directly relevant concern with short-run institutional collapse. Finally, we have identified the key institution whose collapse inherently disrupts economic activity under state socialism—paradoxically, the communist party—and have identified the prolonged decay in this institution that made the subsequent economic problems in the former Soviet republics so much more severe.

Observers have long recognized sharp differences across the three broad groups of economies that we have examined, but they have always assumed that the varied outcomes are simply an expression of underlying differences in initial economic circumstances, approaches to economic reform, or institutional characteristics during the early reform era. In the absence of any ideas that endow these categories with theoretical significance, this is a reasonable default position. Based on comparative case histories, we have argued that these country categories are in fact meaningful indicators of causally important differences in political trajectories immediately prior to the 1990s. We have identified these differences, which are more obvious in retrospect, and which have been overlooked in charged debates about economic policy, and in

particular about neoliberal policies. We have shown that in the period when transformational recessions actually occurred, the many underlying features of these economies so often claimed to account for their differences do not come close to doing so.

Our findings take one step further the intuition of early observers who argued that “dual transitions” that involve the simultaneous transformation of economic and political institutions—likened to “rebuilding the ship at sea” (Elster, Offe, and Preuss 1998)—are much more hazardous than single transitions in either the polity or the economy. In this paper we have identified why this is the case, and have shown that what really matters in the early years is the way in which communist political institutions declined prior to regime change. The prolonged deterioration of party authority in the USSR, coupled with an early approach to economic reform that crippled the party’s control over assets and created deep uncertainty about ownership, led to severe economic crises that afflicted virtually all Soviet successor states. Regime change came much more quickly to other post-communist states, without similarly disruptive prior attempts to reform the economy. Despite the wide variety of ways in which regime change came about, these countries suffered much shorter and much less severe initial recessions.

We share the emphasis of the sociological literature on the key role of states in regulating market economies and enforcing property rights, and in particular the importance of strong state capacity in the course of a market transition. However, we reject the claim that the destruction of state capacity observed in Russia and elsewhere in the former Soviet Union was due to the adoption of mass privatization and other economic policies during the 1990s. These policies were adopted too late to have created the recessions, which actually began across the region, including the USSR, in 1989. We attribute the collapse of state capacity—and the unusually deep recessions observed across the former Soviet Union—to a prior deterioration of communist party

capacity in the years leading up to the regime's end. This decline was much more severe and prolonged in the Soviet Union than elsewhere. If we are to identify policy choices that undermined these economies and crippled state capacity, they were the decisions of Gorbachev and his advisors in the late 1980s, not those of leaders in the newly independent states. Neoliberal policy prescriptions and their intellectual underpinnings may be open to a variety of legitimate objections—our critique of microeconomic theories about property rights and firms is an example. They may also have undermined the restructuring of state firms, as the firm-level analysis of Hamm, King and Stuckler (2012) suggests, and as the contrasting case of Poland appears to confirm (King and Sznajder 2006). We are convinced, however, that their adoption was a response to, not a cause of, the severe recessions of the early 1990s. How effective they were in stimulating recovery from these recessions, and their long-term impact on economies that adopted them, is still an open question. The Hamm, King and Stuckler (2012) finding that it slowed recovery, replicated in the models we have estimated, suggest that this is still a vital area for further research.

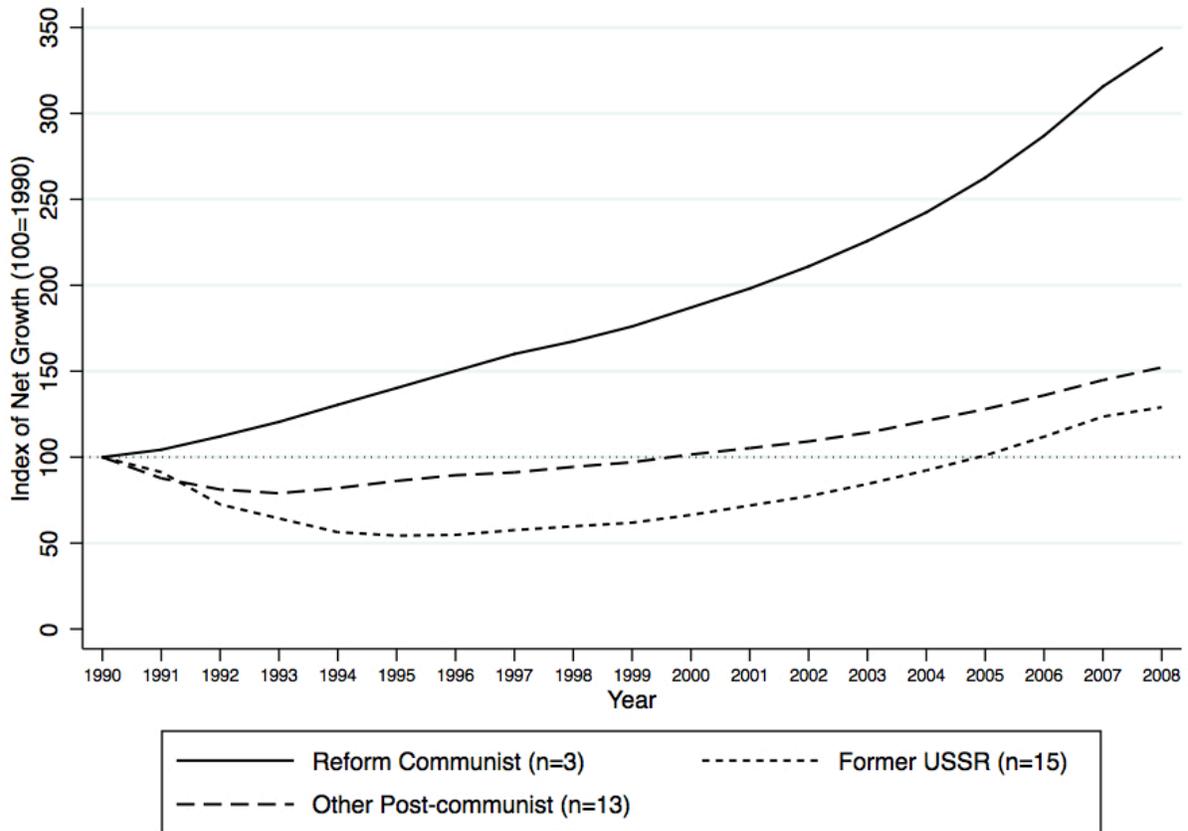
A final set of implications is for claims made about the paths taken by reform communist states, in particular China and Vietnam. The first is the claim that “gradualism” in economic policy is more effective than more concerted reform programs. A related claim is that dictatorships are more effective in implementing painful economic reforms than multiparty democracies. The central message of our analysis is quite different: their primary advantage was the ability to avoid deep recession during the early 1990s, and this in turn was due to the continued ability of their communist parties to define and enforce property rights, even as they began a decisive state-led restructuring during the 1990s. The identification of reform communism with “gradualism” in economic policy is something of a misperception, because the

downsizing and restructuring of state sectors in China and Vietnam in the 1990s was rapid and in many ways radical, leading to waves of plant closures and privatizations that laid off many more workers than was the case in countries that attempted mass privatization. These restructurings under reform communism were not more effective because they were gradual, but because they were carried out from above, under the guidance of still-strong states. That dictatorships are not uniquely effective at state-directed restructurings is illustrated by the case of Poland, where a new democracy directed a similar program of restructuring and privatization that was similarly effective (King and Sznajder 2006). Claims about the superiority of Chinese-style “gradualism” often miss the fact that the restructuring of China’s state sector firms was more rapid, in some ways more “radical” there during the 1990s than in Russia, Ukraine, and elsewhere in the former Soviet Union. The privatization and restructuring of China’s state sector generated layoffs that affected close to 40 million workers (Naughton 2012; Walder, Luo and Wang 2013). China’s strong state capacity, so often contrasted with Russia’s diminished state capacity during the 1990s, permitted these harsh and decisive reforms to be carried out in a way that did not diminish the country’s high growth rates. This is the result of state capacity, not dictatorship per se.

This leads to a final implication, which has been largely hidden in our retrospective analysis of the early 1990s. Having endured the varied economic hardships that followed from the collapse of communist party authority, post-communist states no longer face the risk of severe transformational recessions. Despite more favorable economic trajectories since 1989, reform communist states still face this systemic risk. Their economic futures are therefore to some extent captive of their future political trajectories. They have much larger and more established private sectors than their counterparts at the end of the 1980s, but they still have dominant state sectors comprised of large corporations that generate close to one third of

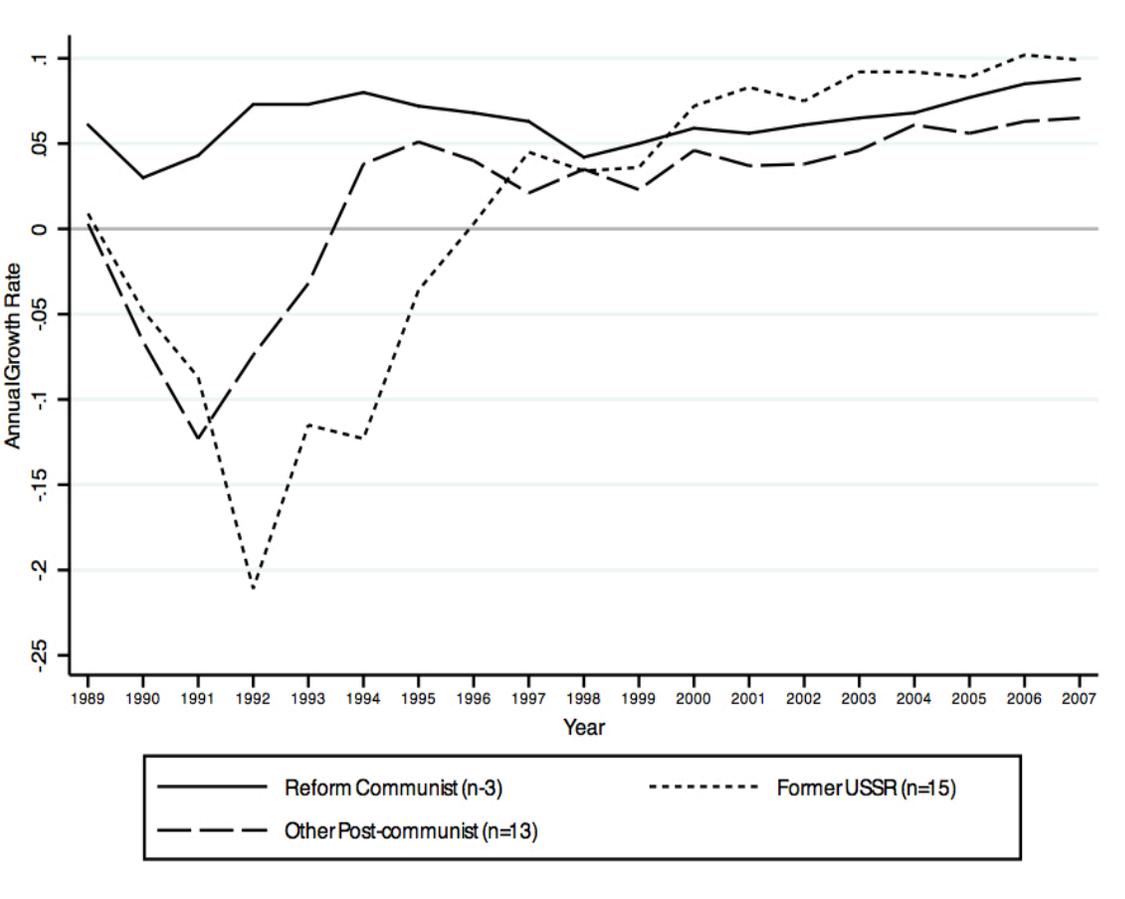
economic output. The implication of the analysis offered here is that the economic costs of future regime change will be minimized if it comes about quickly, especially through open negotiations of the kind observed in Poland and Hungary. It will be more severe if it is delayed to the point where communist parties have already begun to lose internal cohesion, especially if this is accompanied by a prolonged struggle between the forces of democratization and retrenchment. This is the essential historical lesson to be drawn from the final years of the Soviet Union.

Figure 1. Net Growth, Real Gross Domestic Product Per Capita, 1990-2008 (Constant US\$)



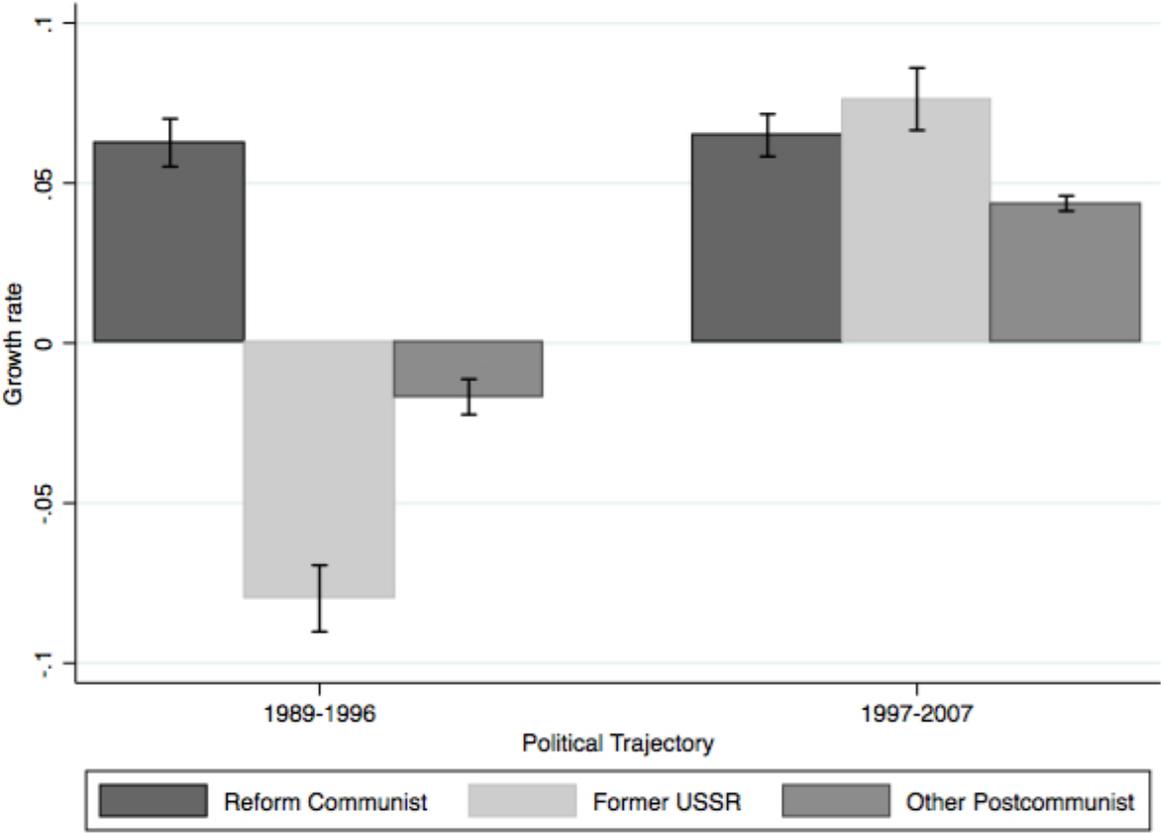
Source: Calculated from World Bank, World Economic Indicators

Figure 2. Annual Growth Rates, Real Gross Domestic Product Per Capita, 1989-2007



Source: World Bank, World Economic Indicators and European Bank (1999).

Figure 3. Predicted Net Growth Rates, by Political Trajectory and Period



Source: Calculated from mixed model estimation, column 3, Table 2. Brackets are 95 percent confidence intervals.

Table 1. Dates of Mass Privatization Programs

Country	Dates for onset and implementation	Prior net change after 1989, GDP per capita
Armenia	October 1994-March 1995	-46.8%
Czech Republic	May-December 1992 (first wave); December 1993-November 1994	-11.7%
Georgia	June 1995-July 1996	-70.8%
Kazakhstan	April 1994-January 1996	-32.1%
Kyrgyzstan	March 1994-	-32.3%
Latvia	1994	-46.1%
Lithuania	1993-1995	-25.8%
Moldova	March 1993-November 1995	-40.3%
Romania	October 1992-June 1995	-23.9%
Russia	August 1992-July 1994	-28.5%
Ukraine	Year end 1994	-48.9%

Sources: Lieberman, Nestor and Desai (1997, pp. 10-13, 98 and 174); GDP per capita (purchasing power parity), World Bank (2012).

Table 2. Mixed model estimates of period contrasts, annual change real GDP per capita, 1989-2007

	(1)	(2)	(3)	(4)
<i>Political Trajectory</i>				
Year > 1996	.050*** (.006)	.053*** (.006)	.052*** (.006)	.054*** (.005)
Reform communist	.073*** (.011)	.063*** (.010)	.087*** (.009)	.084*** (.015)
Reform communist*year>1996	-.048*** (.006)	-.052*** (.006)	-.050*** (.006)	-.052*** (.006)
Former USSR	-.049*** (.013)	-.037*** (.010)	-.038*** (.012)	-.037** (.013)
Former USSR*year>1996	.069*** (.012)	.063*** (.012)	.065*** (.012)	.063*** (.012)
Military conflict	-.103*** (.024)	-.105*** (.029)	-.105*** (.029)	-.104*** (.029)
Hyperinflation	-.069*** (.016)	-.056*** (.014)	-.056*** (.014)	-.055*** (.014)
<i>Economic Circumstances</i>				
Favorable geographic location		.047*** (.009)	.039*** (.006)	
Per capita petroleum output value (US\$ x 1,000)		.080** (.027)	.080** (.027)	.080** (.027)
Initial percent agriculture		-.00055 (.0003)	-.0006*** (.0001)	
Initial per capita GDP x 1000		-.0076** (.0027)	-.004* (.002)	-.0013 (.0017)
Over-industrialization		.0009* (.0004)	.0009** (.0003)	.00075 (.0004)
<i>Policy and Political Economy</i>				
Liberalization			-.0099*** (.0026)	
Mass privatization			-.014** (.005)	-.014* (.0066)
Democratization			.00021 (.00013)	
Rule of law			.00006 (.0002)	
Observations (country-years)	571	552	539	552
Number of groups (countries)	31	30	29	30
BIC	-1548	-1532	-1482	-1538

Excluded category is “other post-communist”. The reported coefficients for time-varying covariates are for deviations from country mean; the coefficients for country mean are not shown. Cambodia is missing in columns 2-4; Serbia is missing in column 3. All models are estimated with robust standard errors. BIC (Bayesian information criterion) is calculated with number of observations set at the number of groups (countries) in the estimation.

Appendix 1. Variable Definitions and Sources

Name	Definition	Type	Source
Growth	Annual percentage change in real GDP per capita, constant 2000 US\$	Scaled, time-varying	World Bank (2012), upplemented by European Bank (1999)
Year > 1996	Dummy variable indicator for period from 1997 -2007	Dummy, constant	
Initial GDP per capita	GDP per capita, constant US\$, 1990	Scaled, constant	World Bank wdi database, supplemented by European Bank 1999
Reform Communist	Transitional economies that did not experience regime change	Dummy, constant	China, Laos, and Vietnam==1
Former USSR	Successor states of the Soviet Union	Dummy, constant	Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan=1
Other post-communist	Neither reform communist nor former USSR	Dummy, constant	Albania, Bulgaria, Cambodia, Croatia, Czech Republic, Hungary, Macedonia, Mongolia, Poland, Romania, Serbia, Slovenia, and Slovakia=1
Initial agriculture share	Percent GDP from agriculture, 1990 or earliest available year	Scaled, constant	World Bank (2012)
Over-industrialization	Index of overconcentration in industrial sector	Scaled, constant	de Melo et. al (2001), with additions (see text)
Location	Geographic location bordering dynamic market economies	Dummy, constant	de Melo et. al. (2001), with modifications (see text)
Oil revenue	Per capita value of annual oil production	Scaled, time-varying	Annual population from World Bank (2012); annual oil production from BP Statistical Review of World Energy June 2012: http://www.bp.com/statisticalreview ; Annual oil price year end: U.S. Energy Information Administration: http://www.eia.gov/dnav/pet/pet_pri_rac2_dcu_nus_a.htm
Mass privatization	State that carried out mass privatization in early 1990s	Dummy, constant	Hamm, King, and Stuckler (2012), with additional coding of six national cases, all coded as “0”: Cambodia (Hughes 2003), China (Naughton 2008), Laos (Stuart-Fox 2005), Mongolia (Rossabi 2005), Serbia (Vujačić and Vujačić 2011), and Vietnam (Dollar 1999).
Liberalization	Index of market liberalization policy, early 1990s	Scaled, constant	de Melo et. al (2001), Popov (2000), with additions
Democratization	Democracy index, average score for 1990-1995	Scaled, constant	Marshall, Gurr and Jagers (2010) and Polity IV (2013); 20 point scale converted to 100 point scale
Rule of law	Index of property rights protection, early 1990s	Scaled, constant	Popov (2000)
Military conflict	Year in which state experienced interstate conflict or civil war	Dummy, time-varying	Authors’ coding—see text for sources
Hyperinflation	Year in which annual inflation exceeded 1,000%	Dummy, time-varying	Coded from data in World Bank WDI database, supplemented by European Bank (1999) and Uvalic (2010) for Serbia

Appendix 2. Mean values of variables, by Political Trajectory

	Former USSR	Other Post- communist	Reform Communist
<i>A. Political trajectories</i>			
Military conflict (country-years)	18	12	0
Hyperinflation (n country-years)	24	9	0
<i>B. Initial economic conditions</i>			
Initial percent agriculture	24.8	15.8	41.0
Initial GDP per capita (US\$)	1816.0	3144.1	281.4
Over-industrialization index	5.87	9.42	-1.78
Favorable geographic location (proportion of cases)	0	.65	1.0
Per capita oil revenue (constant US\$)	133.3	4.45	19.2
<i>C. Policy choice</i>			
Liberalization index (Popov)	1.53	3.40	3.07
Liberalization index (de Melo)	5.09	6.38	2.67
Mass privatization (proportion of cases)	.60	.16	0
<i>D. Reform-era political economy</i>			
Democracy index	43.7	69.9	17.0
Law index	46.9	65.4	60.6

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