

# The Political Economy of Imprisonment in Affluent Western Democracies, 1960–1990

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*Research showing an association between business cycles and imprisonment is suspect on both theoretical and empirical grounds. Most research on this topic uses an impoverished notion of business cycles and pays no attention to differences in the institutional contexts of economic policymaking. This article reexamines this issue using data from 15 affluent capitalist democracies observed over 30 years, from 1960 to 1990. Pooled regression techniques are used to test hypotheses regarding the effects of business cycles, political power, and the structure of labor market institutions. Results from simple models show the expected associations between business cycles and imprisonment rates, but these associations disappear in models that include measures of politics and institutional structure. This suggests that the business cycle–imprisonment relationship is not causal but is instead an artifact of antecedent differences between neoliberal and corporatist societies.*

Over the last three decades, the busiest line of empirical research on imprisonment has treated incarceration rates as a function of macroeconomic trends. This research builds on a Marxian theoretical foundation laid in the 1930s by Rusche and Kirchheimer (Rusche 1978; Rusche and Kirchheimer 1968), who argued that the function of prisons in capitalist

societies is to manage surplus labor. Since the 1970s, dozens of studies have tested the derivative hypothesis that the imprisonment rate moves inversely with the business cycle, rising during recession and declining during economic expansion. Most results confirm the expected association (Chiricos and DeLone 1992), and many scholars believe the “Rusche–Kirchheimer hypothesis” (henceforward RK) is amply supported. Others are skeptical, arguing that tests of RK are based on narrow samples or misspecified statistical models (e.g., D’Alessio and Stolzenberg 1995; Parker and Horowitz 1986; Sutton 2000). If an empirical association exists between recession and imprisonment rates, it is by no means clear how it should be interpreted. Scholars in the RK tradition have suggested that recession may be linked to imprisonment rates as a result of increased crime (unemployed people steal), by the legitimating function of the state (unemployed people make revolutions), or by the agency of official decision makers (judges give harsher sentences to unemployed people). So far we have no way to sort out these alternative interpretations, since “the research has left many if not most of the key theoretical issues unexamined” (Chiricos and DeLone 1992: 432).

I find three chronic weaknesses in the RK literature that call not just for skepticism, but for

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a fundamental rethinking of the prison-economy relationship. One weakness is a persistent lack of attention to the state and the dynamics of social policy making. Holding crime constant, rates of incarceration are most powerfully and proximally influenced by policies that determine the kinds of behaviors that are criminalized and the administrative capacity of criminal justice agencies. These are institutional phenomena: what Wilkins (Wilkins 1991; Wilkins and Pease 1987) calls the “social demand for punishment” cannot be explained away in terms of class interest or elite conspiracy. There is now good evidence from outside the RK tradition of discursive, ideological, and political factors that influence penal policy independently of economic trends, including the development of social welfare schemes (Garland 1985), the production of criminological knowledge and the routes by which it is incorporated into penal policy (Savelsberg 1994), the organization of the life course (Sutton 2000), institutionalized patterns of inequality (Wilkins 1991; Wilkins and Pease 1987), and partisan political alignments (Jacobs and Helms 1996; Sutton 1987; von Hofer 2003). This work is not theoretically integrated, and—perhaps in reaction to the stifling influence of RK—it tends not to address economic effects on incarceration. But the findings from this research point toward a provocative generalization: Demand for punishment seems to be highest in societies that have a strong commitment to individualistic means of social achievement and a correspondingly weak capacity for collective responses to inequality.

A second weakness is that the RK research is based on an impoverished notion of the economy. This is partly a problem of model specification: following Rusche and Kirchheimer’s emphasis on labor surplus, most studies rely on a single predictor of imprisonment rates, usually unemployment (Chiricos and DeLone 1992: Appendix A). This is naïve because business cycles are multidimensional phenomena, comprising several empirical trends that are often independent of each other and that have different implications for class-based social divisions. This is not a difficult problem to remedy in empirical terms, since additional indicators of business cycles are readily available. But it points to a deeper theoretical problem: RK research implicitly assumes that all capitalist economies are the same and that business cycles

are wholly exogenous to other kinds of social processes. This ignores a large and growing body of research in sociology, political science, and macroeconomics that focuses on differences in the institutional foundations of Western capitalist economies and the consequences of these differences for economic performance. This research shows that the variation in the strength and organization of national labor movements, the balance of power among class-based political parties, and the relative centralization of labor markets are consequential for a wide range of macroeconomic outcomes, including employment and growth (e.g., Esping-Andersen 1990; 1999; Garrett 1998; Western 1997). The empirical RK research has overlooked these institutional differences; indeed the research overwhelmingly has focused on societies of the United States and Britain (Chiricos and DeLone 1992: Appendix A), which are exemplars of market liberalism (Esping-Andersen 1990). Little attention has been paid to the European corporatist democracies, where labor market trends are less volatile, welfare state protections are stronger, and incarceration rates are lower.

A third weakness is that, just as the RK research ignores differences across capitalist economies, it ignores institutional adaptations. Rusche and Kirchheimer themselves treated the emergent welfare states of the early 20th century as no different than the poor law regimes that accompanied early industrial capitalism. The majority of the recent RK research ignores the move to Keynesian economic management that began in the 1950s; more importantly, the economic restructuring of the last 30 years has received scant attention. The global oil shocks of 1973 and 1979–80 and the recessions that followed challenged the assumptions of Keynesianism and encouraged a wide-ranging set of adaptations among the advanced capitalist countries. Scholarly opinion is divided about how deep and transformative these adaptations have been, and their debates have implications for our understanding of the economy-imprisonment relationship. According to the “globalization thesis” (Garrett 1998, ch. 1), increasing capital mobility and incorporation into world markets have pushed the European social democracies toward American-style market liberalism (Kitschelt 1994; Piven 1991), while other scholars argue that differences between

liberal and social democratic regimes have persisted in spite of new economic pressures (Esping-Andersen 1999; Garrett 1998). There is a parallel debate in the punishment literature. Wacquant (1999; 2001) has argued that, as European states adjust to more turbulent labor markets, they also imitate the United States by adopting more punitive means of managing inequality. Research by Western and his colleagues (Western and Beckett 1998; Western and Beckett 1999; Western and Guetzkow 2002; Western and Pettit 2000) suggests on the contrary that mass imprisonment is embedded in the U.S. labor market in ways that are not easily exportable. The systematic comparative work required to sort out these arguments has not yet been performed.

The implications of this critique can be summarized briefly: (1) The existing RK research suffers from empirical misspecification and theoretical narrowness; (2) since punishment practices and labor market trends both are shaped by antecedent institutional factors, the observed association between them may well be spurious; and (3) an adequate account of the relationship between the economy and the prison must incorporate both differences among capitalist democracies and adaptations occurring over time. I address each of these issues and develop an alternative model of the relationship of imprisonment to the economy in the next section. This model operates on two levels. On the first level, it offers a more nuanced representation of the behavior of business cycles than has been employed in the RK research, which in turn will permit more exacting analyses of their relationship to imprisonment. On the second level, the model identifies salient institutional differences between liberal and corporatist policy regimes—especially political power and the organization of labor markets—that are likely to influence both incarceration and employment trends. My argument in brief is that incarceration and employment are interdependent because both are embedded in wider institutional frameworks that shape social policy in modern Western societies. More specifically, I argue that incarceration rates are higher in countries where capacities for regulating the macroeconomy and containing inequality are weak. I test this model on data from 15 capitalist democracies observed over 30 years, from 1960 to 1990. This assures that the analysis captures

both relatively stable differences among social policy regimes and adaptations to watershed economic challenges.

## RETHINKING THE ECONOMY-IMPRISONMENT RELATIONSHIP

### *RESPECIFYING BUSINESS CYCLES*

For our purposes, it is convenient, and reasonably faithful to the macroeconomics literature, to think of business cycles as having three empirically distinct dimensions: growth, employment, and inflation. In the textbook scenario, these dimensions are related in the following way: economic growth produces wealth, stimulating demand for goods, services, and labor; eventually wages and/or consumption may rise faster than the economy's productive capacity, leading to inflation; inflation creates a disincentive for productive investment, leading to slower growth, and, eventually, higher rates of unemployment. Real economies do not move in such a lockstep fashion; the potential independence of these trends provides much of the grist for macroeconomic research and suggests great care in generating hypotheses about imprisonment, particularly in a cross-national context. Most of the empirical macroeconomics research focuses on the dynamic properties of single economies; indeed, the United States often serves as exemplar. In my discussion, I will describe the standard expectations about business cycle behavior, but I will also emphasize the growing literature that offers comparative analyses across several economies.

**EMPLOYMENT.** I begin with the issue of employment because it is central to the RK hypothesis. The most commonly used indicator is the unemployment rate, but a well-known limitation of official unemployment rates is that they count only people who are active in the labor force—usually people who are either working or out of work but collecting unemployment benefits. Unemployment rates do not include people who have never participated in the labor force or who have dropped out because of a perceived lack of opportunities. In the adult population, most labor-force nonparticipants are women. However, the labor-force nonparticipant group also includes a high concentra-

tion of young, poorly educated, low-skilled, and socially marginal men—precisely the group that would be most at risk of imprisonment. Indeed, such high-risk candidates are probably more highly concentrated among discouraged workers than among the officially unemployed. Labor-force participation rates provide a useful (inverse) measure of the relative size of the population that is excluded from work. Elmeskov and Pichelmann (1993) analyzed the empirical relationship between labor-force participation and official unemployment rates, and they find a loose negative relationship among OECD (Organisation for Economic Cooperation and Development) countries over the long run: high unemployment tends to coincide with low participation in the labor force (OECD 1991). Still, their data show a few exceptions (notably Sweden), and the patterns of association between the time series vary dramatically across countries. Thus, the two measures seem to capture different dimensions of labor-market slack. Since rising rates of labor-force participation signify expanding economic opportunities, we should expect a negative association with prison growth. I will focus on *male* labor-force participation rates to capture the population most at risk of crime and imprisonment.<sup>1</sup>

**GROWTH.** Total economic output, typically measured by per capita gross domestic product (GDP), is the most general and frequently used indicator of macroeconomic performance, and GDP growth is the most common indicator of business cycle movement. Economic growth is a major determinant of unemployment rates; an association described by “Okun’s law,” one of the best-known predictions in macroeconomics.<sup>2</sup> However, as a great deal of empirical

work has shown, Okun’s law is not a law, but a variable. Comparative analysis by Moosa (1997) shows systematic differences across countries and over time: cycles of GDP and unemployment growth are more tightly related in the United States, Canada, and the United Kingdom than in Japan and continental Europe, where corporatist protections help buffer labor markets. And some evidence shows that linkages are becoming tighter overall (Okun’s coefficient is rising) as worker protections have eroded in many countries. GDP growth is likely to show direct negative effects on prison growth. But we also should attend to possible indirect effects mediated by unemployment. If the orthodox interpretation of the RK hypothesis is correct—that is, labor surplus per se is responsible for variation in imprisonment rates—then labor market effects should persist even when productivity growth is included in the equation. Otherwise, the productivity effect is likely to overwhelm any observed effects of labor markets.

**INFLATION.** Inflation—a general increase in prices—typically is a byproduct of rapid growth, particularly when the economy is producing near its upper limit of output. Growth fuels consumer optimism, hence demand; but if productivity cannot keep pace, prices for a finite stock of goods and services are bid upwards, reducing real incomes. Generally, since inflation makes people poorer, we might expect a positive association between inflation and imprisonment. Indeed, the logic of Okun’s popular “misery index” (the sum of inflation and unemployment rates) suggests that the two trends should have convergent impacts. Lessan (1991) found such a pattern in a time-series analysis of U.S. imprisonment data.

However, macroeconomic theory predicts that inflation and unemployment are inversely related. The anticipated trade-off between inflation and unemployment is formalized in the “Phillips curve,” a cornerstone of macroeconomic theory and monetary policy since the 1950s (Dornbusch, Startz, and Fischer 1998, ch. 16). The logic of the Phillips curve implies that the two trends are unlikely to have convergent effects on incarceration rates. Indeed, without straying far from the spirit of the RK hypothesis, it is reasonable to predict that inflation has a *negative* impact on incarceration. This is

<sup>1</sup> Data on unemployment rates by gender are not available for the earlier years covered by this study. This is probably a minor problem, since male and female unemployment rates tend to move together. Trends in labor-force participation vary sharply: across the countries analyzed here, male participation rates have fallen and female participation rates have risen.

<sup>2</sup> Specifically, Okun’s law predicts that when real GDP growth is over the annual trend of 2.25 percent, unemployment will decline by .5 percent for every 1 percent of additional GDP growth (Okun 1962).

because inflation reduces inequality by redistributing wealth and income from creditors to debtors (Dimelis and Livada 1999; Dornbusch, Startz, and Fischer 1998:518–21; Johnson and Shipp 1999). The hardest hit creditors tend to be large institutions, such as banks, insurance companies, and investment firms, as well as wealthy individuals who derive substantial income from equity stocks. Many businesses are net debtors, but so are most families, particularly those at the lower end of the income distribution. Indexing protects the real incomes of most workers and pensioners from erosion, and, if unemployment is low, even non-indexed wages are likely to rise. Wages aside, inflation tends to raise effective incomes because it makes long-term borrowing—for furniture, cars, homes, and educational expenses—more attractive. Conversely, *disinflation* has profound adverse consequences, mainly for lower-income persons. A relevant example of this is the tight money policies adopted by the United States and other rich countries in an attempt to end the inflationary binge of the 1970s—a strategy that, in the early 1980s, led to a deep recession and the highest unemployment rates in the postwar period.

I also attend to two kinds of effects that expand the basic business cycle model and provide a theoretical bridge to the institutional effects that are my main interest. First, looming behind the RK hypothesis—indeed all arguments deriving from Marx—is the idea that incarceration is related to economic inequality. The implicit logic of the RK argument is that recession raises imprisonment rates by widening class divisions and aggravating social tensions; unemployment is one mechanism of immiseration, but is not the thing itself. Wilkins (1991; Wilkins and Pease 1987) frames the association between imprisonment and inequality in different terms: he argues that incarceration is a form of stratification, a “negative reward” that is allocated through the same social processes that allocate positive rewards like income, education, and health care. Thus the “public demand for punishment” is likely to be higher in societies that tolerate high levels of inequality. Both the RK and Wilkins hypotheses predict a positive association between inequality and imprisonment rates.

Second, it is also important to factor in the effects of social protection schemes designed to

buffer individuals from the impact of recessions. Macroeconomic theory suggests that social benefits, such as unemployment compensation, influence rates of unemployment by raising the “reservation wage” (the wage that offers an adequate incentive for an unemployed worker to accept a job). Also, more generous benefits may embolden employed workers to press for higher wages even in the face of rising unemployment. Whatever the mechanism, substantial research has shown that the more generous the benefit and the longer it persists, the higher the rate of unemployment (Scarpetta 1996:51–2). This suggests a positive association between benefits and imprisonment, mediated by unemployment. However, Cantor and Land (1985) show that we could expect a direct negative effect because unemployment benefits reduce incentives for crime (hence the risk of imprisonment) among insured workers. This suggests that, at least in the short term, higher spending on unemployment benefits should counteract the tendency of rising unemployment to push crime and imprisonment rates up. The expected association in this scenario is negative.

### **RETHINKING LABOR MARKETS**

This section develops two arguments I posed in the introduction. The first is that business cycles are not exogenous. Rates of employment, growth, and inflation are affected by institutional differences between neoliberal and corporatist economies; this means that, at the very least, tests of the effects of business cycles on imprisonment are misspecified unless they control for these antecedent differences. The second and more ambitious argument is that the association between imprisonment and business cycles is spurious, that in fact, institutional differences directly affect both. Recall Wilkins’s (1991) suggestion that imprisonment rates and inequality covary. I have already introduced this idea as a testable hypothesis, but viewed in the larger context of Wilkins’s work, it is a tautology, since he conceptualizes imprisonment as a *form* of inequality. The question then becomes, What determines the level of tolerance for inequality—including punishment rates—across societies and over time? To pose the question in this way implies that neoliberalism and corporatism are not just alternative

techniques of macroeconomic management, but alternative policy regimes that are organized around fundamentally different institutional logics (Friedland and Alford 1991). Neoliberalism defers to the logic of the market: inequality, unemployment, and crime are treated as the natural results of competitive individualism, the state's prescribed role is reactive, and social policies are invidious, even overtly punitive. Corporatist societies are organized around the logic of cooperation, so the state plays a more active role in managing inequality and social policies are aimed at socializing economic risks and rewards. This notion of alternative policy regimes is not new, in fact it is fundamental to the political economy and welfare state literatures (e.g., Esping-Andersen 1990; 1999; Garrett 1998; Hicks 1988; Hicks and Kenworthy 1998; Huber, Ragin, and Stephens 1993; Kenworthy 2002). What is new here is the attempt to bring the issue of imprisonment under the same theoretical umbrella.

I intend to specify the dimensions of market logic, its alternatives, and its likely consequences for imprisonment. To these ends I draw on an extended debate among economists, political scientists, and sociologists about how labor markets and economic performance are related to inequality. The debate focuses on labor market rigidity, which refers primarily to the existence and extent of institutional constraints on open bidding for jobs, wages, and working conditions between firms and individual workers, but also includes redistributive programs that can affect the supply and cost of labor. Labor market rigidity is not a purely technical matter but is rather deeply political: the purpose of regulatory and redistributive policies is to mitigate the impacts of labor market failure on workers and their families, thus their major advocates are labor unions and leftist political parties. Neoclassical economists argue that constraints of this sort are likely to erode economic performance because they raise wages above market-clearing rates and increase the costs of hiring and firing employees. From this point of view, the welfare-state protections and neocorporatist labor regimes that took shape in varying degrees in the 1950s and 1960s were sustainable only because Western economies were relatively closed to outside influences; the 1973–1974 oil shock was a signal that the global market would ultimately have its way, and the

dramatic rebound of the U.S. economy after the 1980–1981 recession was evidence for many that the worst-tasting medicine produces the best results. On the other side of the debate, a stream of literature running from Calmfors and Driffil (1988; Calmfors 1993) and Esping-Andersen (1990; 1999) to Garrett (1998) has attacked the idea that U.S.-style market liberalism is the only road to economic health. Their work suggests that highly centralized social-democratic regimes can achieve high levels of growth, keep inflation in check, *and* reduce inequality by encouraging wage restraint across the entire economy.

Both sides of this debate help to specify the causal scenarios to be tested in this analysis. The neoclassical argument suggests how labor market structure might effect imprisonment indirectly: If economic performance is inversely related to incarceration rates (the RK hypothesis is true), *and* labor market regulation erodes economic performance, then the net effect of regulation is positive. Thus, highly regulated corporatist economies are likely to experience higher imprisonment rates in the long run. This scenario is logically consistent, but *prima facie* implausible, since the United States and the United Kingdom, the two developed countries with the weakest regulatory regimes, also have the highest average rates of incarceration. The revisionist interpretation suggests an entirely different causal scenario: Regulation may reduce the amplitude of business cycles, thus indirectly holding down incarceration rates—again, if RK is true. More importantly, if corporatist regulatory strategies are symptomatic of a deeper institutional logic that informs a broad range of social policies, then we will probably see direct negative effects on incarceration rates.

The following hypotheses capture the tension in this debate. I focus on two sources of labor market rigidity that figure prominently in the literature—the political power of labor movements and social democratic parties, and the capacity of corporatist institutions to coordinate labor markets.

**UNION STRENGTH.** Stronger union organization enhances the collective power of workers to influence wage-setting and other policies that are friendly to workers and their families. The general expectation among mainstream economists is that unrestrained wage demands

by powerful unions will erode economic performance. This effect, they argue, accounts in part for high unemployment rates in Europe since the 1970s; conversely, recovery in the 1980s and 1990s is partly attributable to union decline (e.g., Layard, Nickell, and Jackman 1991; Nickell 1997; Scarpetta 1996). Extending this logic, union strength should be positively associated with prison growth and should attenuate any observed impact of business cycles. There is, however, an alternative account. Research by Hicks (1988) and Alvarez, Garrett, and Lange (Alvarez, Garret, and Lange 1991; Garrett 1998; Garrett and Lange 1986; Lange and Garrett 1985; Lange and Garrett 1986) concludes that union strength contributes to economic growth *and* improvements in income equality when it is complemented by labor party control of government. Boreham, Hall, and Leet (1996) find that, among OECD countries, stronger union sectors are associated with higher levels of redistributive social spending, independent of political party effects. There is no research on the effects of unionization on imprisonment, nor have I found evidence that labor unions have been directly influential on criminal justice issues. But it is clear from the existing research that labor unions are more than wage-bargaining agents, they are also collective political actors that are inimically opposed to the logic of the market. Strong unions imply greater working-class influence in domestic politics, which is likely to encourage cooperative and redistributive social policies and discourage policies that are unfriendly to their constituents—and it is difficult to think of a less worker-friendly policy than imprisonment. On these grounds, I anticipate a negative association between union strength and imprisonment rates.

**PARTISAN POLITICS.** There is a substantial and hotly debated literature on partisan influences on macroeconomic policy. As Alvarez et al. (1991:531–40) elegantly summarize, one side argues that the mix of unemployment and inflation is influenced by which party is in power, because left parties are more averse to unemployment and right parties are more averse to inflation; the other side argues that both the left and right parties are inclined to court the “median voter,” so partisan effects cancel out and market forces prevail. The mere existence of this

debate is sufficient reason to incorporate partisan effects in the analysis, if only as a control. In the literatures on political economy and social policy, the role of left (social democratic and labor) parties has drawn the most attention. Comparative research shows that left parties encourage more redistributive social policies (Hicks and Misra 1993; Hicks and Swank 1992; Korpi 1989), tighter regulation of labor markets (Garrett 1998; Hicks 1988), and a preference for inflation over unemployment (Hibbs 1997). Thus, there is good reason to suspect that these parties exert an antecedent influence on factors that are likely to affect imprisonment rates. There is also evidence that, at least among the Anglo-American democracies, dominance by right parties encourages prison growth directly (Jacobs and Helms 1996; Sutton 1987; 2000). This implies a direct negative effect of left parties, but their specific impact has not been tested because the United States lacks a true party of the left. Data from a wider range of countries will permit such a test; I anticipate a negative association between left party rule and prison expansion.

**CORPORATIST LABOR MARKET INSTITUTIONS.** Capitalist countries vary widely in their structural capacity to coordinate labor market transactions. Neoliberal democracies like the United States and the United Kingdom rely primarily on market mechanisms to set wages, the terms of employment, and eligibility for social benefits, and interest groups play no formal role in economic policymaking. In corporatist regimes, wage rates, work rules, and policies concerning employment security and social protection are set by negotiations among “peak associations” representing workers (through their unions and union federations), employers (through industry associations or federations spanning the entire private economy), and the state. Thus, corporatism is a set of structural arrangements through which workers, employers, and the state are jointly engaged in forging economic policies that are applied in a coordinated way across the entire economy (Hicks and Kenworthy 1998).

There are grounds to expect both indirect and direct effects of corporatist institutions on incarceration trends. A hypothesis of indirect effects arises from the standard macroeconomic view that coordination impedes economic performance. In this view, centralized wage set-

ting—a signal feature of corporatist economies—reduces employers’ flexibility in responding to changing market conditions and to the varying circumstances of workers in different occupations and industries. As a result, growth suffers and unemployment rises. One particularly interesting and influential version of this argument is the “insider-outsider theory.” Lindbeck and Snower (1989) have argued that employed, unionized workers (insiders) have a power advantage over unemployed workers and workers in the informal sector (outsiders): The cost of replacing protected workers is high, so insiders have an incentive to push for wage increases even in the face of a recession. This is likely to raise unemployment rates and hinder economic recovery. If we append this argument (corporatism leads to deeper and longer recessions) to the RK hypothesis (recessions push incarceration rates up), we should expect a net positive effect of corporatism on incarceration, mediated by business cycles. This hypothesis is *prima facie* dubious, because it does not explain Canada, the United States, and the United Kingdom—countries that rank at or near the bottom of any measure of corporatism, and at or near the top in prison growth—but multivariate tests could possibly reveal an underlying effect of this sort.

Since the 1980s, a rising chorus of scholars has criticized the neoclassical view, offering considerable evidence that centralized wage-setting and union consultation can yield efficient economic performance.<sup>3</sup> The core of the revisionist argument is that salutary compromises are more likely when economic risk is nationalized. Under such conditions, union confederations are willing to accept modest (noninflationary) wage increases in return for favorable employment policies and a strong social safety net, and employers are inclined to accept labor market regulation in return for predictable levels of inflation and protection from labor unrest. This suggests a net negative effect of corporatism on incarceration that may operate indirectly, through enhanced economic performance (again, if the RK hypothesis is true),

or directly, as part of a tendency toward more equalitarian social policy.

This effect may not be linear. In a pair of frequently cited articles, Calmfors and Driffil (1988; 1993) put forward a more subtle argument that both market-based and corporatist labor arrangements can perform efficiently; pathologies are most likely to arise at intermediate (industry) levels of labor market coordination, where unions are powerful enough to distort market forces and competition among unions and industries discourages wage restraint. Comparative research by Scarpetta (1996) shows just such a “hump-shaped” effect of coordination on several indicators of unemployment; by simple extension, this suggests a similar, but indirect, U-shaped effect of corporatism on incarceration. But this hypothesis also leaves Canada, the United States, and the United Kingdom dangling conspicuously. An opposite and more intuitively sensible hypothesis is suggested by Lindbeck and Snower’s “insider-outsider” imagery, particularly as employed by Esping-Andersen (1999; 2000a; 2000b). Even in relatively inclusive corporatist countries, risks are not shared equally across the whole society, but only among those with a collective voice. Corporatist institutions can aggravate the insider-outsider problem in broad political and social terms, because workers in core occupations and industries may use their bargaining advantage to monopolize the benefits of regulated labor markets, leaving outsider workers to experience high rates of unemployment, limited social protection, and generally weak attachments to supportive institutions. Esping-Andersen’s (2000b) empirical analyses show that, although labor market regulation does not cause mass unemployment, it does affect the *shape* of unemployment, with particularly harsh impacts on the young and unskilled. As long as the economy is growing, expansion of the core can create new opportunities for outsiders and reduce competition between the two sectors; but recession is likely to lead to shrinkage in core opportunities, deepened segmentation, and rising inequality. Women workers are likely to be positioned as outsiders, but so are younger workers, ethnic minorities, immigrants, and guestworkers—groups that also experience a higher than average risk of incarceration. This leads to another curvilinear hypothesis, this time with a U-shaped functional form. Imprisonment rates

<sup>3</sup> Kenworthy and Hicks (Hicks and Kenworthy 1998; Kenworthy 2002) summarize these studies and provide extensive citations.

are likely to be highest in the market liberal societies, where competitive individualism sets the tone for social policy, and in highly corporatist countries, where group competition between insiders and outsiders is institutionalized. I expect imprisonment rates to be lower in the middle, where neither model predominates.

## DATA AND METHODS

The data for this study comprise time series for 15 countries observed from 1960 to 1990. The sample includes five Anglo-American liberal democracies (Australia, Canada, New Zealand, the United Kingdom, and the United States), four Scandinavian social democracies (Denmark, Finland, Norway, and Sweden), and six European corporatist democracies (Austria, Belgium, France, Germany [F.R.G.], and the Netherlands). The sample was stratified in this way to maximize variation on key economic and labor-market variables while still maintaining a focus on the most developed economic systems. Panels are unbalanced in minor ways due to missing data. German imprisonment data begin in 1961, and New Zealand unionization data only run from 1961 to 1986. These imbalances are irrelevant for the estimation procedures used here.

The dependent variable is imprisonment rates, measured as a ratio of the number of inmates per 100,000 population. For the purposes of this analysis, I use aggregate imprisonment rates, combining sentenced and remand inmates, and inmates in local jails as well as those in penitentiaries. Although this measure is used commonly in scholarly and policy literatures, it is problematic because it collapses several analytically distinct processes operating at different points in the criminal justice process. As Pease's "stocks" and "flows" imagery suggests (Andre and Pease 1994; Pease 1992; Pease 1994), the prison population at any given time is a function of admission rates and the effective length of incarceration, which in turn are affected by the incidence of crime as well as official decisions regarding arrest, pretrial detention, charging, conviction, sentencing, and release, all of which may operate independently. A thorough accounting of imprisonment trends requires the pairing of an appropriate numerator (prison populations or admissions, for example) with a proximal denominator (the

incidence of crime, convictions, or sentences). Thus Pease (1994:125) contends that a measure of the prison population as a ratio to the national population "is useless for all practical and intellectual purposes" (see also Pease 1992; Young 1986; Young and Brown 1993).

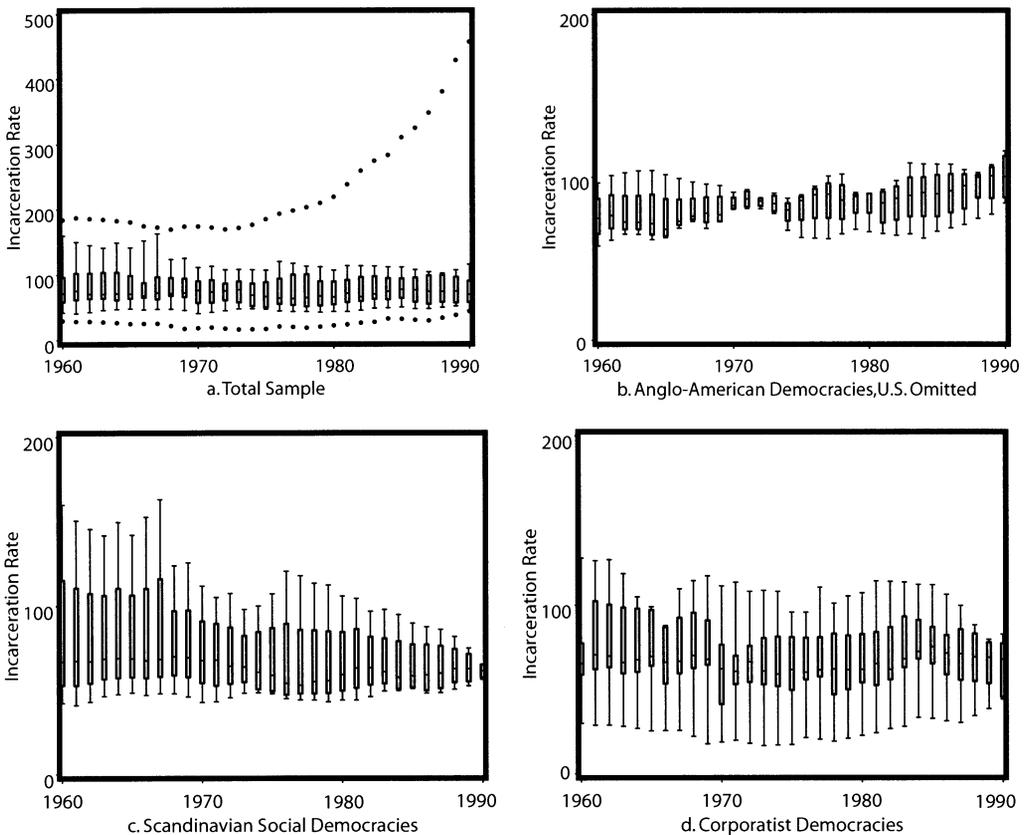
There are several grounds, both practical and theoretical, for defending the measure used here. Prison admission rates, arguably a better measure and clearly more sensitive than inmate population rates, are wholly unavailable for five of the countries in the sample and only spottily available for three more. Counts of arrests and convictions are similarly unavailable. Separate counts of remand populations are not available at all for Canada, and are only partial for two other countries. Even if the data could be gathered, the distinction between sentenced and remand populations would be meaningless, and probably fatally biased, because of differences in national legal conventions. Unlike Common Law systems, continental European countries count convicted prisoners as being on remand until all of their appeals are exhausted, making cross-national distinctions between sentenced and remand populations impossible (Pease 1994:127). Finally, the most skeptical scholars (but also Lynch 1987; Pease 1992; 1994), are motivated by a concern for "punitiveness"—a protean concept whose meaning varies, depending on the theoretical and ideological agenda of the user (Pease 1994:118). Because of severe data limitations, analyses in this vein must use cross-sectional data from small samples of countries, so even the most insightful results remain quite tentative. My goals are different, and in some ways simpler. I am explicitly interested in the dynamics of incarceration, and the need to assemble substantial time series from different countries justifies some sacrifice of depth for breadth. If aggregation at this level obscures important subprocesses, the cost will be a weakening of estimated effects, raising the risk of Type I errors—an acceptably conservative risk. Moreover, I am not concerned with abstract "punitiveness," but with the concrete reality of incarceration. Wilkins, (1991:13), whose "market model" of imprisonment informs my own approach, uncomplicates the issue nicely: "The incarceration rate represents the proportion of individuals who have lost their liberty by reason of the deployment of the criminal law. The incarceration rate is an excellent proxy for many

other measures of societies' responses to acts defined as crimes; moreover it is generally available, simple, and highly variable" (see also Wilkins and Pease 1987:20).

Imprisonment data were drawn from several different sources. For most countries, statistical yearbooks provided baseline figures that were, in some cases, supplemented or replaced by other sources. Government statistical agencies in Canada, Germany, and the Netherlands provided data directly, and Australian yearbook data were supplemented with data published by the Australian Institute of Criminology (Mukherjee et al. 1989) and in Biles (1982). The definitive source for Scandinavian criminal justice systems is von Hofer (1997); Austrian data are from Hanak and Pilgram (1991); and Belgian data are from Snacken (1991). For European countries from 1970 on, data have been cross-checked with figures published by the Council of Europe (1990). Figure 1 presents running boxplots of imprisonment rates among

the countries studied here. Panel 1a includes data from all 15 countries in the sample; it is dominated by U.S. observations, which appear as a high and upwardly accelerating series of outliers. The remaining panels focus on sub-samples of countries, clustered in terms of Esping-Andersen's (1990) regime typology; the United States is excluded so that graphs can be redrawn on a common and more revealing scale. The graphs suggest modest differences across groups: Even without the United States, average imprisonment rates are higher in the Anglo-American countries (panel 1b). Apparent differences in trends between Scandinavian and central European countries (panels 1c and 1d) arise from two countries: Finnish incarceration rates are exceptionally high through the 1960s (von Hofer 2003), and Dutch rates are consistently low.

Descriptive statistics and correlations for all variables, and detailed definitions of independent variables and sources of data, are listed



**Figure 1.** Box Plots of Imprisonment Rates in 15 Affluent Capitalist Democracies

in appendix tables. Business cycles are represented by four standard indicators: *unemployment rates* are calculated as the number of officially unemployed workers as a percentage of the active labor force, *male labor-force participation* is the percentage of males age 15–64 who are in the labor force, *economic growth* is measured in terms of real per capita gross domestic product (in 1985 U.S. dollars), and *inflation* is calculated from within-country GDP deflators. To supplement these standard indicators, I use a quintile-based Gini index of *income inequality* compiled from various sources by Nielsen and Alderson (1995),<sup>4</sup> and the influence of *social benefits* is represented by spending on unemployment compensation as a percentage of GDP. Three variables represent institutional effects. *Union strength* is measured as union density, the number of union members as a percentage of the active labor force (Golden, Lange, and Wallerstein 1997). *Left dominance* is indicated by a measure of the proportion of total cabinet seats held by left (labor and social democratic) parties (Swank 2002). *Corporatism* is represented by Hicks and Kenworthy's (2002) wage-coordination measure, a synthetic index that captures the comprehensiveness of business and union federations, centralization of the wage-bargaining process, and cooperation among unions, employers, and the state.

It is important, finally, to control for the incidence of crime. Recession might encourage crime, although the research literature is ambiguous on this matter (Box 1987; Chiricos 1987); and while cross-national data tend to show that the association between crime and imprisonment is very weak (von Hofer 2003; Wilkins and Pease 1987), it is probably unwise to dismiss it out of hand. I seek, insofar as possible, to derive estimates of effects on impris-

ment that are independent of criminogenic effects, so to this end I use homicide rates (the number of homicides per 100,000 population) as a control. This is far from an ideal indicator, since the relationship of homicide rates to other kinds of crime rates is problematic, and tends to vary across countries (Zimring and Hawkins 1997). Unfortunately there are no preferable alternatives, since comparable data on other types of crimes are not available for all of the countries and years in the sample. The two virtues of homicide rates are, first, that fairly accurate data are available from modern societies over long stretches of time (Monkkonen 1989), and, second, because homicides are so conspicuous, they are likely to have an exaggerated influence on public perceptions of crime and on crime-control policies (Zimring and Hawkins 1997).

Pooled time-series models raise special difficulties because the observations are related to each other in both space and time. The basic model can be expressed as follows:

$$y_{it} = \alpha + \beta x_{it} + \varepsilon_{it}, \quad (1)$$

which differs from the standard regression model in terms of the subscripts, with  $i$  denoting cross-sectional units (countries, in this case) and  $t$  denoting time (in this case years). The problem here is that the observations are not independent; most conspicuously for cross-national studies in which  $N < T$ , there is likely to be unobserved heterogeneity due to stable but unmeasured differences across the countries in the sample. The simplest way to deal with this problem is to assume that  $\alpha$  is fixed over time but varies across countries, yielding

$$y_{it} = \alpha_i + \beta x_{it} + \varepsilon_{it}. \quad (2)$$

This fixed effects (FE) model can be estimated using OLS by including dummy variables for  $N-1$  countries in the equation, or more parsimoniously by centering  $y_{it}$  and the  $x_{it}$  around the means for each country. The alternative is the random effects (RE) model in the form

$$y_{it} = \alpha + \beta x_{it} + v_i + \varepsilon_{it}, \quad (3)$$

in which  $v_i$  is a random disturbance that is stable through time within country  $i$ . The RE model is preferable if one seeks to generalize to a larger population, but the implicit assumption that  $v_i$  is uncorrelated with the other regressors may be untenable (Greene 1997:632–33). A

<sup>4</sup> The Gini data include two "technical" variables that control for biases arising from differences in income data from different countries (Nielsen and Alderson 1995: 684): a dummy variable for income data based on households (rather than individuals), and a dummy variable for coefficients calculated from decile data. I included these technical indicators in all models where the Gini index is used as a regressor, but omit their coefficients from the tables.

Hausman test using the present data (in the full model in Table 1 below) showed significant and systematic differences between the FE and RE estimates, indicating that FE is preferable. The models presented below also correct for heteroskedasticity (a likely problem due to size differences among the countries and wide divergences in imprisonment trends) and first-order autocorrelation. These corrections make very little qualitative difference in the final results.<sup>5</sup>

Indicators of incarceration rates, unemployment rates, male labor-force participation rates, unemployment benefits, union density, and homicide rates are in levels, logged to limit

undue influence from outliers. The Gini, left cabinet dominance, and corporatism variables are also measured in levels form (not logged). Left cabinet dominance is smoothed using running averages from  $t-2$  to  $t-1$ . This follows common practice in the comparative social welfare literature (Hicks and Swank 1992); substantively, this transformation recognizes that “policy lags” (Dornbusch, Startz, and Fischer 1998) are likely to delay the full impact of shifts in left-party power. The GDP and inflation variables are expressed in proportional change terms as  $\ln(X_t/X_{t-1})$ . The GDP measure is differenced to provide a measure of growth, a more appropriate indicator of business cycles; inflation is implicitly a measure of change in the value of money.

The full estimation model, with signs on the coefficients that indicate hypothesized effects, is the following:

<sup>5</sup> Models are estimated using Stata's `xtgls` procedure; data are mean-centered within panels. Tables showing unreported results are available from the author.

**Table 1.** FE/GLS Estimates of Effects of Selected Variables on Imprisonment Rates

Error Structure	Heteroskedastic				Heteroskedastic AR(1)
	1	2	3	4	5
Unemployment Rates	.0428* (.0171)	.0640*** (.0178)	.0557** (.0180)	.0224 (.0186)	.00960 (.0198)
Male Labor Force Participation	.554** (.195)	-.0718 (.178)	.0937 (.168)	.114 (.162)	-.201 (.204)
GDP Growth		-.335 (.197)	-.383* (.187)	-.294 (.178)	-.150 (.105)
Inflation		-1.09*** (.185)	-.548** (.167)	-.699*** (.162)	-.357* (.142)
Income Inequality		.595** (.202)	.517** (.173)	.162 (.181)	.0726 (.200)
Unemployment Benefits		-.0604* (.0283)	.0132 (.0285)	.0240 (.0292)	.00183 (.0309)
Union Density			-.472*** (.0361)	-.457*** (.0363)	-.504*** (.0588)
Left Party Cabinet Dominance			-.0347** (.0130)	-.0274* (.0133)	-.0246 (.0153)
Neocorporatism				-.800*** (.144)	-.710*** (.177)
Neocorporatism <sup>2</sup>				.433*** (.111)	.402** (.117)
Homicide Rates	.0700 (.0398)	.127** (.0403)	.214*** (.0363)	.174*** (.0357)	.0975** (.0308)
Intercept	1.71 (.900)	4.38*** (.798)	5.34*** (.752)	5.66*** (.731)	7.29*** (.953)
Wald $\chi^2$	11.83**	187.81***	359.06***	410.02***	137.28***

Note: Standard errors appear in parentheses. AR = autoregressive; FE = fixed effects; GDP = gross domestic product; GLS = generalized least squares.

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$  (two-tailed tests)

$$\begin{aligned} \ln(\text{IMP}) = & \beta_0 + \beta_1 \times \ln(\text{UNEMP}_{t-1}) - \\ & \beta_2 \ln(\text{MLFP}_{t-1}) - \beta_3 \times \ln(\text{GDP}_t/\text{GDP}_{t-1}) - \beta_4 \\ & \times \ln(\text{DEFL}_t/\text{DEFL}_{t-1}) + \beta_5 \times \text{GINI} \\ & - \beta_6 \times \ln(\text{UNBEN}_{t-1}) - \beta_7 \times \ln(\text{DENSITY}_{t-1}) \\ & - \beta_8 \times (\text{NEOCORP}_{t-1}) + \beta_9 \times \\ & (\text{NEOCORP}_{t-1})^2 - \beta_{10} \times \text{ma}(\text{LEFT}_{t-2, t-1}) + \\ & \beta_{11} \times \ln(\text{HOM}_{t-1}), \end{aligned}$$

where IMP = imprisonment rate, UNEMP = unemployment rate, MLFP = male labor force participation rate, GDP = real gross domestic product per capita, DEFL = country-specific GDP deflator, GINI = Gini inequality scores, UNBEN = unemployment benefits as a percentage of GDP, DENSITY = union density, NEOCORP = the Hicks-Kenworthy neocorporatism measure, LEFT = left-party share of cabinet seats, HOM = homicide rates, and *ma* is the moving average operator.

## RESULTS

Table 1 shows results from the regression analysis. My modeling strategy is to begin with simple specifications that emphasize aggregated individual-level factors, then to incorporate structural factors that are expected to have antecedent effects. The first model represents the conventional version of the Rusche-Kirchheimer (RK) argument. It contains only labor supply variables—unemployment and labor-force participation—along with a control for homicide rates. Model 2 offers a more comprehensive version of RK by incorporating GDP growth and inflation as additional measures of business cycles, along with indicators of income inequality and spending on unemployment benefits. Model 3 takes into account the political strength of labor unions and left parties, and model 4 includes the polynomial measure of corporatist labor market structures. Models 1 through 4 are robust GLS estimates from mean-centered data; model 5 adds a correction for autocorrelation.

Model 1 conforms in part to the expectations of the RK hypothesis, and in part not. On the one hand, high unemployment is significantly associated with high rates of imprisonment. The association is rather weak: On average a one percent difference in unemployment rates corre-

sponds to only a .04 percent difference in incarceration rates. On the other hand, male labor-force participation shows an unexpectedly positive and quite strong effect, indicating that imprisonment rates are higher when a greater proportion of men are active in the labor market (or, the equivalent, when fewer have dropped out). These perplexing findings may partly be artifacts of the high inverse correlation between unemployment and male participation rates ( $r = -.83$ ),<sup>6</sup> but also, as subsequent results show, of an underspecified model.

Model 2 paints a more coherent picture. Here the unemployment effect appears a bit stronger and the labor-force participation effect drops away entirely. GDP growth shows no effect, but the coefficients for inflation rates, income inequality, and unemployment benefits are all significant and in the hypothesized directions. The inflation effect appears powerful: When the buying power of local currency drops by one percent (inflation rises), the imprisonment rate is on average about one percent lower. Higher income inequality is associated with higher imprisonment rates, and more generous spending on unemployment insurance appears to push imprisonment rates down (to about the same degree as unemployment *rates* push imprisonment upward). Results so far suggest that, at the very least, the RK hypothesis needs to be elaborated to incorporate not only labor supply, but also aggregate inequality and downward-redistributive social policies.

The third model reveals some powerful influences of political power. The coefficients for union density and left-party dominance are both negative and significant, indicating that strong unions and strong social democratic parties contribute independently to lower rates of incarceration. Just as important, inclusion of union and left party effects suggests that earlier results were partly spurious. The estimated effects of unemployment and income inequality are both cut by about 13 percent, but remain significant. The inflation effect drops by half, and that for

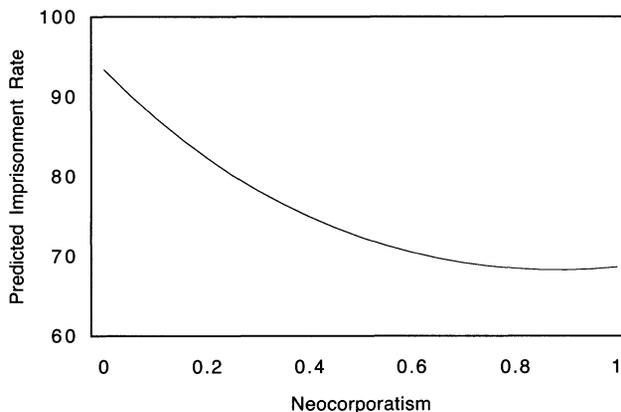
<sup>6</sup> When the participation variable is dropped from model 1, the unemployment effect goes nonsignificant; when unemployment is dropped, the participation effect is cut by half but remains significant. Dropping one or the other makes no difference in more complex models.

unemployment benefits disappears. The reasonable interpretation of these shifts is that unions and left parties affect trends in employment and redistribution as well as trends in imprisonment. For reasons that are not clear, but are probably unimportant, the negative coefficient for GDP growth becomes just significant in model 3. The curvilinear effect of neocorporatism is added to the equation in model 4. As expected, the coefficient for the linear term is negative and that for the squared term is positive; both are significant, suggesting a U-shaped association. This addition significantly improves the overall fit of the model, even though it weakens the estimated effects of most downstream variables. Effects of unemployment rates, GDP growth, and income inequality all shrink below significance. Coefficients for union density and left party strength grow smaller—the former slightly, the latter by almost 25 percent—but remain significant. The inflation coefficient grows rather markedly, but model 5 suggests this might be artifactual. Model 5 includes the same set of variables, but adds a correction for autocorrelation. Here the inflation coefficient is cut by half and the left party effect drops a bit, becoming insignificant; effects of union density and neocorporatism remain strong and significant.

Most of these findings can be summarized briefly. In harmony with prior studies, they show associations between imprisonment rates and labor surplus, as well as with inflation and more general patterns of inequality. But they show also that these associations are mostly

byproducts of higher-order effects arising from the distribution of political power and the institutional structure of labor markets. Union density—and, in some models, left party power—show direct negative effects on imprisonment rates and also attenuate the influence of business cycles, inequality, and social benefits. This suggests that strong unions and social democratic parties exert political influence in support of a range of ameliorative social policies, including less punitive responses to crime. Of the two forms of political power studied here, union influence appears to be more consequential and robust; but the left party effect should not be dismissed as an artifact of autocorrelation. In a separate model that truncates the observation period in 1985, the left party effect rebounds strongly while other results are qualitatively unchanged. This supports observations in the qualitative literature that left parties in many countries moved toward a law-and-order stance during the 1980s (Downes and Morgan 1997; Tham 1995; 2001; Träskman 1995; Victor 1995; von Hofer 2003).

Accounting for neocorporatist arrangements further weakens downstream effects, including those of political power. The direct effects of neocorporatism are less readily interpretable. The observed curvilinear association might indicate, as I hypothesized, that imprisonment rates are highest (net of other effects) in countries that are either very low or very high in terms of labor market centralization, but this can only be determined by examining the functional form of the association. Figure 2 uses the coefficients in



**Figure 2.** Predicted Imprisonment Rates by Level of Neocorporatism

model 5 to plot predicted rates of imprisonment across different levels of neocorporatism, with all other regressors set at their means.

It is apparent that the association is not U-shaped, but negative with a declining slope. The lowest predicted imprisonment rate—about 68 per 100,000—corresponds to a neocorporatism score of .90, or about the 80th percentile. The strongest association appears in the lower half of the distribution, where neocorporatism scores range from .005 to .61; differences in the upper half of the distribution are negligible. This can be put in more concrete terms by thinking about the range of neocorporatism scores among different countries in the sample. Those consistently scoring below the median range from the United States (mean score = .079) to France (mean score = .425), with other Anglo-American democracies and Italy falling between these extremes. Observations for the Scandinavian social democracies, Austria, and Germany are always in the upper half of the distribution, and those for the Netherlands (mean score = .66) and Belgium (mean score = .73) fall around the median. This pattern of covariation is thus mainly linear, but it also seems to reflect categorical differences that make countries with highly centralized labor markets uniformly resistant to high levels of imprisonment. The choice between linear and categorical interpretations is interesting, but in this case moot. The appropriate conclusion is simply that, net of other measured effects, imprisonment rates are highest in market societies and lowest in societies with strong systems of labor market regulation.<sup>7</sup>

## DISCUSSION

This article has challenged the prevailing orthodoxy on the relationship between the prison

and the economy in two ways. The first was to respecify and test the RK hypothesis using more nuanced indicators of economic performance and a broader sample of countries than previous studies have employed. The second was to place the business cycle-imprisonment relationship in a larger context by analyzing the impact of political power and labor market institutions. I proposed a model that treated the association between labor surplus and imprisonment not as causal, but as an artifact of wider structural differences in policy regimes among the advanced Western democracies. This model was informed by debates among economists, sociologists, and political scientists about the impact and viability of market liberal and neocorporatist forms of labor market organization. Concatenation of neoclassical economics with the RK model (odd bedfellows, perhaps, but logically consistent) leads to the prediction that powerful unions, strong left parties, and highly regulated labor markets will indirectly drive imprisonment rates up, as a byproduct of weakened economic performance. The alternative model predicted that these same factors will discourage high imprisonment rates directly, as part of a broader orientation to inclusive and equalitarian forms of social policy. This argument differs from those of RK and neoclassical economics by taking both prisons and labor markets seriously as institutions, not just economic instrumentalities. This means that employment, no less than criminality, is a moral status; and that in the rationalized orders of modern societies, the articulation of labor markets and prisons with welfare regimes and macroeconomic policies influences the distribution of both economic opportunity and moral reputability.

The most striking pattern in these results is the apparently strong impact of unemployment, inflation, income inequality, and unemployment benefits in simpler models, followed by declining or even disappearing effects in models that include measures of institutional structure. The effect of unemployment benefits disappears when union and left party strength are controlled, probably because both of these collective actors try to push compensation rates up. The effects of unemployment and inequality are fully accounted for by the combined influence of political power and labor market structure. This pattern provides strong evidence that

<sup>7</sup> The fact that the United States is an outlier in terms of both incarceration rates and labor market regulation raises the question of whether the strong estimated effect at the low end of the neocorporatism scale results from differences between the United States and other countries rather than across the entire distribution. As a test, I estimated model 5 on data that omitted the U.S. observations. Coefficients for the neocorporatism variables declined about 25 percent in absolute value but remained significant, and there were no qualitative differences in the rest of the model. The effect is robust.

previous tests of the RK hypothesis are at best incomplete, and at worst wholly misspecified; in particular, the effect of labor surplus seems wholly spurious. The most persistent business-cycle effect is the decelerative influence of inflation. One could interpret this as an instrumental effect whereby downward redistribution of wealth reduces incentives for crime, hence the need for punishment; but this interpretation is undercut if one accepts homicide rates as an effective control for crime in these models. Given the larger pattern of results, the more likely interpretation is that inflation is to a large degree a political outcome that reflects the preferences of unions and left parties for redistribution over inequality.

All of the hypotheses regarding institutional variables were supported under one or another model specification. The finding that incarceration rates are inversely related to the scope of union organization, and often to the power of left parties, offers strong evidence that criminal justice is responsive to working class influence over social policy. Corporatist labor market arrangements further encourage collaborative, cross-class solutions to a wide range of social policy issues, including, apparently, less punitive responses to crime. Thus, while imprisonment rates are not responsive to fluctuations in labor *supply*, they are very sensitive to variation in labor market *structure*. A labor market in this sense is not just a site for economic transactions, but a set of institutionalized power relationships that establish a framework for negotiations between workers and employers, define the broad outlines of the stratification system, and set normative expectations about government's role in managing the economy. As Western and Beckett have argued (1999), the prison is not a response to the labor market, but one of its constituent elements; my results show that in modern western democracies, imprisonment trends are related both to the distribution of political power and to the kinds of structures that are used to govern the distribu-

tion of employment, social protection, and social status.

This analysis is not the last word on the business cycle-imprisonment relationship. As Spitzer (1975) pointed out, the association of labor surplus to incarceration rates is probably stronger, and perhaps directly causal, for certain high-risk subpopulations—especially poorly educated young men who are also ethnic minorities or immigrants. This line of inquiry requires finer-grained data than those used here. Even at lower levels of aggregation, however, the effect of labor surplus is probably not exogenous. Analyses by Sampson and Laub (1993) and Western and Pettit (2000) point to a reciprocal relationship: Among individuals, joblessness increases the risk of crime and incarceration; but involvement with the criminal justice system also increases subsequent joblessness.

These findings suggest the need for a broader theoretical canvas on which to paint the sociology of crime and punishment. For reasons that have been well analyzed by Savelsberg (1994), criminological research has for some time been parochialized and cut off from broader currents in sociological thought, particularly in the United States. As Durkheim recognized (1933), research on punishment taps into fundamental social processes of solidarity and exclusion, stratification, and power. Further and more systematic attention to the ways punishment is embedded in social policy regimes will not only contribute to more sophisticated theories of criminality, but will also enrich analyses of the economy and the state. Crime and punishment are too important to be left to the criminologists.

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## APPENDIX

Table A. Variable Descriptions and Sources

Variable	Description	Source
Imprisonment rates	Inmates per 100,000 population (natural log, at $t$ )	Various (see text)
Unemployment rates	Unemployed persons as percent of total working population (natural log, at $t-1$ )	Golden (1997); NZ data from ILO (1955–1990)
Male labor force participation rates	Males in the labor force as percent of males age 15–64 (natural log, at $t-1$ )	OECD (1991)
GDP	Real GDP per capita (proportional change from $t-1$ to $t$ )	Summers and Heston (1995)
Inflation	Proportional change (from $t-1$ to $t$ ) in GDP deflator	Summers and Heston (1995)
Income inequality	Quintile-based Gini index	Nielsen and Alderson (1995)
Unemployment benefits	Expenditures on unemployment compensation as a percentage of GDP (natural log, at $t-1$ )	International Labour Office (1961–92)
Union density	Union members as percent of total labor force (natural log, at $t-1$ )	Golden (1997); NZ data from Western (1997)
Left party dominance	Proportion of total cabinet seats held by left parties (average from $t-1$ to $t$ )	Swank (2002)
Neocorporatism	Hicks-Kenworthy wage coordination measure (at $t-1$ )	Hicks and Kenworthy (2002)
Homicide rates	Number of homicides per 100,000 population (natural log, at $t-1$ )	World Health Organization (1951–64; 1962–88)

Table B. Correlations and Descriptive Statistics for Variables Used in the Analysis

	1	2	3	4	5	6
1. Incarceration rate	1.000	—	—	—	—	—
2. Unemployment rate	0.105	1.000	—	—	—	—
3. Male labor force participation	-0.039	-0.834	1.000	—	—	—
4. GDP growth	0.007	-0.108	0.247	1.000	—	—
5. Inflation	-0.245	0.112	-0.303	-0.316	1.000	—
6. Quintile-based Gini	0.166	-0.476	0.528	0.187	-0.193	1.000
7. Unemployment benefits	0.037	0.856	-0.756	-0.148	0.083	-0.465
8. Union density	-0.574	0.118	-0.129	-0.125	0.275	-0.227
9. Left cabinet dominance	-0.035	0.086	-0.133	-0.122	0.179	-0.037
10. Neocorporatism	-0.360	-0.662	0.549	0.142	-0.025	0.151
11. Neocorporatism <sup>2</sup>	-0.221	-0.554	0.481	0.119	0.048	0.253
12. Homicide rate	0.115	0.508	-0.572	-0.259	0.305	-0.268
Mean	4.308	1.492	4.467	0.026	0.049	.343
SD	0.152	0.507	0.047	0.023	0.027	.0354
	7	8	9	10	11	12
7. Unemployment benefits	1.000	—	—	—	—	—
8. Union density	0.160	1.000	—	—	—	—
9. Left cabinet dominance	0.129	-0.052	1.000	—	—	—
10. Neocorporatism	-0.602	0.180	0.076	1.000	—	—
11. Neocorporatism <sup>2</sup>	-0.603	0.127	0.139	0.832	1.000	—
12. Homicide rate	0.514	0.224	0.081	-0.463	-0.362	1.000
Mean	0.433	3.801	0.336	0.559	0.426	0.891
SD	0.279	0.159	0.306	0.061	0.066	0.147

Note: All figures are based on panel-centered data.

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