# Barred from employment? A study of labor market prospects before and after imprisonment

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PROEFSCHRIFT

ter verkrijging van
de graad van Doctor aan de Universiteit Leiden,
op gezag van Rector Magnificus prof. mr. C.J.J.M. Stolker,
volgens besluit van het College voor Promoties
te verdedigen op donderdag 19 juni 2014
klokke 15.00 uur

*door*

Anke Antonia Theodora Ramakers

geboren te Roermond

in 1986

Promotiecommissie:

| | |
|---|---|
| Promotor: | prof. dr. P. Nieuwbeerta |
| Copromotoren: | dr. J.A. van Wilsem<br>dr. R.J. Apel (Rutgers University, Verenigde Staten) |
| Overige leden: | prof. dr. C.L.J. Caminada<br>prof. dr. F.L. Leeuw (Universiteit van Maastricht)<br>prof. mr. dr. L.M. Moerings<br>prof. dr. P.H. van der Laan (Vrije Universiteit, Amsterdam)<br>prof. dr. J.P. van der Leun<br>prof. dr. ir. A.G. van der Lippe (Universiteit Utrecht) |

Dit proefschrift is onderdeel van het Prison Project. Dit project werd financieel ondersteund door de universiteit van Leiden, het Nederlands studiecentrum vooor criminaliteit en rechtshandhaving (NSCR), de Nederlandse organisatie voor wetenschappelijk onderzoek (NWO) en de universiteit van Utrecht.

Lay-out: AlphaZet prepress, Waddinxveen

ISBN 978-94-6259-178-3

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# 1 Introduction

## 1.1 Background

Dutch prisons carry out approximately 40,000 prison spells each year.[1] These prisoners constitute a select group of high-risk offenders as imprisonment is the most severe sentence a judge can impose in the Netherlands. Practically all these prisoners return to free society after release and their recidivism rates are high: within two years, half of the ex-prisoners will have been rearrested and one-third will be back in prison (Linckens & De Looff, 2013). While it is known that ex-prisoners face many barriers for a successful reintegration into society (Bushway, Stoll, & Weiman, 2007), it remains unclear to what extent imprisonment caused these individuals to lose their integration with community, especially since many of them were unlikely to be integrated before they entered prison (Bushway, 2006; Dirkzwager, Nieuwbeerta, & Fiselier, 2009; Petersilia, 2003).

### *1.1.1 Intended and unintended consequences of imprisonment*

A prison sentence is *intended* to connect to several punishment goals: retribution, general deterrence, specific deterrence and rehabilitation (Von Hirsch, Ashworth, & Roberts, 2009). The chapters in this thesis connect to the two latter punishment goals, with a focus on rehabilitation; the idea that sentences can reform the criminal tendencies of offenders and create law-abiding habits (such as regular employment).

The majority of studies on specific deterrence do not find evidence to suggest that imprisonment indeed deters offenders from crime (Nagin, Cullen, & Johnson, 2009). Instead, imprisonment is argued to generate *unintended* or *collateral* consequences which make reoffending more instead of less likely. In recent decades, the increasing punitiveness in most Western societies brought broader issues of prisoner reentry under the attention of criminologists, sociologists, and labor economists (Kling, 2006; Nieuwbeerta, 2007; Petersilia, 2003; Raphael, 2011; Visher & Travis, 2003; Western, 2002). They pointed out the numerous challenges for exiting prisoners with, for instance, affective relationships, employment, personal wellbeing and housing. These challenges influence the quality of life and recidivism risk after release. Expectations concerning the rehabilitative effect of imprisonment

1 Some of these ex-prisoners were released multiple times. There were 39,617 releases in 2012, this involved 32,937 persons.

– the main intended punishment goal under investigation in this thesis – are therefore also not optimistic.

Despite the rapidly growing pool of ex-prisoners and growing interest in reentry research in recent decades, systematic empirical knowledge about the various *unintended* consequences of imprisonment is scarce. Most scholars still focus on the recidivism risks of those coming out of prison, and methodologically rigorous studies remain an exception. Much work is based on small samples and research designs lack a longitudinal framework that accounts for individual circumstances before, during and after incarceration (Visher & Travis, 2003, 2011; Nieuwbeerta, 2007).

Research on outcomes other than recidivism is warranted to capture the magnitude of the intended and unintended effects of imprisonment on post-prison lives. Note that this broader research perspective does not discount the intended purposes of the prison system, such as deterrence, incapacitation and retribution, but instead "warrants a fuller accounting of the costs and benefits and net returns" (Bushway et al., 2007a, p. 2). Hence, these insights can contribute to the societal and political debates on the punishment and treatment of offenders. The punitive changes in criminal justice policies are often motivated by their expected contribution to crime control. But thus far, there is little evidence to back up these expectations. A broad research perspective, including both intended and unintended consequences of imprisonment, can help policymakers and service providers to make more informed (evidence-based) decisions.

### *1.1.2 Labor market consequences of imprisonment*

This thesis examines the unintended effect of imprisonment on employment. And, more generally, the current work aims to enhance the insight into the labor market experiences of this group of presumably disadvantaged workers by following them over time. To what extent do these individuals face barriers to employment even before entering prison? And, are they only "barred from employment" during their prison spell, or does this spell also limit their post-release employment prospects?

The salience of this research focus stems from the fact that scholars, professionals as well as prisoners themselves, note that the path to a successful reentry depends critically on a transition to employment. Finding and holding down a good job not only provides a steady income – which weakens the temptations of illegal income – but is associated with numerous factors that promote desistance, such as personal wellbeing, affective relationships, and housing (e.g., Bushway & Reuter, 2002; Graffam, Shinkfield, Lavelle, & McPherson, 2005; Visher & Travis, 2011). Addressing labor market reentry is thus key to increasing ex-prisoners' chances for a successful return to the community.

Longitudinal research efforts have greatly contributed to our knowledge about prisoners' labor market experiences before and after imprisonment. Three summary observations can be made. First, prisoners are weakly

attached to the labor market in the run-up to their imprisonment (Bushway, 2006). Second, imprisonment has a negative impact on employment likelihood and earnings (Apel & Sweeten, 2010; Huebner, 2005; Waldfogel, 1994; Western, 2002). Third, employment is related to a significant reduction in crime (Farrington, Gallagher, Morley, St. Ledger, & West, 1986; Lageson & Uggen, 2013; Uggen & Wakefield, 2008).

Despite these insights, there are several unexplored research areas in the field of imprisonment and employment. For instance, while prisons have been frequently described as institutions that house the most disadvantaged socioeconomic segments of society (Wakefield & Uggen, 2010; Western, 2006), limited empirical evidence exists to confirm that unemployment is *a longstanding feature* of prisoners' lives. Also, previous work focused primarily on employment likelihood and earnings, leaving open which *kind of jobs* ex-prisoners find, and *how* imprisonment (length) might affect employment likelihood, as well as job quality and stability. Moreover, studies on the work-crime relationship are based on community or general (young) offender samples and pay little attention to the theoretical mechanisms in which the protective effect of employment is linked to *job quality and stability*. These research gaps can partly be explained by a general lack of detailed longitudinal data on prisoners. In addition, existing work often does not allow for a causal inference of effects, and conclusions are almost solely based on American data.

This thesis intends to advance on the current body of knowledge by addressing new research questions, by revisiting research questions using detailed longitudinal survey data from the Netherlands, and by performing advanced statistical methods.

Figure 1.1 presents a schematic overview of the analytical model of this thesis. Following prisoners over time, this thesis first presents a baseline measurement of their employability, by studying the employment careers preceding imprisonment (RQ 1). Moving forward along prisoners' life courses, this thesis studies the effect of imprisonment on employment prospects (RQ 2-3). Also, insight is provided into determinants of post-release employment, with a specific focus on the role of pre-prison work experiences (RQ 4). Finally, the focus shifts to studying whether employment subsequently protects ex-prisoners from reoffending in the hectic aftermath of imprisonment (RQ 5). The dashed lines in Figure 1.1 represent relationships with (pre-existing) individual characteristics that are not the central focus of this thesis. As will be discussed later on, controlling for the role of these individual characteristics (e.g., pre-prison employment and criminal careers) is however theoretically and methodologically salient for understanding the effect of the two life course events – imprisonment and employment – under investigation in this thesis (see Table 1.1 for the research questions).

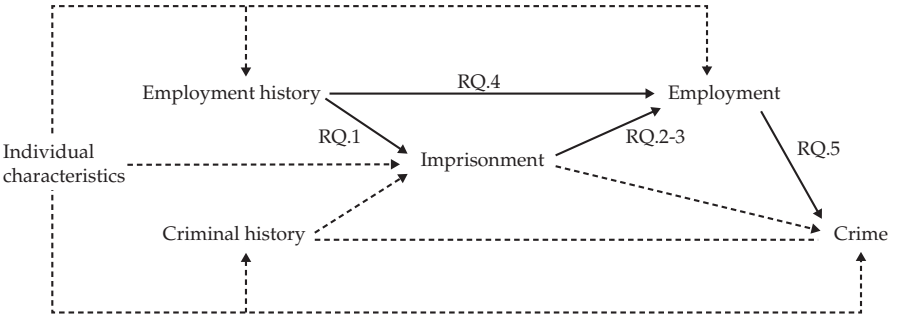


*Figure 1.1. Schematic overview of research questions*

## 1.2 Imprisonment and employment in the Netherlands

Relevant for a study on prisoners' labor market situation in the Netherlands is to provide insight into the unique context that these prisoners face after release, and to address how this context differs from the American context that dominates prisoner reentry research.

### *1.2.1 Imprisonment in the Netherlands*

Prisons in many Western countries have undergone three full decades of uninterrupted growth (see Tonry & Farrington, 2005, and the chapters therein), and this pattern has only recently begun to slow and stabilize. The Netherlands in particular, long known for its liberal penal policies, has witnessed rapid prison expansion, growing almost fourfold (375 percent) during the last three decades (see Tonry & Bijleveld, 2007). Nonetheless, the Netherlands maintained a relatively mild penal climate in comparison to the United States (U.S.) and many other Western countries (see also Lappi-Seppälä, 2011). Over 80 percent of all Dutch prisoners released in 2012 were confined for a maximum of six months.[2] The median time served was one month and an average prison spell lasted 3.7 months [112 days]. As point of comparison, state prisoners in the United States serve an average sentence of two years (Guerino, Harrison, & Sabol, 2011).

While the penal climate remained relatively lenient in international comparison, the Netherlands did experience a shift towards stricter punishment policies; not only the frequency of imprisonment but also its duration increased (Junger-Tas, 1998; Moerings, 2010). At the same time prison regimes have become more sober (Downes & Van Swaaningen, 2007; Nelis-

2 Other characteristics of the Dutch prison system are that they mostly house male offenders (94.6%). Prisoners are relatively young (40% is younger than 30 years) and are often born outside the Netherlands (44.3%) (figures from 2012 in Linckens & De Looff, 2013). Moreover, individuals with a lower educational level, psychiatric disorder or substance addiction are overrepresented (Dirkzwager et al., 2009).

sen, 1998). Rehabilitation was a major punishment goal after World War II and resulted in the broad supply of educational courses and skills training, developed to better prepare individuals who are willing to make the life changes necessary to succeed after release. In the decades that followed this focus became increasingly subordinate to other tasks of the prison system, such as the humane execution of detention, the reduction of any harmful consequences of confinement and cost-effectiveness. A first reason for this shift is the declining belief in rehabilitation; disappointing outcomes of evaluation studies resulted in the "nothing-works" paradigm (Lipton, Martinson, & Wilks, 1975). A second and ongoing reason are the growing public safety concerns which accompanied the strong perception that crime rates continue(d) to increase rapidly.

In recent years, crime-reduction, by means of efficiency and effectiveness, seems to have become the main focus point in penal policies (Kamerstukken [Parliamentary documents] II 2002/03, 28 684, no. 1-2; Kamerstukken [Parliamentary documents] II 2013/14, 33 745, no. 3). And, the "nothing works" paradigm has been replaced by the less pessimistic "what works" paradigm, in which interventions are based on a more personal and evidence-based approach (Aarten, Poort, & Van der Laan, 2009). Currently only a small selection of longer-term prisoners – with a prison spell of at least four months after trial – are offered personalized educational or vocational training programs. As a result of these developments, pretrial- and short-term prisoners spend more time in their cells. Recent bills discuss a new system in which a smaller group would qualify for reintegration programs (and early release), namely only the well-behaved and motivated prisoners (Kamerstukken [Parliamentary documents] II 2013/14, 33 745, no. 3). The recent implementation of the Comprehensive Approach to Aftercare Program [Programma Sluitende Aanpak Nazorg] contrasts this downsizing trend to some degree. Social workers in prison ooperate with the municipalities (to which prisoners return) and other organizations, to ensure that prisoners have an accommodation, income, and valid identification after release. If necessary, a plan for debt assistance and health care is provided. This aftercare program is part of a broader policy plan in which organizations that come in contact with ex-prisoners (e.g., penitentiaries, police, health services, employee insurance agencies) are stimulated to improve collaboration in an attempt to increase ex-prisoners' chances of a successful reintegration (Vereniging Nederlandse Gemeenten [Association of Netherlands Municipalities], 2009). Evaluations of the aftercare program showed that circumstances improved after release but also revealed that, despite of these efforts, ex-prisoners continue to face numerous challenges (Noordhuizen & Weijters, 2012).[3]

3 Figures on the aftercare program from eight municipalities showed that, six months after release, only 16 percent of the ex-prisoners experienced no problems with any of the life domains. Moreover, while almost 90 percent of the ex-prisoners had an income by that time, most of them relied on social benefits for this income (Noordhuizen & Weijters, 2012).

A recent review indicated that criminal interventions that are based on the idea of rehabilitation (versus deterrence) might be more effective for reducing crime in the Netherlands (Wartna, Alberda, & Verweij, 2013). Methodological rigorous studies are, however, scarce. As such, it remains largely unknown which policy changes are indeed more effective in rehabilitating offenders and reducing crime.

### *1.2.2 Employment of ex-prisoners in the Netherlands*

Prisoners' chances to reintegrate successfully after release are likely related to the employment context to which they return. The Dutch labor market is characterized by a relatively high participation rate. During the last decade the unemployment rate circled around 5 percent, which is low compared to other European countries (Statistics Netherlands, 2012). The economic recession led to an increase in the unemployment rate in many EU-member states, and to a relatively high increase in the Netherlands. Still, the Dutch unemployment rate remained relatively low for European standards (7% versus an average of 12.1%), but became more similar to the American unemployment rate (7.4%) (Eurostat, 2013). Notably, even before the recession, over a million individuals were unemployed or disabled and did not participate in the Dutch labor market (Van Echtelt, 2010).

In order to increase the chances of a successful (re)integration into the labor market, Dutch prisoners can receive professional assistance after release. A selection of prisoners, namely those who are released on a suspended sentence with special conditions, are monitored and assisted by a probation officer – pending the special conditions defined by the judge. Another option is to seek assistance in the municipality to which ex-prisoners return. Following the aforementioned aftercare program, all ex-prisoners can receive assistance with problems in any of the primary life domains. Ex-prisoners who are willing to make the life changes necessary to succeed can also approach reintegration organizations (e.g., Exodus, DOOR, Moria, Ontmoeting). Van Wingerden, Alberda, Moerings, and Van Wilsem (2010) showed that recidivism rates of previous residents were low compared to other ex-prisoners. These organizations might thus be able to redirect ex-prisoners towards law-abiding behavior. Alternative explanations are, however, also plausible (e.g., previous residents are perhaps more motivated to change their lives). Although national figures are unknown, most prisoners seem to lack intensive guidance. However, if they choose to reach out for help, Dutch (ex-)prisoners are, arguably, more likely to receive any assistance than their American counterparts. An apparent reason for this is that individual responsibility is more strongly stressed in the United States (Becker, 2000). Moreover, the American pool of ex-prisoners is substantially larger.

The extent in which ex-prisoners are successful in finding employment can also depend on legal barriers. In the Netherlands every employer may ask applicants for a certificate of conduct. This certificate is mandatory in

certain sectors and is granted by the secretary of Security and Justice if a criminal history is not related to the future work activities (Staatscourant, 2012, no. 16054; Staatscourant, 2013, no. 5409). In recent years the certificate has become mandatory in more sectors and the rules for granting a certificate have become stricter (Boone 2011). In many cases, however, legal restrictions will not hinder employment as the Dutch law merely prohibits work activities that are related to the crime committed. And, in contrast to the United States, Dutch employers have few other possibilities to retrieve information about the criminal history of applicants.

Finally, whether or not ex-prisoners are employed might depend on whether they qualify for social benefits. Social security policies have changed in the Netherlands in recent decades. While income protection was the main goal in earlier decades, the more recent policies aim to stimulate re-employment (e.g., by tightening eligibility rules, benefit sanctions) (Abbring, Van den Berg, & Van Ours, 2005). Despite this retrenchment, the Dutch welfare system is still generous in international comparison (Becker, 2000; Esping-Andersen, 1990), especially compared to the United States, and this might affect labor market participation.

The duration and level of benefits is likely to affect the transition to employment. Following job search theory, and the more general notion of rational choice theory, an individual decides on the optimal search intensity by balancing the expected costs and benefits of this search (Mortensen, 1986; Van den Berg, 1990). Several studies found that an increase in the duration and level of benefits increase the duration of unemployment through its effect on job search strategies among the unemployed (see Lalive, Van Ours, & Zweimuller, 2006). Hence, the more generous benefits policies in the Netherlands might result in lower employment ratios among Dutch ex-prisoners compared to American ex-prisoners. Yet, it remains largely uncertain whether and how the supply of benefits indeed affects the level of labor market participation as it is difficult to isolate the effects of policy changes in (unemployment) benefits on employment rates. And, in order to draw conclusions, cross-national comparisons are needed to distinguish between the effect of such policies and other differences and policies between countries that could affect unemployment duration and employment ratios. Moreover, little is known about how marginal groups on the labor market, such as ex-prisoners, are influenced by the supply of benefits in their search for a job.

## 1.3 Research on imprisonment and employment: a multidisciplinary field

In studying prisoners' labor market experiences and its relation with reoffending, this thesis connects not only to the field of prisoner reentry research, but intends to incorporate insights from multiple disciplines and research fields, specifically: life course criminology, labor market studies and penology.

### 1.3.1 *Prisoner reentry research*

The immense increase in prison rates in recent decades led to a renewed research focus on the reentry of prisoners. Even though increasing punitiveness appears to be a more general feature of modern Western society (see Tonry & Farrington, 2005), this research field is dominated by American scholars.

Reentry research concerns the challenge of *reintegrating* prisoners as almost all of them eventually leave prison and return home. Since imprisonment is expected to affect various life domains important for a successful reintegration, prisoner reentry research examines not only recidivism outcomes but pertains to a wider range of outcomes; family relationships, housing, social networks, employment, health or neighborhood participation. Often, these studies are based on small or unrepresentative samples or were conducted decades ago (see Visher & Travis, 2003). The effect of imprisonment on employment careers, however, has been studied rather thoroughly (e.g., Kling, 2006; Raphael, 2011; Western, 2002, 2006) (see section 1.5.2). The focus on employment can, perhaps, be explained by the high hopes for its potential to protect offenders from reoffending. In addition, scholarly access to unemployment insurance systems makes it possible to report prisoners' registered quarterly employment rates or earnings. Yet, these administrative studies miss out on an important part of prisoners' economic activities (e.g., off-the-books employment, self-employment) (Kornfeld & Bloom, 1999).

### 1.3.2 *Life course criminology*

The field of life course criminology combines insights from the criminal career paradigm with the more sociological life course approach (Blokland & Nieuwbeerta, 2010; Farrington, 2003). Life course theorists argue that life events, such as imprisonment or employment, can cause changes in individual development, over and above pre-existing differences between individuals. Hence, they focus on *within-individual* changes in criminal development among adult offenders. Another characteristic of this field is that a criminal career is perceived as one of many interdependent pathways, next to, for instance, employment- and marriage careers. Transitions in one pathway can function as "turning points" that redirect the development in other trajectories (Elder, 1985; Sampson & Laub, 1993).

It should be noted that challengers of this *dynamic* life course framework believe that life events do *not* have any consequences for future behavior. Instead they argue that all life events are a result of an underlying factor know as an individual's criminal propensity or self-control (Gottfredson & Hirschi, 1990). This *static* propensity is developed in the early childhood and determines the risk of offending and other life events during the entire life course. In recent years many empirical (inter)national studies have shown that individual outcomes seem to be driven by both stability (pre-existing differences between individuals) and change (transitions) (see Blokland &

Nieuwbeerta, 2010). Hence, the theoretical sections that follow in the remainder of this thesis mainly build on theories that fit within the dynamic paradigm (see section 1.4). Imprisonment and employment are thus expected to generate behavioral changes. This thesis connects to the more *static* paradigm by emphasizing throughout the chapters that controlling for pre-existing between-individual differences is theoretically (and methodologically) salient.

### *1.3.3 Labor market studies*

According to labor economists, labor markets function through the interaction of workers (supply-side) and employers (demand-side). They attempt to understand the resulting wage and unemployment patterns (at macro- and micro level) by considering both workers and employers as rational actors who have economic goals (i.e., earnings and productivity). Labor sociologists use a broader framework to understand labor market outcomes. They emphasize that individual behavior is conditioned by the existence of social networks and driven by both economic and non-economic motives (Granovetter, 1988). Both the economic and sociological explanations for employment outcomes are considered in this thesis.

The current thesis also connects to the theoretical notions used in both of thesefields because of its focus on the effect of *imprisonment* – a forced time out of the labor market – on subsequent employment prospects. The expectation that a period of labor market absence can deteriorate one's economic prospects is common to labor market economists and sociologists alike. A period of imprisonment is however likely to have a different impact than a regular time out from the labor market.

Finally, by focusing on the labor market experiences of prisoners, a marginal group on the labor market, the current work falls within the sociological line of research pertaining to labor market stratification (see for instance Wakefield & Uggen, 2010).

### *1.3.4 Penology & effect-studies*

In studying the effect of imprisonment (length) on employment outcomes and the effect of post-release employment on crime, this thesis connects to the field of penology which is concerned with the effectiveness of punishment and treatment devised for the prevention of crime.

Quantifying the impact of a punishment (imprisonment) (or another life event such as employment) on subsequent behavioral outcomes is, however, challenging because of the non-random selection of individuals into events. To illustrate, if prisoners have a higher recidivism risk than a comparison group of offenders who are given an alternative sentence, this difference can be caused by the prison confinement but can also be the result of pre-existing differences. Judges base their sentencing decision on the type of crime and suspects' risk of reoffending. As a result, prisoners might have a severe

criminal history compared to non-prisoners, and this difference, rather than the time spent in prison, might be the cause of their higher likelihood of reoffending.

The ideal way of dealing with selection effects would be to conduct randomized experiments. For ethical reasons of course, the random selection of individuals into prison is complicated. With respect to employment, experimental designs are a possibility. Yet, several meta-analyses imply that random assignment to employment has few to no causal impact on post-prison employment or rearrest (Bushway & Reuter, 2002; Visher, Winterfield, & Coggeshall, 2005). And, large-scale and methodological rigorous study designs still remain an exception in this field of research. Most scholars therefore turn to quasi-experimental designs to study the effect of treatment. In order to isolate this effect from pre-existing differences between the treatment and comparison group, researchers employ advanced statistical methods and depend on the available list of confounding variables (see sections 1.6.3, 1.7.4).

## 1.4 General theoretical background on imprisonment and employment

Throughout the empirical chapters of this thesis many different theories are used to derive expectations concerning the effect of the life course events of interest – imprisonment and employment. This introductory chapter precludes an extensive coverage of all theories, and therefore the mainstream theories are discussed in short. In order to connect to the empirical chapters, these theories are grouped by life event (even though some notions are valuable for both events). *Chapter 2* discusses theories useful for understanding why individuals with a lower socioeconomic background are overrepresented in prison populations. A more extensive overview of theories that explain the effect of imprisonment on employment is given in *chapters 3-5*. And, *chapter 6* offers a more elaborate theoretical discussion of how employment can affect the development of criminal behavior.

### *1.4.1 Imprisonment and employment*

Various life course theories pertain to how imprisonment (length) can affect the development of criminal and law-abiding careers. To start, deterrence theory states that both the threat of punishment, known as general deterrence, and the personal experience of punishment, known as specific deterrence, can discourage potential and actual offenders (Beccaria, [1764] 1995). Punishment is expected to deter criminals from future criminal behavior and drive them towards law-abiding behavior through an enhanced perception of the risk of getting caught and the severity of punishment. Typically, it is assumed that the higher the chances of getting caught and the more severe the punishment, the more the punished will be deterred and try to avoid future punishments. As such, the personal experience of imprison-

ment, can discourage offenders and lead them to prefer a conventional lifestyle, including employment, over a criminal lifestyle.

Alternatively, learning theories, such as the differential association theory of Sutherland, Cressey, and Luckenbill (1992), focus on how close relationships with delinquent peers or co-prisoners can lead individuals to (continue to) commit delinquency. In short, this theory proposes that individuals learn the values and attitudes for criminal behavior through interaction with criminal others. In the same vein, imprisonment is expected to increase criminal behavior and decrease employment chances because (long-term) prisoners are likely to become involved with social groups that devalue conventional norms.

Labeling theories also emphasize that social interaction can generate criminal behavior, but offer a different mechanism. Lemert (1951) developed the notion of primary and secondary deviance. Primary deviance could stem from many different sources, whereas secondary deviance was described as the result of dealing with society's disapproval of that primary deviance. Becker (1963) also believed in this self-fulfilling prophecy. When a person is labeled as "criminal", this label highlights the criminal behavior and diminishes other characteristics central to that person's identity. To illustrate, a prison record can deter employers because they associate this record with inferior personal characteristics and a generally low work competency. Hence, labeling can lead individuals to (continue to) commit crimes, because it generates mechanisms which close doors to norm-consistent behavior.

Finally, the theoretical notion of human capital theory, that education and work experience play an important role in the development of law-abiding behavior, is often used in criminological work. Note that, instead of the development of criminal behavior, labor market productivity is the central concern of this economic theory. According to human capital theory, employers will recruit the best person for the job and base this decision on applicants' general and specific forms of human capital (Becker, 1964). And, in a similar vein, workers choose training and jobs to maximize their own productivity. General human capital is useful to all employers, whereas specific human capital refers to work experience that is useful only to a single employer or industry. A period of labor market absence – such as the forced time out during imprisonment – restricts the accumulation of human capital, disrupts employment bonds and can even lead to the erosion of skills as they go unutilized. Offenders' criminal behavior is then explained through their failure to find (quality) employment. It should be noted, however, that especially a long prison spell can also offer prisoners opportunities to accumulate human capital.

### *1.4.2 Employment and criminal behavior*

Other theories connect employment, or specific characteristics of a job, to the development of criminal (versus law-abiding) behavior. Starting with social control theory, Hirschi (1969) stated that individuals are expected to engage in

delinquent behavior in the absence of close relationships with conventional others. Conventional relationships socialize individuals to obey the dominant law-abiding norms and values. While Hirschi focused on juvenile delinquency, Sampson and Laub (1993) judged this theory valuable for an understanding of continuity and change in offending across the entire life course. In their theory of age-graded informal social control, Sampson and Laub furthermore used a dynamic perspective in which offenders can reestablish social bonds to institutions of informal social control (e.g., family, neighborhood, work) during adulthood that can subsequently divert them from crime.

Economic theories embrace the idea that individuals are free to choose crime as one of a range of behavioral outcomes. These theories use a rational choice approach in which individuals weigh the advantages and disadvantages of criminal behavior, and are expected to commit fewer crimes when the potential costs of criminal behavior (i.e., job loss) are higher than the potential benefits (Becker, 1968). Strain theory also sees individuals as rational actors. Yet, instead of depending on cost-benefit analyses, criminal behavior is expected to result from feelings of "strain" (Merton, 1938) (or "anomie"). According to Merton, individuals feel strained when the legal means are insufficient to reach the desired material and immaterial goals. Criminal behavior is interpreted as an adaptive solution to these frustrations (see also Agnew, 1992). Following this theory, employed individuals will commit fewer crimes because they are less strained than the unemployed.

Routine activity theory adds to these rational processes that if and to what extent individuals commit crimes relies on the opportunities to commit crimes. More specifically, the presence of motivated offenders is not enough, criminal behavior is dependent of the availability of suitable targets as well as the absence of guardians (Cohen & Felson, 1979). Employment is then expected to reduce criminal behavior because it limits the opportunity structure for such behavior.

### *1.4.3 Expectations*

The abovementioned theories can be used to derive ambiguous expectations about the effect of imprisonment on employment. In other words, imprisonment (length) can either improve or diminish prisoners' labor market position after release. The dominant expectation seems to be that a (long) prison spell decreases employment prospects. This is especially the case in this thesis, as the deterrent effect of imprisonment is more likely to be true for prison spells that are longer than the ones considered (maximum confinement length is one year). The general expectation with respect to employment is that it can protect offenders from committing crimes.[4] The discussed theories ascribe this protective effect to different job characteristics.

4 To be sure, employment can also increase specific types of criminal behavior, such as fraud and embezzlement, because of the access and liberties that come with certain jobs (Van Erp, Van der Geest, Huisman, & Verbruggen, 2011). While this is plausible, this hypothesis seems more valuable to research that distinguishes between different types of crime.

## 1.5 Prior empirical studies

Below, prior (inter)national work is discussed in order to provide a background and show how the current study progresses on previous work. More extensive overviews of the literature will be provided in the empirical chapters of this study (*chapter 2-6*). Following the life course of prisoners, the literature pertaining to the selection of marginal workers into prison is first discussed. Then, the focus shifts to the effect of the two life events; the effect of imprisonment on employment and the effect of (post-release) employment on crime.

### *1.5.1 Studies on selection of marginal workers into prison*

*Dutch studies*
Few Dutch studies pertain to the (socioeconomic) characteristics of individuals entering prison. Yet, there is some evidence to suggest that prisoners have a low educational level and weak labor market position in the run-up to imprisonment. Only one-third of the prisoners are employed at the time of arrest (Linckens & De Looff, 2013) and a similar percentage of prisoners has no diploma or only completed primary education (Mol & Henneken-Hordijk, 2008). Results from small-scale surveys furthermore showed that individuals face problems with work, housing, finance and health even before entering prison (Janssen, 1999; Jongman & Steenhuis, 1975; Kuppens & Ferwerda, 2008; Moerings, 1978; Sprenger, 1995; Van den Braak et al., 2003; Van Galen, Niemeijer, & Beijers, 1998) (for an overview see Dirkzwager, et al., 2009). These data sources lack retrospective measures pertaining to the long-term labor market attachment of prisoners as well as a general population sample for the purpose of comparison.

*International studies*
International studies confirm the low socioeconomic status in the immediate period before prison admission.[5] Data from state correctional agencies and unemployment insurance systems furthermore showed that prisoners who worked in the year prior to imprisonment earned relatively low wages (Pettit & Lyons, 2007; 2009; Kling, 2006; Sabol, 2007). Yet, these employment measures are sparse in the sense that they ignore job stability and quality, and refer to a short period of time, which is likely to be affected by the illegal activities that led to imprisonment. Survey-based research offered some evidence for the expectation that a low socioeconomic status is a more long-standing feature of prisoners' working lives (Visher & Kachnowski, 2007),

5 Large shares of prison populations did not complete secondary education (e.g. Australia: 53%; Denmark: 48.5%; Finland: 34.9%; Germany: 57%; Norway: 42.5%; Sweden: 56%; United Kingdom: 46%; United States: 41%) and pre-prison employment rates are generally low (e.g. Australia: 55%; United Kingdom: 32%; United States: 75%) (Butler & Milner, 2003; Eikeland, Manger, & Asbjørnsen, 2009; Entorf, 2009; Hopkins, 2012; Petersilia, 2003).

and that prisoners occupy a marginal position compared to the general labor force (Western, 2006).

### *1.5.2 Studies on effects of imprisonment on employment*

*Dutch studies*

A general observation from pre-and post-prison comparisons is that the level of labor market participation among Dutch prisoners seems to decline (even) further after release (Janssen, 1999; Jongman & Steenhuis, 1975; Moerings, 1978; Sprenger, 1995). These studies are, however, not suitable for the causal inference of the effect of imprisonment on employment outcomes, as they lack the comparison group or background variables a quasi-experimental design demands.

Two Dutch studies are better suited to isolate the imprisonment-effect and found indeed evidence for a reduction in employment likelihood after release. Recall that employment outcomes result from the behavior and decisions of both prisoners (supply-side of the labor market) and employers (the demand-side of the labor market). Choosing the employers' perspective, Buikhuisen and Dijksterhuis (1971) conducted an experimental audit study and compared the employment prospects of job applicants with and without felony (prison) convictions by surveying employers. They found that employers were less likely to hire the applicant with a record than, the otherwise identical, applicant without a record. Using data on prisoners, the supply-side of the labor market, Van der Geest (2011) found that imprisonment had a negative impact on the employment likelihood of those who were regularly employed before imprisonment.

*International studies*

International (American) studies also found that imprisonment has a negative impact on post-release employment likelihood. Starting with the demand-side perspective, Pager (2003) found convincing evidence for the expectation that a history of imprisonment can lead to rejection in the hiring process. In addition, Holzer, Raphael, and Stoll (2004) showed that, when given the choice, employers prefer to hire other marginalized groups, such as welfare recipients or applicants with little work experience, over ex-prisoners.

Studies in which employment outcomes of an imprisoned sample are compared with a non-imprisoned comparison group represent a popular strand of research within the supply-side perspective. These studies showed that *imprisonment* has a corrosive impact on an offender's employment prospects by reducing the probability of employment (Apel & Sweeten, 2010; Huebner, 2005; Waldfogel, 1994) and eroding earnings (Apel & Sweeten, 2010; Waldfogel, 1994; Western, 2002). However, not all studies found strong evidence for the negative effect of imprisonment when differences between groups have been taken into account (for an overview see Apel & Sweeten, 2010; Loeffler, 2013). Moreover, comparability between groups can remain in

doubt as ex-prisoners as a group arguably possess, more than other disadvantaged groups, characteristics that limit employment chances. A smaller and recent line of research in which the comparability of groups was better warranted, comparisons of groups with different confinement lengths did not find a negative effect but instead found that *imprisonment length* can increase employment chances in the short-term (Jung, 2011; Kling, 2004, 2006; Pettit & Lyons, 2007, 2009).

Exploring the determinants of successful labor market (re)entry after release, Visher et al. (2011) showed that especially prisoners with more work experience, connections to employers, and a stable family network were likely to find employment after release. This work was based on unique data of the Returning Home project; a longitudinal data collection among a multistate sample of approximately 1,200 American prisoners. Outside this project, few research efforts are suitable for providing a general insight into which characteristics affect post-release employment success and failure.

### *1.5.3 Studies on effects of (post-release) employment on recidivism*

*Dutch studies*

Only in recent years, Dutch scholars studied the effect of employment on crime using longitudinal study designs. In these studies support was found for the protective effect of employment (Van der Geest, 2011; Verbruggen, Blokland, & Van der Geest, 2012; Wensveen, Palmen, Blokland, & Meeuws, 2012). In addition, there was evidence to suggest that especially stable employment diverts offenders from crime.

These findings were based on data from high-risk youth samples. No such studies were conducted using prisoner data – the offender group with the highest risk of future offending. Notably, the recidivism patterns of ex-prisoners are monitored rather precisely in the Netherlands (Wartna et al., 2011), however, to date, little attention is given to explanatory factors, such as employment.

*International studies*

In Anglo-Saxon countries, the work-crime relationship has gained strong interest, both in older and recent decades (Farrington et al., 1986). Reviews of longitudinal research suggest that employment has an independent effect on crime among offenders -and community samples (Lageson & Uggen, 2013; Uggen & Wakefield, 2008).

Yet, also outside the Netherlands, surprisingly little is known about whether employment can also deter *high-risk* adult offenders from crimes. And, the handful of studies that is based on prisoner data showed ambiguous findings. Research based on administrative data seems to confirm the crime-reducing effect of employment (Berg & Huebner, 2005; Piquero, Brame, Mazerolle, & Haapanen, 2002; Skardhamer & Telle), while survey-based research was less conclusive (Horney et al., 1995; Visher et al., 2011).

One plausible explanation for this ambiguity could be that the protective effect of employment is conditional on the qualities of that employment (Sampson & Laub, 1993). None of the aforementioned studies looked into the role of job characteristics. To illustrate, Horney and colleagues ascribe their finding that employment does not decrease offending to the fact that they could not control for the *ties to employment* as formulated by Sampson and Laub (1993). The study of Uggen (1999) forms an exception as he did not focus on the absence or presence of a job but instead examined the influence of job quality on the criminal behavior of ex-prisoners. He found that a shift to a higher-quality job indeed reduced recidivism risk among ex-prisoners.

### *1.5.4 Shortcomings of prior empirical studies*

Earlier studies in all three research fields are characterized by some limitations. First, previous work presents a limited insight into the magnitude of disadvantage that prisoners face even prior to their prison experience. The reason for this is the lack of retrospective measures pertaining to the long-term labor market attachment of prisoners as well as a general population sample for the purpose of comparison. Second, the contribution of imprisonment to post-release employment hardships remains an unsettled area of research as the non-random selection of individuals into prison and employment could have potentially confounded effect-estimates (see also Loeffler, 2013; Raphael, 2008). Researchers have to pose heavy assumptions about the comparability of prisoners and non-prisoners, and the list of potential confounders is relatively short in the majority of studies that are based on administrative data. Third, the line of existing work cannot show if employment can lead to a crime-reduction among ex-prisoners. Research on the (protective) effect of employment is merely based on young offender data and lacks an investigation of serious offender groups, specifically ex-prisoners. An overall limitation is that conclusions are almost solely based on data pertaining to American prisoners. Findings from other countries and times are needed to help validate conclusions.

Besides these limitations, there are several unexplored research areas within the field of imprisonment, employment and crime. To start, effect-studies on both life events focused primarily on the existence of effects. In order to increase our understanding of reentry success and failure, research that tries to disentangle the *mechanisms* underlying these effects seems warranted. In addition, little is known about the *kind of jobs that ex-prisoners find*. Scholars often limit their description to employment likelihood and earnings, but prisoners and practitioners could benefit from a deepened insight into the timing, quality and stability of post-release employment. Related to this is the question if imprisonment limits the kind of jobs for which ex-prisoners may successfully apply. Moreover, very little is known about *the determinants of – and pathways to –* successful labor market reintegration. And, finally, while evidence for the protective relationship between employ-

ment and crime is piling up, to date, relatively few empirical studies paid attention to *the role of job quality and job stability in the protective effect of employment*. A plausible explanation for these research lacunas is the general scarceness of detailed longitudinal data on prisoners. Moreover, methodological rigorous and large-scale studies remain an exception within the small research field that does explore the abovementioned topics.

## 1.6 This study

### *1.6.1 Research questions*

Building on previous work and following prisoners over time, the five empirical research papers of this thesis revisit popular research questions and address several largely unexplored areas in the field of imprisonment, employment and crime. Table 1.1 offers an overview of these research questions.

The first empirical chapter (*chapter 2*) presents a baseline measurement of prisoners' employability by comparing the *pre-prison labor market attachment* of this group of presumably marginal workers to the labor market attachment of the general labor force (RQ 1). In doing so, it also offers an insight into the magnitude of labor market disadvantage and human capital deficit these individuals face even prior to their imprisonment.

Moving one step further along the life course, two different research designs are used to study the effect of imprisonment (length) on *the time to employment* and the *kind of jobs* ex-prisoners find. *Chapter 3* tests the effect of two kinds of labor market absence, imprisonment and unemployment, on finding employment. It aims to provide insight into the additional negative effect, if any, of imprisonment over and above regular labor market absence, by using a control group of comparable individuals (future prisoners) who experience a period of unemployment (RQ 2). *Chapter 4* focuses on the effect of imprisonment length on labor market prospects. Its main aim is to investigate the effect of longer imprisonment on employment likelihood, job stability and job quality, over and above the effect of pre-existing between-individual differences (RQ 3). The second aim of this chapter is to address the role of two theoretical mechanisms, human capital erosion and criminal embeddedness, in this relationship.

Thereafter, insight is provided into which and how ex-prisoners succeed in finding employment, with a focus on the role of *pre-existing employment ties*. *Chapter 5* studies a potentially successful strategy to re-employment by focusing on the possibility that ex-prisoners return to their pre-prison employer. This chapter shows if individuals who were employed at the time of their arrest return to their pre-prison employer, find new employment or become non-employed after release (RQ 4). In addition, determinants of job return are examined.

Finally, *chapter 6* moves an additional step further along the life course

and studies the effect of post-release employment on future offending, over and above the effect of pre-existing and post-release between-individual differences (RQ 5). This chapter intends to increase the knowledge concerning the theoretical mechanisms underlying the (protective) effect of employment; it examines the effect of various job characteristics, such as job quality and stability, on recidivism.

### *1.6.2 Data*

To answer the research questions, this study uses detailed data on the offending and employment careers of two Dutch prisoner samples (see Table 1.1).

*Prison Project*

Most empirical chapters are based on data from the Prison Project. This data collection is a longitudinal research project among 1,909 prisoners in the Netherlands, and can be seen as the Dutch equivalent of the abovementioned Returning Home project in the United States. The general aim of this project is to study the intended and unintended effects of imprisonment on several life domains of prisoners and their families. Data were collected in the beginning of pretrial detention, during confinement as well as after release from prison.[6] The project targeted male prisoners who entered a Dutch detention facility between October 2010 and March 2011, were born in the Netherlands, between 18 and 65 years old and did not suffer from severe psychological problems.

The in-prison computer assisted personal interview (CAPI) was held approximately two weeks after the beginning of pretrial detention and consisted of many retrospective questions (P1). Additionally, participants were asked to fill in written questionnaires following the interview and several times during their confinement (after 3, 6 and 9 months) (P2, P3, P4). The first reentry wave (R1) took place six months after release and consisted of a second capi-interview.

Combined, these self-report data offer a unique and detailed insight into prisoners' lives prior to pretrial detention, during their prison spell as well as in the first crucial half year after release. A more extensive discussion of the sample set-up and the data collected in these waves can be found in the

6 Pretrial detainees represent a group of relatively serious offenders within the prison population. On September 30, 2012, 49 percent of the prison population consisted of pretrial detainees (Linckens & De Looff, 2013). In the Netherlands there are four conditions for pretrial detention:
- Serious suspicion that offender committed the offense
- Offense type can result in prison sentence of 4 or more years /specific offense types/ offender has no home address
- Danger for flight/ societal security/ high risk of recidivism/ collusion (interference of outside world could intervene with finding the truth)
- Expected prison spell is longer or of same duration as pretrial detention

*Table 1.1 Overview of empirical chapters in this thesis*

| Chapter | Research question | Data | Dependent variable | Independent variable | Analytical strategy |
|---|---|---|---|---|---|
| 2 | RQ 1. What does the employment history of prisoners look like? And, to what extent is the employment history of prisoners comparable to the employment history of the general labor force in the Netherlands? | Prison Project Wave P1, *n* = 1,909 Labor market Panel Wave 2010, *n* = 2,059 | Employment history since leaving fulltime education | First-time prisoners Prison-recidivists General male labor force | Logistic regression Linear regression |
| 3 | RQ 2. To what extent do two types of labor market absence – imprisonment and unemployment – affect the time to employment? | Statistics Netherlands/ TULP 2004-2006, *n* = 1,430 | Time to registered employment in two year follow-up | Imprisonment Unemployment | Kaplan-Meier analysis Logistic regression *Sensitivity analysis:* Cox regression |
| 4 | RQ 3. To what extent does imprisonment length affect employment prospects? | Prison Project Wave P1 & R1, *n* = 702 | Employment likelihood, job stability and job quality in first six months after release | Length of imprisonment | Propensity score modeling for ordered treatment *Sensitivity analysis*: Propensity score modeling for continuous treatment |
| 5 | RQ 4. To what extent are previously employed ex-prisoners able to return to their pre-prison job, find new employment or become non-employed? | Prison Project Wave P1 & R1, *n* = 225 | Returned to pre-prison employer, new employment or not employed in sixth month after release | Prisoner characteristics Pre-prison job characteristics | Multinomial logistic regression |
| 6 | RQ 5. To what extent do post-release employment (characteristics) affect the risk of recidivism? | Prison Project Wave P1 & R1, *n* = 842 | Self-reported and registered recidivism rate in first six months after release | Employment likelihood Job quality Job stability | Logistic regression *Sensitivity analysis:* Propensity score weighing |

*Note:* The sample sizes differ between chapters. Reasons for this are the difference in datasets (Prison Project or Statistics Netherlands), research focus, or time of writing. *Chapter 2* includes all prisoners who participated in the first wave of the Prison Project (P1) and includes data on a representative sample of the male labor force in the Netherlands. *Chapter 3* is based on data of Statistics Netherlands. *Chapter 4* includes Prison Project participants who were released for a minimum period of six months up to June 2012 and agreed to participate in the reentry interview (R1). *Chapter 5* includes the selection of Prison Project participants who were released for a minimum period of six months up to January 2013 *and* worked as salary worker prior to detention. *Chapter 6* is based on the R1-data of all Prison Project participants who were released for a minimum period of six month up to January 2013.

separate empirical chapters of this dissertation (*chapter 2*, *4-6*, see also Dirkzwager & Nieuwbeerta, 2014).

*Administrative data on participants of the Prison Project*
The survey data of the Prison Project are linked to several administrative sources to acquire additional information on the participants or to check the self-reported data with registered data. First, the Public Prosecutor's Office was consulted for information on the *index offense*; the offense that led to the pretrial detention during which detainees were approached to participate in the Prison Project (October 2010-March 2011). This resulted in information on the type of crime, the number of registered offenses in a criminal case, the maximum penalty (maximum days a judge can sentence an offender to prison based on the index offense) and whether or not the individual was released before trial. Second, detailed information on the offender's *criminal history* was collected from "rap sheets" available in the Criminal Record Office. These data were made available by the Research and Documentation Centre (WODC) of the Dutch Ministry of Security and Justice, and contain information on all registered convictions beginning at age 12, the age of criminal responsibility. Third, in order to supplement the dataset and confirm the reliability of several *sociodemographic characteristics*, such as date of birth, country of birth, parenthood and official marital status, municipal population data were used ([Gemeentelijke Basisadministratie] GBA). Finally, the exact timing of *prison spells* is based on data from the Judicial Institutions Department ([Tenuitvoerlegging vrijheidsbenemende straffen en maatregelen in penitentiaire inrichtingen] TULP).

*Administrative data of Statistics Netherlands*
In *chapter 3* we combine data on registered prison spells from the Judicial Institutions Department (TULP) with data from the Social Statistics Files from Statistics Netherlands, to study the effect of imprisonment on registered (instead of self-reported) employment among a sample of 1,500 prisoners who entered a Dutch penitentiary between 2005- 2006. For the years 2004–2006, information on various sociodemographic characteristics as well as monthly information on the offenders' socioeconomic circumstances (e.g., whether employment was main source of income) were obtained from the Social Statistics Files.

*Data on Dutch labor force*
In *chapter 3* the employment history of prisoners is compared to the employment history of a representative sample of the Dutch labor force. These data resulted from a Dutch longitudinal labor panel [Organisatie voor Strategisch Arbeidsmarktonderzoek (OSA)]. The dataset is suitable as a comparison group because it contains information about educational attainment, work experience and recent labor market position. Similar to the inclusion criteria of the Prison Project, only males, born in the Netherlands and between 18 and 65 years old were included in this study.

### 1.6.3 Methods

Both "regular" and more advanced regression techniques are used to answer the research questions (see Table 1.1). Recall that effect-studies are complicated by the non-random selection of individuals in prison (or employment). Regression analysis is the most straightforward and popular method to address selection bias. Especially in recent years, scholars have had several more advanced analytical strategies at their disposal to control for selection (for an overview see: Blokland & Nieuwbeerta, 2010). A small number of scholars started applying propensity score techniques to control for selection in (longer) imprisonment (e.g., Loughran et al., 2009; Wermink, Blokland, Nieuwbeerta, Nagin, & Tollenaar, 2010). A propensity score represents the probability of receiving treatment, conditional on a set of observed pre-treatment covariates. Individuals with a similar propensity score, but a different observed treatment (i.e., different lengths of imprisonment), are compared in outcome, net of time stable and time-varying observables. A general advantage of the propensity score methodology over standard regression analyses is that it is more robust with respect to model misspecification (Drake, 1993). Another advantage is the internal validity that results from this approach, as it assures the exclusion of "treated" individuals for whom no comparable "controls" are available.

## 1.7 Scientific relevance

### 1.7.1 New research questions

This thesis sets out to advance on previous work by revisiting questions concerning pre-prison labor market attachment (*chapter 2*) and examining the effects of imprisonment and employment by using advanced statistical methods and rich longitudinal data from the Netherlands (*chapters 3-6*). As such, this thesis targets the "Americentric" tendencies in correctional and reentry research (Frost & Clear, 2012, p. 620). In addition, several largely unexplored areas in the field of imprisonment, employment and crime are addressed. To start, instead of examining employment likelihood and earnings, a broader range of employment outcomes related to timing, quality and stability is explored (*chapters 3-6*). Furthermore, this thesis can examine whether imprisonment limits the kind of jobs for which ex-prisoners may successfully apply (*chapter 4*). In addition, this thesis is among the first to examine (the determinants of) a potentially successful pathway to labor market reintegration among a large prisoner sample (*chapter 5*). Moving one step further along the life course, attention is paid to the role of job quality and job stability in the protective effect of employment (*chapter 6*).

### 1.7.2 Theory

An observation from the general theoretical background in this introductory chapter is that most theories are not fundamentally incompatible but differ in focus. While there is often agreement on the direction of effects – imprisonment diminishes employment prospects and employment reduce criminal behavior – theories are less consistent concerning the processes and conditions required to generate this effect. Often because of data restrictions, previous studies used these theories to derive a general hypothesis about the effect of imprisonment or employment, but failed to advance on the validity of the different theoretical mechanisms underlying this effect.

This thesis aims to test hypotheses on how imprisonment (length) (*chapter 3-4*) and employment characteristics (*chapter 6*) influence later trajectories. The data are suited for these aims as they enable the measurement of several key theoretical concepts.

### 1.7.3 Data

Many earlier studies, especially on the imprisonment-employment relationship, are based on administrative data and have little access to detailed data on employment and background characteristics. And, with some exceptions, studies on survey data are based on small unrepresentative samples of prisoners. This limits our understanding of reentry processes. A specific downside of administrative data is that they fail to capture the full range of labor market activities among high-risk samples. Although especially these groups are expected to receive income from uncovered jobs (e.g., self-employment, out-of-state income, off-the-books employment) (Kornfeld & Bloom, 1999), earnings from administrative data are solely based on the official reports of employers as registered in state tax records. Related to this is the limitation that most studies draw conclusions about recidivism risks on a single data source (either self-reported or registered).

The current thesis progresses on previous work by using detailed longitudinal survey data of the Prison Project, and supplementing and validating this information with several administrative datasets (*chapter 2*, *4-6*). Together, these data entail information on criminal and employment careers and a wide range of other life domains concerning the period prior, during and after imprisonment. Moreover, *chapter 3* is solely based on administrative data from Statistics Netherlands and provides insight into registered (i.e., legal) post-release employment outcomes.

### 1.7.4 Methods

Most scholars turn to quasi-experimental research designs for the study of both imprisonment- and employment-effects. As such they face the problem of isolating effects from selection bias. The success of "regular" regressions analyses and propensity score modeling relies heavily on the set of con-

founding variables (Shadish, 2013). While many prior studies are based on administrative data and lack detailed measures, the unique quasi-experimental designs used in *chapter 3* and *4*, and the rich longitudinal data and advanced statistical methods used in *chapter 4* and *5* ensure the elimination of a long list of confounding variables.

## 1.8 Societal relevance

Practically all prisoners return to free society after release. Half of these ex-prisoners recidivate within two years (Linckens & De Looff, 2013). As such, this study connects to issues of concern to society at large. Criminal behavior is the cause of public feelings of unsafety and brings substantial immaterial and material costs.

A transition to employment can work as a "hook for change" towards becoming a law-abiding citizen (e.g., Giordano, Cernkovich, & Rudolph 2002). It offers an income, daily structure, social contacts and a sense of responsibility (e.g., Jahoda, 1982). Labor market participation could thus work as an effective crime reduction strategy. In addition, the importance of labor market (re)integration stems from the fact that Dutch society, specifically its welfare state, relies on a high labor market participation. This is also reflected in recent policy initiatives and legislation that aim to stimulate the participation of disadvantaged workers (Kamerstukken [Parliamentary documents] II 2011/12, 33 161, no. 8).

Yet, ex-prisoners have low levels of human capital and other personal characteristics that make them hard to employ (e.g., Petersilia, 2003; Western, 2006). After release, they are likely to face additional challenges in searching for a job and reintegrate into mainstream society.

Importantly, the supply of education and employment assistance, both in and outside prison walls, is one of the few policy instruments a government can employ in an attempt to reduce recidivism. Knowledge about prisoners' work experiences before and after release can help target these efforts more effectively, and thereby increase the chances of a successful (re)integration into the labor market.

By addressing the employment- and recidivism risk of released prisoners, this study also contributes to the line of research that examines whether punishment is based on justifiable assumptions; to what extent are prisoners able to rehabilitate after release, and does a prison spell deter them from crime and push them towards a conventional lifestyle? Accordingly, this thesis could inform and help stimulate debates about (effective) punishment policies, and make policy makers better equipped to weigh the advantages and disadvantages of changes in punishment and reentry programs.

# 2 Down before they go in: A study on pre-prison labor market attachment■


## Abstract

This study is concerned with describing the employment history of prisoners. Past labor market performance is a major predictor of later performances. Yet, the substantial field of reentry research paid little attention to pre-prison employment patterns and the magnitudes of labor market disadvantage that prisoners already face prior to their imprisonment. Using data on nearly 2,000 Dutch prisoners and a representative sample of the Dutch labor force, we find that unemployment is a longstanding feature of prisoners' lives. Starting with a low educational attainment, their subsequent employment career is characterized by long periods of unemployment, off-the-books employment, dismissals and job shifts. This results in a marginalized labor market position prior to imprisonment. The findings emphasize that the labor market (re)integration of ex-prisoners is a pressing social and public policy challenge, and stress the importance of skill attainment and work experience among high-risk groups.



Key words: Imprisonment, employment history, prisoner reentry, the Netherlands.


■ An earlier version of this chapter was published in Dutch as: Ramakers, A.A.T., Van Wilsem, J.A., Nieuwbeerta, P., & Dirkzwager, A. (2012). Het arbeidsverleden van gedetineerden voorafgaand aan detentie. Een vergelijking tussen gedetineerden en de algemene bevolking. *Mens & Maatschappij*, 87, 272-301.


An earlier version of this chapter is accepted for publication as: Ramakers, A.A.T., Van Wilsem, J.A., Nieuwbeerta, P., & Dirkzwager, A. (forthcoming). Down before they go in? Pre-prison labor market attachment in the Netherlands. *European Journal of Criminal Policy and Research.* Available online as of February 22, 2014, doi:10.1007/s10610-014-9234-x.

## 2.1 Introduction

In recent decades, the prison populations of modern Western societies have increased substantially (see Kuhn, 1996; Tonry & Farrington, 2005). Only recently this prison growth has begun to slow and even stabilize. The growth has brought issues of prisoner reentry to the forefront (Petersilia,, 2003; Visher & Travis, 2003). Because labor market (re)integration can serve as a turning point for offenders, prisoners' employment experiences after release have received much attention within this research field (e.g., Sampson & Laub, 1993; Staff & Uggen, 2003; Uggen, 2000, Visher & Travis, 2003; Warr, 1998).

The expectation that a period of imprisonment deteriorates one's economic prospects is common to labor market economists and criminologists alike. Ex-prisoners' employment chances are relatively low (Apel & Sweeten, 2010; Pager, 2003; Ramakers, Van Wilsem, & Apel, 2012; Waldfogel, 1994; Western & Pettit, 2000), as is their long-term earnings potential (Holzer, 2007; Waldfogel, 1994; Western, 2002). Research on the attitudes of employers and the general public towards ex-prisoners further supports this negative image (Graffam, Shinkfield, & Hardcastle, 2008; Holzer, 1996; Holzer et al., 2004; Pager, 2003). Prisoners thus have unusually weak employment prospects following their release from prison.

Yet, another general expectation is that prisoners already have a low socioeconomic potential *prior* to their imprisonment. For instance, prisons have been frequently described as institutions that house the most disadvantaged segments of society (Wakefield & Uggen 2010; Western, 2006). If this is indeed the case, the growing research interest in *post*-prison labor market outcomes (and other life domains) might be inapt to address problems surrounding prisoner reentry. In the words of Bushway (2006): "…I believe the discussion about reentry is misleading in its focus on the need to *re*integrate prisoners into the community. Prison did not cause these individuals to lose their integration with community – *they were not integrated before they entered prison*." (p.565, lines 13-19). In the same light, a number of scholars has proposed a shift in reintegration policy from prison-interventions to investment in general preventative measures that stimulate the attainment of jobs skills and work experience (e.g., Pettit & Lyons, 2007; Sabol, 2007).

There is however surprisingly little empirical evidence for the expectation that prisoners were hardly integrated in society in general or the labor market in specific, before entering prison, especially outside the United States. Western (2006) similarly observed that "Racial disparities had been studied extensively, but I could find little work on the economic situation of prison and jail inmates…" (p. xii, lines 11-12). Administrative studies report low employment ratios, showing that approximately one-third of the prison population was employed (for some time) in the year before prison admission. In addition, wages often fall below the minimum wage in the run-up to imprisonment (Kling, 2006; Pettit & Lyons, 2007; Tyler & Kling, 2007; Sabol

2007). These employment measures are not only sparse in the sense that they ignore job stability and quality, they also refer to a short period of time, which is likely to be affected by the illegal activities that led to imprisonment. Moreover, most studies are restricted to formal labor market participation, and fail to capture all economic activity, especially for young men with a prior arrest (Kornfeld & Bloom, 1999). Only recently, the pre-prison labor market attachment was addressed using broader measurements on a larger sample of prisoners (see Visher et al., 2011 and related publications). Yet, also in these studies, the main focus is on post-prison employment outcomes. Another weakness is that existing studies are limited to prisoners, with no accompanying data on non-prisoners (but see: Western, 2006). Hence, scholars are unable to assess the magnitude of disadvantage prisoners face even prior to their prison experience.

The lack of research on pre-prison labor market attachment is unfortunate for three reasons. First, past and present labor market performance are strongly interrelated (Becker, 1964; Farkas, 2003; Mincer, 1974; Spence, 1973). Recently, Berg and Huebner (2011) and Visher and colleagues (2011) pointed out that ex-prisoners with little work experience are especially vulnerable on the labor market. Holzer and colleagues (2004) showed that employers were far less enthusiastic about hiring applicants with a spotty work history (59% "probably will" or "definitely will" hire them) than hiring other disadvantaged groups, such as welfare recipients (92%), low educated applicants (96%) and applicants that were unemployed in recent years (83%). Moreover, they favored individuals with a spotty work record only over ex-offenders (38%). Second, effect estimates of incarceration on employment and wages might be plagued by selection processes when studies fail to include comprehensive measures of pre-prison work experiences. Third, systematic knowledge about the work experience and skills that prisoners possess (or lack) can help target efforts to guide ex-prisoners to jobs more effectively, and thereby increase the chances of a successful (re)integration into the labor market. Moreover, education and employment assistance is one of the few policy instruments a government can employ in an attempt to reduce recidivism.

The present study will use data of the first wave of the Prison Project – a unique prospective, longitudinal and nationwide data collection among 1,909 male prisoners in the Netherlands – to describe the employment history of prisoners. Do prisoners experience rapid deterioration in the months leading up to their prison spell – a time in which labor market activities are likely to be affected by the illegal activities that led to their imprisonment – or are their diminished prospects indicative of a longer-term trajectory that characterizes their entire employment history? The self-reported measures on labor market attachment span the entire life up to prison admission. Moreover, they offer a detailed insight into the quality of pre-prison jobs (occupational level, self-employed or salary worker, hours, wages, employment arrangement). Next to this, the present study offers a frame of reference for the relative position of prisoners on the Dutch labor market by com-

paring their employment history to the general population. By using data from the Netherlands we furthermore respond to a recently enounced request for research outside the United States. in order to overcome the "Americentric tendencies in correctional research" (p.639) and create insight into best practices (Frost & Clear, 2012).

## 2.2 Theoretical expectations

Several criminological theories support the general expectation that prisoners have a lower socioeconomic status (SES) than the general population, even before imprisonment. First, there are theories that expect that prisoners have a lower SES because individuals with a low SES have *a higher chance of committing criminal behavior* and becoming incarcerated. Merton's (1938) anomie theory and Hirschi's (1969) social control theory state that employed individuals commit fewer crimes because they are better capable to provide for themselves financially and have stronger bonds with conventional society. A second explanation presumes that individuals with a low SES are *treated differently by the criminal justice system* than similar individuals with a higher SES. The focal concerns theory of criminal sentencing (Steffensmeier, Ulmer, & Kramer, 1998) states that individuals with similar criminal histories can receive a different sentence because judges base their risk assessment and verdict on both the severity of the crime and the characteristics of the suspect, including socioeconomic position (Spohn & Holleran, 2000). As a result, offenders with a low SES may be confronted with higher chances to be sentenced to prison than other offenders. A third explanation concerns differences in *work preferences*. Although employment can increase an individual's wellbeing, for instance by providing daily structure, not everyone is willing to work. In line with this, subcultural theories point to (deviant) subcultures with specific norms and values (Miller, 1958; Wilson, 1987). Motivation for legal employment can be absent within deviant peer groups, for example because they disapprove of such conventional behavior. A low SES among prisoners might therefore also be the result of different work preferences. Moreover, illegal activities might be more attractive for individuals with a low SES as they are only eligible for low-status jobs. Following these three theoretical mechanisms our first hypothesis is as follows: *Prisoners have a weaker employment history than the general population*.

In addition, we expect to find differences in the employment histories between two groups of prisoners: first-time prisoners and prison-recidivists. The vast majority of the prisoners in the present study's sample have been in contact with the criminal justice system prior to their imprisonment and more than half have been imprisoned before. According to labeling theories, any previous judicial contact can stigmatize an offender and reduce his or her labor market opportunities. A prison record may raise an additional labeling effect and further complicate the labor market participation of individuals who went to prison earlier in life. It may also be indicative for a

deeper embeddedness in criminal behavior and a weaker attachment to the formal labor market. By distinguishing between the employment history of first-time prisoners and prison-recidivists we explore whether a more extensive criminal history is associated with a weaker employment history. Our second hypothesis reads: *Prison-recidivists have a weaker employment history than first-time prisoners*.

Finally, attention is paid to *selection bias* that might plague the group comparisons in employment history. Registered data show that a relatively high percentage of the prison population is poorly educated, member of an ethnic minority and young of age (Linckens & De Looff, 2011). In the same light, previous research has shown that individuals with these characteristics experience significantly more difficulties on the labor market (e.g., Pager & Shepherd, 2008; Wolbers, De Graaf, & Ultee, 2001). The sociodemographic group composition might therefore explain the poor employment history of prisoners. The third hypothesis is as follows: *Differences in employment history between first-time prisoners, prison recidivists and the general population reduce after taking account of sociodemographic group composition.*

## 2.3 Previous research

Limited empirical evidence exists on the employment patterns of future prisoners. Still, three strands of studies can be discerned. Cross-sectional inmate surveys, arranged by prison administrations, represent a first source of information. While many Western countries survey their prison population, information on educational attainment and employment history is not always available. Moreover, some countries held national inmate surveys, while others surveyed a small (selective) group of prisoners. This compromises comparisons across countries. The available figures do seem to align the expectation that prisoners have a low SES in the immediate period before prison admission. Large shares of prison populations did not complete secondary education (e.g., Australia: 53%; Denmark: 48.5%; Finland: 34.9%; Germany: 57%; Netherlands: 30%; Norway: 42.5%; Sweden: 56%; United Kingdom: 46%; United States: 41%) and pre-prison employment rates are generally low (e.g., Australia: 55%; Netherlands: 35%; United Kingdom: 32%; United States: 75%) (Butler & Milner, 2003; Eikeland et al., 2009; Entorf, 2009; Hopkins, 2012; Linckens & De Looff, 2011; Mol & Henneken-Hordijk, 2008; Petersilia, 2003). These data sources lack retrospective measures pertaining to the long-term labor market attachment of prisoners as well as a general population sample for the purpose of comparison.

The second type of studies is solely based on American data and combines data from state correctional agencies and unemployment insurance systems (UI data) to report prisoners' quarterly employment rates or earnings in Florida (Kling, 2004, 2006), Ohio (Sabol, 2007), Washington State (Pettit & Lyons, 2007, 2009), and Illinois (LaLonde & Cho, 2008; Jung, 2011). These studies aim to estimate the effect of imprisonment on post-prison

employment outcomes and their pre-prison employment measurements can extend to several years. However, they mostly only report the pre-prison employment ratio and wages in the year prior to imprisonment: approximately one-third of American prison inmates are employed in the run-up to imprisonment and those who worked in the year prior to imprisonment earned relatively low wages.[1] Kling (2006) reports that only 10 percent of the prisoners that were employed before prison admission earned a wage above the poverty rate ($2,340 per quarter). Besides the limited time span of pre-prison employment outcomes, a weakness of administrative studies is that measurements are restricted to formal labor market participation and earnings. The study of Kling (2004) is an exception, as he compared the self-reported employment rate (65%) with the registered employment rate in the year before imprisonment (~33%). This difference in level is not the result of false reporting by prisoners as a comparison with a national survey produced a similar self-reported employment rate.[2] Instead, at least half of the difference in self-reported and registered employment rates could be explained by uncovered employment such as out-of-state employment, off-the-books employment and short-term employment. Kornfeld and Bloom (1999) concluded as well that administrative data understate employment and earnings, particularly for young men with a prior arrest record. This indicates that UI data miss out on a significant part of the economic activities of prisoners and other high-risk groups that represent the core in criminological research.

Longitudinal survey data, based on interviews with prisoners, offer a third valuable source of information, yet few datasets contain detailed employment measures that span entire employment histories. Some notable exceptions can be found in the United Kingdom and the United States. Both Soothill (1974) and Martin and Webster (1971) studied a small (sub)sample of prisoners in the London area a few decades ago. Both studies documented that instability was a longstanding feature of prisoners' working lives. Many prisoners were found to be illiterate and the researchers also found a pattern of temporary jobs and unemployment. More recent findings of the Returning

1 Average quarterly employment ratio in first year prior to prison admission: Lalonde and Cho (2008): 25%; Jung (2011): 25%; Kling (2006): 33%; Sabol (2007): 35%; Tyler and Kling (2007): 31%.

2 For a proper comparison Kling (2004) weighted the data of the Current Population Survey (CPS) from 1993 to 2000 to reflect gender, race, education and age distributions of the sample of Florida inmates. Furthermore, he assessed the proportion of uncovered jobs for individuals with similar demographics as the Florida inmates as follows: "…I used the CPS April 1993 benefit supplement to calculate the fraction of those employed in the survey week whose employers withhold Social Security from their paychecks as a proxy for being in a job covered by UI. This analysis suggests that about one quarter of those with demographics like inmates who report themselves as employed are working in jobs not covered by UI. Since the only common characteristics in the inmate sample and CPS sample are gender, race and education and age, the CPS fraction with uncovered jobs is likely an underestimate for the true rate in the more disadvantaged inmate population." (p. 16, lines 13-22).

Home Project, corroborate this pattern for American prisoners. Visher, Debus and Yahner (2008) reported that half (52%) of their sample of prisoners completed high school. During the last six months before prison roughly two-thirds of the prisoners (68%) worked for at least some time. Yet, only a small majority of prisoners reported to ever have held a job for at least two years (53%). Moreover, one-third reported to have been fired from a job at least once (Visher & Kachnowski, 2007). The National Longitudinal Survey of Youth (NLSY '79/'97) also holds extensive information about the work experiences of a subsample of American prisoners. However, most researchers only report the employment rate (number of weeks worked) and earnings in the first year(s) before imprisonment. An important advantage of these data is that they offer a comparison group of non-prisoners. Western (2006) compared never incarcerated individuals with prisoners before incarceration, and showed that, in the year before incarceration, never incarcerated individuals obtained significantly higher hourly wages (white men: $14.7 versus $11.14; black men: $12.34 versus $10.25) and worked more weeks per year (white men: 44 versus 37; black men: 40 versus 35).

## 2.4 The current study

The literature overview reveals that previous work relied on measurements of pre-prison labor market attachment over a short period of time, failed to provide an overview of all of prisoners' economic activities and often lacked a comparison group of non-incarcerated individuals. Moreover, findings are almost solely based on American data. It is uncertain to what extent American findings can be generalized to other Western countries because of the difference in, for instance, penal climate and incarceration rate (see Kuhn, 1996). The current study tries to address these limitations in order to examine (a) whether the apparent instability at the time of prison admission is a longstanding feature of prisoners' working lives, and (b) to create an insight into the magnitude of labor market disadvantages that prisoners face. First, we examine developmental patterns in labor market participation by distinguishing three stages in an employment history: the educational level at labor market entry, the work experience since leaving fulltime education, and the labor market position in the run-up to imprisonment. Second, the current study uses a wide array of self-reported employment measures that cover all different kinds of economic activity. Third, data on a representative sample of the Dutch labor force enable us to produce a frame of reference for the employment history of prisoners. Finally, we address the American domination in prisoner research by offering insight into the context of the Netherlands.

This context is comparable to other countries in (Northern) Europe in several features which are relevant for labor market participation. For instance, despite retrenchment in recent decades, the Dutch welfare system is still generous in international comparison (Becker, 2000; Esping-Andersen

1990; Lappi-Seppälä, 2011). A second relevant feature is the restricted access to criminal records. In many countries ex-offenders face a variety of statutory restrictions that categorically prohibit certain types of employment (see for instance Jacobs & Larrauri, 2012). In the Netherlands, every employer may ask applicants for a certificate of conduct. In recent years the certificate has become mandatory in more sectors and the rules for granting a certificate have become stricter (Boone, 2011). In contrast to some American states, Dutch, and most European laws, merely prohibit work activities that are related to the crime committed. Hence, regulations protect Dutch ex-offenders from labor market discrimination, whereas open access laws in the United States (leaving aside some variation in state laws) pose an additional burden for American ex-offenders (Briggs, Thanner, Bushway, Taxman, & Van Brakle, 2004).

## 2.5 Data

### *2.5.1 The prisoners*

The data for this study were collected as part of the Prison Project, a unique prospective, longitudinal and nation-wide data collection among Dutch pretrial detainees. The project targeted male prisoners who entered a Dutch detention facility between October 2010 and March 2011, were born in the Netherlands, between 18 and 65 years old and did not suffer from severe psychological problems. The first wave was held at the beginning of pretrial detention and consisted of a computer assisted personal interview and written questionnaire. In total, 2,945 pretrial detainees who entered pretrial detention between October 2010 and March 2011 met our selection criteria. No less than 95 percent of these men could be approached and 65 percent of the original sample agreed to participate in the data collection. This resulted in a sample of 1,909 pretrial detainees (from here on referred to as "prisoners"). The sample was generally representative of all 2,945 prisoners that met the selection criteria in terms of age, marital status, type of crime and receiving an unconditional prison sentence for the index offense, but differed in some other characteristics.[3] For this study we selected only those prisoners eligible for the Dutch labor force (individuals between 18 and 65 years old, not in fulltime education). In addition, we excluded those prisoners for whom information on age, educational level, ethnic background or criminal history was missing. After these selections, our research group consisted of 1,708 prisoners.

3 Participants and non-participants differ with respect to age of onset (18.9 versus 17.4), employment status before imprisonment (45.7% versus 38.7%) and duration of actual time served (5.1 versus 4.1 months). In addition, a comparison of criminal history measures revealed that participants have a slightly less extensive criminal history than nonparticipants (on average: 3.4 versus 5.0 previous spells; 7.7 versus 9.8 previous convictions).

Information on previous prison sentences was collected using the General Documentation Files of the Criminal Record Office. These data were made available by the Research and Documentation Centre (WODC) of the Netherlands Ministry of Security and Justice, and contain information on all registered convictions beginning at age 12, the age of criminal responsibility. We found that more than half of the prisoners had been to prison prior to our research period (60.7 percent). We distinguish between *first time prisoners* ($n$ = 671) and *prison-recidivists* ($n$ = 1,037) in our analyses.

### *2.5.2 The general population*

In this paper the employment history of prisoners is compared to the employment history of a representative sample of the Dutch labor force.[4] We use data from the Labor Panel from 2008 ([Organisatie voor Strategisch Arbeidsmarktonderzoek] OSA). This dataset is suitable as a comparison group because it contains information about educational attainment, work experience and recent labor market position. Yet, it does not contain information about criminal history. Similar to the inclusion criteria of the Prison Project, only males, born in the Netherlands and between 18 and 65 years old were included in this study. Consequently, the comparison group exists of 2,059 men from the *general population*.

## 2.6 Measures

*Educational attainment.* The present study distinguishes between three educational categories. Lower education characterizes those that did not complete primary school, only completed primary school or graduated from the lower levels of secondary school. Medium education symbolizes completion of a higher level of secondary schooling. High education refers to those who completed a higher vocational training or post-secondary education.

*Work experience.* We view an employment career as the work experience since leaving fulltime education. For both the prisoners and the general population we know the total number of employers and the total duration of unemployment since leaving fulltime education.[5] Both indicators provide insight into the instability of employment careers. Additional information is available of prisoners. They were asked to report their longest job duration.

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4 It is necessary to weigh the data because of selective non response. This weight factor is based on the age distribution in the Survey of the Labour Force (EBB) of Statistics Netherlands. We used this weight factor only in the descriptive analyses. As the weight factor of the labor panel is based on an independent variable (age), it is preferred to perform regression analyses without weight factor (Winship & Radbill, 1994).

5 Total duration of unemployment is measured as follows in the Prison Project: "How many months and years did you not have paid employment since leaving fulltime education?" In the OSA dataset a different question was asked: "How long since leaving fulltime education have you received unemployment or disability benefits?"

Next to this we know the prevalence ("0" no, "1" yes) and the frequency of both getting fired (number of dismissals) and off-the-books employment ("0" never to "5" very often).

*Recent labor market position.* For prisoners, the recent labor market position reflects the employment situation just before entering prison (at time of arrest), and for the general population it concerns the situation at the time of survey participation. First, we know whether individuals were employed (minimum of 1 hour per week), unemployed or did not participate in the labor force (ill or disabled, student, works in household, pensioner). Second, we know if benefits were received (unemployment benefits, disability benefits, welfare or other benefits). Third and fourth, we know for an employed individual whether he was a salary worker or self-employed as well as his hourly wage. The latter measure was based on the reported net monthly income from employment and the average number of hours worked. Fifth, using the Standard for Classification of Occupations (SBC) of Statistics Netherlands, survey information on job title, type of business, (executive) tasks and wage was used to classify jobs into five occupational levels ranging from the elementary to the scientific level (Westerman, 2010).[6] Sixth, our data included information on the employment arrangement: permanent contract, prospect on permanent contract, temporary contract and other (e.g., off-the-books employment, employment agency).

*Sociodemographic measures.* Next to educational level, we will include age and a measure of ethnic background into the analyses as control variables. The data show that first-time prisoners are slightly younger than prison-recidivists, 29.4 years and 32.4 years respectively. The general population is on average more than ten years older (43.9). The failure to control for these age differences can especially bias indicators of work experience (for instance number of employers) as younger people have had less "exposure" time on the labor market. Individuals are identified as non-ethnic Dutch when one or both parents were born outside the Netherlands. We find that 36.8 percent of the first-time prisoners and 42.7 percent of the prison-recidivists are non-ethnic Dutch. Only 4.1 percent of the general population in this study is classified as non-ethnic Dutch.

## 2.7 Results

### *2.7.1 Educational attainment*

The results section corresponds to three phases in an employment history: educational attainment, work experience and the most recent labor market

6 The SBC is a classification of occupations based on the level of capabilities necessary to practice an occupation in a certain field. First, information on job descriptions were coded into occupational codes. The second step was to code the occupational codes into five occupational levels.

position. Table 2.1 demonstrates that many future prisoners start their employment career in an already disadvantaged position.[7] A sizable majority of the prisoners has a low educational level (56.9% of first-time prisoners; 68.2% of prison-recidivists), while only one-quarter (25.6%) of the general population is classified as low educated. Accordingly, only 6.9 percent of the first-time prisoners and 4.1 percent of the prison-recidivists are high educated. In contrast, more than one-third (38.8%) of the general population obtained a higher education. Further analyses showed also substantial differences between the groups with respect to the completion of secondary schooling. Only 2.4 percent of the general population, but 21.5 percent of first-time prisoners and 35.8 percent of the prison-recidivist did not (yet) finish secondary schooling.

*Table 2.1 Position during labor market entry*

| | General population ($n$ = 2059) | First-time prisoners ($n$ = 671) | Prison-Recidivists ($n$ = 1037) | |
|---|---|---|---|---|
| | % | % | % | Sign. |
| *Educational level* | | | | [abc] |
| Low | 25.6 | 56.9 | 68.2 | |
| Medium | 35.6 | 36.2 | 27.8 | |
| High | 38.8 | 6.9 | 4.1 | |

[a] Sign. difference between general population and first-time prisoners ($p$<0.001)
[b] Sign. difference between general population and prison-recidivists ($p$<0.001)
[c] Sign. difference between first-time prisoners and prison-recidivists ($p$<0.001)

### 2.7.2 *Work experience*

In Table 2.2 we present information about the work experience since leaving fulltime education. Both first-time prisoners and prison-recidivists have worked for significantly more employers than individuals in the general population, respectively 5.0 and 6.1 versus 3.6 employers. We also find substantial differences in the time spent in unemployment. On average the general population was unemployed for less than one year (0.7 years), while the two groups of prisoners were unemployed for 1.7 (first-time prisoners) and 4.4 years (prison-recidivists). These differences are remarkable, especially when we take into account that prisoners are on average more than ten years younger than the men from the general population sample. Moreover, the high number of employers among prisoners is also noteworthy. The employment histories of prisoners seem thus far less stable than the employment history of the general population.

7 In the tables of this chapter, Chi-square tests were performed to test for significant differences between groups, and Mann-Whitney tests were used for ordinal or interval variables with skewed distributions.

Table 2.2 presents additional work experience measures for the two prisoner groups, which indicate the existence of a more severe labor market disadvantage among prison-recidivists. We find that first-time prisoners worked on average a maximum of 4.4 years in the same job, while prison-recidivists worked a maximum of 3.5 years in the same job. The latter group was also fired more frequently and worked more often in off-the-books employment than first time prisoners.

*Table 2.2 Work experience*

| | | General population ($n$ = 2059) | | | First-time prisoners ($n$ = 671) | | | Prison-recidivists ($n$ = 1037) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Range* | N | Mean | Med. | N | Mean | Med. | N | Mean | Med. | Sign. |
| Nr. Employers | 0-15 | 1942 | 3.6 | 3.0 | 669 | 5.0 | 4.0 | 1030 | 6.1 | 5.0 | abc |
| Duration of unemployment (yr.) | 0-12.5 | 1945 | 0.7 | 0.0 | 662 | 1.7 | 0.5 | 1014 | 4.4 | 3.0 | abc |
| Duration longest job (yr.) | 0-15 | | | | 666 | 4.4 | 2.5 | 1025 | 3.5 | 2.0 | c |
| Dismissal | 0-1 | | | | 671 | 0.5 | 0.0 | 1036 | 0.5 | 1.0 | c |
| Frequency | 0.10 | | | | 310 | 2.3 | 1.0 | 528 | 3.0 | 2.0 | c |
| Off-the-books employment | 0-1 | | | | 671 | 0.5 | 1.0 | 1036 | 0.7 | 1.0 | c |
| Regularity | 1-5 | | | | 346 | 2.6 | 2.0 | 682 | 2.9 | 3.0 | c |

* For the continuous variables all scores above the 95 percentile were truncated.
[a] Sign. difference between general population and first-time prisoners ($p<0.001$)
[b] Sign. difference between general population and prison-recidivists ($p<0.001$)
[c] Sign. difference between first-time prisoners and prison-recidivists (min. $p<0.05$)

Bivariate comparisons of employment outcomes between groups might be confounded by the selection of individuals with specific sociodemographic characteristics into prison. Multivariate regression analyses were performed to investigate the influence of sociodemographic group composition on the outcomes presented in the previous tables. Table 2.3 shows the results of these analyses, where the dependent variables include the number of employers, ever having been unemployed and the total duration of unemployment. [8] In line with the bivariate results, both first-time prisoners (B=0.209) and prison-recidivists (B=0.377) have worked for more employers than the general population. While we interpret a high number of employers as evidence of an unstable employment career, switching employers can also signify upward social mobility. This is however unlikely to be the case

8 Natural logarithmic transformation of the dependent variables was performed to reduce the skewness of distributions: number of employers, duration of unemployment and hourly wage. In order to retain individuals who scored a zero on these variables – for instance: 69 percent of the general population said to have never been unemployed and 21 percent of the prisoners gave this answer – we substituted the zeros with a very small number (0.5) before taking the natural log. Sensitivity analyses showed that similar conclusions were reached when the individuals who scored a zero on these variables were excluded from the analyses.

here as there are large differences in the number of employers and in the time spent participating on the labor market between prisoners and the general population. We also find that prisoners have a higher chance of ever having been unemployed than the general population (first-time prisoners: B=1.276; prison-recidivists: B=2.059). And, both first-time prisoners (B=0.487) and prison recidivists (B=1.268) have been unemployed for a longer period of time than the general population.

We hypothesized that the inclusion of sociodemographic characteristics would reduce group differences in employment outcomes. A comparison of models in which the sociodemographic characteristics were included separately (not shown here), indicated that educational level and ethnic background indeed led to a decrease in group differences in the number of employers and the duration of unemployment. However, group differences increased substantially when age was included. In fact, when we controlled for the relatively short exposure time of prisoners, the differences in work experience exceeded the original group differences in the number of employers. This finding is counterintuitive, but actually provides further evidence for the unstable work pattern of prisoners: in spite of their young age, prisoners have worked for more employers, are more likely to become unemployed and have been unemployed for a longer period of time than the general population.

*Table 2.3 Regression analyses on indicators for work experience*

| | Number of employers | Ever unemployed | Duration unemployment |
|---|---|---|---|
| | B | B | B |
| Intercept | 1.297*** | -0.362*** | -0.078* |
| *Group* | | | |
| General population *(ref.)* | | | |
| First-time prisoners | 0.209*** | 1.276*** | 0.487*** |
| Prison-recidivists | 0.377*** | 2.059*** | 1.268*** |
| Control variables | | | |
| Low education *(ref.)* | | | |
| Medium education | -0.035 | -0.418*** | -0.304*** |
| High education | -0.131*** | -0.653*** | -0.376*** |
| Non-ethnic Dutch | -0.176*** | 0.307** | 0.002 |
| Age (centered) | 0.011*** | 0.009* | 0.019*** |
| $R^2$ | 0.062[a] | 0.290[b] | 0.324[a] |
| N | 3652 | 3631 | 3631 |

***$p$<0.001; **$p$<0.01; *$p$<0.05

[a] Adjusted $R^2$

[b] Nagelkerke $R^2$

### 2.7.3 *Recent labor market situation*

Table 2.4 shows descriptive statistics on several indicators for the most recent labor market situation before imprisonment. The percentage of employed individuals is much lower among prisoners: 51.1 percent of the first-time prisoners and 33.5 percent of the prison-recidivists had a job versus 87.5 percent of the general population. This difference is also reflected in the percentages of benefit recipients. Many prison-recidivists received social benefits (44.7%), whereas one-fourth of the first-time prisoners (27.6%) and only 15.7 percent of the general population reported to receive social benefits.

For those who reported to be employed, Table 2.4 also presents information on type of employment. The high percentages of self-employment among prisoners are remarkable: 30.0 percent of the first-time prisoners and 40.1 percent of the prison-recidivists reported to be self-employed, compared to only 8.0 percent of the general population. In addition, there are differences in occupational level between the groups. While we observe an even distribution among the general population, the majority of the prisoners are employed in a lower occupational level (e.g., production employee, cleaner) or medium occupational level (e.g., road mender, truck driver). In addition, we find that both prisoner groups earn a lower hourly wage than the general population. Half of the prison-recidivists earn a minimum hourly wage of €10.6 while half of the general population earn a minimum of €12.50 per hour. Furthermore, 34,1 percent of the prison-recidivists, 45.4 percent of the first-time prisoners and no less than 85.8 percent of the general population work in a permanent employment arrangement.

*Table 2.4 Most recent labor market situation*

| | General Population | | | First-time prisoners | | | Prison-recidivists | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | % | Mean/ Median | N | % | Mean/ Median | N | % | Mean/ Median | Sign. |
| *All:* | *2059* | | | *671* | | | *1036* | | | |
| Employed | | 87.5 | | | 51.1 | | | 33.5 | | abc |
| Unemployed | | 1.9 | | | 35.2 | | | 49.0 | | abc |
| Non-participant | | 10.6 | | | 13.7 | | | 17.5 | | abc |
| Receives benefits | | 15.7 | | | 27.6 | | | 44.7 | | abc |
| *Employed:* | *1801* | | | *343* | | | *347* | | | |
| Self-employed | | 8.0 | | | 30.0 | | | 40.1 | | abc |
| Occupational level | | | | | | | | | | |
| Elementary | | 4.2 | | | 6.4 | | | 8.4 | | ab |
| Lower | | 18.0 | | | 48.4 | | | 47.0 | | |
| Medium | | 34.4 | | | 24.8 | | | 25.6 | | |
| Higher | | 29.9 | | | 7.6 | | | 5.8 | | |
| Scientific | | 12.8 | | | 1.2 | | | 1.2 | | |
| Missing | | 0.6 | | | 11.7 | | | 12.1 | | |
| Hourly wage* | | | 13.4/12.5 | | | 11.6/9.7 | | | 12.6/10.6 | abc |
| *Employees:* | *1657* | | | *240* | | | *208* | | | |
| Work agreement | | | | | | | | | | abc |
| Temporary | | 4.6 | | | 14.2 | | | 9.6 | | |
| Other | | 1.4 | | | 18.8 | | | 38.9 | | |
| Prospect on permanent contract | | 8.1 | | | 21.7 | | | 17.3 | | |
| Permanent contract | | 85.8 | | | 45.4 | | | 34.1 | | |

* All scores above the 95 percentile were truncated.
[a] Sign. difference between general population and first-time prisoners (min. $p<0.05$)
[b] Sign. difference between general population and prison-recidivists ($p<0.001$)
[c] Sign. difference between first-time prisoners and prison-recidivists (min. $p<0.05$)

In Table 2.5 we study the recent labor market position in a series of regression analyses, where the dependent variables are employment (yes/no), hourly wage and working in a permanent contract (yes/no).[9] In order to examine whether career development affected the recent labor market position, we added the total duration of unemployment and the number of employers to these models.

Even after controlling for demographic differences and career development, the recent employment rate is highest among the general population. Beyond the disadvantage of being low educated and having longer spells of unemployment, prisoners thus face an additional reduction in the chance to be employed.

Table 2.5 also shows that prisoners are less likely to work in a permanent contract than the general population, and again, this likelihood is lowest for prison-recidivists (B=-2.095). Noteworthy is that the odds of working in a permanent contract are, besides age, especially determined by the indicators for work experience. Instable track records thus seem to lower chances for such a contract.

With respect to hourly wage, the multivariate approach shows a counterintuitive finding. In comparison with individuals from the general population with a similar educational level, ethnic background, age and work experience, prison-recidivists earn a significantly higher wage (B=0.092) than the general population workers. Outlier analyses (not shown) confirmed the difference in hourly wage. [10] Misreporting by the prisoners could offer an explanation for the higher average wage. Yet, the type of jobs that prisoners occupy might offer an explanation for their higher hourly wage. Although few prisoners stated that their last job included off-the-books employment, the answers to more general questions about informal employment (as displayed in Table 2.2) indicate that prisoners often do supplement their income by working "under the table". Moreover, many of them work in an occupation that is suitable for off-the-books employment (e.g., construction worker, painter). The high percentage of benefit recipients among the prisoner groups might offer another explanation. Perhaps these prisoners have a higher "reservation wage", meaning that they only accept employment offers for jobs with relatively high wages and otherwise rely on social benefits.

9 A logistic regression analysis is not suitable for comparing parameters between models (Mood, 2010). As such we are cautious in interpreting a change in B-parameters across logistics regression models as a decrease or increase in group differences.

10 We found low Cook's D values (maximum= 0.07), which indicates that none of the residuals potentially distort the outcome. Outlier analyses did reveal the presence of 13 extreme z-scores (z-score>3.29). However, exclusion of the extreme cases did not alter our conclusions.

*Table 2.5 Logistic and linear regression analyses on indicators for the recent labor market position*

| | Employed | Hourly wage | Permanent contract |
|---|---|---|---|
| | B | B | B |
| Intercept | 1.833*** | 2.407 | 2.385 |
| *Group* | | | |
| General population *(ref.)* | | | |
| First-time prisoners | -1.539*** | -0.064* | -1.826*** |
| Prison-recidivists | -1.544*** | 0.092** | -2.095*** |
| *Control variables* | | | |
| Low education *(ref.)* | | | |
| Medium education | 0.137 | 0.136*** | 0.314* |
| High education | 0.598*** | 0.406*** | 0.376* |
| Non-ethnic Dutch | -0.476*** | 0.066 | -0.011 |
| Age (centered) | -0.024*** | 0.013*** | 0.076*** |
| *Work experience* | | | |
| Duration of unemployment (LN) | -0.858*** | -0.059*** | -0.481*** |
| Number of employers (LN) | 0.001 | -0.067*** | -0.513*** |
| $R^2$ | 0.478[b] | 0.179[a] | 0.389[b] |
| N | 3620 | 2389 | 2017 |

***$p<0.001$; **$p<0.01$; *$p<0.05$

[a] Adjusted $R^2$

[b] Nagelkerke $R^2$

### 2.7.4 *Linking hypotheses to findings*

Our findings support the first two hypotheses: *Prisoners have a weaker employment history than the general population*, and: *Prison-recidivists have a weaker employment history than first-time prisoners.* Compared to the general population, prisoners entered the labor market with a lower educational level and in subsequent years they obtained spotty work records by working for more different employers and being unemployed for longer period(s) of time. These differences remained after accounting for differences in group composition: in spite of the overrepresentation of younger men (with shorter "exposure" times on the labor market) in the prison groups and due to their low educational level (and in lesser extent because of their ethnic background), prisoners have a highly unstable track record and a weak labor market position prior to prison entry. The analyses furthermore showed that there are larger differences in employment outcomes between prison-recidivists and the general population than between first-time prisoners and the general population. The findings only partly support the third hypothesis: *Differences in employment history between first-time prisoners, prison-recidivists and the general population reduce after taking account for sociodemographic differences in group composition.* While several group differences reduced after the inclusion of sociodemographic characteristics, others increased after controlling for age.

## 2.8 Discussion

By using a wide array of employment measurements that spanned the entire employment history, this study showed that prisoners' marginal position at the time of prison admission is a longstanding feature of their working lives. We used data from the Prison Project, a prospective, longitudinal and nationwide data collection among nearly 2,000 prisoners in the Netherlands. The magnitude of socioeconomic disadvantage that prisoners face was shown by comparing their employment histories to a representative sample of the general population.

We motivated the current study's focus on pre-prison labor market attachment by pointing out the rather singular focus of existing reentry research on post-prison labor market outcomes. A more longitudinal perspective seems preferable since incarceration is often merely the consequence of pre-existing barriers, including a weak labor market position. A second reason for focusing on the situation *before* prison admission is the importance of pre-prison labor market performance for assessing incarceration's effects. Third, information on pre-prison labor market attachment can be meaningful to policy makers that are entrusted with the reintegration of ex-prisoners, since labor market (re)integration can serve as a turning point for offenders (Sampson & Laub, 1993; Staff & Uggen, 2003; Uggen, 2000; Visher & Travis, 2003; Warr, 1998).

In line with previous work we found that the majority of prisoners were low educated. Their subsequent employment career can be characterized as highly unstable because of the high number of employers, the long spells of unemployment and the high frequency of dismissal and off-the-books employment. Roughly 40 percent of the prisoners were employed before imprisonment. This percentage is consistent with previous research from the Netherlands (Dirkzwager et al., 2009; More & Weijters, 2011). Prisoners who were employed before entering prison often worked in low-status jobs and in temporary employment arrangement. Some effect studies found that many *ex*-prisoners work in the so-called "secondary labor market" (Western, 2006). The present findings suggest that prisoners already hold these low-quality jobs prior to their imprisonment. This raises the question to what extent a prison spell can cause further employment penalties. Future research could examine this further by linking pre-prison work experiences to post-prison work experiences and zooming in on the type of employment that ex-prisoners find. Another notable finding was that many prisoners reported to be self-employed. This is in line with previous work from other fields showing that entrepreneurship is preferred when the feasible employee-type arrangements do not pay a sufficiently high wage (Clark & Drinkwater, 2000; Parker, 2004). Moreover, further examination of the data led us to believe that, in line with earlier work from Soothill (1974), many of these men in fact worked as independent contractors or owned very small businesses.

The comparison with the general population made abundantly clear that prisoners are underemployed during their entire pre-prison employ-

ment career. These findings correspond with previous research on lower socioeconomic classes in society (Gesthuizen, 2004; Wilson, 1987). Prisoners, especially those with prior prison record(s), do not seem to succeed or do not strive to obtain a high quality job and stable work experience. Yet, we found that, among individuals with a similar educational level, ethnic background, age and work experience, prison-recidivists earn a significantly higher wage than the general population workers. The frequent combination of formal labor with off-the-books employment among prisoners might offer an explanation for this wage-difference. Differences in work preferences could offer another explanation. Perhaps these prisoners are more driven by short-term profits instead of jobs that offer security and promotion in the long term. Another potential explanation is misreporting among prisoners. Future research in which self-report data are compared with administrative earnings could offer more insight into the validity of this explanation. In any case, we are not the first to find higher earnings among offender population. Nagin and Waldfogel (1995) explain their finding that young convicted men earn higher wages by pointing out that they are more often employed in "spot market" jobs instead of "career" jobs. The first type of job pays relatively well but does not offer job stability (e.g., seasonal jobs). Also, this type of work has a flat wage line, whereas "career" jobs require more effort and training, have a lower starting wage but a steeper age-wage profile. Third, the higher hourly wage of prisoners can also be related to the supply of welfare benefits in the Netherlands. This alternative source of income might have led to higher reservation wages among Dutch citizens in general and among prisoners in specific. Further research is warranted to examine the validity of these explanatory mechanisms.

Despite the insights delivered in this study, some limitations should also be addressed. The first limitation concerns the data. We used rich datasets, but a downside of survey data is that social desirability and memory loss can potentially bias responses. Yet, in view of the magnitude of differences between first-time prisoners, prison-recidivists and the general population in labor market performance, we consider it unlikely that a different measurement strategy would lead to other conclusions. Moreover, administrative data from unemployment insurance systems, have shown to underestimate the economic activity of young men with prior arrest records (Kornfeld & Bloom, 1999). An important direction for future research is to study the labor market participation of (ex)prisoners by combining administrative data with survey data.

Second, caution should be exercised when generalizing the findings from this study, particularly the level of differences between prisoners and the general population, to a larger sample of prisoners and to other Western countries. We used data from the Netherlands, an interesting case study with a relatively mild penal climate, restricted access to criminal history records and a generous social welfare regime. It is therefore a matter of speculation whether we would find similar results using data of other countries. However, especially countries in Northern Europe resemble the Netherlands in

their policies and practices, and this could mean that our findings might apply to these countries. Perhaps, countries with less generous welfare systems find higher levels of labor market attachment among prisoners because employment is more necessary in those countries. Another possibility is that countries with open access to criminal history information might find even larger differences in labor market attachment between prisoners and the general population as convicted felons will encounter more problems finding employment (Pager, 2003). We encourage scholars to conduct comparative research to examine to what extent our results are country-specific.

To close, our findings demonstrate that prisoners face a severe human capital deficit, even before imprisonment. This lack of human capital will hinder them to find employment after release from prison. In fact, their poor labor market attachment might be more influential with respect to post-prison labor market performances than the prison experience in itself. As such our findings suggest that future reentry research on the (additional) negative effect of imprisonment on post-prison circumstances should extend their focus towards a more elaborative study of pre-prison circumstances. We view the study of and investment in general preventative measures that stimulate a higher level of education, the attainment of jobs skills and work experience among high-risk groups as an essential avenue for future research and policy makers.

# 3 The effect of labor market absence on finding employment: A comparison between ex-prisoners and unemployed future prisoners■


## Abstract

A period of labor market absence reduces one's chances of getting a job. The labor market position of both imprisoned and unemployed individuals tends to worsen after their time out from the labor market. This study considers whether imprisonment has "scarring" effects on job acquisition over and above unemployment. Using a unique quasi-experimental design with a high-risk sample, we conduct event history analyses in order to estimate the time to employment for a group of ex-prisoners ($n$ = 1,159) and a group of unemployed future prisoners ($n$ = 271). The results show that ex-prisoners find employment more quickly and more often than unemployed future prisoners. Although future research is warranted, these findings align theoretical notions in which a prison spell can lead to skill accumulation and deter offenders from criminal involvement.



Keywords: imprisonment, quasi-experimental design, time to employment, unemployment.


■ An earlier version was published in Dutch as: Ramakers, A.A.T., Van Wilsem, J.A., Fleischmann, M., Apel, R., Goudriaan, H. & Beijersbergen, K. (2011). Het effect van arbeidsmarkt- afwezigheid op baankansen. Een vergelijking van baankansen tussen ex-gedetineerden en werkloze toekomstig gedetineerden. *Tijdschrift voor Criminologie*, 53, 140-162.

An earlier version was published as: Ramakers, A.A.T., Van Wilsem, J.A., & Apel, R. (2012). The effect of labour market absence on finding employment. A comparison between ex-prisoners and unemployed future prisoners. *European Journal of Criminology*, 9, 442-461.

## 3.1 Introduction

Labor market reintegration for ex-prisoners is a social and public policy challenge (Bushway et al., 2007a). Previous studies have shown that ex-prisoners' employment chances are considerably diminished because of their imprisonment (Apel & Sweeten, 2010; Buikhuisen & Dijksterhuis, 1971; Kling, 2006; Pager, 2003; Waldfogel, 1994; Western & Pettit, 2000), as is their earnings potential (Holzer, 2007; Waldfogel, 1994; Western, 2002). The importance of offender reintegration stems from the fact that finding and holding down a job is an important feature of the reentry process (Farrington et al., 1986; Sampson & Laub, 1993; Staff & Uggen, 2003; Visher & Travis, 2003).

Unfortunately, it is problematic to ascertain the causal effect of imprisonment on employment. First, it is unclear to what extent the relatively worsened labor market prospects of ex-prisoners are an artefact of their proneness to experience labor market difficulty even in the absence of prison. Prisoners tend to be drawn from marginalized segments of the population with diminished prospects in the labor market. Yet existing research is plagued by the use of comparison samples that are not truly at risk of imprisonment, giving rise to a pernicious selection problem that empirical analysts must confront as rigorously as possible. Second, to the extent that there is indeed a causal effect of imprisonment, the mechanisms that underlie the effect are poorly understood. For instance, previous studies have not clarified whether it is imprisonment per se or labor market absence that accounts for ex-prisoners' worsened labor market prospects.

Descriptive studies that compare the labor market outcomes of prisoners before and after imprisonment are unable to resolve these questions. Although these studies can measure change in employment chances, it remains unclear whether this change can be attributed to the prison spell. Other studies compare the employment chances of ex-prisoners with those of other disadvantaged groups (Graffam et al., 2008; Holzer, 1996; Holzer et al., 2004) or with samples of non-imprisoned subjects (Bushway, 1998; Freeman, 1992; Waldfogel, 1994; Western, 2002). Comparability between ex-prisoners and these other groups is often in doubt, however. Ex-prisoners as a group possess, arguably more than other disadvantaged groups, characteristics that severely limit their employment chances. When the comparability of groups is not warranted, we can expect to find a negative effect of imprisonment whereas in fact this effect is owing to other differences between the groups (such as criminal propensity). Some recent studies in which the comparability of groups was better warranted (comparisons of groups with different confinement lengths) did not find a negative effect but instead found that imprisonment can increase employment chances in the short term (Kling, 2006; LaLonde & Cho, 2008; Pettit & Lyons, 2007; Sabol, 2007). However, these studies are unable to clarify whether this effect is the result of imprisonment (the prison experience) or of labor market absence (a time out).

In this study we have advanced previous research in several ways. First, we employed a quasi-experimental design with comparable groups. Both groups will experience a prison spell either at the beginning or the end of our two-year observation window. Both groups are also shown to have relatively poor work prospects. The research design is unique for estimating the effect of imprisonment and is inspired by Grogger's (1995) study of the impact of arrest on wages. We estimated the time to employment for a group of 1,159 persons who entered prison in the first half of 2005 and a group of 271 future prisoners who have a comparable criminal history, were unemployed for some time during the first half of 2005 and entered prison in the second half of 2006. Second, we have gained insight into the effect of two kinds of labor market absence by contrasting the employment chances of a group of ex-prisoners with a group of unemployed future prisoners. Third, we used a large-scale dataset in which information from several administrative sources has been linked. We learned the timing of their prison spell in 2005/6 from data maintained by the Judicial Institutions Department in the Netherlands. For the years 2004–2006, we obtained monthly information on the offenders' socioeconomic circumstances. In addition, information on background characteristics was available. These data come from the Social Statistics Files of Statistics Netherlands.[1] Fourth, as this field of research is dominated by U.S. studies, we contribute to the literature by bringing data on male prisoners from the Netherlands.

All in all, the research design and data offer a unique opportunity for contrasting two types of labor market absence on employment: To what extent do two kinds of labor market absence – imprisonment and unemployment – affect the time to employment?

## 3.2 Theoretical perspectives

The expectation that a period of labor market absence worsens one's economic prospects is common to labor economists and sociologists alike (Ackum, 1991; Gregg & Tominey, 2005). However, labor market chances can differ between groups of non-participants. In this study we concentrated on a group of ex-prisoners and a group of unemployed future prisoners to investigate whether two types of labor market absence have a different effect on employment chances. We used insights from deterrence theory, human capital theory and signaling theory.

1 We thank Statistics Netherlands, especially Heike Goudriaan, and the Judicial Information Service, especially Paul Linckens, for providing data from the Social Statistics Files and from the penitentiaries (Tenuitvoerlegging vrijheidsbenemende straffen en maatregelen in penitentiaire inrichtingen, TULP). We refer to Goudriaan and Beijersbergen (2010) for information about the combining of these files.

### 3.2.1 *Deterrence theory*

According to deterrence theory, punishment reduces criminal behavior. Both the threat of punishment, known as general deterrence, and the personal experience of punishment, known as specific deterrence, are expected to discourage potential and actual criminals (Beccaria, [1764] 1995). The latter kind of deterrence is of interest to this study. Punishment is expected to deter criminals from future criminal behavior through an enhanced perception of the risk of getting caught and the severity of punishment. Imprisonment is the most severe punishment in the Netherlands and is therefore expected to decrease criminal behavior and is, simultaneously, expected to increase lawful behavior. Employment is a main component of lawful behavior because it enables individuals to support themselves financially in a legal manner. It should be noted that, when the punishment experience is not as severe as expected, it might have the opposite effect and increase criminal activity.

### 3.2.2 *Human capital theory*

Employers will recruit the best person for the job. According to theories of human capital, they base this decision on applicants' general and specific forms of human capital (Becker, 1964). General human capital is useful to all employers (e.g., educational attainment), whereas specific human capital refers to work experience that is useful only to a single employer or industry (such as on-the-job training). Unemployment restricts the accumulation of human capital and can even lead to the erosion of skills as they go unutilized. A prison spell can have a variety of effects on the educational and occupational skills of offenders. The forced time out of the labor market can translate into an erosion of skills as well. In addition, a prison sentence disrupts work and educational training. Ties to legitimate employers are likely to be severed by a prison spell. Also, prisoners can learn new criminal skills through their interaction with other prisoners (McCarthy, Hagan, & Martin, 2002). The accumulation of such 'criminal capital' can have a negative effect on a prisoner's legal labor market position and aspirations after release from prison.

On the other hand, more so than "regular" unemployed individuals, prisoners may learn new skills that benefit them in the labor market. First, some acquire training in job skills, complete educational courses while in prison, or take part in reentry programs after release. Second, prisoners might increase their human capital through mandatory prison labor. This participation can lead to new job skills and social skills that can come in handy after their release.

### 3.2.3 *Signaling theory*

According to signaling theory, employers differentiate between signals (such as educational training and work experience) and indices (e.g., sex, race)

(Spence, 1973). Employers use applicants' information by translating it into positive and negative signals. Work experience can be seen as a signal of general work competence. It indicates that an individual has certain characteristics, such as discipline, work motivation and social skills, that are relevant for job performance. Even a short period of unemployment can be interpreted as a negative signal. Hence, employers might associate a criminal conviction or prison record with inferior personal characteristics and a generally low work competency. Indeed, previous research has shown that a history of imprisonment can lead to rejection in the hiring process (Pager, 2003).

Both unemployment and imprisonment are assumed to evoke negative signals in the labor market, and consequently to decrease employment chances. However, it is plausible that imprisonment evokes a more influential negative signal. In line with this, Holzer (1996) and Holzer et al. (2004) showed that employers prefer hiring welfare recipients or applicants with little work experience over ex-prisoners.

### *3.2.4 Expectations*

The foregoing theories are ambiguous with respect to the employment chances of ex-prisoners compared with unemployed future prisoners. On the one hand, deterrence and guidance during and after imprisonment are expected to increase the employment chances of ex-prisoners. On the other hand, the accumulation of criminal capital and negative signaling will lead to better employment chances within the unemployed group. It is outside the scope of this study to test the mechanisms that underlie the effect of labor market absence on employment chances. However, in investigating whether imprisonment affects employment chances to a different extent than "regular" unemployment, these theoretical explanations provide a broader context for the interpretation of findings.

## 3.3 Previous research

A number of summary observations can be made from the body of research on the effect of imprisonment on labor market position. First, almost all studies are conducted in the United States, which constitutes a unique social context for prisoner reentry that might not generalize to other nationalities. For instance, U.S. studies include samples of offenders who have served comparatively long sentences in state or federal prisons (a notable exception is Apel & Sweeten, 2010). In the Netherlands, the prison rate increased fourfold between 1977 and 2004 (Tonry & Bijleveld, 2007). Nevertheless, the criminal justice system in the Netherlands is far less punitive than that in the United States. In 2010, the prison rate was 94 per 100,000 in the Netherlands against 760 in the United States (International Centre for Prison Studies, 2010). Moreover, prison sentences are shorter and life circumstances in prison are better in the Netherlands. For instance, most prisoners have a private

cell. A case study on a different prison population and labor market will give more insight into the generalizability of U.S. findings. Second, studies do not uniformly find support for a corrosive effect of imprisonment on employment and earnings that withstands control for a variety of sources of confounding (Apel & Sweeten, 2010; Kling, 2006; Monk-Turner, 1989; Raphael, 2007). Third, an unexpected finding in administrative studies is that employment or earnings often improve in the short term, for the first several quarters following release from confinement (Kling, 2006; LaLonde & Cho, 2008; Pettit & Lyons, 2007; Sabol, 2007). Despite these qualifications, however, most studies do indeed find that imprisonment has a corrosive impact on an offender's employment prospects by reducing the probability of employment, increasing the duration of unemployment, eroding wages and earnings, and exacerbating turnover.

Research findings can be linked to the three mentioned theories in various ways. As regards deterrence theory, most empirical studies do not find that imprisonment reduces criminal behavior (Nagin et al., 2009). Likewise this indicates that imprisonment does not promote conventional behavior such as legal employment. On the other hand, the increased employment chances after release from prison, as found by some U.S. studies, may be the result of short-run deterrence.

With respect to the human capital hypothesis, imprisonment undeniably imposes a period of "time out" from the labor market, representing a permanent loss of work experience for the duration of the prison sentence. One possible indication of the corrosive effects of imprisonment on human capital is that offenders with longer prison sentences tend to have worse employment prospects than offenders with comparatively shorter sentences, other things equal (Sampson & Laub, 1993).

Previous studies also offer support for the contrasting hypothesis that imprisonment leads to an accumulation of skills. Reentry programs for ex-prisoners can have a positive effect on employment after release. However, the evaluation literature reports that most programs produce minimal effects (Bushway & Reuter, 2004). In order to increase the chances of successful entry into the labor market after release, employment-based programs should not only help with finding a job, but should also contain a component of training that improves the "employability" of ex-prisoners (see Apel, 2011).

The possibility that imprisonment imposes reputational losses on ex-prisoners, consistent with the signaling hypothesis, can be discerned from a study by Pager (2003). She conducted a study of matched audit pairs in Milwaukee (U.S.) and found that employers advertising entry-level job openings, were less than half as likely to call back applicants who reported a prison record. Interviews with employers have also consistently documented a reluctance to hire employees with a criminal record (Holzer, 1996; Holzer et al., 2004).

Ex-prisoners thus appear to experience discrimination during the hiring process. They also face a variety of statutory restrictions that categorically prohibit certain types of employment. In the Netherlands, every employer

may ask applicants for a certificate of conduct. In certain sectors this certificate is mandatory (education, the health service, cab driving, security and transportation). It is granted by the Secretary of Security and Justice if a criminal history is not related to the future work activities. In recent years the certificate has become mandatory in more sectors than before. The rules for granting a certificate have become stricter as well (Boone, 2011). However, in contrast to the United States, Dutch employers have few other possibilities to retrieve information about the criminal history of applicants. Furthermore, the Netherlands represents a welfare state in which every person is entitled to health care and benefits. As such, unemployed Dutch citizens might be less inclined than unemployed Americans to seek employment.

## 3.4 Data

### *3.4.1 Selection of research group*

We compared the time to employment for ex-prisoners and unemployed future prisoners. The prisoners enter prison at the beginning of the reference window and the unemployed enter prison at the end of this period. The groups were selected from the population of male prisoners who entered Dutch penitentiaries in the years 2005 or 2006 as registered in the TULP.[2] These data are linked to the socioeconomic database of Statistics Netherlands. Only those who were registered in the municipal administration during the years 2004–2006 were selected ($n$ = 39,739).[3] For these subjects, we know the socioeconomic category for almost every month. After this selection we divided the individuals into a focal group of ex-prisoners and a comparison group of unemployed future prisoners. Data from calendar year 2004 function to establish any differences between the groups in prior work experience and background characteristics. The first half of 2005 determined into which group a subject is classified. Subjects who entered prison during this period, and were released before September 2005, belong to the focal group. Subjects who were already unemployed or became unemployed in this period, which is indicated by the receipt of benefits for unemployment or welfare, and who entered prison in the second half of 2006 (and were released before March 2007) belong to the comparison group.

As a result of these selections we followed only those with a maximum confinement length of 8 months. For the focal group, the follow-up period starts the month after release (earliest month: February 2005, latest month: December 2006; maximum of 23 months). For the comparison group, the follow-up period starts the month after the first month of unemployment

2 TULP is the prison registration system. For more information on the TULP data, see Linckens and De Looff (2011).

3 As a result, illegal inhabitants are excluded from this study.

until (at latest) three months before the beginning of their prison spell (earliest start: March 2004, latest month possible: September 2006; maximum of 31 months). This last condition is based on the finding that the employment position is relatively worse in periods shortly before imprisonment.

In order to be selected into the focal or the comparison group, some additional conditions were applied. First, the length of confinement had to be at least 15 days. A shorter prison spell does not necessarily affect a labor market position, because such an absence does not need to be justified in the hiring process and because employees can dismiss it as having taken a holiday or being ill. Second, only those in the focal group who were indeed listed as unemployed for a minimum of one month during their prison sentence were selected. The reason for this selection is that we focus our analysis on *finding* employment. Prisoners who were able to keep their job during their prison spell did not have to look for employment after release. Third, we selected only those individuals who are in the *risk pool* for employment by selecting individuals who were employed for a minimum of one month in 2004. After having made these selections, the focal group consisted of 1,159 persons and the comparison group consisted of 271 persons.

### *3.4.2 Employment*

The dependent variable in this research is time to employment and covers the period January 2005 – December 2006. This measure is based on the socioeconomic category in the Social Statistics Database. It is a monthly variable consisting of the following categories: entrepreneur, employee, welfare benefits, disability benefits, unemployment benefits, other benefits, student and pension. A person is assigned to a particular category based on a comparison of the sources that contribute to monthly income. The highest source of income determines the category. Those categorized as an entrepreneur or employee are considered to be employed; all other categories are considered to be unemployed. For about 11 percent of the subjects, data on socioeconomic category are missing for one or more months. We considered these months to be unemployed months. Because the Social Statistics Database data are very wide-ranging in using multiple sources, any income from (legal) employment would have been registered.

### *3.4.3 Prior work experience*

Socioeconomic data from calendar year 2004 serve as a measure of prior work experience, which comprises two variables: the number of employed months and the number of unemployed months. These variables consist of the number of months a person is registered as an employee or entrepreneur, and the number of months a person is registered as unemployed. Here, the number of unemployed months is based on the number of months

a person received benefits (unemployment or welfare).[4] The values on this variable range from 1 to 12 because we selected only those subjects who worked for at least one month in 2004. The number of unemployed months varies from 0 to 11.

### *3.4.4 Instant offense characteristics*

We also had information on the type of crime for which a person was imprisoned in 2005 or 2006, as well as the length of this confinement. Length of confinement represents the actual number of days a person has spent in prison. We distinguished between eight types of crime: violent crimes, property crimes, public order crimes, penal crimes, traffic crimes, drug crimes, other crimes, and unknown crimes.

### *3.4.5 Criminal history*

We controlled for a number of factors known to be related to both imprisonment and employment. We controlled for the number of prior imprisonments in the period 1996–2004. This means that we do not know the total number of prior imprisonments for all subjects. However, for many men this period covers their whole adult life (the average age is 32). Only for 1.5 percent of the sample we did not have any information on the number of previous imprisonments. We added the category "missing" in order to be able to include these individuals in the analyses. In addition, we controlled for the fact that a person was suspected of a crime in 2004 ([Herkenningsdienstsysteem] HKS). If a person is suspected of a crime in a particular year, the HKS documents how many times before he has been a suspect. This means that we have a valid score only for those who were suspected of a crime in 2004 (49.8 percent). Again, a missing data category was created for those without a valid score.

### *3.4.6 Background characteristics*

The Social Statistics Database consists of information on several background characteristics, for instance, date of birth, country of birth, religious denomination, marital status and the number of children under 17 years of age living in the household. Because there might be more employment opportunities in bigger cities than in smaller towns, we included an ordinal six-category measure of urbanization in the analyses. These characteristics are included as static control variables (measured in 2004).

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4 The number of unemployed months does not equal 12 minus the number of employed months in 2004 because there are many more socioeconomic categories (see the construction of 'employment').

### 3.4.7 *Comparability of research groups*

Our quasi-experimental research design is more suitable than many previous studies for identifying the effect of imprisonment on finding employment. Nevertheless, the comparability of the research groups is not flawless. Below, we will pay more attention to this by discussing the descriptive information in Table 3.1. Some of the characteristics have a skewed distribution or are not interval variables. In these cases, instead of a Chi-square test, we used a Mann-Whitney test to estimate if differences between groups were significant (the missing categories were excluded in these tests).

*Table 3.1 Descriptive information on focal group of ex-prisoners (n = 1,159) and comparison group of unemployed future prisoners (n = 271)*

| | Ex-prisoners | | Unemployed future prisoners | | |
|---|---|---|---|---|---|
| | Mean / % | SD | Mean / % | SD | Sign. |
| *Index offense* | | | | | |
| Length of imprisonment (days) | 70.4 | 48.7 | 62.4 | 38.0 | |
| Type of crime | | | | | *** |
| Violent crime | 28.2 | | 39.5 | | |
| Property crime | 24.8 | | 17.3 | | |
| Public order | 7.2 | | 5.5 | | |
| Penal crimes | 7.2 | | 5.9 | | |
| Traffic | 4.8 | | 2.6 | | |
| Opium act | 8.4 | | 15.9 | | |
| Other | 2.9 | | 2.6 | | |
| Unknown | 7.7 | | 9.6 | | |
| Missing | 8.8 | | 1.1 | | |
| *Background characteristics* | | | | | |
| Employed months (2004) | 6.1 | 4.0 | 6.0 | 3.9 | |
| Unemployed months (2004) | 1.9 | 3.2 | 3.4 | 3.6 | *** |
| Age | 30.5 | 9.4 | 32.6 | 9.6 | |
| Suspect | | | | | *** |
| 1 time | 2.8 | | 4.4 | | |
| 2-3 times | 6.2 | | 9.6 | | |
| 4-10 times | 22.0 | | 14.8 | | |
| >10 times | 20.8 | | 12.2 | | |
| Missing | 48.1 | | 59.0 | | |
| Prior imprisonment | | | | | *** |
| None | 51.0 | | 64.6 | | |
| 1 time | 21.7 | | 17.7 | | |
| 2-3 times | 16.0 | | 8.9 | | |
| 4-10 times | 9.0 | | 7.0 | | |
| >10 times | 0.9 | | - | | |
| Missing | 1.4 | | 1.8 | | |

*Table 3.1 continued*

| | Ex-prisoners | | Unemployed future prisoners | | |
|---|---|---|---|---|---|
| | Mean / % | SD | Mean / % | SD | Sign. |
| Country of birth | | | | | |
| Netherlands | 43.7 | | 48.7 | | |
| Morocco | 15.5 | | 10.3 | | |
| Turkey | 9.1 | | 8.9 | | |
| Surinam | 9.0 | | 7.4 | | |
| Antilles and Aruba | 6.9 | | 8.1 | | |
| Other non-western countries | 7.7 | | 9.6 | | |
| Other western countries | 8.1 | | 7.0 | | |
| Marital status | | | | | * |
| Single | 67.5 | | 61.3 | | |
| Partner | 11.7 | | 13.7 | | |
| Married | 7.9 | | 13.3 | | |
| Else | 10.1 | | 9.2 | | |
| Missing | 2.8 | | 2.6 | | |
| Denomination | | | | | |
| None | 34.5 | | 43.2 | | |
| Protestant | 7.6 | | 10.3 | | |
| Catholic | 13.2 | | 14.0 | | |
| Muslim | 22.9 | | 21.8 | | |
| Else | 2.3 | | 2.2 | | |
| Missing | 19.5 | | 8.5 | | |
| Urbanization | | | | | |
| None | 4.6 | | 4.8 | | |
| Some | 11.4 | | 12.9 | | |
| Average | 16.9 | | 18.5 | | |
| Strong | 33.7 | | 28.4 | | |
| Very strong | 33.2 | | 35.4 | | |
| Missing | 0.2 | | - | | |
| Children <17 | | | | | * |
| No children<17 | 50.0 | | 57.6 | | |
| Children<17 | 47.3 | | 39.9 | | |
| Missing | 2.8 | | 2.6 | | |

***$p$=<0,001; **$p$=<0,01; *$p$=<0,05

Table 3.1 shows the characteristics of both groups. The duration of the "current" prison spell, mean age, number of employed months in 2004, country of birth, denomination and urbanization in the city of residence did not differ between the groups. Owing to the research design, the criminal history for both groups is fairly comparable. Nonetheless, we found some significant differences. The focal group of ex-prisoners has been suspected of a crime more often and has also been to prison more often than the compari-

son group of unemployed future prisoners. In addition, although a violent crime is the most common crime in both groups, this percentage is significantly higher among the unemployed future prisoners. Other differences are that ex-prisoners were more often single and more often lived with children under 17 years of age. Finally, men in the comparison group had been unemployed for more months in 2004 than the focal group. We controled for these group differences in the analyses.

The fact that the comparison group will become imprisoned in the future may lead to a difference in job search and employment chances between the groups. Presumably, future prisoners will be less motivated to find employment if they know that they will go to prison in the near future. For many future prisoners this will not play a role because their prison spell began in custody awaiting trial (53.5 percent). Such prison spells follow directly from an arrest and are therefore unexpected. Another reason the search for employment might be different for future prisoners can be that, instead of searching for a job, they are engaged in the criminal activities that will lead to their imprisonment. We reduced this possible bias by excluding the three months prior to the prison spell from the follow-up period of future prisoners. Moreover, sensitivity analyses in which a different comparison group was used, led to similar findings.[5]

## 3.5 Methods

We performed the Kaplan–Meier technique to study the time to employment for both groups. An advantage of this technique is that it accounts for unbalanced data, differences in observation length between subjects, and subjects

5 The fact that the comparison group will become imprisoned in the future may lead to a difference in job search and employment chances between the comparison and the focal group. In order to get an insight into whether this incomparability might have biased the results, we constructed an additional comparison group of unemployed short-term prisoners. They have a comparable criminal history. The added value of including this additional comparison group is that a shorter prison spell is expected to have a smaller effect on both the search for a job and the chances of finding a job (before and after imprisonment). First, we can study whether those with a shorter prison sentence will be less affected by their sentence in finding employment than future prisoners, who will probably be more engaged in criminal behavior in the run-up to their prison spell. Second, we can study whether this comparison group is less affected by their prison spell in finding employment than the focal group of prisoners with longer sentences. The maximum confinement length of the comparison group of unemployed short-term prisoners is seven successive days in 2005–2006. They become unemployed in the first six months of 2005 and only those individuals who were employed for at least one month in 2004 were selected. The comparison group of unemployed short-time prisoners consists of 228 individuals. When we included this additional comparison group in the analysis we found that this group takes a position between the unemployed future prisoners and the ex-prisoners. They seem to find a job sooner than the unemployed future prisoners but less quickly than the ex-prisoners. This result indicates that ex-prisoners make the transition to the labor market more rapidly than comparable groups of individuals who experience a 'regular' spell of unemployment.

who do not find employment during the research window (censored cases). The Kaplan–Meier analysis compares survival curves of groups over a period of time. Although we can use this technique to compare the survival curves of ex-prisoners and unemployed future prisoners, it does not allow the inclusion of other covariates.

We therefore performed a logistic regression in order to control for other effects. According to Allison (1982), logistic regression is an appropriate technique for studying the effects of multiple variables on the occurrence of an event when data of discrete time (months) is used. Instead of estimating the time to employment, the logistic model estimates the chance of finding employment within the follow-up period. This model is based on a person-period data file in which each person is represented by multiple lines depending on the number of follow-up months. We controlled for time by including month dummies in the model.[6] Because this technique treats multiple time units for each individual as though they were independent, standard errors might be somewhat deflated, which as a result may lead more easily to significant results. However, we do not expect that another technique would lead to a different conclusion with respect to the group difference in employment chances (see also Allison, 1982). To illustrate, a Cox regression model on time to employment led to similar results. Because the proportional hazard assumption of the Cox regression was violated with respect to group membership (the variable of interest), we chose to present the results of the logistic regression model.

As mentioned above, the discrete time periods in this study were months. For ex-prisoners, the period of observation starts in the month after release from prison and ends not later than December 2006. The follow-up period of the unemployed future prisoners starts one month after the month they became unemployed and ends not later than three months before their prison spell. Naturally, the observation period also ends when employment is found.

## 3.6 Results

### *3.6.1 Kaplan-Meier technique*

The survival curves in Figure 3.1 show that ex-prisoners find employment sooner than unemployed future prisoners. The survival rate for a specific month represents the probability that the event (finding employment) has not occurred by that time. Consequently, the figure shows for both groups the probability per month that an average group member will stay unemployed

6 The maximum follow-up period is around 24–31 months for some unemployed future prisoners (those who were already unemployed in March 2004 or later that year). Because of low cell frequencies, inclusion of these months in the binary regression led to inflated standard errors. For that reason the logistic regression uses a maximum follow-up period of 23 months.

after that month. A log-rank test showed that the two survival curves of employment are significantly different from each other ($\chi^2 = 21.930$, df = 1, $p < .001$).

Immediately after the period of labor market absence, we observe a pronounced difference between groups. A substantial percentage of the ex-prisoners (20 percent) finds employment right after release from prison. Based on the estimated means of the Kaplan-Meier analysis, the average ex-prisoner finds employment after 12 months, whereas the average unemployed future prisoner finds employment after 18.3 months. For unemployed future prisoners it takes more time to return to the labor market.

In addition to showing that ex-prisoners find employment sooner, Figure 3.1 also shows that they have an overall higher chance of finding employment than unemployed future prisoners. A simple comparison of employment ratios showed that approximately 80 percent of the ex-prisoners and 55 percent of the unemployed future prisoners find employment (for at least one month) within the follow-up period. Below, we discuss whether this difference in overall employment rate remains after controlling for other effects.

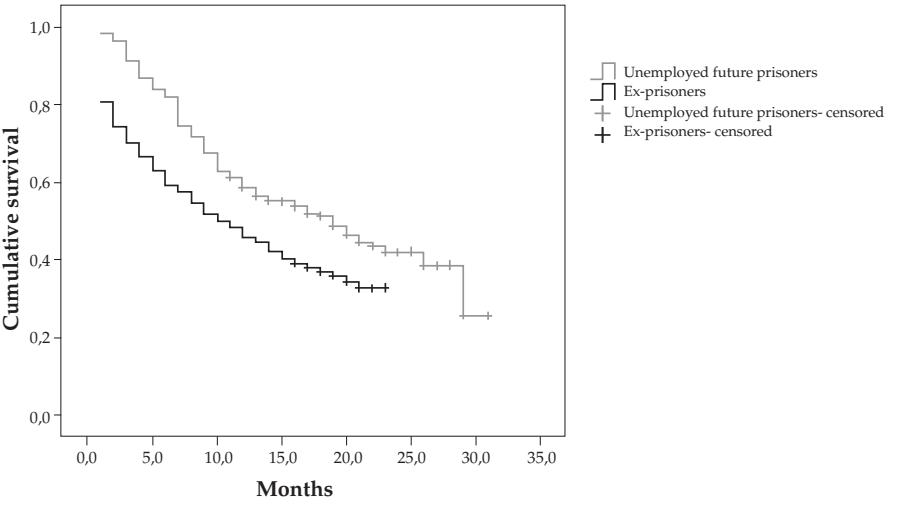


*Figure 3.1 Kaplan Meier survival functions of time to employment after labor market absence*

### *3.6.2 Logistic regression*

Table 3.2 shows the unstandardized regression coefficients and odds ratios of the logistic regression analyses on finding employment. Model 1 includes only a dummy for group membership; ex-prisoners have a higher chance of finding a job than unemployed prisoners (OR = 1.617). More precisely, the chance of finding employment versus the chance of not finding employment is 1.617 times higher for ex-prisoners than for unemployed future prisoners.

*Table 3.2 Logistic regression model on finding employment (Ex-prisoners: n persons = 1,159, n lines = 12,290; Unemployed future prisoners: n persons = 271, n lines = 3,649)*

| | Model 1 | | | | Model 2 | | | |
|---|---|---|---|---|---|---|---|---|
| | B | SE | Sign. | OR | B | SE | Sign. | OR |
| Constant | -3.221 | 0.09 | *** | .040 | -1.742 | 0.295 | *** | 0.175 |
| Ex-prisoners | 0.481 | 0.09 | *** | 1.617 | 0.451 | 0.100 | *** | 1.570 |
| Employed months (2004) | | | | | 0.055 | 0.011 | *** | 1.056 |
| Unemployed months (2004) | | | | | 0.004 | 0.014 | | 1.004 |
| Age (18=0) | | | | | -0.028 | 0.005 | *** | 0.972 |
| Suspect | | | | | | | | |
| 1 time *(ref.)* | | | | | | | | |
| 2-3 times | | | | | -0.155 | 0.237 | | 0.856 |
| 4-10 times | | | | | -0.188 | 0.210 | | 0.828 |
| >10 times | | | | | -0.638 | 0.224 | ** | 0.528 |
| Missing | | | | | -0.247 | 0.201 | | 0.781 |
| Prior imprisonment | | | | | | | | |
| None *(ref.)* | | | | | | | | |
| 1 time | | | | | 0.116 | 0.093 | | 1.123 |
| 2-3 times | | | | | 0.062 | 0.116 | | 1.064 |
| 4-10 times | | | | | 0.203 | 0.149 | | 1.225 |
| >10 times | | | | | 0.507 | 0.411 | | 1.660 |
| Missing | | | | | 0.210 | 0.290 | | 1.234 |
| Country of birth | | | | | | | | |
| Netherlands *(ref.)* | | | | | | | | |
| Morocco | | | | | 0.010 | 0.165 | | 1.010 |
| Turkey | | | | | -0.098 | 0.179 | | 0.906 |
| Surinam | | | | | -0.162 | 0.148 | | 0.851 |
| Antilles and Aruba | | | | | 0.114 | 0.149 | | 1.121 |
| Other non-western countries | | | | | -0.328 | 0.153 | * | 0.720 |
| Other western countries | | | | | 0.099 | 0.135 | | 1.104 |
| Marital status | | | | | | | | |
| Single *(ref.)* | | | | | | | | |
| Partner | | | | | 0.037 | 0.114 | | 1.037 |
| Married | | | | | -0.092 | 0.144 | | 0.912 |
| Else | | | | | -0.105 | 0.125 | | 0.900 |
| Missing | | | | | 0.512 | 0.213 | * | 1.668 |
| Denomination | | | | | | | | |
| None *(ref.)* | | | | | | | | |
| Protestant | | | | | 0.045 | 0.136 | | 1.046 |
| Catholic | | | | | 0.080 | 0.117 | | 1.083 |
| Muslim | | | | | -0.213 | 0.157 | | 0.808 |
| Else | | | | | -0.129 | 0.260 | | 0.879 |
| Missing | | | | | 0.007 | 0.107 | | 1.007 |

*Table 3.2 continued*

| | Model 1 | | | | Model 2 | | | |
|---|---|---|---|---|---|---|---|---|
| | B | SE | Sign. | OR | B | SE | Sign. | OR |
| Urbanization | | | | | | | | |
| None *(ref.)* | | | | | | | | |
| Some | | | | | 0.192 | 0.191 | | 1.211 |
| Average | | | | | 0.059 | 0.186 | | 1.061 |
| Strong | | | | | -0.091 | 0.178 | | 0.913 |
| Very strong | | | | | -0.192 | 0.184 | | 0.825 |
| Missing | | | | | -0.768 | 1.082 | | 0.464 |
| Children <17 | | | | | | | | |
| No children<17 *(ref.)* | | | | | | | | |
| Children<17 | | | | | 0.034 | 0.079 | | 1.034 |
| Months | | | | | | | | |
| Month 1 *(ref.)* | | | | | | | | |
| Month 2 | | | | | -0.948 | 0.138 | *** | 0.388 |
| Month 3 | | | | | -1.152 | 0.151 | *** | 0.316 |
| Month 4 | | | | | -1.189 | 0.157 | *** | 0.304 |
| Month 5 | | | | | -1.263 | 0.166 | *** | 0.283 |
| Month 6 | | | | | -1.218 | 0.167 | *** | 0.296 |
| Month 7 | | | | | -1.319 | 0.178 | *** | 0.267 |
| Month 8 | | | | | -1.186 | 0.174 | *** | 0.306 |
| Month 9 | | | | | -1.151 | 0.175 | *** | 0.316 |
| Month 10 | | | | | -1.211 | 0.185 | *** | 0.298 |
| Month 11 | | | | | -1.699 | 0.229 | *** | 0.183 |
| Month 12 | | | | | -1.171 | 0.189 | *** | 0.310 |
| Month 13 | | | | | -1.543 | 0.225 | *** | 0.214 |
| Month 14 | | | | | -1.324 | 0.211 | *** | 0.266 |
| Month 15 | | | | | -1.480 | 0.230 | *** | 0.228 |
| Month 16 | | | | | -1.634 | 0.251 | *** | 0.195 |
| Month 17 | | | | | -1.560 | 0.258 | *** | 0.210 |
| Month 18 | | | | | -1.878 | 0.329 | *** | 0.153 |
| Month 19 | | | | | -1.559 | 0.331 | *** | 0.210 |
| Month 20 | | | | | -1.107 | 0.320 | *** | 0.331 |
| Month 21 | | | | | -1.277 | 0.426 | ** | 0.279 |
| Month 22 | | | | | -2.434 | 1.011 | * | 0.088 |
| Month 23 | | | | | -1.302 | 1.024 | | 0.272 |
| Nagelkerke $R^2$ | 0.005 | | | | 0.078 | | | |

***$p$=<0,001; **$p$=<0,01; *$p$=<0,05

Logistic regression is not suitable for comparing estimated parameters and explained variances between models (Mood, 2010). We therefore cannot be certain about the extent to which the group difference in employment chanc-

es changes when we control for other variables in Model 2. This model can, however, tell us that the group difference still exists after controlling for covariates and month dummies (OR = 1.570). Model 2 shows as well that most of the individual characteristics do not influence the chance of finding employment. However, those with more work experience (OR = 1.056) and those who have a missing value on marital status (OR = 1.668) have a higher chance of employment. Older individuals (OR = 0.972^(age-18)) and those who were born in another non-Western country (OR = 0.720) as well as those who were suspected of a crime more than ten times (OR = 0.528) find employment relatively less often within the follow-up period. The month dummies show that the chance of finding employment is highest in the first month after labor market absence. In addition, these dummies seem to indicate that the chance of finding employment decreases in subsequent months.

In sum, even after controlling for other effects, ex-prisoners find employment more often than unemployed future prisoners. More so than regular unemployment, imprisonment seems to encourage the transition to the labor market. Several sensitivity analyses showed that this conclusion is robust.[7]

## 3.7 Conclusion

The goal of this study was to ascertain the effect of imprisonment versus unemployment on finding employment. We used a quasi-experimental design in which ex-prisoners were compared with unemployed future prisoners. This design improved the ability to make causal statements in comparison with previous studies in which ex-prisoners were compared with non-prisoners. The negative effect of imprisonment reported in these studies was at least partly a result of the fact that ex-prisoners have characteristics that led to a relatively worse labor market position even prior to their imprisonment. These studies are therefore likely to overestimate the negative effect of imprisonment. The quasi-experimental design used in this study reduces the influence of such unobserved differences significantly (see also Grogger, 1995). Our results were based on administrative information on more than 1,100 ex-prisoners and almost 300 unemployed future prisoners. We used monthly data on employment and imprisonment during a period of two years. In addition, we had information on various control variables that are often lacking in studies that use administrative data. As

7 Although we do not have complete information on criminal history (see data section) we repeated the analyses on – according to our available data – first-time prisoners. These analyses showed similar results. Sensitivity analyses showed that ex-prisoners who have committed a violent crime have more difficulties finding employment than ex-prisoners who committed a property offense or other type of crime. All three groups have a significantly higher chance of finding employment than unemployed future prisoners. See also note 22 for additional sensitivity analyses.

such, this study adds to a body of research that is dominated by U.S. scholars and has not been carried out in the Netherlands (Dirkzwager et al., 2009).

We found that ex-prisoners find a job more often and more quickly than unemployed future prisoners. After accounting for possible differences between the groups, the positive effect of imprisonment holds. Although this finding might seem unexpected and counterintuitive, it is in line with some recent U.S. studies. Studies based on administrative data find that employment chances are higher in the period shortly after release (Kling, 2006; LaLonde & Cho, 2008; Pettit & Lyons, 2007; Sabol, 2007). Moreover, one should keep in mind that we compared ex-prisoners with unemployed future prisoners. We could not find previous studies that compared these two groups. It should also be noted that, unlike previous effect studies, we included only those individuals who were employed for at least one month in the year prior to their imprisonment or unemployment. This means that, within a group of individuals with relatively poor labor market prospects, we selected those who were actually in the *risk pool* for employment. Nevertheless, the high percentage of employed ex-prisoners seems remarkable. It is possible that finding employment is more necessary for ex-prisoners than for unemployed future prisoners because the latter group is more likely to receive benefits. During imprisonment, all benefits are stopped (law on prisoners' social security rights) and it may take some time for benefits to become available after release.

The findings are in line with an hypothesis following from human capital theory. Prisoners can learn skills during their prison spell and by participating in reentry programs immediately after release. This kind of human capital is not available for the unemployed. Especially in recent years, the Dutch government increased the provision of aftercare. This could explain the relatively advantaged position of ex-prisoners. However, it should be noted that many programs are offered only to the more long-term prisoners, and the aftercare programs were relatively new or impending during our research window. One should therefore be cautious about ascribing the positive effect of imprisonment on employment chances to assistance in prison. Guidance after release from prison, for instance by a probation officer, might offer a more plausible explanation. In the Netherlands, a prison sentence is often combined with a conditional prison sentence and probation supervision. In addition, deterrence theory states that a prison spell can deter prisoners from criminal behavior. Our finding could therefore also reflect a deterrent effect. Another possible explanation is that ex-prisoners might have the opportunity to return to former employers (Visher et al., 2011). Unfortunately, our data do not allow us to study the validity of the proposed mechanisms. We view such explanatory research as an essential avenue for future research.

As a result of the quasi-experimental design, our estimation of the imprisonment effect is more meaningful than in many previous studies. Nevertheless, the design has limitations. First, the comparability of the

research groups is not perfect. The ex-prisoners and unemployed future prisoners are alike with respect to many characteristics, and we control for the variables in which they differ. However, they might also differ in other characteristics that are not easily measured (such as social background or self-control). Only an experimental research design in which individuals are randomly assigned to a prison and a comparison group can ensure that such characteristics do not bias the results. A second limitation is that our maximum follow-up period is only two years. A longer follow-up period would increase our insight into post-release employment patterns and enables us to improve the research design. Using a longer follow-up we would be able to account more rigorously for the fact that the comparison group will become imprisoned in the future (which may lead to a difference in job search and employment opportunities between the comparison and the focal group). A third limitation is that we only have information on registered employment and criminal behavior. Although we found that many ex-prisoners find registered and thus legal employment, previous studies have speculated that (ex-)prisoners often participate in employment off-the-books. Adding such data would give more insight into the labor market position of ex-prisoners. Nonetheless, an advantage of using registered data is that social desirability and memory loss cannot have obscured the findings.

To close, the finding that ex-prisoners find a job more often and sooner than unemployed future prisoners suggests that imprisonment, more so than regular unemployment, seems to encourage the transition to the labor market. The high recidivism rates after imprisonment do not seem to be in line with our finding. Like much research, this study thus raises new questions. Do ex-prisoners commit crimes while they are employed (perhaps at the workplace)? Do they return to former employers easily? Are ex-prisoners unable to hold on to a job? By answering these questions, future research will better understand ex-prisoners' pathways to employment and crime.

# 4 Imprisonment length and employment prospects■

Abstract

This study considers the relationship between imprisonment length and employment outcomes. The data come from a unique prospective, longitudinal study of Dutch pretrial detainees ($n$ = 702). All subjects thus experience prison confinement of varying lengths, although the durations are relatively short (mean = 3.8 months; median = 3.1 months). This contrasts with prior research that was limited to the study of American prison sentences spanning an average of 2 years. These data thus fill a gap in the empirical base concerning short-term confinement, which is the norm in the United States (e.g., jail incarceration) and other Western countries. Using a comprehensive array of pre-prison covariates, a propensity score methodology is used to examine the dose-response relationship between imprisonment length and a variety of employment outcomes. The results indicate that, among prison spells less than 6 months in duration, longer confinement is largely uncorrelated with employment. In contrast, among spells in excess of 6 months, longer imprisonment length seems to worsen employment prospects.

Keywords: imprisonment length, employment, propensity score methodology, the Netherlands.

■ A slightly different version is accepted for publication as: Ramakers, A.A.T., Apel, R., Nieuwbeerta, P., Dirkzwager, A., & Van Wilsem, J.A. (forthcoming). Imprisonment length and post-prison employment prospects in the Netherlands. *Criminology.* In production.

## 4.1 Introduction

In recent years, much scholarly attention has been focused on the social disabilities caused by mass imprisonment (Dumont, Brockmann, Dickman, Alexander, & Rich, 2012; Raphael, 2011; Wakefield & Uggen, 2010; Western, 2006). The alarming scale of incarceration has brought issues of prisoner reentry to the fore (Petersilia, 2003; Visher & Travis, 2003), as prisons experienced three full decades of uninterrupted growth. This prison growth persisted through the most pronounced crime decline of the modern era, and only recently has it begun to slow and even stabilize. Although the United States stands out for its unbridled enthusiasm toward the use of incarceration as a solution to the crime problem, it is hardly unique in its trend of growing punitiveness. Indeed, increasing punitiveness appears to be, with isolated regional exceptions (within the United States, as well), a more general feature of modern Western society, exhibiting cross-national differences that are largely in degree rather than in kind (see Tonry & Farrington, 2005, and the chapters therein).

One social disability that has garnered sustained research attention is the employment barrier. Many ex-inmates report feeling that their criminal record hinders their ability to find a job (Visher, Debus-Sherrill, & Yahner, 2011), while experimental audits confirm that employers are only half as likely to call back job applicants who report a prison sentence on their application (Pager, 2003). Furthermore, in comparisons between ex-inmates and comparable non-incarcerated individuals, ex-inmates consistently exhibit employment probabilities that are about 10-15 percent lower (Apel & Sweeten, 2010; Huebner, 2005; Waldfogel, 1994). Among employed ex-inmates, there is a comparable earnings penalty on the order of 10-15 percent, as well as modestly slower earnings growth over time (Apel & Sweeten, 2010; Waldfogel, 1994; Western, 2002).

The importance of the foregoing findings lies in the widespread expectation that efforts to improve ex-inmates' success in the labor market can lower the risk of criminal behavior, and at the same time give them the capacity to earn a livable wage that further lessens the attraction of illegal behavior. Unfortunately, compared to the general population, ex-inmates possess deficits that would greatly limit their employment prospects, even in the absence of imprisonment. For example, they are overwhelmingly drawn from socially marginalized populations – the poor, minorities, high-school dropouts – and they tend to have erratic work histories (Dumont et al., 2012; Raphael, 2011; Wakefield & Uggen, 2010; Western, 2006). In spite of these obvious disadvantages, employment opportunities early in the prison reentry process do in fact have the capacity to strengthen commitments to conformity and to hasten desistance from criminal behavior (Uggen, 1999, 2000; Uggen & Thompson, 2003).

The current study seeks to fill in two important gaps in existing research, by analyzing differences in employment outcomes by imprisonment length in a sample of Dutch offenders who experience comparatively short prison

spells.[1] First, virtually no research attention has been devoted to sentences of incarceration less than one year. This is a glaring omission, as an example from the U.S. context makes clear. The jail population on any given day tends to be about one-half the size of the prison population – the prison incarceration rate is about 500 per 100,000, and the jail incarceration rate is about 250. However, the average daily jail population of about 750,000 individuals, from which the jail incarceration rate is calculated, underestimates by a very large margin the number of individuals who actually pass through the nation's jails in a year, which the Bureau of Justice Statistics estimates at a shade under 13 million in 2010 (Minton, 2011). Accounting for the fact that just under 40 percent of individuals are in jail serving a sentence (rather than awaiting trial) still yields about 5 million who are incarcerated in jail for a crime in a given year (Minton, 2011). So while the prison incarceration rate of about 500 per 100,000 provides a fairly accurate estimate of the number of people who spend time in prison during a year, the annualized jail incarceration rate actually exceeds 1,600 per 100,000 (or an alarming 4,300 per 100,000 if jail incarceration and pretrial detention are both considered). Short sentences of incarceration are clearly the norm, in the United States and elsewhere, yet virtually nothing is known about their consequences.

Second, an analysis of imprisonment length among incarcerated offenders allows one to isolate processes of erosion that are independent of the stigmatizing potential of incarceration. Estimates of the impact of incarceration (vs. non-incarceration) confound demand- and supply-side processes, which can cloud interpretation and impede the creation of policy solutions. Stigma is the quintessential demand-side impact of incarceration (see Holzer, Raphael, & Stoll, 2006). Yet limiting attention to incarcerated subjects only, the stigma of incarceration is held constant, at least in principle.[2] Any differences in employment prospects which are attributable to imprisonment length can then be interpreted as productivity losses that accrue as individuals spend more time isolated from the formal labor market.

In what follows, the prior literature on the incarceration-employment relationship is first reviewed. The discussion then turns to an overview of the Netherlands, the unique social context in which this study is carried out. Thereafter, the data and methods are described, followed by the results and an extended discussion.

1 In this study, imprisonment length is intended to refer to the actual length of time served, rather than to the sentence length handed down by a judge.

2 In fact, stigma could depend on the length of incarceration if longer imprisonment spells are more difficult to hide from employers.

## 4.2 Theoretical explanations

A significant policy concern is the degree to which incarceration stigmatizes ex-prisoners in the marketplace. The most direct evidence for stigma is provided by the hiring preferences and practices of employers. For example, Holzer et al. (2006) find that employer willingness to hire known ex-offenders (38% "probably will" or "definitely will" hire them) for low-skill positions is markedly lower than their willingness to hire welfare recipients (92%), applicants with only a GED (96%), applicants who had been unemployed for a year or more (83%), and applicants with a spotty work record (59%). Apparently, the employment prospects of ex-prisoners are negatively impacted by demand-side preferences which penalize individuals with a criminal history.

More relevant for the present study are the potential supply-side deficiencies that accumulate among offenders who are confined for longer periods of time – specifically, productivity losses due to longer imprisonment length. Three such processes include erosion in work skills, deepening embeddedness in illegal activity, and growing detachment from the institution of work – these are likely to be reinforcing rather than mutually exclusive processes. First, the most obvious source of erosion is depreciation in "human capital" as work-related skills and experiences go unused. The work histories of ex-prisoners will be punctuated with unaccounted-for gaps. Recall from Holzer, Raphael and Stoll's work (2006) that employers are only modestly more enthusiastic about hiring applicants with a spotty work record as they are about applicants with a criminal record (59% vs. 38% would hire them, respectively), compared to other difficult-to-employ groups (each in excess of 80% hiring likelihood). Therefore, even an employer who is completely unaware of an applicant's imprisonment will be reluctant to hire him over other unskilled individuals simply because the lack of stable work experience might convey that the applicant is unskilled, unreliable, or difficult to work with.

Second, longer confinement could also promote the accumulation of "criminal capital," or criminal knowledge and experiences which improve one's prospects in the illegal market (Hagan, 1993). Offenders can become more deeply embedded in criminal contexts as they are isolated from conventional society for longer periods of time, perhaps because they spend more time in the company of fellow captives who might strengthen their orientation to unlawful behavior. For example, Bayer, Hjalmarsson, and Pozen (2009) report reinforcing effects on recidivism exhibited by juveniles who are exposed to other youthful offenders remanded to the same correctional facility.

Third, longer imprisonment might also weaken an offender's attachment to legal work. Apel and Sweeten (2010) demonstrate that following their first conviction, young people who are incarcerated spend significantly more time "out of the labor force," relative to comparable young people who are not incarcerated following their first conviction. In other words,

incarceration is followed by a period of time in which ex-inmates are neither employed nor seeking employment (in contrast to unemployment, defined as non-employment but active job search). This work detachment endures for up to six years following confinement. While work detachment could partly reflect discouragement (labor force dropout precipitated by failed job search), the work histories of the to-be-incarcerated youth in this study were already characterized by longer periods of labor force non-participation. The confinement experience apparently worsened an already tenuous attachment to legal work.

To be sure, there are also reasons to believe that longer imprisonment length could actually increase employment prospects. Namely, longer periods of incarceration can increase a prisoner's exposure to correctional rehabilitation programs focusing on educational certification and vocational training, or to prison labor programs that provide tangible work experience. And there is suggestive evidence that such programs are effective in improving employment and lowering recidivism (Wilson, Gallagher, & MacKenzie, 2000). Although the commitment to rehabilitation has been more "rhetoric than reality" in U.S. prisons (Phelps, 2011), the same is not true in other Western contexts. Rehabilitation was a major punishment goal in the Netherlands after World War II. In the decades that followed, this focus became increasingly subordinate to other tasks of the prison system (e.g., humane detention and cost-effectiveness) (Downes & Van Swaaningen, 2007). Still, to the extent that the correctional system in the Netherlands has adopted a culture of rehabilitation, we regard any estimates of the relationship between imprisonment length and employment among Dutch ex-inmates as highly conservative.

## 4.3 Previous research

Limited empirical evidence actually exists on the question of the impact of imprisonment length on employment prospects, although two kinds of studies can be identified. The first set of studies represent analyses in which imprisonment length is not necessarily the primary determinant of employment under consideration. This includes a reanalysis of the Transitional Aid Research Project (Needels, 1996), a reanalysis of the National Supported Work Demonstration (Matsueda, Gartner, Piliavin, & Polakowski, 1992), and a reanalysis of data from a sample of males sentenced to a Boston-area reform school who were matched to school-going youth (Sampson & Laub, 1993). In these studies, the findings about the salience of imprisonment length are frustratingly mixed. Notably, however, they focus not on imprisonment length for any particular spell, but instead on total time incarcerated within a reference window, which can (and often does) include more than one incarceration spell.

A second prominent strand of scholarship that is directly focused on imprisonment length uses data from state correctional databases and unemployment insurance (UI) systems for contemporary samples of prisoners. Studies using administrative data have been conducted in Florida (Kling, 2004, 2006), Ohio (Sabol, 2007), Washington State (Pettit & Lyons, 2007, 2009), and Illinois (LaLonde & Cho, 2008; Jung, 2011). These studies consistently report that employment and earnings in UI-covered jobs, following release from prison, increase in sentence length. Kling (2004, 2006) finds that employment rates among ex-prisoners in Florida peak immediately upon release, at 40 percent among ex-prisoners incarcerated for one year, but over 50 percent among ex-prisoners incarcerated for four years (2006: 867, Figure 1A). Similarly, mean earnings in the peak quarter are about $800 among ex-prisoners incarcerated for one year, but $1,600 among ex-prisoners incarcerated for four years (Figure 1C). On the other hand, the differentials appear to be relatively short lived, as employment and earnings converge after about two years have elapsed. Furthermore, post-prison employment rates eventually return to their pre-prison level, irrespective of imprisonment length.

Pettit and Lyons (2007, 2009) similarly report that imprisonment length is positively and significantly correlated with employment rates among ex-prisoners in Washington State. As in the Florida study, there is a tendency for employment rates to return to pre-prison levels within about two years. Jung (2011) reports the same kind of convergence at the two-year mark among male ex-prisoners in Cook County, Illinois (see LaLonde & Cho, 2008, for evidence on female ex-prisoners in the same jurisdiction). Also like the Florida study, there are significant earnings differentials in favor of employed ex-prisoners who serve longer terms of confinement in Washington State and Illinois. Unlike the Florida study, on the other hand, while the earnings differentials narrow over time, they nevertheless appear to persist for the duration of the follow-up period. Yet the long-term differentials are not particularly notable for their magnitude. For example, in Jung's (2011) study, ex-prisoners who differ by one year in their imprisonment length only differ by about $150 in long-run quarterly earnings, or $50 per month (2011: 513, Table 4A, Model 6).

To summarize the administrative studies of imprisonment length and employment, the findings are unambiguous that offenders who serve longer prison terms have better prospects with respect to both employment and earnings (conditional on employment). However, these differentials tend to erode with the passage of time. A notable feature of these studies is that the subjects are state prison inmates, almost all of whom serve sentences longer than one year. In fact, the average ex-prisoner in these studies serves about two years behind bars. The estimates should therefore be interpreted as the correlation between imprisonment length and employment prospects, conditional on serving a prison sentence of well over one year.

## 4.4 Limitations of previous research

Two comments about this literature are in order, which help motivate the current study. First, administrative earnings data come from state tax records and are based on the earnings reported by employers to the state unemployment insurance (UI) system, and therefore fail to capture income from uncovered jobs (i.e., self-employment income, out-of-state income), among other sources of error. Comparisons of self-report and administrative data show that survey earnings are routinely higher than UI earnings, although program impacts tend to be similar (Kornfeld & Bloom, 1999). The one noteworthy exception is for young males with a criminal record, for whom the discrepancy between unofficial and official earnings is greatest, and for whom program impact estimates qualitatively differ depending on the source (Kornfeld & Bloom, 1999; Schochet, Burghardt, & McConnell, 2008). These are precisely the subjects of interest in the studies cited above, suggesting that post-prison employment prospects measured from tax records miss many sources of income for high-risk samples – self-employment, informal employment arrangements, short-term employment, and employment that is cash only or "off the books." If the tendency to work in UI-covered jobs varies systematically by the length of time served in prison, the positive correlation between imprisonment length and employment prospects reported in the studies cited above will partially be an artifact of this tendency. This suggests that self-report employment and earnings, while undoubtedly subject to their own peculiar sources of measurement error, are likely to be less biased for young, high-risk males and more generally, people with criminal records.

Second, most previous research does not consider the process by which incarceration shapes the work prospects of ex-prisoners. Administrative datasets, in particular, are not well suited to an elaboration of potential erosion processes that are linked to imprisonment length. In this study, we consider a number of measures to characterize the post-prison work experience: the timing of job acquisition, multiple job holding, wages, occupational level, and re-employment with a pre-prison employer. We also consider non-employment measures such as skills acquisition in prison and criminal recidivism. The analysis to follow is therefore capable of considering job stability, job quality, human capital, and criminal embeddedness.

## 4.5 The Netherlands as context

The United States is quite unique in its scale of imprisonment, but penal punitiveness is a much broader Western phenomenon (Tonry & Farrington, 2005). Two-thirds of 35 European countries surveyed recently have experienced prison growth (Aebi et al., 2006). The Netherlands in particular, long known for its liberal penal policies, has witnessed rapid prison expansion, growing almost fourfold (375 percent) during the last three decades (see

Tonry & Bijleveld, 2007). As a point of comparison, from 1975 to 2005, the U.S. incarceration rate grew 5.5 percent annually, while the comparable figure for the Netherlands is 4.9 percent.

Despite comparable prison growth rates, there are obvious differences between the Dutch and American penal climates. First, the Netherlands has a milder penal climate which might make the transition from prison to the labor market less fraught. Over 80 percent of all prisoners released in the Netherlands are confined for a maximum of six months. The median time served is one month and an average prison spell is 3.6 months (109 days) (Linckens & De Looff, 2012). State prisoners in the United States serve an average sentence of two years (Guerino et al., 2011). Moreover, prison conditions are generally less harsh in the Netherlands. For instance, most Dutch (pretrial) prisoners are confined in single cells in comparatively small prisons and entitled to daily yard time.

Second, criminal records are not publicly accessible in the Netherlands, and employers have few avenues to retrieve this information. Yet, in certain sectors, a conduct certificate is mandatory (e.g. education, health services, cab driving, security and logistics) and the rules for granting a certificate have become stricter, although it contains no information regarding the existence or nature of an applicant's criminal history (see Boone, 2011). These regulations aim to protect Dutch ex-offenders from labor market discrimination, whereas open access laws in many states in the United States pose an additional burden for American ex-offenders (see Briggs et al., 2004; Bushway, 2004).

Third, the more generous social welfare regime in the Netherlands might actually serve as a disincentive for employment among Dutch ex-offenders. Individual responsibility is not as strongly stressed (Becker, 2000; Esping-Andersen, 1990), and despite retrenchment in recent decades, the Dutch welfare system is still very generous compared to that of the United States. For example, in 2009 the Dutch government spent 23 percent of its national GDP on public expenditures (e.g. unemployment, housing, labor market programs, pensions), compared to 19 percent in the United States (OECD Social Expenditure Database (SOCX)). While this difference is substantial in itself, higher income inequality (in 2009 the Gini coefficient was 0.29 in the Netherlands and 0.38 in the United States) and demand for social provisions in the United States further emphasize the differences in social policy. On the other hand, higher minimum wages in the Netherlands might also lead to relatively higher employment rates among Dutch ex-prisoners. In addition, social benefits might provide some basic needs which make it easier for Dutch ex-prisoners to find and hold down a steady job.

Given these seemingly fundamental differences, one might reasonably ask whether findings from the Netherlands provide any generalizability at all to the American context. Where basic criminological relationships are concerned, this can be answered in the affirmative. The findings from many prior Dutch studies confirm the relevance of life transitions such as educational attainment, employment, marriage, and parenthood for crimi-

nal behavior and desistance (Blokland & Nieuwbeerta, 2005; Ramakers, Bijleveld, & Ruiter, 2010; Van der Geest, Bijleveld, & Blokland, 2011; Van Schellen, Apel, & Nieuwbeerta, 2012), as well as the impact of incarceration on marital stability and subsequent offending (Apel, Blokland, Nieuwbeerta, & Van Schellen, 2010; Nieuwbeerta, Apel, & Blokland, 2009; Snodgrass, Blokland, Haviland, Nieuwbeerta, & Nagin, 2011). However, because Dutch prison sentences are so much shorter than their American counterparts, it is best to conceive of them as being more akin to short incarceration spells, most of which are spent in jail. An analysis of imprisonment length and employment prospects in the Netherlands can thus fill an important empirical gap where short sentences of incarceration are concerned.

## 4.6 Data

The data for this study were collected as part of the Prison Project, a unique, longitudinal and nationwide effort to collect data about Dutch prisoners in the beginning of pretrial detention, during confinement, and after release from prison. The project targeted male prisoners who entered a Dutch detention facility between October 2010 and March 2011, were born in the Netherlands, were between 18 and 65 years old, and did not suffer from severe psychological problems.[3] A total of 2,945 prisoners who entered pretrial detention between October 2010 and March 2011 met the selection criteria. No less than 95 percent of these men were approached and 65 percent of them agreed to participate in the study. This sample of 1,909 prisoners was generally representative of all prisoners that met the selection criteria in terms of age, marital status, committing a violent crime, and receiving an unconditional prison sentence for the criterion offense, but differed slightly in some other characteristics.[4]

The sample used in the current study comprises 702 ex-prisoners who participated in the in-prison interview (P1) and agreed to a reentry interview (R1) that was conducted six months after release (up to June 2012).[5]

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3 The study targeted prisoners who were detained for a minimum of 3 weeks. In some cases, prisoners were interviewed really soon after entering pretrial detention, but released shortly after this interview

4 Participants and non-participants differ with respect to age of onset (18.9 vs. 17.4), being employed before imprisonment (45.7% vs. 38.7%) and duration of actual time served (5.1 vs. 4.1 months). In addition, a comparison of criminal histories revealed that participants have a slightly less extensive criminal history than non-participants (7.7 vs. 9.8 previous convictions; 3.4 vs. 5.0 previous prison spells).

5 The R1-interview took place in prison if the subject had re-entered prison at that time (approximately 20% of the R1-interviews were held in prison). Not all interviews took place exactly six months after release from prison. A majority were held 5 or 6 months after release (63.6%), 2.6 percent of the interviews took place before that time and 33.8 percent took place at a later time.

As expected, the particular lifestyle of the sample made it difficult to contact the 1,423 ex-prisoners who were eligible for participation in the R1-interview. Some refused permission to be approached in follow-up waves ($n$ = 43). Still, 76 percent of the 1,380 ex-prisoners were successfully contacted and 52 percent of them agreed to participate in the R1-interview. This led to an overall response rate of almost 34 percent (P1:0.65 x R1:0.52) in June 2012.

Importantly, difference tests showed comparability between the R1- and P1-samples across a wide range of baseline covariates (e.g, criminal history, parenthood, employed before imprisonment, educational level). Nevertheless, the R1-sample contained fewer non-ethnic Dutch (35% vs. 49%), fewer respondents with partners (44% vs. 53%) and fewer violent offenders (42% vs. 47%) than the full P1-sample. In addition, since not all 1,909 prisoners were eligible for participation in R1 (some were still imprisoned or had not yet been released for six months), the R1-sample at present has served a shorter prison spell (median spell of 3.1 months vs. 3.8 months). Some caution is therefore advised when generalizing the results from the R1-sample to the larger population of detainees from which the P1-respondents were drawn.

## 4.7 Measures

### *4.7.1 Length of imprisonment*

Length of imprisonment is measured as the actual time between the first day of pretrial detention and the date of release from confinement (either pretrial detention or imprisonment), as registered by the Judicial Institutions Department of the Netherlands (mean = 3.8 months; median = 3.1 months, see Figure 4.1). In order to estimate the impact of different "doses" of imprisonment on employment, five groups are created: 1 to 6 weeks ($n$ = 132), 6 weeks to 3 months ($n$ = 191), 3 to 4 months ($n$ = 133), 4 to 6 months ($n$ = 127) and 6 to 12 months ($n$ = 119). These are based on the distribution of length of imprisonment as well as judicial practice (i.e. how decisions about extended placement are made by judges) (Tak, 2003). In follow-up analyses detailed in the appendix, imprisonment length is retained as the number of days of confinement (continuous measurement).

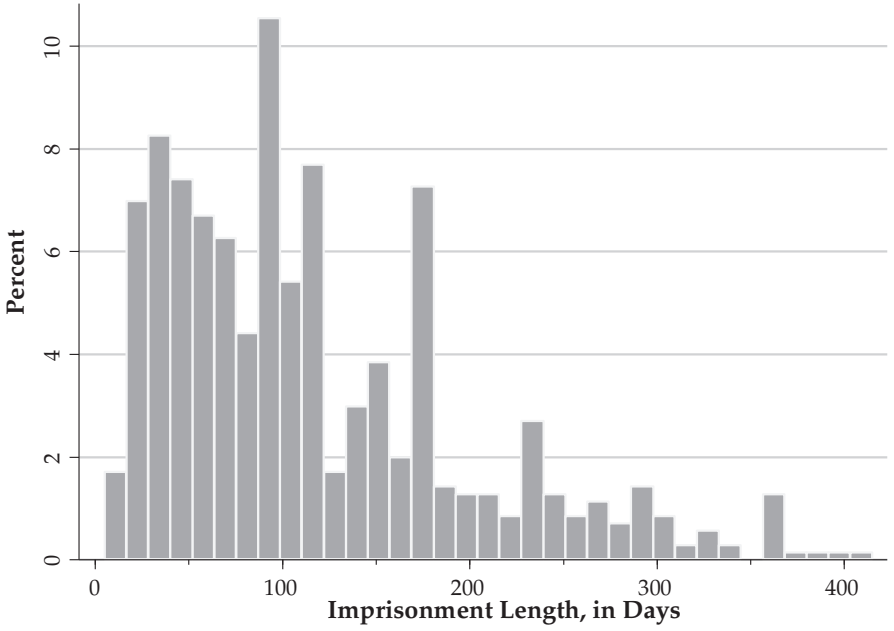



*Figure 4.1 Distribution of imprisonment length (n = 702)*

### *4.7.2 Post-prison outcomes*

Employment during the six months post-release is measured in two distinct ways during the R1-interview. The first measure is from survey responses to the question, "How many jobs did you have since leaving prison?" The second measure is from a life event calendar, in which respondents report on their employment situation (among other information) during each month since their release from prison. Previous research has shown that this method leads to higher quality retrospective reports (Belli, Shay, & Stafford, 2001; Engel, Keifer, & Zahm, 2001). Respondents who report being self-employed, being an employee, or working "off the books" in a given month are counted as "employed" (months spent in prison were counted as unemployed months). Both the survey and calendar measures indicate that roughly one-half of respondents find employment within six months of leaving prison (see Table 4.1).

In addition to these binary indicators of employment, we construct four measures of job stability. We identify ex-prisoners who work in more than one job, and we use the life event calendar to compute the proportion of months employed during the six-month reentry window. Additionally, we determine whether employment was found immediately upon release, and identify the employed ex-prisoners who returned to their pre-prison job after release.

We also utilize two measures of job quality. At the R1-interview, employed respondents report their net monthly salary (after taxes) (mean = €2,109; median = €1,500).[6] In addition, based on the Standard for Classification of Occupations (SBC) of Statistics Netherlands (Westerman, 2010), information about the job title, type of business, and (executive) tasks was used to classify self-employed and salaried workers into one of five occupational levels: elementary, low, middle, high, or scientific.

Finally, we include two non-employment outcomes – human capital and criminal capital – to gain insight into the processes of skills erosion and criminal embeddedness that might underlie the effect, if any, of imprisonment length on employment. Human capital accumulation is measured by participation in a prison program. Criminal embeddedness is based on self-reports from the life-event calendar about whether respondents have committed a crime since their release from prison.[7]

*Table 4.1 Descriptive statistics*

| | N | Mean | Median | SD | Min | Max |
|---|---|---|---|---|---|---|
| Found employment within six months [a] | 694 | .51 | | | .00 | 1.00 |
| Found employment within six months [b] | 651 | .47 | | | .00 | 1.00 |
| Worked multiple jobs within six months [a] | 351 | .24 | | | .00 | 1.00 |
| Employed in 1st month [b,c] | 308 | .67 | | | .00 | 1.00 |
| Time spent employed [b,c] | 308 | 79.32 | 100.00 | 27.03 | 16.67 | 100.00 |
| Return to pre-prison employer [d] | 188 | .30 | | | .00 | 1.00 |
| Wage in sixth month (€) [e] | 236 | 2,109.30 | 1,500.00 | 4,222.09 | 10.00 | 58,000.00 |
| Occupational level in sixth month [e] | 236 | 2.20 | 2.00 | .55 | 1.00 | 5.00 |

*ABBREVIATIONS*: SD = standard deviation (omitted for dummy variables), Min = Minimum, Max = Maximum.

[a] Based on general question concerning the number of jobs during the follow-up period.

[b] Based on monthly employment data from the calendar questionnaire.

[c] Available for those employed (for at least one month) during the follow-up period.

[d] Available for those who were employed as salary workers before imprisonment.

[e] Available for those who were employed in the sixth month after release.

### 4.7.3 *Pre-prison confounding variables*

The background data collected in the Prison Project are quite rich, allowing us to eliminate a wide range of potential pre-existing differences between men who serve different lengths of imprisonment. Appendix 4.A contains descriptive information on 55 such covariates. This information is incorpo-

6 All values above the 95-percentile were truncated.

7 Additional analyses (not shown) indicated that a difference in exposure time (time spent in prison during the six-month follow-up) could not explain the lower employment ratio among long-term prisoners. In addition, we ruled out the possibility that long-term prisoners were less likely to find employment because they were more likely to get sentenced back to prison for the criterion offense – among those who were released before trial, only six long-term prisoners returned to prison for the criterion offense.

rated into a propensity score model, and includes demographics, employment history since leaving full-time education, employment situation before imprisonment, social bonds, sources of income before imprisonment, lifestyle, and attitudes. The Public Prosecutor's Office was consulted for information on the "criterion" offense: the number of registered offenses in a criminal case, the maximum penalty (maximum days a judge can sentence an offender to prison based on the criterion offense), and pretrial release. Detailed information on the type of crime and the offender's criminal history was collected from "rap sheets" available in the Criminal Record Office. These data were made available by the Research and Documentation Centre (WODC) of the Netherlands Ministry of Security and Justice, and contain information on all registered convictions beginning at age 12, the age of criminal responsibility.

## 4.8 Analytical approach

The main objective of this study is to identify the effect of imprisonment length on employment outcomes among pretrial detainees who were detained for a minimum of one week. A simple comparison of post-prison employment rates across groups that served different lengths of imprisonment is potentially confounded with pre-prison factors that affect not only the length of imprisonment but also labor market performance. Only an experimental design, in which individuals are randomly assigned to prison for shorter or longer periods of time, would ensure that all possible confounders (including unobservables) are controlled. However, any bias caused by observable pre-prison covariates can be eliminated by conditioning on a propensity score (Rosenbaum, 2002; Rosenbaum & Rubin, 1983). A general advantage of the propensity score methodology over standard regression analyses is that it is more robust with respect to model misspecification (Drake, 1993). Another advantage is the internal validity that results from this approach, as it assures the exclusion (or down-weighting) of "treated" individuals for whom no comparable "controls" are available.

The richness of the Prison Project data and large sample size allow us to rule out 55 potential confounders. To our advantage, most covariates (47 out of 55) are initially balanced, which indicates that groups which differ in imprisonment length are already highly similar (see Appendix 4.B). Failure to account for the remaining observable differences would allow selection bias to contaminate the results. And, to be sure, there may still be hidden biases confounding our results after the differences in observables are taken into account (Rosenbaum, 2002). Yet, a substantial share of the potential confounders can be eliminated using propensity score methods. We account for factors that have been shown to be highly influential in sentencing decisions (crime severity, criminal history, demographics), and the rich background data enable us to incorporate many more.

### 4.8.1 *Propensity score model for an ordered treatment*

A propensity score is a type of "balancing score" which represents the probability of receiving treatment, conditional on a set of observed pre-treatment covariates. In the case of a binary treatment, two individuals with an identical or closely similar propensity score, but a different observed treatment, are compared in outcome. In this study, however, subjects served different imprisonment lengths and were classified into one of five groups receiving smaller or larger "doses" of prison (1 = 1-6 weeks, 2 = 6 weeks to 3 months, 3 = 3-4 months, 4 = 4-6 months, 5 = 6-12 months). Following Loughran et al. (2009), the current study uses sub-classification on the balancing score. This score was estimated from an ordered logit model in order to create groups of prisoners who are observationally similar on measured covariates at the time of arrest, yet served different lengths of confinement (for other applications of the generalized propensity score, see Lu et al., 2001; Zanutto, Lu, & Hornik, 2005). The probability that subject $i$ serves imprisonment length $D_i$ or higher, conditional on $j = 1,\ldots,K$ pre-treatment covariates $X_{ij}$, is parameterized in familiar log-odds form:

$$ln\left[\frac{Pr(D_i > d)}{Pr(D_i \leq d)}\right] = \tau_d + \sum_{j=1}^{K} \beta_j X_{ij}, \text{ for } d = 1,2,3,4$$

In this model, $\tau_d$ represents a dose-specific threshold or intercept, corresponding to imprisonment length $d$ (exclusion of the threshold for one category, $d = 5$ in this case, is necessary for identification). By satisfying the proportional odds assumption, a single set of coefficients can be estimated for each of the covariates, ensuring that the only difference in the likelihood of different imprisonment lengths is an intercept shift captured by the thresholds.[8] The implication is that the thresholds, because they are constants, can be removed and a single balancing score estimated for each subject using just the linear predictor from the ordered logit model.

This balancing score is the ordered logit analog to the propensity score estimated from a binary logit model. One difference is that, because the balancing score in this analysis is used for stratification rather than matching, no additional transformations are necessary (e.g., conversion of the balancing score to a probability). The balancing score is used to group subjects into five equal-sized subgroups, known as strata, within each imprisonment length group. Classification into five strata suffices to remove approximately 90 percent of the initial imbalance in each of the covariates (Rosenbaum & Rubin, 1984). Covariate balance is maximized using an iterative approach for model selection (e.g., including interactions, squares, log transformations), after which the stratum-weighted mean of employment outcomes, conditional on receiving imprisonment length $d$, is estimated (see also Loughran et al., 2009).

8 The proportional odds assumption is easily satisfied ($\chi^2$ [180] = 188.9, $p$ = 0.31).

### *4.8.2 Propensity score estimation and covariate balance*

Our objective is to compare the post-prison employment outcomes of individuals who are observationally similar with respect to pre-treatment covariates (as indexed by the balancing score), yet served different lengths of imprisonment. We take advantage of the overlap in predicted balancing scores across the five groups of detainees (see Figure 4.2) and exclude the cases for which no appropriate match is available. Hence, the analytic sample excludes subjects who have a balancing score lower than the minimum score among the long-term prisoners ($n$ = 7), or a balancing score higher than the maximum score among the short-term prisoners ($n$ = 29) (see the black dashed lines in Figure 4.2). The final analytic sample thereby consists of 666 subjects.

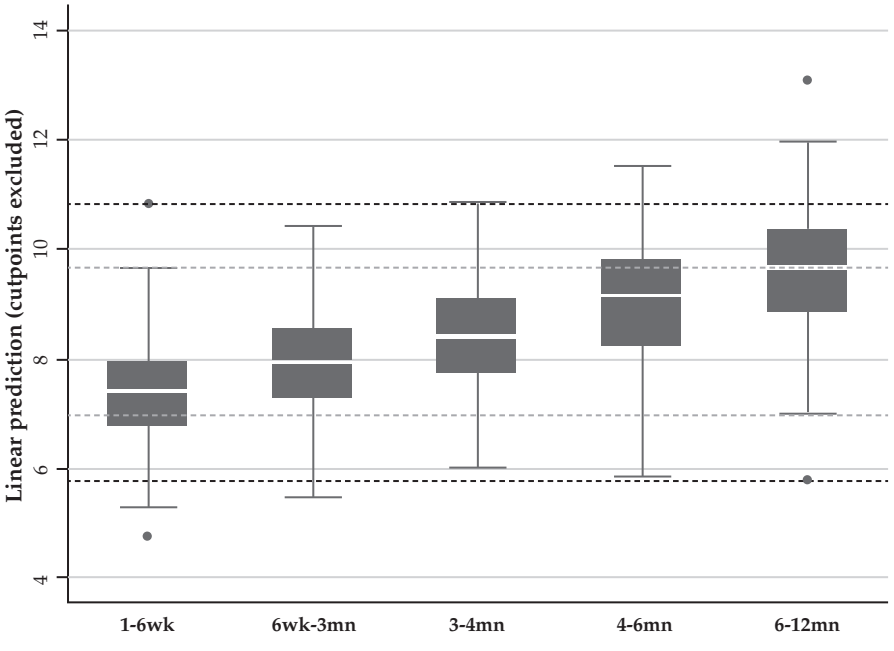



*Figure 4.2 Balancing score distributions, by imprisonment length (n = 702)*

*Note:* The black dashed lines indicate the trimming performed prior to stratification for the main analysis, specifically, propensity scores lower than the maximum of the shortest imprisonment length group and higher than the minimum of the longest imprisonment length group were included. The gray dashed lines indicate the trimming performed as a sensitivity analysis, specifically, propensity scores lower than the upper adjacent vazlue (i.e., the upper whisker) of the shortest imprisonment length group and higher than the lower adjacent value (i.e., the lower whisker) of the longest imprisonment length group.

Following Loughran et al. (2009), covariate balance was evaluated by performing two-way analyses of variance (ANOVA). The ordinal measure of imprisonment length, the balancing score strata, and their interaction serve as independent variables, where each covariate is the dependent variable.

Balance is assured when the combination of imprisonment length and its interaction with the balancing score strata is not significantly correlated with the covariate ($\alpha = 0.05$). After stratification, age of onset, sex crime as criterion offense, and ethnic background remain out of balance (see Appendix 4.C), but we would expect about 3 of the 55 covariates to be out of balance by chance alone.[9]

More recently, scholars have discouraged the use of significance tests to check balance, because these tests can be affected by not only changes in effect size but also changes in sample size (see Connelly, Sackett, & Waters, 2013). Therefore, the magnitude of group differences in covariates was assessed by performing regressions with the covariate as the outcome and the ordered treatment as the regressor, weighted by the propensity score strata. The square root of the R-square from this model functions as a measure of effect size (0.1 = small; 0.3 = medium; 0.5 = large). A covariate is considered to be out of balance when this effect size is 0.10 or higher. These tests show that the relatively large group differences in several of the criterion offense characteristics (between 0.16 and 0.36) decreased after stratification (highest effect size is 0.12) (see Appendices 4.B and 4.C). Of the three covariates that were out of balance based on the aforementioned significance tests (age of onset, sex crime as criterion offense, ethnic background), two had very small effect sizes before and after stratification.

We also find that some effect sizes actually increased after stratification (e.g., the effect size for use of alcohol and sex crime increased from 0.02 to 0.12). Nevertheless, Appendix 4.C shows that most effect sizes decreased after stratification and are far below the threshold of 0.10,. Hence, even though the propensity score method used here does not enforce complete balance between imprisonment length groups, both the significance tests as well as the effect size measures indicate that the current model confronts the selection problem as rigorously as possible by eliminating a substantial number of covariates as potential confounders.

## 4.9 Results

### *4.9.1 Finding employment*

This section presents the adjusted findings (weighted by propensity score strata). The key finding with respect to the impact of imprisonment length on employment is shown in Figure 4.3. In each month after release, men who stayed in prison for more than six months have a lower likelihood of employment than their observationally similar counterparts who stayed in

9 Sensitivity analyses on the effect of imprisonment length on employment likelihood in which we directly adjusted for the influence of the out-of-balance covariates – by including them together with imprisonment length in a regression model weighted by the propensity score strata – led to similar conclusions.

prison for less than six months. For instance, the sample average employment likelihood in the first month after release is 31 percent, but the long-term prisoners (minimum spell of six months) exhibit a substantially lower employment likelihood (20%). Though not linear, the relationship between imprisonment length and first-month employment is marginally significant ($\chi^2 = 7.91$, $p < 0.10$; Cramer's V = 0.113). This difference in employment likelihood does not remain intact during all follow-up months, but standardized residuals indicate that the employment rate of long-term prisoners remains significantly lower throughout the first six months after leaving prison. Additional analyses of the type of employment (not shown) indicate that long-term prisoners are less likely to work in a formal job (as salary workers) and to be self-employed than short-term prisoners.

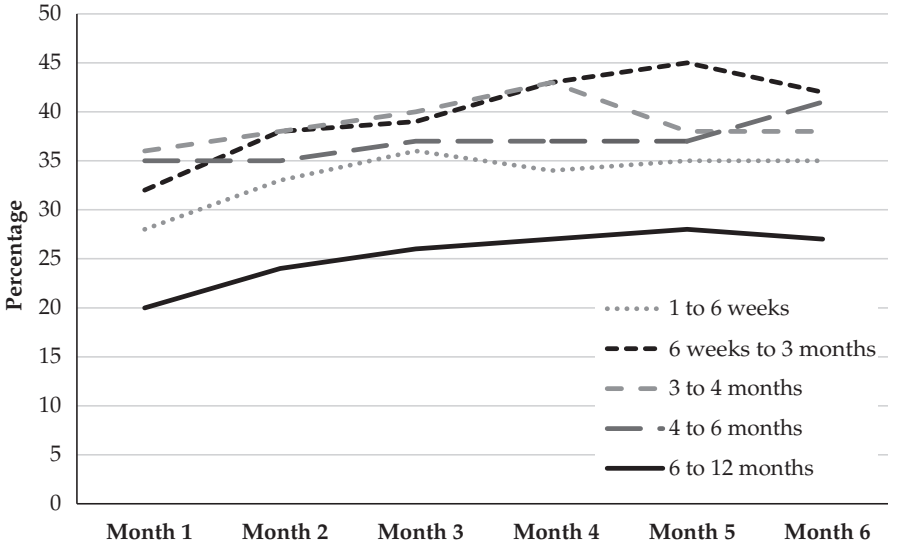



*Figure 4.3 Monthly employment rates following prison release, by imprisonment length*

*Note:* Figure 4.3 presents the adjusted stratum-weighted means (Panel B, Table 4.2). Employment is measured from the life event calendar.

Having examined the employment differentials in each month of the follow-up, we next compare the percentages of ex-prisoners who found employment at any point within the six-month window. Recall that we can use both the monthly calendar data as well as a general question about the number of jobs acquired since leaving prison. Table 4.2 provides the unadjusted estimates (Panel A) and adjusted estimates (Panel B). Both panels show a generally inverse relationship between imprisonment and employment. Even though the adjusted effect sizes are fairly modest for both measures (Cramer's V is 0.114 and 0.155), the significance of the monthly measure ($\chi^2 = 8.12$, $p < .10$) and general measure ($\chi^2 = 15.84$, $p < .01$) reveals that the diverging

impact of a longer prison spell on the overall employment rate remains intact after controlling for selection on observables. Since both measures are presumably subject to their own sources of measurement error, the high resemblance across measures strengthens the finding. They offer evidence for our expectation that ex-prisoners who stay in prison longer are less likely to be employed in the first crucial months following release, compared to their observationally similar counterparts who spend less time in prison. The strongest relationship is observed for the general question – 58 percent of the short-term prisoners (1-6 weeks) obtain a job, compared to 32 percent of the long-term prisoners (6-12 months), with the remaining groups intermediate between these two percentages at about 50 percent.

While the general employment measure exhibits a linear trend ($\chi^2$ = 12.30, $p < .01$), the finding that stands out the most across both panels and measures is the relatively low employment likelihood of long-term prisoners (6-12 months). Additional difference tests between these long-term prisoners and all other prisoners confirm this, for both measures (see the bottom rows of Table 4.2). Specifically, the employment differential is –14 probability points (calendar measure) and –19 probability points (general measure) for offenders confined in excess of 6 months compared to all offenders confined for fewer than 6 months (Panel B).

### *4.9.2 Sensitivity analyses*

In order to increase confidence in the findings thus far, three types of sensitivity analyses were performed. We performed the abovementioned analyses on a more restrictive sample, we estimated a propensity score model for a continuous treatment (number of days in prison) rather than ordered treatment, and we estimated a standard regression model controlling for the covariates directly rather than indirectly by way of a propensity score. Here we summarize the conclusions from these analyses.

First, we restricted the sample further to ensure even more similarity between offenders serving different confinement lengths. In the results reported above, we trimmed the sample to retain those with balancing scores lower than the maximum of the shortest imprisonment length group and higher than the minimum of the longest imprisonment length group (see the black dashed lines in Figure 4.2). In additional analyses, we instead trimmed the sample to retain those with balancing scores lower than the upper adjacent value (i.e., the upper whisker) of the shortest imprisonment length group and higher than the lower adjacent value (i.e., the lower whisker) of the longest imprisonment length group (see the gray dashed lines in Figure 4.2). This resulted in a substantially smaller estimation sample ($N$ = 476 vs. $N$ = 666).

*Table 4.2 Post-prison employment*

| | Calendar questionnaire[a] | | | General question[b] | | |
|---|---|---|---|---|---|---|
| | Unadjusted[c] (Panel A) | Adjusted[d] (Panel B) | (Panel C) | Unadjusted[c] (Panel A) | Adjusted[d] (Panel B) | (Panel C) |
| Imprisonment length | % | % | % | % | % | % |
| 1 to 6 weeks | 50.81 | 42.02 | 52.38 | 56.06 | 57.60 | 61.11 |
| 6 weeks to 3 months | 48.31 | 46.07 | 49.64 | 50.80 | 49.19 | 49.30 |
| 3 to 4 months | 50.00 | 49.58 | 47.87 | 51.91 | 50.39 | 49.51 |
| 4 to 6 months | 46.34 | 42.86 | 46.58 | 51.59 | 47.01 | 53.16 |
| 6 to 12 months | 39.62 | 31.18 | 42.86 | 42.37 | 31.68 | 42.11 |
| All | 47.31 | 43.16 | 48.51 | 50.72 | 47.80 | 51.38 |
| Significance | NS | † | NS | NS | ** | NS |
| Statistical test | $\chi^2[4]=3.59$ | $\chi^2[4]=8.12$ | $\chi^2[4]=1.33$ | $\chi^2[4]=4.91$ | $\chi^2[4]=15.84$ | $\chi^2[4]=5.87$ |
| Linear trend | No ($\chi^2[1]=2.59$) | No ($\chi^2[1]=2.29$) | No ($\chi^2[1]=1.28$) | Yes ($\chi^2[1]=3.31$) | Yes ($\chi^2[1]=12.30$) | Yes ($\chi^2[1]=2.91$) |
| *N* | 651 | 621 | 437 | 694 | 657 | 471 |
| 6-12 months vs. all others | | | | | | |
| Difference in mean (%) | -9.6 | -14 | -6.2 | -10 | -19 | -10.6 |
| Significance | † | * | NS | * | *** | NS |

*NOTES:* Panel A= whole sample (*n* =702), Panel B= main sample (after stratification on propensity score) (*n*=666), Panel C= alternative sample after stratification on propensity score (*n*=476).

*ABBREVIATIONS:* $\chi^2$ = Chi square test.

[a] Based on monthly employment data from the calendar questionnaire.

[b] Based on general question concerning the number of jobs during the follow-up period.

[c] This column provides the unadjusted estimates (before stratification on propensity score)

[d] This column provides the adjusted estimates (stratum-weighted means)

†$p < .10$; *$p < .05$; **$p < .01$; ***$p < .001$ (two-tailed tests).

The results from the smaller, alternative sample are shown in Panel C of Table 4.2. Balance diagnostics indicated that after stratification, again, few covariates remained out of balance (namely, wage, self-employed before imprisonment, previous prison spell) and the magnitude of group differences decreased. All but one covariate exhibited an effect size below 0.10 (number of property crimes, $r = 0.10$). The main difference in findings is that Panel C indicates higher overall employment rates across all groups, implying that more of the "unemployable" ex-prisoners were excluded from this alternative sample. Nevertheless, the basic finding that a longer prison spell is correlated with lower employment chances is replicated for both employment measures.

Although the results in Panel C do not achieve statistical significance, the pattern is similar to that observed in Panel B – long-term prisoners (6-12 months) possess a much lower employment rate compared to short- and medium-term prisoners. For example, based on the calendar questionnaire, employment among offenders confined for 6-12 months remains about 6 probability points lower than offenders confined for less than 6 months. The employment differential is –11 probability points for the measure based on the general employment question. Interestingly, while these point estimates are halved from the Panel B results, they more closely resemble the unadjusted results in Panel A, which in the case of the general measure of employment, are statistically significant.

Second, we evaluated the sensitivity of the findings to the choice of propensity score method. In additional analyses, we considered a propensity score model for continuous treatment (number of days of prison confinement). Details on the approach are provided in Appendix 4.E, and here we briefly summarize the key findings. Figure 4.4 illustrates the mean probability of employment for specific imprisonment length "doses" (spanning 5 days to 415 days), conditional on the generalized propensity score (and thus the covariates indexed by it). Note that each subject contributes to the estimate of the mean probability evaluated at each imprisonment length "dose," as explained in Appendix 4.E. The graphs illustrate that the likelihood of employment is negative and mildly non-linear (but monotonic) in the length of prison confinement. For example, from 5 days to about 150 days (5 months), the mean employment probabilities decline with longer confinement, but tend to do so very slowly within this range; indeed, the confidence intervals overlap considerably. On the other hand, the dose-response function becomes more steeply and linearly inverse when imprisonment length exceeds about 180 days, or approximately 6 months. This harmonizes nicely with the results yielded by the ordered response model. It is also noteworthy that, as before, the findings from the general measure of employment indicate a stronger relationship than the findings from the calendar measure.

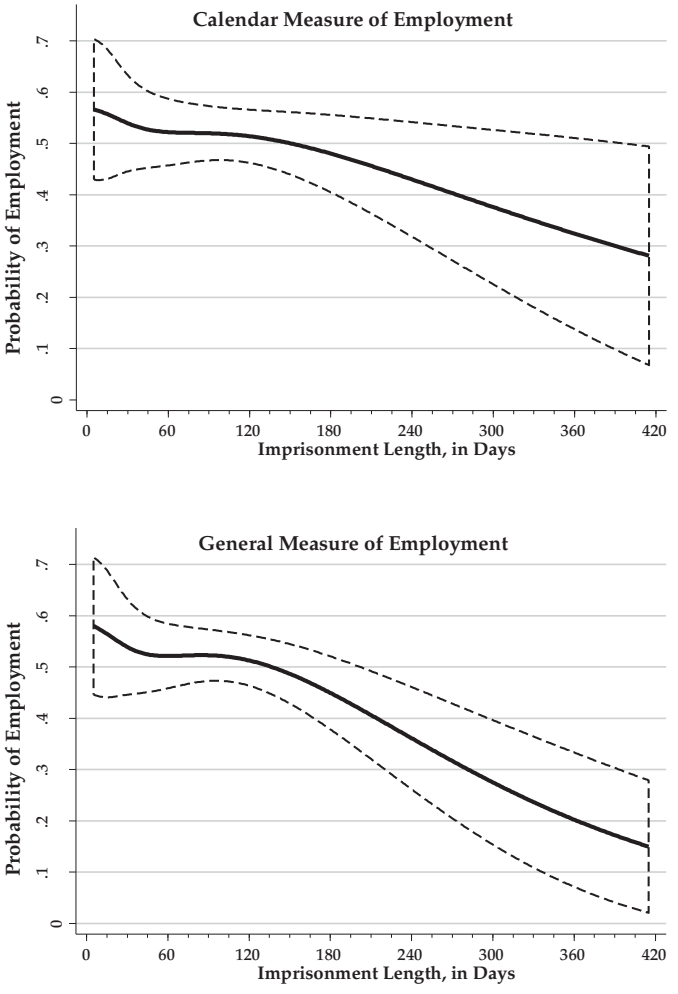



*Figure 4.4 Dose-response relationship between imprisonment length (in days) and employment, from a generalized propensity score model*

*Note:* The solid line represents the predicted mean probability of employment for a specific imprisonment length "dose," conditional on the generalized propensity score (and thus the covariates indexed by it). The dashed bands are bootstrapped 95% confidence intervals. Note that all 702 subjects contribute to the estimate of the mean for all imprisonment lengths between 5 days and 415 days, yielding 411 predicted probabilities per subject. Details on the generalized propensity score model and the creation of this graph are provided in Appendix 4.E.

Finally, in a series of models that are not shown, we controlled directly for the pre-prison covariates in a linear probability model of employment on imprisonment length (robust standard errors are used). For both employment outcomes, the coefficient for imprisonment length (in days) is –0.00075 ($p < .01$), indicating the impact of one additional day of confinement on

employment. Alternatively, when imprisonment length is logged, the coefficient from both models is about –0.080 ($p < .01$), which we can use to say that a doubling of imprisonment length (say, from 50 to 100 days, or from 100 to 200 days) corresponds with a decline in employment of 8 probability points, on average. Of course, these models impose a linear functional form to the relationship between imprisonment length and employment, whereas evidence reported above indicates a non-linear functional form. Squared terms in the models were not statistically significant, although a dummy variable for imprisonment length in excess of 6 months (relative to imprisonment less than 6 months) was marginally significant in the calendar employment model ($b = –.076$; $p < .10$) but non-significant in the general employment model ($b = –.050$; $p = .22$).

In summary, the main findings and sensitivity analyses yield evidence of a vaguely linear, inverse relationship between imprisonment length and employment, although the strength of the relationship is dependent on model choice and outcome measure. Although the evidence is not conclusive in all sensitivity analyses, the most consistent finding concerns imprisonment of 6 months or more: prison spells in excess of 6 months are correlated with diminished employment prospects after release.

### *4.9.3 Explaining the effect of imprisonment length on employment*

In order to understand potential explanatory mechanisms for the employment differentials, we examine participation in prison programs and self-report recidivism. Table 4.3 shows that, even within a sample of relatively short prison spells, long-term prisoners have more opportunities to compensate for their absence from the labor market through educational programs and interventions in prison ($\chi^2$=47.66, $p$ <.01). This suggests that the employment differentials are likely to be even larger in the absence of in-prison programming. We also observe highly similar levels of recidivism across the groups: about one-fourth of the sample reports committing a criminal offense during the six-month follow-up. While not significantly different from the remaining groups, the long-term prisoners actually report the lowest recidivism rate at 17 percent. Thus, deepening embeddedness in criminal behavior seems incapable of explaining the lower employment rates among the ex-prisoners who serve the longest sentences.

*Table 4.3 Human capital and criminal capital*[a]

| | Prison program participation | Recidivism [b] |
|---|---|---|
| Imprisonment length | % | % |
| 1 to 6 weeks | 3.20 | 21.01 |
| 6 weeks to 3 months | 16.32 | 24.86 |
| 3 to 4 months | 28.24 | 24.37 |
| 4 to 6 months | 35.59 | 26.55 |
| 6 to 12 months | 27.45 | 17.02 |
| All | 21.43 | 23.04 |
| Significance | *** | NS |
| *N* | 666 | 620 |

[a] This table presents the adjusted stratum-weighted means of Panel B.
[b] Based on monthly self-report criminal behavior from the calendar questionnaire.
†$p < .10$; *$p < .05$; **$p < .01$; ***$p < .001$ (two-tailed tests).

### *4.9.4 Job stability and job quality*

We examine the job stability of ex-prisoners who found employment in the first half-year upon release using four indicators: multiple job holding, immediate job acquisition, re-employment in a pre-prison job, and proportion of time spent employed. A quick glance at Table 4.4 shows that imprisonment length does not significantly impact any of the measures of job stability. A notable finding is that only 22 percent of employed ex-prisoners worked in more than one job, indicating low turnover. And as was already shown in Figure 4.3, the vast majority of employed ex-prisoners find a job immediately upon release (66-81%).

*Table 4.4 Post-prison job stability*[a]

| | Worked multiple jobs [b] | Employed in 1st month [c] | Return to pre-prison employer [d] | Time spent employed [c] |
|---|---|---|---|---|
| Imprisonment length | % | % | % | Proportion |
| 1 to 6 weeks | 26.45 | 68.00 | 34.78 | 0.78 |
| 6 weeks to 3 months | 22.84 | 69.14 | 26.67 | 0.85 |
| 3 to 4 months | 19.44 | 74.14 | 28.21 | 0.77 |
| 4 to 6 months | 19.45 | 81.25 | 31.03 | 0.84 |
| 6 to 12 months | 17.70 | 65.52 | 20.00 | 0.80 |
| All | 21.85 | 71.80 | 27.92 | 0.81 |
| Significance | NS | NS | NS | NS |
| Statistical test | $\chi^2[4]=1.39$ | $\chi^2[4]=3.48$ | $\chi^2[4]=1.51$ | KW[4]=2.38 |
| Linear trend | No ($\chi^2[1]=1.23$) | No ($\chi^2[1]=.545$) | No ($\chi^2[1]=.463$) | No (*J-T*=15477.0) |
| *N* | 314 | 266 | 176 | 267 |

*ABBREVIATIONS*: $\chi^2$ = Chi square test, KW = Kruskal-Wallis test, J-T= Jonckheere-Terpstra test (tests for an ordered pattern in the medians).
[a] This table presents the adjusted stratum-weighted means of Panel B.
[b] Based on general question concerning number of jobs and available for those who reported one or more jobs.
[c] Based on monthly employment data from calendar questionnaire and available for those employed for at least one month during the follow-up.
[d] Available for those who were employed as salary workers before imprisonment.

Approximately 28 percent of the previously employed prisoners were able to maintain their employment ties beyond their confinement, offering one explanation for quick job acquisition. Short-term prisoners were the most likely to return to a pre-prison employer (35%), and the long-term prisoners were the least likely (20%). While this difference is not significant, it does help partly explain the employment differentials by imprisonment length. Specifically, the relatively low employment ratio among long-term prisoners (6-12 months) seems to be driven by a combination of re-employment (short-term prisoners are more likely to return to their pre-prison job) and new job acquisition (short-term prisoners are more likely to find new employment). Further examination (not shown) points to self-employment as another plausible explanation for quick job acquisition: the majority of men who were self-employed upon release had also classified themselves as self-employed before imprisonment. Many of these men worked as independent contractors or owned small businesses.

The final indicator of job stability – proportion of time employed – suggests that those who find employment tend to remain employed for the greater part of the follow-up period, (0.77-0.85). Altogether these findings show that many of those who find employment are able to hold on to the same job, at least during the first half-year following release from prison.

Finally, we turn to the job quality of the men who were employed in the sixth month after release. Table 4.5 shows no significant differences in monthly earnings or occupational level between the imprisonment length groups. Compared to the average Dutch male worker who earns €2,275 per month (Statistics Netherlands, 2010), this sample averages earnings between €1,839 and €2,128.[10] For roughly one-third of the ex-prisoners, the income from employment is below the minimum monthly income in the Netherlands for adults (aged 23 and older), which is approximately €1,424 before taxes (assuming a 40-hours work week). Although not shown, the median hourly wage is approximately €9.37 and a third of the ex-prisoners earn below the legal minimum hourly wage for adults in the Netherlands (€8.22) (Ministry of Social Affairs and Employment, 2011). While these low earnings could be partly explained by the fact that 27 percent of the ex-prisoners have not reached adulthood (younger than 23), they nonetheless show that the ex-prisoners in this sample are concentrated in low-wage jobs.

10 As of this writing, €1.00 is roughly $1.35. Monthly earnings for this sample thus average between $2,483 and $2,873.

*Table 4.5 Post-prison job quality*[a]

| | Wage (€) [b] | | Medium / higher occupational level [b] |
|---|---|---|---|
| Imprisonment length | Mean | Median | Percent |
| 1 to 6 weeks | 1,907.44 | 1,500 | 38.46 |
| 6 weeks to 3 months | 1,866.95 | 1,500 | 28.79 |
| 3 to 4 months | 2,127.83 | 1,428 | 28.95 |
| 4 to 6 months | 1,839.17 | 1,500 | 33.33 |
| 6 to 12 months | 2,078.16 | 1,150 | 28.57 |
| All | 1,946.61 | 1,500 | 31.40 |
| Significance | NS | | NS |
| Statistical test | KW[4]=6.12 | | $\chi^2$[4]=1.384 |
| Linear trend | No (J-T=8376.50) | | No ($\chi^2$[1]=.282) |
| *N* | 206 | | 207 |

*ABBREVIATIONS*: $\chi^2$ = Chi square test, KW = Kruskal-Wallis test, J-T= Jonckheere-Terpstra test (tests for an ordered pattern in the medians).

[a] This table presents the adjusted stratum-weighted means of Panel B.

[b] Available for those employed in sixth month after release.

We also consider the occupational level of post-prison employment by categorizing all jobs into "high status" (middle, high, or scientific level) versus "low status" (elementary or low level) occupations. Table 4.5 shows that less than one-third of the employed ex-prisoners obtain a high-status job. These men run their own (small) business (e.g., furniture, tanning studio, cars), for instance, or work as a manager, real estate agent, or landscaper. This contrasts sharply with 70 percent of the Dutch male work force that is employed in a high-status occupation (Statistics Netherlands, 2011). The individuals in low-status occupations do not direct other employees and work in jobs that require less education (e.g., warehouse worker, bicycle repairer, road worker). Hence, while many ex-prisoners seem able to find and hold down employment in the first crucial months after release, the quality of their post-prison employment tends to be quite low.

## 4.10 Discussion

### *4.10.1 Post-prison employment*

About half the ex-prisoners found employment in the first six months after release, which studies indicate is a crucial window of time during reentry. The most salient finding was that ex-prisoners who were confined for longer than six months were less likely to be employed, compared to their observationally similar counterparts who were confined for a shorter length of time. When comparing these results with previous studies, we see resemblance with respect to employment rates. Administrative studies report post-prison employment rates of roughly 50 percent immediately after release (Sabol, 2007; Pettit & Lyons, 2007). Visher et al. (2011) found that 65 percent of ex-

prisoners were employed within eight months of release. On the other hand, our finding of a vaguely inverse relationship between imprisonment length and employment rates is not in line with other recent studies. For example, administrative studies consistently conclude that long-term prisoners are more likely to find employment and have higher wages in the first months following release than short-term prisoners (Jung, 2011; Kling, 2004, 2006; Pettit & Lyons, 2007, 2009).

One possible explanation for this contrast in findings is that many previous studies, because they are based on the use of administrative data, fail to capture income not reported to state unemployment insurance systems (self-employment, off-the-books employment, out-of-state employment), and this measurement error is likely to be most severe in samples of high-risk males (Kornfeld & Bloom, 1999; Schochet et al., 2008). Our survey data include all kinds of employment reported by ex-prisoners. Unfortunately, further analyses of the distinction between "formal" and "informal" employment in our data (not shown) were inconclusive, as few ex-prisoners reported working informally. This aligns with previous research showing that ex-prisoners might often fail to make a distinction between formal and informal work because they spend their whole working lives in the informal labor market (Fletcher, 2008).

Another explanation for the contrast in findings could be that our sample includes relatively short prison spells – much shorter than prior administrative studies, in which mean imprisonment length is two years. The negative impact of imprisonment on employment rates observed in our study is thus conditional on serving a prison sentence of well under one year. The apparent positive impact of longer prison spells observed in previous studies could be explained by stronger deterrent effects or more extensive institution- or community-based programming. Relatedly, the relative rarity of long prison spells in the Netherlands, or its more generous welfare regime, might also contribute to cross-national differences in patterns. Comparative research is warranted in order to test the validity of such explanations.

In analyses of non-employment outcomes, we found no evidence for the human capital or criminal embeddedness hypotheses – that skills erosion or recidivism among long-term prisoners explained the relatively low employment ratio among this group. In contrast, our results suggested that the differences in employment are likely to be even larger in the absence of prison programming. Deepening embeddedness in criminal behavior is also incapable of explaining the lower employment rates among long-term prisoners, as we found similar levels of criminal behavior across all imprisonment length groups.

### *4.10.2 Post-prison job stability and job quality*

While we observed a lower employment ratio among the long-term prisoners (6-12 months), prison spells in excess of six months did not lead to different outcomes with respect to the measures of job stability (i.e., employment

timing, number of jobs, re-employment in a pre-prison job, and time employed). We recognize that our six-month window is too short to draw inferences about the long-term job stability of ex-prisoners, necessitating continued follow-up to ascertain whether ex-prisoners are able to keep their jobs for a long period of time.

It is noteworthy that the vast majority of employed ex-prisoners found a job quickly, and that pre-prison employment ties are of major importance for post-prison employment prospects. From a policy perspective, it might be fruitful to consider creative ways to incentivize employers to hire back former employees whose work was disrupted by a short prison spell, assuming of course that the criminal behavior which precipitated their incarceration was unrelated to work activities. Indirectly, this finding also reinforces the expectation that employment is far more difficult for those with little prior work experience, for whom *entry* rather than *reentry* into the labor market accurately characterizes the post-prison challenge (a point made by Bushway, 2006). With respect to job quality, the results show that the employed ex-prisoners often return to, or begin working in, uniformly low-quality jobs which differ little by imprisonment length. Our findings thus lead us to conclude that many of the employed ex-prisoners in our sample find jobs that are relatively stable but of uniformly low quality.

### *4.10.3 Limitations and future research*

Some limitations of this study deserve attention in future research. First, it should go without saying that results from a propensity score model are only as strong as the covariates which are included in the analysis, and the method requires great care in the modeling of the "assignment mechanism." The propensity score methodology can only account for selection on observables, or measured differences between detainees prior to their incarceration. Our view is that the Prison Project data are strongly suited to the task, because they include measures of the two most important determinants of imprisonment length – offense severity and criminal history – along with a wide variety of measures related to demographics, lifestyle, and pre-prison work experiences. In addition, we supplemented tests of statistical significance with estimates of effect size to check more carefully for balance on observables (e.g. Connelly et al., 2013), and we performed a variety of sensitivity analyses to increase confidence in the robustness of our findings. That being said, one should always bear in mind the possibility of unobserved confounding variables for the relationship between imprisonment length and employment.

A second limitation concerns potential weaknesses of the data. An advantage of survey data is the ability to collect rich background data, which is essential for a propensity score methodology. Yet a potential downside is that social desirability and memory loss can invalidate responses. We tried to minimize these biases in several ways. For example, during face-to-face interviews we asked retrospective questions about recent events, used

traditional as well as calendar-based questionnaires to measure labor market participation, and acquired additional information on length of imprisonment and criminal history from administrative sources. An important direction for future research is to study the labor market participation of (ex-)prisoners by combining administrative data with self-report data on employment and recidivism.

A third concern is the generalizability of our findings to the wider population of prisoners and to other Western countries. Because of the timing of data collection, short-term prisoners are overrepresented in the current sample. As a result, any findings pertaining to the deteriorating effect of longer imprisonment length are likely to be underestimates. Furthermore, the Netherlands has a relatively mild penal climate, highly restricted access to criminal history records, and a generous social welfare regime. It is therefore a matter of speculation whether we would find similar results using data from other countries, although our findings are most likely to apply to Northern European countries.

Balanced against a concern about generalizability is the paucity of research on the consequences of short prison spells for employment. In the United States and Western Europe, short spells of incarceration are the norm – they are known as prison spells in a European context but jail spells in an American context. Past research on the incarceration-employment relationship, conducted largely in the United States, is limited to prison spells averaging two years. Bearing in mind other differences in the penal and social climates, a study of prison inmates in the Netherlands can fill an important empirical gap concerning the effect of imprisonment length on employment among American jail detainees. Furthermore, given the more humanitarian climate in the Netherlands, we regard the estimates in this study as conservative.

## 4.11 Conclusion

The present study examines the effect of imprisonment length on employment outcomes in the first six months after release from prison. Because all of the men in this study were incarcerated, we compare groups differing in their imprisonment length, rather than compare men who were incarcerated to men who were not incarcerated. A rich longitudinal dataset comprising 702 pretrial detainees enables us to assess the effect of longer imprisonment on employment outcomes. A variety of post-prison employment variables offers further insight into the labor market prospects of this sample of Dutch ex-prisoners.

The key finding is that, while employment is largely insensitive to imprisonment length among short-term prisoners, there is an apparent threshold at about six months: beyond six months, longer imprisonment corresponds with incremental deterioration in employment prospects. We do note that not all of the sensitivity analyses confirmed this basic pattern.

So while our conclusion should be regarded as provisional, our hope is that follow-up studies will help untangle the impact of imprisonment length on long-term employment prospects (such efforts based on Prison Project data are currently under way). Interestingly, no clear pattern was evident in the intermediate mechanisms considered (prison programming, criminal recidivism), nor was a clear pattern observed with respect to job quality or job stability.

The social context of the Netherlands would seem to indicate that any effects should be conservative relative to short terms of confinement in the U.S. context (specifically, among jail inmates). The fact that employment prospects are apparently worsened among Dutch ex-prisoners serving more than six months suggests that such effects, considered in the context of less generous social welfare and less humanitarian prisons, are likely to be considerably larger.

*Appendix 4.A Descriptive statistics for the 55 pre-prison covariates used in the propensity score model (n = 702)*

| | Mean | SD | Min. | Max. |
|---|---|---|---|---|
| Demographic Characteristics | | | | |
| Age | 31.85 | 11.13 | 18.00 | 65.00 |
| Non-ethnic Dutch | .31 | | .00 | 1.00 |
| Higher level of secondary schooling | .37 | | .00 | 1.00 |
| Level of education father | | | | |
| Low | .33 | | .00 | 1.00 |
| High (higher level of secondary schooling) | .21 | | .00 | 1.00 |
| Missing | .47 | | .00 | 1.00 |
| Level of education mother | | | | |
| Low | .42 | | .00 | 1.00 |
| High (higher level of secondary schooling) | .17 | | .00 | 1.00 |
| Missing | .41 | | .00 | 1.00 |
| Employment History | | | | |
| Number of employers | 5.91 | 5.70 | .00 | 20.00 |
| Duration unemployment (years) | 3.76 | 5.45 | .00 | 20.00 |
| Duration longest job (years) | 3.71 | 3.73 | .00 | 13.00 |
| Frequency dismissal | 1.36 | 2.10 | .00 | 8.00 |
| Frequency off-the-books employment | 1.75 | 1.77 | .00 | 5.00 |
| Employment Before Imprisonment | | | | |
| Non-participant | .22 | | .00 | 1.00 |
| Unemployed | .39 | | .00 | 1.00 |
| Employee | .26 | | .00 | 1.00 |
| Self-employed | .13 | | .00 | 1.00 |
| Wage (€) | 700.26 | 1039.74 | .00 | 3200.00 |
| Sources of Income before Imprisonment | | | | |
| Receive income from others | .12 | | .00 | 1.00 |
| Income from off-the-books employment (€) | 130.57 | 306.06 | .00 | 1000.00 |
| Income from illegal act. (€) | 667.94 | 1622.66 | .00 | 6000.00 |
| Income from benefits (€) | 329.32 | 406.76 | .00 | 1100.00 |
| Lifestyle | | | | |
| Repeated class in school | .29 | | .00 | 1.00 |
| Special education | .27 | | .00 | 1.00 |
| Ever suspended | .58 | | .00 | 1.00 |
| Use of alcohol | 1.95 | 1.69 | .00 | 5.00 |
| Use of drugs | 1.70 | 1.76 | .00 | 4.00 |
| Health | 3.66 | .89 | 1.00 | 5.00 |
| Homeless | .09 | | .00 | 1.00 |
| Debts | .63 | | .00 | 1.00 |
| Driver's license | .50 | | .00 | 1.00 |
| Passport | .47 | | .00 | 1.00 |
| ID-document | .63 | | .00 | 1.00 |

*Appendix 4.A continued*

| | Mean | SD | Min. | Max. |
|---|---|---|---|---|
| Attitude | | | | |
| Locus of control | 2.82 | .85 | 1.00 | 5.00 |
| Positive attitude towards criminal justice actors | 2.80 | .42 | 1.28 | 4.35 |
| Negative attitude towards law | 2.84 | .31 | 1.00 | 3.90 |
| Motivation to work | 3.47 | .49 | 1.00 | 4.89 |
| Social Bonds | | | | |
| Children | .46 | | .00 | 1.00 |
| Partner | .45 | | .00 | 1.00 |
| Criterion Offense Characteristics | | | | |
| Type of crime | | | | |
| Violent | .24 | | .00 | 1.00 |
| Sex | .02 | | .00 | 1.00 |
| Violent property | .16 | | .00 | 1.00 |
| Property | .34 | | .00 | 1.00 |
| Damage | .08 | | .00 | 1.00 |
| Drug offense | .09 | | .00 | 1.00 |
| Other/unknown | .07 | | .00 | 1.00 |
| Number of crimes in case file | 2.71 | 1.95 | 1.00 | 10.00 |
| Maximum penalty (LN) | 7.56 | .67 | 4.50 | 8.90 |
| Pretrial release | .56 | | .00 | 1.00 |
| Criminal History | | | | |
| Number of violent crimes | 1.20 | 1.51 | .00 | 5.00 |
| Number of property crimes | 3.82 | 5.31 | .00 | 18.00 |
| Number of other crimes | 2.33 | 2.39 | .00 | 8.00 |
| Previous prison sentence | .55 | | .00 | 1.00 |
| Age of onset | 19.39 | 6.32 | 11.74 | 35.20 |

*Appendix 4.B Balance diagnostics, prior to stratification, for the covariates used in the propensity score model (n = 702)*

| | 1-6 weeks | | 6 wk-3 months | | 3-4 months | | 4-6 months | | 6-12 months | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *n* = 132 | | *n* = 191 | | *n*= 133 | | *n* = 127 | | *n* = 119 | | | |
| Covariates | Mean | SD | Mean | SD | Mean | SD | Mean | SD | Mean | SD | Sig. | R |
| Demographic Characteristics | | | | | | | | | | | | |
| Age | 33.02 | 11.41 | 30.46 | 10.45 | 30.31 | 10.81 | 30.69 | 10.84 | 31.39 | 10.81 | | .04 |
| Non-ethnic Dutch | .23 | .43 | .34 | .48 | .35 | .48 | .31 | .46 | .27 | .45 | | .01 |
| Higher level of secondary schooling | .45 | .50 | .34 | .47 | .41 | .49 | .35 | .48 | .34 | .47 | | .05 |
| Level of education father | | | | | | | | | | | | |
| Low | .39 | .49 | .35 | .48 | .30 | .46 | .30 | .46 | .38 | .49 | | .02 |
| High (higher level of secondary schooling) | .24 | .43 | .12 | .33 | .19 | .39 | .20 | .41 | .20 | .40 | | .01 |
| Missing | .37 | .49 | .53 | .50 | .51 | .50 | .50 | .50 | .42 | .50 | * | .01 |
| Level of education mother | | | | | | | | | | | | |
| Low | .44 | .50 | .39 | .49 | .40 | .49 | .40 | .37 | .51 | .50 | | .04 |
| High (higher level of secondary schooling) | .20 | .41 | .16 | .37 | .45 | .36 | .16 | .37 | .18 | .38 | | .02 |
| Missing | .36 | .48 | .45 | .50 | .45 | .50 | .44 | .50 | .31 | .47 | | .03 |
| Employment History | | | | | | | | | | | | |
| Number of employers | 6.15 | 5.83 | 6.25 | 5.92 | 6.05 | 6.12 | 4.90 | 4.98 | 6.40 | 5.82 | | .02 |
| Duration unemployment (years) | 3.98 | 6.09 | 3.60 | 5.30 | 3.27 | 5.29 | 3.24 | 5.19 | 4.32 | 5.64 | | .00 |
| Duration longest job (years) | 3.60 | 3.95 | 3.46 | 3.51 | 3.41 | 3.69 | 3.79 | 3.95 | 3.72 | 3.75 | | .02 |
| Frequency dismissal | 1.33 | 2.14 | 1.36 | 2.09 | 1.42 | 2.42 | 1.16 | 1.74 | 1.39 | 2.04 | | .00 |
| Frequency off the books employment | 1.83 | 1.82 | 1.81 | 1.76 | 1.71 | 1.85 | 1.50 | 1.64 | 1.64 | 1.79 | | .06 |
| Employment Before Imprisonment | | | | | | | | | | | | |
| Non-participant | .27 | .44 | .23 | .42 | .20 | .40 | .23 | .42 | .23 | .42 | | .02 |
| Unemployed | .40 | .49 | .36 | .48 | .41 | .49 | .39 | .49 | .39 | .49 | | .01 |
| Employee | .22 | .42 | .31 | .46 | .29 | .30 | .26 | .44 | .24 | .43 | | .01 |
| Self-employed | .11 | .32 | .10 | .30 | .10 | .30 | .13 | .33 | .14 | .35 | | .04 |
| Wage (€) | 617.91 | 1016.46 | 676.84 | 980.66 | 677.82 | 979.69 | 672.13 | 1051.95 | 706.55 | 1030.51 | | .02 |

*Appendix 4.B continued*

| | 1-6 weeks | | 6 wk-3 months | | 3-4 months | | 4-6 months | | 6-12 months | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *n* = 132 | | *n* = 191 | | *n*= 133 | | *n* = 127 | | *n* = 119 | | | |
| Covariates | Mean | SD | Mean | SD | Mean | SD | Mean | SD | Mean | SD | Sig. | R |
| Sources Of Income Before Imprisonment | | | | | | | | | | | | |
| Receive income from others | .14 | .34 | .15 | .36 | .16 | .37 | .10 | .30 | .12 | .32 | | .03 |
| Income from off the books employment (€) | 146.36 | 334.00 | 163.80 | 344.07 | 119.58 | 297.15 | 77.59 | 240.54 | 180.63 | 359.02 | | .01 |
| Income from illegal act. (€) | 613.78 | 1,600.66 | 607.93 | 1,507.40 | 952.85 | 1,875.71 | 590.15 | 1,445.26 | 862.45 | 1,884.20 | | .04 |
| Income from benefits (€) | 369.94 | 418.05 | 302.13 | 418.27 | 287.99 | 394.80 | 317.03 | 403.78 | 321.23 | 407.49 | | .03 |
| Lifestyle | | | | | | | | | | | | |
| Repeated class in school | .32 | .47 | .37 | .48 | .28 | .45 | .26 | .44 | .40 | .49 | | .01 |
| Special education | .25 | .44 | .29 | .45 | .26 | .44 | .25 | .44 | .27 | .45 | | .00 |
| Ever suspended | .52 | .50 | .57 | .50 | .58 | .50 | .50 | .50 | .69 | .47 | * | .07 |
| Use of alcohol | 2.11 | 1.81 | 2.00 | 1.72 | 1.83 | 1.61 | 2.09 | 1.66 | 1.97 | 1.59 | | .02 |
| Use of drugs | 1.72 | 1.72 | 1.75 | 1.76 | 1.82 | 1.80 | 1.50 | 1.72 | 1.74 | 1.76 | | .02 |
| Health | 3.58 | .84 | 3.77 | .90 | 3.70 | 1.01 | 3.75 | .88 | 3.62 | .88 | | .00 |
| Homeless | .14 | .34 | .09 | .29 | .05 | .22 | .13 | .33 | .10 | .30 | | .01 |
| Debts | .67 | .47 | .60 | .49 | .57 | .50 | .61 | .49 | .62 | .49 | | .02 |
| Driver's license | .50 | .50 | .48 | .50 | .46 | .50 | .50 | .50 | .48 | .50 | | .00 |
| Passport | .42 | .50 | .46 | .50 | .50 | .50 | .51 | .50 | .45 | .50 | | .03 |
| ID-document | .64 | .48 | .60 | .49 | .66 | .48 | .59 | .49 | .59 | .49 | | .03 |
| Attitude | | | | | | | | | | | | |
| Locus of control | 2.82 | .72 | 2.69 | .82 | 2.73 | .84 | 2.86 | .89 | 2.87 | .82 | | .05 |
| Positive attitude towards criminal justice actors | 2.74 | .44 | 2.83 | .40 | 2.79 | .48 | 2.81 | .44 | 2.82 | .44 | | .04 |
| Negative attitude towards law | 2.86 | .31 | 2.81 | .32 | 2.80 | .32 | 2.84 | .37 | 2.86 | .28 | | .02 |
| Motivation to work | 3.45 | .49 | 3.50 | .47 | 3.48 | .54 | 3.49 | .48 | 3.53 | .52 | | .04 |

*Appendix 4.B continued*

| | 1-6 weeks | | 6 wk-3 months | | 3-4 months | | 4-6 months | | 6-12 months | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *n* = 132 | | *n* = 191 | | *n*= 133 | | *n* = 127 | | *n* = 119 | | | |
| Covariates | Mean | SD | Mean | SD | Mean | SD | Mean | SD | Mean | SD | Sig. | R |
| Social Bonds | | | | | | | | | | | | |
| Children | .39 | .49 | .38 | .49 | .46 | .50 | .47 | .50 | .49 | .50 | | .08 |
| Partner | .39 | .49 | .40 | .49 | .47 | .50 | .43 | .50 | .51 | .50 | | .08 |
| Criterion Offense Characteristics | | | | | | | | | | | | |
| Type of crime | | | | | | | | | | | | |
| Violent | .27 | .44 | .23 | .42 | .21 | .41 | .28 | .45 | .20 | .40 | | .02 |
| Sex | .02 | .12 | .02 | .13 | .04 | .19 | .02 | .13 | .03 | .16 | | .02 |
| Violent property | .10 | .30 | .13 | .34 | .17 | .37 | .17 | .38 | .29 | .46 | *** | .16 |
| Property | .43 | .50 | .41 | .49 | .35 | .48 | .29 | .46 | .22 | .42 | ** | .16 |
| Damage | .09 | .29 | .06 | .24 | .08 | .27 | .06 | .23 | .04 | .20 | | .05 |
| Drug offense | .08 | .28 | .09 | .29 | .11 | .31 | .10 | .30 | .13 | .33 | | .04 |
| Other/unknown | .02 | .12 | .06 | .24 | .05 | .22 | .08 | .27 | .09 | .29 | | .09 |
| Number of crimes in case file | 2.23 | 1.57 | 2.31 | 1.38 | 2.44 | 1.46 | 2.89 | 1.92 | 3.13 | 2.07 | *** | .19 |
| Maximum penalty (LN) | 7.47 | .52 | 7.52 | .64 | 7.58 | .72 | 7.61 | .73 | 7.84 | .60 | *** | .17 |
| Pretrial release | .72 | .45 | .65 | .48 | .48 | .50 | .32 | .47 | .24 | .43 | *** | .36 |
| Criminal History | | | | | | | | | | | | |
| Number of violent crimes | 1.09 | 1.51 | 1.28 | 1.56 | 1.14 | 1.45 | 1.28 | 1.52 | 1.24 | 1.53 | | .02 |
| Number of property crimes | 4.03 | 5.54 | 3.86 | 5.33 | 3.53 | 5.30 | 1.91 | 4.55 | 3.05 | 4.29 | | .07 |
| Number of other crimes | 2.79 | 2.64 | 2.43 | 2.53 | 2.05 | 2.37 | 1.91 | 2.11 | 2.43 | 2.43 | * | .07 |
| Previous prison sentence | .62 | .49 | .55 | .50 | .52 | .50 | .50 | .50 | .50 | .50 | | .06 |
| Age of onset | 19.24 | 5.95 | 18.14 | 5.23 | 18.81 | 6.09 | 19.73 | 6.61 | 5.52 | 5.52 | | .03 |

*NOTE:* For all covariates, p values reflect one-way analysis of variance (ANOVA) tests for the equality of means.
*ABBREVIATIONS*: SD= standard deviation (omitted for dummy variables)
* $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed tests).

*Appendix 4.C Balance diagnostics, after stratification, for the covariates used in the propensity score model (n = 666)*

| Covariates | 1-6 weeks *n* = 125 | 6 wks-3 months *n* = 190 | 3-4 months *n* = 131 | 4-6 months *n* = 118 | 6-12 months *n* = 102 | Significance | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Mean | Mean | Mean | Mean | Mean | Length | Length* quintile | Both | R |
| Demographic Characteristics | | | | | | | | | |
| Age | 33.59 | 30.21 | 30.31 | 31.33 | 33.61 | | | | .01 |
| Non-ethnic Dutch | .20 | .38 | .34 | .24 | .33 | | * | * | .02 |
| Completed higher level of secondary schooling | .46 | .31 | .44 | .36 | .38 | | | | .03 |
| Level of education father | | | | | | | | | |
| Low | .39 | .33 | .29 | .32 | .33 | | | | 04 |
| High (higher level of secondary schooling) | .18 | .14 | .21 | .18 | .35 | * | | | .12 |
| Missing | .42 | .53 | .50 | .50 | .32 | | | | .07 |
| Level of education mother | | | | | | | | | |
| Low | .59 | .34 | .39 | .36 | .55 | * | | | .02 |
| High (higher level of secondary schooling) | .13 | .20 | .15 | .18 | .20 | | | | .03 |
| Missing | .28 | .45 | .46 | .46 | .26 | | | | .01 |
| Employment History | | | | | | | | | |
| Number of employers | 5.50 | 6.02 | 6.21 | 4.96 | 6.52 | | | | .02 |
| Duration unemployment (years) | 4.52 | 3.62 | 3.19 | 3.31 | 4.05 | | | | .03 |
| Duration longest job (years) | 4.07 | 3.43 | 3.39 | 3.62 | 3.97 | | | | .00 |
| Frequency dismissal | 1.48 | 1.37 | 1.49 | 1.06 | 1.42 | | | | .03 |
| Frequency off the books employment | 1.82 | 1.73 | 1.72 | 1.56 | 1.80 | | | | .02 |
| Employment Before Imprisonment | | | | | | | | | |
| Non-participant | .20 | .22 | .21 | .24 | .24 | | | | .03 |
| Unemployed | .44 | .35 | .40 | .38 | .39 | | | | .01 |

*Appendix 4.C continued*

| Covariates | 1-6 weeks $n = 125$ | 6 wks-3 months $n = 190$ | 3-4 months $n = 131$ | 4-6 months $n = 118$ | 6-12 months $n = 102$ | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Mean | Mean | Mean | Mean | Mean | Length | Significance Length* quintile | Both | R |
| Employee | .18 | .32 | .30 | .25 | .24 | | | | .01 |
| Self-employed | .18 | .11 | .09 | .12 | .12 | | | | .04 |
| Wage (€) | 646.11 | 691.83 | 653.87 | 676.20 | 632.74 | | | | .00 |
| Sources Of Income Before Imprisonment | | | | | | | | | |
| Receive income from others | .09 | .14 | .15 | .10 | .11 | | | | .00 |
| Income from off the books employment (€) | 136.65 | 156.78 | 110.99 | 65.41 | 197.01 | | | | .00 |
| Income from illegal act. (€) | 530.52 | 629.45 | 926.08 | 600.73 | 704.37 | | | | .03 |
| Income from benefits (€) | 490.00 | 301.83 | 298.10 | 356.13 | 324.59 | | | | .08 |
| Lifestyle | | | | | | | | | |
| Repeated class in school | .23 | .37 | .27 | .24 | .28 | | | | .02 |
| Special education | .29 | .31 | .27 | .29 | .30 | | | | .00 |
| Ever suspended | .57 | .60 | .58 | .48 | .66 | | | | .00 |
| Use of alcohol | 1.71 | 1.91 | 1.83 | 1.99 | 2.47 | | | | .12 |
| Use of drugs | 1.81 | 1.70 | 1.75 | 1.48 | 1.72 | | | | .03 |
| Health | 3.48 | 3.79 | 3.74 | 3.73 | 3.52 | | | | .00 |
| Homeless | .11 | .09 | .04 | .17 | .07 | | | | .00 |
| Debts | .76 | .58 | .56 | .62 | .63 | | | | .06 |
| Driver's license | .49 | .49 | .45 | .48 | .50 | | | | .00 |
| Passport | .46 | .49 | .49 | .47 | .41 | | | | .03 |
| ID-document | .64 | .63 | .67 | .67 | .57 | | | | .02 |

*Appendix 4.C continued*

| Covariates | 1-6 weeks $n = 125$ | 6 wks-3 months $n = 190$ | 3-4 months $n = 131$ | 4-6 months $n = 118$ | 6-12 months $n = 102$ | Significance | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Mean | Mean | Mean | Mean | Mean | Length | Length* quintile | Both | R |
| Attitude | | | | | | | | | |
| Locus of control | 2.93 | 2.68 | 2.72 | 2.84 | 2.90 | | | | .02 |
| Positive attitude towards criminal justice actors | 2.74 | 2.83 | 2.78 | 2.82 | 2.84 | | | | .05 |
| Negative attitude towards law | 2.93 | 2.81 | 2.79 | 2.85 | 2.84 | | | | .05 |
| Motivation to work | 3.37 | 3.50 | 3.45 | 3.49 | 3.47 | | | | .05 |
| Social Bonds | | | | | | | | | |
| Children | .54 | .41 | .45 | .46 | .40 | | | | .05 |
| Partner | .54 | .45 | .46 | .39 | .37 | | | | .11 |
| Criterion Offense Characteristics | | | | | | | | | |
| Type of crime | | | | | | | | | |
| Violent | .25 | .23 | .21 | .20 | .24 | | | | .02 |
| Sex | .10 | .01 | .05 | .01 | .01 | ** | *** | *** | .12 |
| Violent property | .13 | .16 | .16 | .10 | .19 | | | | .02 |
| Property | .27 | .36 | .36 | .35 | .37 | | * | | .05 |
| Damage | .18 | .05 | .07 | .06 | .07 | | * | | .09 |
| Drug offense | .05 | .10 | .10 | .09 | .09 | | | | .03 |
| Other/unknown | .02 | .08 | .06 | .09 | .02 | | | | .01 |
| Number of crimes in case file | 2.91 | 2.42 | 2.39 | 2.54 | 2.49 | | | | .05 |
| Maximum penalty (LN) | 7.56 | 7.55 | 7.57 | 7.40 | 7.65 | | | | .00 |
| Pretrial release | .70 | .58 | .51 | .52 | .51 | | | | .12 |

*Appendix 4.C continued*

| Covariates | 1-6 weeks $n = 125$ | 6 wks-3 months $n = 190$ | 3-4 months $n = 131$ | 4-6 months $n = 118$ | 6-12 months $n = 102$ | Significance | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Mean | Mean | Mean | Mean | Mean | Length | Length* quintile | Both | R |
| Criminal History | | | | | | | | | |
| Number of violent crimes | 1.15 | 1.31 | 1.07 | 1.25 | 1.23 | | | | .00 |
| Number of property crimes | 3.07 | 3.63 | 3.42 | 3.87 | 5.06 | | | | .10 |
| Number of other crimes | 2.31 | 2.30 | 2.02 | 2.24 | 2.65 | | | | .03 |
| Previous prison sentence | .50 | .55 | .50 | .52 | .73 | | | | .10 |
| Age of onset | 22.29 | 18.32 | 18.92 | 19.25 | 19.92 | ** | ** | * | .07 |

*NOTE*: For all covariates, p values reflect one-way analysis of variance (ANOVA) tests for the equality of the means.
* $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed tests).

*Appendix 4.D Propensity score quintile conditional on imprisonment length (n = 666)*

| | Observed dose of imprisonment | | | | |
|---|---|---|---|---|---|
| Predicted scores | 1-6 weeks | 6 wks-3 months | 3- 4 months | 4-6 months | 6-12 months |
| 1st quintile | .44 | .24 | .15 | .08 | .03 |
| 2nd quintile | .32 | .28 | .17 | .09 | .06 |
| 3rd quintile | .12 | .24 | .26 | .21 | .14 |
| 4th quintile | .10 | .16 | .27 | .25 | .25 |
| 5th quintile | .02 | .07 | .15 | .37 | .52 |
| *N* | 125 | 190 | 131 | 118 | 102 |

*Appendix 4.E Details on estimation of a generalized propensity score with a continuous treatment*

In addition to estimating a propensity score model for an ordered treatment, a propensity score model for a continuous treatment was also considered. For this supplementary analysis, we retained imprisonment length in its original metric, representing the number of days of prison confinement. The rationale of the approach is developed by Hirano and Imbens (2004) and Imai and Van Dyck (2004), with an application available in Bia and Mattei (2008). In this appendix, we provide a detailed description of the method, but we begin in the next paragraph with a very brief, non-technical overview.

In the current analysis, the generalized propensity score (GPS) represents the estimated probability of the residual from a log-linear regression of imprisonment length on all covariates. This probability derives from the standard normal or *z*-distribution, and therefore assumes that the residuals are normally distributed (an assumption that can be empirically verified). Following estimation of the GPS but prior to estimation of the dose-response function, it is important to ascertain that subjects with different assigned imprisonment lengths are "balanced" with respect to the pre-prison covariates. In other words, conditional on the GPS, there should be no systematic tendency for subjects possessing different imprisonment length "doses" to differ with respect to the covariates. A procedure which involves stratifying on quantiles of imprisonment length (and then stratifying further on quantiles of the GPS) provides a means of testing the balancing property of the model. Estimation of the dose-response function proceeds after the balancing property and the support condition have been confidently established. A GPS-adjusted probability of employment for a given imprisonment length dose can be calculated, which averages over each subject's dose-specific GPS. This can be performed for each imprisonment length of interest, which in the present study is 5 days to 415 days, and then summarized in a graph.

In more technical terms, estimation of the dose-response function using a generalized propensity score consists of three basic steps. The first step is estimation and diagnosis of the GPS. We performed maximum likelihood (ML) regression of the natural logarithm of imprisonment length (denoted $T_i$, for "treatment dosage") on all covariates, along with the squared and interaction terms necessary to maximize balance on the covariates. The model is represented straightforwardly as follows:

$$ln(T_i) = \beta_0 + \sum_{j=1}^{K} \beta_j X_{ij} + \varepsilon_i$$

where $i = 1,\ldots,N$ indexes subjects and $j = 1,\ldots,K$ indexes regressors. Following estimation, the normality of the residuals was confirmed from the non-parametric, Kolmogorov-Smirnov test. These residuals are shown in Appendix F.

We then evaluated each of the residuals with respect to the standard normal probability density function:

$$P_i = \phi\left(\frac{ln(T_i) - X\beta_i}{\sigma_\varepsilon}\right)$$

where $X\beta_i = \beta_0 + \beta_1 X_{i1} + \cdots + \beta_i X_{iK}$ references the linear predictor for subject $i$ (obtained using the estimates from the ML regression model above), $\sigma_\varepsilon$ is the square root of the ML estimate of the model variance, and $\phi(\cdot)$ is the standard normal density evaluated at the argument (i.e., the height of the standard normal distribution at the evaluation point). By construction, $P_i$ is the GPS, formally defined as the conditional density of treatment given the covariates (Hirano and Imbens, 2004). Less formally, the GPS is just the probability assigned to a $z$-score, where $z_i$ is defined as $ln(T_i)$ with reference to the mean ($X\beta_i$) and standard deviation ($\sigma_\varepsilon$) of a normal random variable.

The second step is evaluation of the balancing property of the GPS. There are several ways to do so, but we relied on the method proposed by Hirano and Imbens (2004), which involves blocking on imprisonment length and the estimated GPS. After estimation of the GPS from the first step, imprisonment length is divided into four equal-sized strata (quartiles). Then, within each stratum, an auxiliary GPS is calculated by evaluating each subject's linear predictor with respect to the median imprisonment length for the stratum:

$$P_i^r = \phi\left(\frac{Median\left(ln\left[T_{i\in r}\right]\right) - X\beta_i}{\sigma_\varepsilon}\right)$$

where $r = 1,\ldots,S$ indexes imprisonment length strata and the linear predictor and standard deviation are the same terms obtained from the regression model in the first step. The outcome of this step is the creation of four such auxiliary variables for each subject – one for the evaluation with respect to the median of each imprisonment length stratum. To evaluate covariate balance, each auxiliary GPS is then divided into five equal-sized blocks (quintiles). Balance is tested by computing mean differences of each covariate between subjects assigned to the same GPS block but classified into different imprisonment length strata:

$$t_j^{g,l} = \frac{\mu_{j,1\in r}^{g,l} - \mu_{j,2\notin r}^{g,l}}{\sqrt{\frac{\left(N_{1\in r}^{g,l} - 1\right)s_{j,1\in r}^{g,l} + \left(N_{2\notin r}^{g,l} - 1\right)s_{j,2\notin r}^{g,l}}{N_{1\in r}^{g,l} + N_{2\notin r}^{g,l} - 2}}\sqrt{\frac{1}{N_{1\in r}^{g,l}} + \frac{1}{N_{2\notin r}^{g,l}}}}$$

where $g = 1,\ldots,H$ indexes auxiliary GPS's, $l = 1,\ldots,M$ indexes blocks of the auxiliary GPS and, as before, $j = 1,\ldots,K$ indexes regressors and $r = 1,\ldots,S$ indexes imprisonment length strata. Note that this yields an independent-samples $t$-test which is specific to block $l$ of auxiliary GPS $g$. Because they are independent across blocks, the means and variances from these $t$-tests can be weighted and combined to yield a single overall test of balance of subjects in imprisonment length stratum $r$ relative to all other subjects.

The foregoing procedure is repeated for each imprisonment length stratum. Of the 55 covariates tested in four such comparisons – resulting in 220 total groupwise comparisons – just 4 covariates are statistically significant ($p < .05$, two tails). This indicates that the covariates are strongly balanced by the GPS. For reference, prior to conditioning on the GPS, 12 of the 55 covariates are significantly different in at least one comparison, yielding 20 of the 220 total groupwise comparisons that are significant.

The third and final step is evaluation of common support and estimation of the dose-response function. We first plotted the auxiliary GPS's estimated from the second step, separately for the subjects assigned to a given imprisonment length stratum and the subjects who were not assigned to the stratum. Inspection of Appendix G reveals that the distributions overlap to a degree that we have confidence the support condition is satisfied. We then regressed the employment outcomes on imprisonment length and the GPS (as well as the product of the two). Because the key response variables considered here are binary measures of employment, a pair of logistic regression models was specified:

$$ln\left[\frac{Pr(Y_i = 1)}{1 - Pr(Y_i = 1)}\right] = \delta_0 + \delta_1 T_i + \delta_2 P_i + \delta_3 T_i \times P_i$$

where $T_i$ is imprisonment length and $P_i$ is the GPS estimated from the first step. To evaluate sensitivity of the dose-response estimates, several polynomial functions of imprisonment length and the GPS were considered (e.g., quadratic and cubic functions and their interactions), although we limit our attention here to the simpler, linear functional form with the interaction. Note that the coefficients obtained from this model have no meaningful interpretation and are instead required for estimation of the dose-response function.

After obtaining the results from the logistic regression model, it is finally possible to estimate the dose-response function, or the GPS-adjusted probability of employment for a given imprisonment length. Doing so requires first calculating a dose-specific GPS that evaluates each subject's linear predictor (from the first step) with respect to a specified imprisonment length:

$$P_i^t = \phi\left(\frac{ln(T_i = t) - X\beta_i}{\sigma_\varepsilon}\right)$$

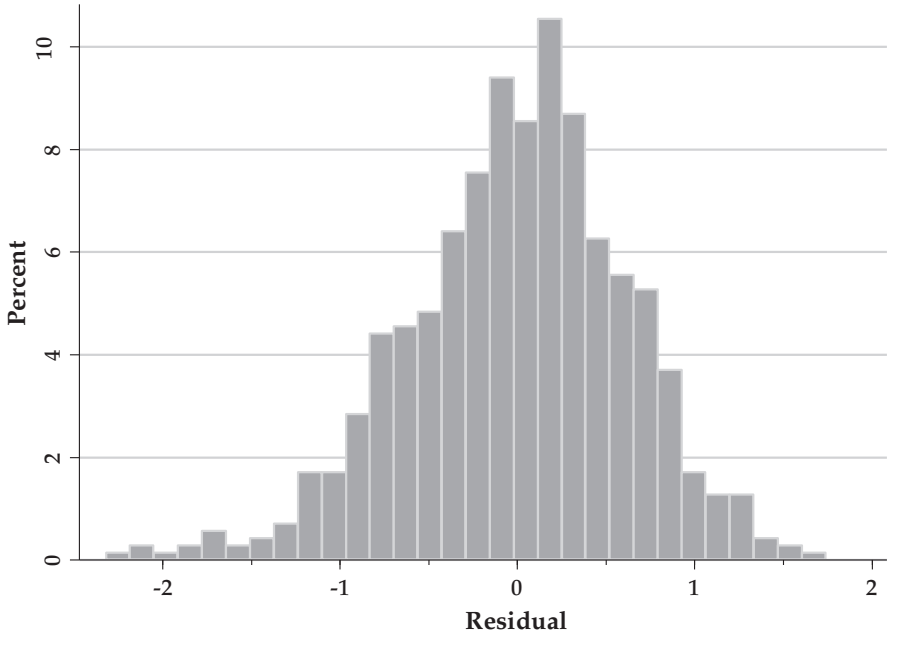
where $T_i = t$ denotes the treatment dosage of interest. We can then use the parameter estimates from the logistic regression model to compute a predicted probability of employment that fixes $T_i = t$ for each subject and then averages over the dose-specific GPS's for all subjects:

$$\overline{Pr\left(Y_i = 1 \middle| T_i = t\right)} = \frac{1}{N}\sum_{i=1}^{N} \frac{exp\left[\hat{\delta}_0 + \hat{\delta}_1\left(T_i = t\right) + \hat{\delta}_2 P_i^t + \hat{\delta}_3\left(T_i = t\right) \times P_i^t\right]}{1 + exp\left[\hat{\delta}_0 + \hat{\delta}_1\left(T_i = t\right) + \hat{\delta}_2 P_i^t + \hat{\delta}_3\left(T_i = t\right) \times P_i^t\right]}$$

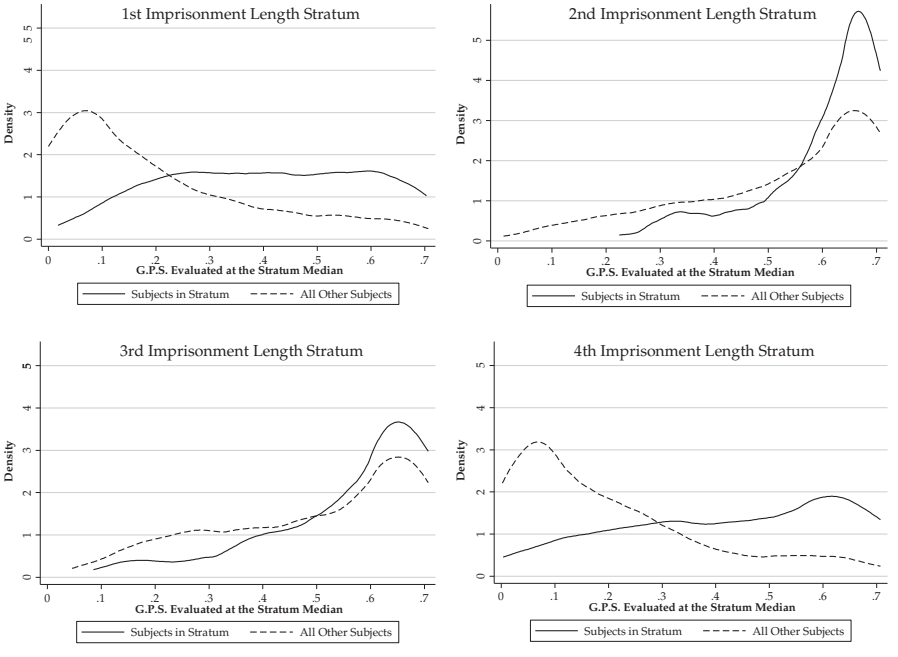
where the coefficients are the estimates obtained from the logistic regression model described above. In principle, there are as many GPS-adjusted response probabilities as there are treatment doses, and in the present study, imprisonment length varies from 5 days to 415 days (yielding up to 411 imprisonment length doses for each subject). Standard errors for the average predicted probabilities are obtained by the bootstrap (with 500 replications), which accounts for the uncertainty introduced by the coefficients and the GPS, both sets of which are themselves estimates of unknown quantities.

The key findings are provided in the two graphs shown in Figure 4.4 in the main text. Using the procedures outlined above, the graphs provide the mean probability of employment for specific imprisonment length "doses," conditional on the GPS (and thus the covariates indexed by it). Note that, because each subject possesses a "potential outcome" under each imprisonment length dose, all subjects contribute to the estimates of the dose-specific means and standard errors. This means that the means and confidence intervals shown in the graph are produced from 288,522 predicted employment probabilities (702 subjects × 411 imprisonment length doses).

*Appendix 4.F Distribution of the residual of logged imprisonment length, following estimation of the generalized propensity score model*



## *Appendix 4.G Common support distributions following estimation of the generalized propensity score model (n = 702)*



# 5 Do released prisoners return to their previous employer? A study on a potentially successful pathway to re-employment■


## Abstract

This study examines to what extent ex-prisoners return to their pre-prison job and identify factors that facilitate or hinder this outcome. Data of a longitudinal study of Dutch pretrial detainees were analyzed to examine whether those who were employed at the time of arrest returned to their pre-prison employer, found new employment or remained jobless in the first half year after release from prison. A multinomial logistic regression was performed to determine to what extent prisoner and pre-prison job characteristics explain job return. About 55 percent of the previously employed prisoners were employed in the sixth month after release. One in three employed ex-prisoners found employment through their previous employer. Individuals who worked for a longer period of time in their pre-prison job and were satisfied with this job, were more likely to return to that former job. Higher educated prisoners were more likely to find new employment. Post-release jobs are generally of low quality, but return jobs score better in some aspects than new jobs. These findings reveal the relevance of recent employment ties for successful reintegration, nuance the common expectation that employers do not want to hire this group of workers, and encourage incentives for employers to rehire employees, assuming that the committed crime(s) are not work related.



Keywords: incarceration, prisoner reentry, employment.


■ Under review at international journal as: Ramakers, A.A.T., Van Wilsem, J. A., Nieuwbeerta, P., & Dirkzwager, A. Do released prisoners return to their previous employers? A study on a potentially successful pathway to re-employment.

## 5.1 Introduction

Scholars, policy makers as well as the majority of ex-prisoners themselves believe that employment is a chief element for a successful transition to a conventional lifestyle (Graffam et al., 2008; Nelson, Deess, & Allen, 1999; Visher et al., 2008). Yet, ex-prisoners face a number of challenges in attempting to find employment and reintegrate into mainstream society. To start, these individuals generally have a low educational level, accumulated little work experience, and hold many other characteristics associated with poor employment prospects (e.g., Petersilia, 2003; Western, 2006). Beyond these pre-existing labor market disadvantages, imprisonment can further limit prisoners' employment opportunities by disrupting existing work relations, preventing the accumulation of work experience and eroding their human capital or pro-social tendencies. Moreover, certain occupations are closed to offenders under law and many employers conduct background checks to weed ex-offenders out of the applicant pool. These barriers warrant knowledge regarding successful pathways to employment for ex-prisoners (see for instance Raphael, 2011 for a more extensive discussion of these barriers).

The literature pertaining to how and which ex-prisoners do succeed in finding employment is emerging. A consistent finding is that work experience is a crucial predictor of post-prison labor market success (e.g., Berg & Huebner, 2011; Sabol, 2007; Visher et al., 2011; Western, 2006). Especially *recent* work experience seems to speed up labor market integration after release. Noteworthy in this respect is that, despite their relatively weak labor market attachment, a substantial share of the prison population is employed at the time of their arrest. Administrative data from state correctional and unemployment insurance systems show that approximately one-third of American prison inmates are employed in the formal labor market at the time of the arrest leading to their current incarceration (Kling, 2006; Pettit & Lyons, 2007; Tyler & Kling, 2007; Sabol, 2007).[1] When unregistered employment is included (self-employment, out-of-state employment, informal labor) this figure increases. For instance, in the Survey of Inmates of State Correctional Facilities two-thirds of the prisoners reported to have a job before incarceration (Bureau of Justice Statistics, 1999). Hence, prisons house many individuals who would otherwise be working.

A few decades ago, scholars showed that several prisoners found their first post-release job by returning to their last job or revisiting another previous employer (Martin & Webster, 1971; Soothill, 1974). Furthermore, using a recent and larger sample of released prisoners, Visher et al. (2008) concluded that prisoners who contacted a previous employer were most successful in finding employment (see also Nelson et al., 1999). Moreover, they showed that contacting a prior employer shortly after release from prison increased

1 Average quarterly employment ratio in first year prior to prison admission: Lalonde and Cho (2008): 25%; Jung (2011): 25%; Kling (2006): 33%; Sabol (2007): 35%; Tyler and Kling (2007): 31%.

the percentage of time ex-prisoners were employed in the first eight months out of prison (Visher et al., 2011). Several other studies present other indirect evidence for the importance of former work relations by showing that many (post-release) jobs are found through social networks (Berg & Huebner, 2011; Granovetter, 1995; Travis, Solomon, & Waul, 2001). Also, scholars have interpreted relatively high employment rates immediately after release as indirect evidence of job return (e.g., Holzer et al., 2006; Ramakers et al., 2012). While all these scholars seem to believe in the relevance of job return for successful labor market reentry after release, they cannot offer hard evidence as none of them actually made the distinction between prisoners who returned to a former employer and prisoners who found new employment. Moreover, even less is known about why some prisoners return to their former employer while others do not. Insight into this potentially successful pathway to employment could help to connect more ex-prisoners to jobs.

The current study builds on the prior theoretical and empirical literature by addressing three important questions. First, we examine to what extent released prisoners are able to (a) return to their pre-prison job, (b) find new employment or (c) become non-employed (*Research question 1*).[2] Second, we examine which prisoner- and job characteristics affect the chance to return to the pre-prison job, find new employment or remain non-employed (*Research question 2*). As such, we study whether theoretically derived factors, that have proven to affect employment chances in general, also affect the job return of previously employed prisoners. Examples of such characteristics are human capital, industry of employment and crime severity. Third, we examine to what extent the job quality of return jobs and new jobs is comparable (*Research question 3*). This exploratory comparison will show whether returning to a previous employer is a sensible strategy where job quality is concerned. Based on interviews with prisoners who returned to their old job, Nelson et al. (1999) stated that "The jobs may not be the best they could get but … many of them decided that any job is better than being unemployed." (p.14). A comparison between type of jobs will test this expectation and furthermore provide a general insight into the quality of post-release jobs.

In order to answer these research questions we use data of the Prison Project, a unique prospective, longitudinal data collection among male pre-trial detainees in the Netherlands. Detailed self-report data allow us to assess for a subsample of 225 previously employed male prisoners whether they returned to their pre-prison jobs, found new employment or were non-employed in the sixth month after release. While employment is known to play an important role in the reintegration after release (e.g., Sampson & Laub, 1993), to date little is known about specific job strategies that increase employment chances for the ever growing pool of ex-prisoners. By using a

2 In this study the term "non-employment" refers to both unemployed individuals (searching but unable to find a job) and non-participants (not in search for a job).

trichotomous distinction in outcomes we are the first to shed light on job return as a potentially successful pathway to employment.

## 5.2 Theory

After release, previously employed ex-prisoners can be classified into three employment statuses; they either return to their former employer, are employed in a new job or remain non-employed. In the latter two cases the pre-prison job is disrupted. Ex-prisoners' placement in any of these three statuses depends partly on two of their own decisions: (a) do they want to work after release, and if so, (b) do they want to return to their previous job or prefer a new job? Evidently, employers also have an important saying in the classification of ex-prisoners in one of the employment statuses: (a) do they want to hire ex-prisoners and (b) do they want to (re)hire that specific ex-prisoner?[3] Theories on the effect of imprisonment on employment probabilities pertain to the general decisions of both actors: prisoners' willingness to work and employers' willingness to hire ex-prisoners. Below, we discuss the role of both prisoners and employers in these theories and apply their notions to the return of released prisoners to their previous job.

### *5.2.1 The role of prisoners*

Various theories pertain to how imprisonment can either diminish or stimulate prisoners' willingness *to work* after release. We start with the potential negative effect of imprisonment. According to the differential association theory (Sutherland et al., 1992), imprisonment will reduce employment chances because prisoners are likely to become involved with social groups that devalue employment in the traditional labor market (Hagan, 1993; McCarthy et al., 2002; Sullivan, 1989). The second downward process has been referred to as self-labeling or secondary deviance (Lemert, 1951): a prison spell can make a prisoner question his own suitability for a conventional lifestyle and accept his deviant status. Third, human capital theory states that applicants' general (e.g., education, work experience) and specific forms of human capital (e.g., job duration, on-the-job-training) are important predictors of employment success (Becker, 1964). During imprisonment, the accumulation of work experience is restricted. Moreover, skills could even deteriorate over a long period of imprisonment (Kling, 1999) and this erosion could affect prisoners' aspirations and confidence to find employment.

3 We use the term "rehire" to refer to the situation in which an employer allows a former prisoner to return to work after release. By using this term we do not imply that imprisonment automatically results in dismissal, as employment contracts could be maintained during imprisonment.

Other theoretical perspectives compete with these downward processes. First, specific deterrence, the personal experience of punishment, can discourage criminals (Becker, 1968), leading them to prefer a conventional lifestyle over a criminal lifestyle. Second, the human capital perspective can also be mustered to posit increases in employability after a period of imprisonment. Long-term prisoners, in particular, could try to compensate for their absence from the labor market, and accumulate new skills, by participating in educational programs and interventions in prison.

When we apply the abovementioned competing arguments to prisoners' willingness *to return to their pre-prison job* after release, we have to consider that previously employed prisoners constitute a selective group of the prison population. Their willingness to work will be relatively high and they are also likely to possess other characteristics associated with employment success, such as a higher level of human capital. It is because of this selectivity that we argue that previously employed prisoners are in general less receptive to any of the mentioned theoretical processes. Nonetheless, processes related to inter-prisoner-contact, self-labeling or the erosion of skills could lead them to disrupt their pre-prison job and become non-employed. Also, processes of deterrence and in-prison skill accumulation could increase their willingness to either return to their previous job or to disrupt their pre-prison job in order to find a new and better job.

### *5.2.2 The role of employers*

Imprisonment can also affect post-prison employment outcomes by diminishing employers' general willingness *to hire an ex-prisoner*. Indeed, findings from employer surveys and audit studies consistently show that employers represent one of the greatest barriers for ex-prisoners (e.g., Pager, 2003; Holzer et al., 2006). First, labeling theories state that employers are reluctant to hire ex-prisoners because they associate a prison record with inferior personal characteristics and a generally low work competency. Human capital theory offers a second explanation for how imprisonment can affect employers' hiring decisions as the previously discussed skill erosion may not only affect prisoners' willingness to work but also turns them into less attractive employees. Third, imprisonment can decrease employers' willingness to hire ex-prisoners because of legal restrictions. In many countries ex-offenders face a variety of statutory restrictions that categorically prohibit certain types of employment (see Harris & Keller, 2005; Jacobs & Blitsa, 2008; Jacobs & Larrauri, 2012). As such, hiring decisions are sometimes outside an employers' discretion. In many cases, however, legal restrictions will not hinder employment as most laws merely prohibit work activities that are related to the crime committed.

In applying these general theories to former employers' willingness *to rehire an ex-prisoner*, we should take into account that, like previously employed prisoners, former employers constitute a specific group. They have access to detailed information about the capabilities of ex-prisoners

and this could influence their hiring decisions. According to the signaling thesis, a theory often used in labor economics, the absence of perfect information about applicants' true productivity forces employers to translate applicants' information into positive and negative signals regarding that productivity (Spence, 1973). As such, signaling theory implies that the negative stereotyping associated with imprisonment might be conditional upon the access to more positive (or negative) information about the employee. In line with this, Pager, Western, and Sugie (2009) found in their recent audit study that "as employers learn more about the person behind the category (e.g., ex-offender, black man), their comfort level with the applicant in question is likely to increase" (p.200). We therefore expect that former employers – having greater familiarity with the characteristics and qualities of the ex-convict – are less influenced by the stigma associated with a prison record and more inclined to rehire an ex-prisoner than new employers. Likewise, we expect that, the more time and costs an employer has invested in an employee, the more likely it is that he will allow this employee to return after release. Hence, we expect that employers will be more likely to rehire prisoners with more job-specific human capital, such as a higher occupational level or longer pre-prison job duration.

Finally, we address the role of legal restrictions in the re-hiring of ex-prisoners. Although countries differ in legislation (see section 5.4), dismissal is always justified when the conduct is job- or industry related (e.g., driving under influence excludes a former taxi driver from returning to his job). Next to this, several prisoner -and job characteristics can also qualify as legally valid reasons for dismissal. Examples are the type of employment arrangement and whether or not the prisoner informed his employer in due time about his imprisonment (Hoge Raad [High Court of the Netherlands], 2010; Legal Action Center, 2004; Sagel, 2011).

## 5.3 Previous research

We complement the theoretical background with empirical work pertaining to theoretically derived predictors of post-release employment. This overview enables us to derive more specific hypotheses about how prisoner characteristics (general human capital, crime severity and motivation) and pre-prison job characteristics (specific human capital, employment industry) affect prisoners' classification in one of the three employment outcomes. Using job return as the reference category, we derive hypotheses about the likelihood of non-employment versus job return and the likelihood of new employment versus job return (see Table 5.1).

### *5.3.1 General human capital*

General human capital is expected to increase employment chances. Holzer et al. (2004) showed that employers were only mildly more enthusiastic

about hiring applicants with a spotty work history (59% "probably will" or "definitely will" hire them) than about hiring ex-offenders (38%). Albright and Denq (1996) furthermore reported that the percentage of employers who expressed willingness to hire an ex-offender increased from 12 to 32 percent when the ex-offender had a college degree. Skill accumulation in prison can also increase employment chances. However, relatively few inmates receive treatment or participate in educational training during as well as after imprisonment (e.g., Travis et al., 2001) and several meta-analyses showed that different kind of programs have few to no causal impact on post-prison employment (or rearrest) (Bushway & Reuter, 2002; Visher et al., 2005). Nonetheless, the completion of voluntary work programs during or after imprisonment can be informative signals and represent a prisoner's willingness to desist from crime (Bushway & Apel, 2012). Hence, *general human capital is expected to make non-employment less likely than job return.*

However, it can also be argued that high-skilled prisoners put less effort in maintaining their old job, precisely because their human capital can help them to overcome the stigma of a prison record in new hiring decisions (Albright & Denq, 1996; Finn & Fontaine, 1983). Moreover, high-skilled prisoners will be better suited to take on employment in other industries when a criminal history excludes them from their pre-prison job. So, even though former employers would be willing to rehire a skilled ex-prisoner, this individual might prefer to look for work somewhere else; *general human capital is expected to make new employment more likely than job return*.

### *5.3.2 Crime severity*

The severity of the conduct can affect employment chances after release. Employer surveys show that the length of a prison spell is interpreted to reflect not only the severity of the crime but also ex-prisoners' capabilities to adjust to the outside world, resulting in a lower willingness to hire long-term prisoners (Giguere & Dundes, 2002). Remarkably, recent studies, based on administrative data from state correctional and unemployment insurance systems, found that offenders who serve longer prison terms experience short-term gains in employment (e.g., Jung, 2011, Kling, 2006; LaLonde & Cho, 2008). This short-term gain could be conditional on serving very long prison spells as the processes that potentially increase employment prospects (deterrence, skill accumulation) are more likely to be true for such punishments. The Dutch spells considered in this study are considerably shorter than those studied in the abovementioned American studies (as will be discussed in a later section). *A longer prison spell is therefore expected to make non-employment more likely than job return*. It strains the work relationship and increases the chance that employers (are legally allowed to) replace their former employee. Following this line of thinking we also expect that *a longer prison spell makes new employment more likely than job return.* Yet, following the signaling thesis, former employers might not be as put off by the duration of a prison spell as new employers, especially when they were sat-

isfied with pre-prison job performances. We therefore also derive the contrasting hypothesis that *a longer prison spell makes new employment less likely than job return*.

With respect to type of crime, results are ambiguous and likely related to the type of job in question. Most studies show that employers favor non-violent offenders over violent offenders (e.g., Albright & Denq, 1996; Giguere & Dundes, 2002; Holzer et al., 2006). It can however also be expected that employers favor violent offenders over non-violent offenders, because the latter group, consisting of drug- and property offenders, shows higher recidivism rates and is therefore more likely to – have offended and will – reoffend against the company (Atkinson, Fenster, & Blumberg, 1976; Helfgott, 1997). As such, competing arguments can be mustered concerning the effect of committing a violent crime on the likelihood of non-employment or new employment on the one hand and job return on the other hand.

### *5.3.3 Motivation*

The motivation to work will increase employment chances after release. A substantial part of the prison population lack this motivation. Illustrative of this is that the lower employment rate among ex-prisoners (compared to non-prisoners) stems largely from labor force non-participation rather than unemployment (the inability to find employment) (Apel & Sweeten, 2010).

Research furthermore showed that prisoners tend to be drawn from social groups that are least satisfied with their job (Quinn & Staines, 1979). The current sample may be relative highly motivated and satisfied with their job as they were all employed before imprisonment. *A higher work motivation or job satisfaction before imprisonment is therefore expected to make non-employment less likely than job return*. Moreover, because job satisfaction likely reflects a prisoner's willigness to return to the pre-prison job (versus the will to search for a new job), we also expect that *a higher job satisfaction makes new employment less likely than job return*.

### *5.3.4 Job-specific human capital*

Specific human capital – work experience that is useful only to a single employer or industry – increases employment chances. For instance, Visher et al. (2011) reported that individuals with a longer pre-prison job duration spent more time employed after release. A longer job duration and higher occupational level prior to imprisonment implies that job skills may have been accumulated and both the prisoner and the employer invested time in the work relationship. These characteristics make both actors more receptive to continuing the relationship after release. As workers with more job-specific human capital are more valuable to employers, and particular to former employers, we expect that both *a longer job duration and a higher occupational level make non-employment less likely than job return* and *new employment less likely than job return*.

### *5.3.5 Employment industry*

Perhaps because of their fear of negligent hiring, employers base hiring decisions on the link between specific job tasks on the one hand and crime risk on the other hand. In general, industries differ in job tasks and crime risks. Illustrative of this is the finding that large firms in fields with little interaction between customers and workers, such as manufacturing and construction, are much more willing to hire ex-offenders than other industries and small firms (Holzer, Raphael, & Stoll, 2007). Earlier work (Martin & Webster, 1971; Soothill, 1974) as well as recent studies (Nally, Lockwood, & Ho, 2011; Stoll & Bushway, 2008) showed that the majority of ex-offenders indeed find employment in low skill sectors with little customer interaction or financial responsibilities. We therefore expect that *when the pre-prison job concerns the handling of money or customer interaction both non-employment and new employment are more likely than job return*.

*Table 5.1 Overview hypotheses on prisoner- and job characteristics*

| | | Non-employed versus Job return (*ref.*) | New job versus Job return (*ref.*) |
|---|---|---|---|
| *Prisoner characteristics* | | | |
| General human capital | Educational level | - | + |
| | Work experience | - | + |
| | Training in prison | - | + |
| Crime severity | Imprisonment length | + | +/- |
| | Violent crime | +/- | +/- |
| Motivation | Motivation to work | - | +/- |
| | Job satisfaction | - | - |
| *Job characteristics* | | | |
| Job-specific human capital | Job duration | - | - |
| | Occupational level | - | - |
| Crime risk industry | Handling of money or customer contact | + | + |

## 5.4 The Dutch context

Before heading to the data and results we pay attention to the context in which these data were gathered. The Netherlands represents a unique case study and differs from the United States in several important ways. On the one hand, job return might be more prevalent in the Netherlands because prison spells are comparatively short and laws designed to protect ex-offenders from (labor market) discrimination are more stringent, compared to the United States. Approximately 80 percent of all Dutch prisoners spent less than six months in prison (Linckens & De Looff, 2011), whereas the

average American prisoner serves about two years (Guerino et al., 2011). It is therefore best to conceive of these Dutch prison spells as being more akin to American jail sentences. Moreover, where Dutch ex-offenders are, legally speaking, only excluded from jobs that are related to their criminal history, certain American states ban all ex-offenders from public employment and allow private employers to refuse anyone with a criminal conviction (Legal Action Center, 2004). It should be noted however that characteristics of the job (e.g., employment arrangement) and the prisoner (e.g., on-the-job behavior) can offer Dutch as well as American employers legally valid reasons to fire an imprisoned employee (Hoge Raad [High Court of the Netherlands], 2010; Sagel, 2011). Still, these two country differences could result in a relatively higher job return rate in the Netherlands.

On the other hand, the more generous welfare system and the restricted access to criminal background information in the Netherlands, could lead to relatively more job returners in the United States. The Netherlands is long known for its generous welfare regime while the United States is known as a liberal regime with strict eligibility criteria and minimum benefit levels (Esping-Andersen, 1990). Although Dutch social policy liberalized in recent decades, the welfare regimes of both countries remained to produce different levels of social benefits. Dutch ex-prisoners might therefore be less inclined to search for employment, either at former or new employers, than American ex-prisoners. In addition, the job return rate could be higher in the U.S. because the search for new employment is more challenging. In the Netherlands, an applicant's criminal history is difficult to access (Boone, 2011), yet most American employers can search for information in official repositories, online databases or hire private agencies that gather court records (Briggs et al., 2004; Bushway, 2004).[4] Hence, American ex-prisoners might put more effort in returning to a former employer, who might be more likely to diverge from the stereotype of "the ex-convict" than new employers.

## 5.5 Data

The data for this study were collected as part of the Prison Project, a unique prospective, longitudinal and nationwide effort to collect data about Dutch pretrial detainees. The project targeted male prisoners who entered a Dutch detention facility between October 2010 and March 2011, were born in the Netherlands, between 18 and 65 years old and did not suffer from severe

4 In the Netherlands, every employer may ask applicants for a certificate of conduct. In certain sectors this certificate is mandatory (education, health service, cab driving, security and transportation). It is granted by the secretary of Security and Justice if a criminal history is not related to the future work activities. In recent years the certificate has become mandatory in more sectors than before. The rules for granting a certificate have become stricter as well (Boone, 2011). In contrast to the United States, Dutch employers have few other possibilities to retrieve information about the criminal history of applicants.

psychological problems. As the current study aims to investigate prisoners' opportunities to return to the pre-prison employer after release, we restrict our focus to the participants who worked as employees in the run op to imprisonment and were reinterviewed six months after release. As a result, the current sample consists of 225 previously employed prisoners.

These prisoners participated in the baseline interview a few weeks after entering detention (P1) (total $n$ = 1,909; 65% response rate), and in the reentry interview that took place in the sixth month after release (R1) (total $n$ = 842; 52% response rate). Missing data on pre-prison or post-prison employment status resulted in 824 cases for analysis on the R1-sample. Approximately 27.3 percent of these participants worked as salary workers before imprisonment ($n$ = 225). Appendix 5.A provides more detailed information about the data collection, and the representativeness of the sample.

### *5.5.1 Measures*

*Post-prison employment status* is the key dependent variable examined in this study. It measures if previously employed prisoners returned to their pre-prison job, were employed in a new job or were non-employed in the sixth month after release. The construction of the questionnaire enables us to measure job return for those ex-prisoners who returned to their pre-prison employer immediately after release. The present study focuses on the employment situation in the sixth month after release. Therefore, we consider those who returned to their previous employer immediately after release *and* were still working there in the sixth month after release as job returners.

We also created five indicators for post-release job quality, the second dependent variable. First, *earnings* represent the net monthly salary (after taxes) (mean: €1,622.71; median: €1,425).[5] Second, following the definition of *fulltime employment* of Statistics Netherlands we coded those who worked a minimum of 35 hours per week as full-timers. Third, we distinguish between a permanent and temporary *employment arrangement*. Fourth, using the Standard for Classification of Occupations of Statistics Netherlands (Westerman, 2010), survey information on the job title, type of business and (executive) tasks was used to classify workers into five *occupational levels* ranging from the elementary level to the lower, medium, higher or scientific level. Fifth, average scores on eleven items pertaining to post-prison *job satisfaction* (e.g., "My job gives me confidence", range: 1 "totally disagree" – 5 "totally agree") were combined into a reliable scale (Cronbach's alpha is 0.913).

We operationalized a series of pre-prison job- and prisoner characteristics that prior studies have established as predictors of post-prison employment. We start by describing four pre-prison job characteristics. *Job duration* represents the time between the month they started working in their pre-

5 Scores above the 95th percentile (€5,600) were truncated ($n$ = 2).

prison job and prison admission (median: 16.4 months; mean: 43.8 months). Pre-prison *occupational level* was assessed the same way as the post-prison occupational level. In addition, survey information on job title, type of business and (executive) tasks was used to categorize jobs into ten different *employment industries*: hotel and catering industry, logistics, construction and maintenance, sales, security, farming, services, manufacturing, cleaning and other industry. One additional variable was created to identify *industries that entailed the handling of money or customer interaction* (hotel and catering, logistics, sales, security, services) (33.6%).

Next, we describe seven prisoner characteristics that relate to post-prison employment. *Education* is included as a dichotomous variable. Lower education characterizes those that did not complete primary school, only completed primary school or graduated from the lower levels of secondary school. Medium and higher education symbolize completion of a higher level of secondary schooling and refers to individuals who completed a higher vocational training or post-secondary education (42.2%). *Work experience* represents the proportion of time a prisoner spent in unemployment since leaving fulltime education (mean: 14%; median: 2%). *Skill accumulation* was measured by asking prisoners after release whether they participated in an educational -or work program during imprisonment (28.9%). *Length of imprisonment* is the actual time between the first day of pretrial detention and date of release from confinement (either pretrial detention or imprisonment) as registered by the Judicial Institutions Department of the Netherlands. This variable ranges from 14 to 538 days and the median spell is 3.8 months (116 days), with a mean of 5.1 months (158 days). The General Documentation Files (GDF) of the Criminal Record Office ("rap sheets") were consulted for information on the index offense, such as *type of crime*. These data were made available by the Research and Documentation Centre (WODC) of the Netherlands Ministry of Security and Justice. We distinguish between non-violent crimes and violent crimes (50.0%). *Work motivation* and *job satisfaction* before imprisonment were based on several items and average scores were captured in two scales (Cronbach's alpha of 0.672 and 0.903 respectively).

Finally, the rich survey data allow us to control for many covariates. First, we added information on *demographics* and *social bonds*. Next, we included whether the former *employer knew about the imprisonment* in order to account for the possibility that an employer maintained or terminated the employment contract without knowing about the prison spell. The vast majority of prisoners reported already during the first interview (P1) that they informed their employer about their imprisonment (82.7%). Third, we included whether or not the prisoner had a *permanent employment agreement* with the employer prior to imprisonment (60.4%). Fourth, we controlled for detailed information on *criminal history*, based on the General Documentation Files (GDF) of the Criminal Record Office ("rap sheets"). Next to information on the index offense, these data contain every case that was registered by the Public Prosecutor's Office starting from age twelve, the age of criminal responsibility. Finally, we included the *national monthly unemploy-*

*ment rate* at time of release (ranging from 4.7 to 6.2%) in order to control for differences in labor demand during the research period (Statistics Netherlands, 2013). Appendix 5.B offers descriptive statistics about all covariates used in this study.

## 5.6 Methods

The analyses proceed in four separate stages. First, we perform a chi-square test to show the association between pre-and post-prison employment outcomes for the larger sample of prisoners, including those who were not employed before prison. This allows us to examine if previously employed prisoners indeed have higher employment chances after release. Then, the focus shifts to the selection of former employees and their chances to return to their previous employer, find new employment or remain non-employed (*RQ 1*). Third, the relation between prisoner- and job characteristics and the post-prison employment status (return job, new job and non-employment) is studied using descriptive statistics and chi-square tests. Fourth, we estimate the effect of each predictor on the dependent variable with other predictors held constant by employing a multinomial logistic regression technique. This technique was selected because it allows for categorical dependent variables, such as our trichotomous measure of post-prison employment status. It estimates one set of coefficients for each category of the dependent variable, minus the reference category (Pampel, 2000). Using job return as the reference category, two comparisons are made: the probability of finding a new job is compared to that of returning to the previous job; similarly, the probability of remaining non-employed is compared to the probability of returning to the previous job (*RQ 2*).[6, 7] Finally, additional difference tests are performed in order to compare the job quality before and after prison for job returners and job changers, and study the mobility in job quality within these two groups (*RQ 3*).

## 5.7 Findings

### *5.7.1 RQ 1: To what extent are released prisoners able to return to their pre-prison job, find new employment or become non-employed?*

Table 5.2 presents the respondents' employment situation before and after imprisonment. The results show that, overall, 34.8 percent of the ex-prisoners were employed in the sixth month after release (29.7%+5.1%). Previously

6 In order to retain the total sample size in the multivariate analysis, the few missing values on pre-prison covariates (see Appendix 5.B) were imputed.

7 Diagnostics indicate that multicollinearity and outliers are no concern in this multinomial logistic regression.

employed prisoners are more likely to succeed in the labor market after release than those without recent work experience ($\chi^2(15)= 478.815$, $p<0.001$). Approximately twenty percent of the individuals who were non-participant or unemployed prior to imprisonment found employment after release, 17.1 percent and 20.7 percent respectively. In contrast, self-employed prisoners and previous employees have a more than fifty percent chance of finding employment after release (68.4% and 54.7% respectively).

Another significant observation is that most of the ex-prisoners remain in the same employment category after release: 37.4% of the non-participants, 37.9% of the unemployed, 55.1% of the self-employed and 50.3% of the employees. We furthermore notice the high re-imprisonment rates. Approximately 1 in 4 previously non-employed prisoners were back in prison in the sixth month after release. Lower but substantial re-imprisonment rates are found among the prisoners who were previously self-employed or worked as salary worker (12.2% and 13.8%). Recidivism rates are thus high among our sample.[8]

Of more specific interest to this study are the post-release employment outcomes of the 225 prisoners who were employed as salary workers before imprisonment. Table 5.2 shows that 18.7 percent of them returned to their previous employer, 36.0 percent found new employment and 45.3 percent are non-employed in the sixth month after release. Hence, approximately 34 percent of those who were successful in obtaining employment six months after their release were employed by their previous employer (18.7/54.7=34.2). This finding demonstrates the importance of pre-prison employment ties for labor market reintegration after release. Additional analyses (not shown) indicated that the prevalence of job return was somewhat higher in the first month after release (27.5% versus 18.7%). Hence, one-third of the individuals who initially returned to their pre-prison employer were unable to retain this job. As such, job return does not seem to assure job certainty and stability. Yet, the majority of returning prisoners were able to retain their job, at least during the first (and crucial) half year after release.

8 Yet, we do note that the presented re-imprisonment rates might overestimate the actual recidivism rate because approximately 13 percent of all prisoners were sentenced back to prison for the index offense. Recall that ex-prisoners were re-interviewed approximately six months after their *first release* back into society. Sometimes they had to await the trial-decision at home. Approximately 34.8 percent of the prisoners in the current sample were first released before trial and 37.6 percent of them were later sentenced back to prison for the index offense (prison spell was prolonged) (34.8*37.6=0,13). Unfortunately it is outside the scope of this study to examine whether they indeed returned to prison for the index offense or another offense at the time of the reentry interview (sixth month after release).

*Table 5.2 Employment status before imprisonment and six months after release*

| | | | Before imprisonment | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Non-participant | | Unemployed | | Self-employed | | Employee | | All | |
| Sixth month after prison | | | % | % | % | % | % | % | % | % | % | % |
| *Non-employed* | | | | *82.9* | | *79.3* | | *31.6* | | *45.3* | | *65.2* |
| | Non-participant | | 37.4 | | 13.1 | | 11.2 | | 8.0 | | 17.0 | |
| | Unemployed | | 24.1 | | 37.9 | | 8.2 | | 23.6 | | 27.3 | |
| | Back in prison | | 21.4 | | 28.3 | | 12.2 | | 13.8 | | 20.9 | |
| *New job* | | | | *17.1* | | *20.7* | | *68.4* | | *36.0* | | *29.7* |
| | Self-employed | | 4.8 | | 2.2 | | 55.1 | | 4.4 | | 9.7 | |
| | Employee | New job | 12.3 | | 18.5 | | 13.3 | | 31.6 | | 20.0 | |
| *Return job* | | Return job | - | | - | | - | | 18.7 | *18.7* | 5.1 | *5.1* |
| Total | % | | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| | N | | 187 | 187 | 314 | 314 | 98 | 98 | 225 | 225 | 824 | 824 |

### 5.7.2 *RQ 2: Which prisoner- and job characteristics affect the chance to return to the pre-prison job, find new employment or remain non-employed?*

Table 5.3 indicates that several prisoner characteristics are associated with job return in the expected direction. Yet, only work motivation increases job return significantly: 36.6 percent of the highly motivated prisoners returned to the same employer after release, compared to only 13.6 percent of the less motivated prisoners ($\chi^2(2)=11.772$, $p<0.01$).[9] With respect to job characteristics, we find that individuals who worked for their employer for longer than one year prior to their imprisonment, have a significantly higher chance to return to their previous job (25.7% versus 11.2%) ($\chi^2(2)=6.653$, $p<0.05$). The other pre-prison job characteristics were not significantly associated with post-prison employment status. This lack of significant associations could be attributable to the relatively small sample size.

9 In Table 5.3 we identify the particular cell(s) that contribute most to the Chi-square based on the standardized residuals. These residuals can be viewed as z-scores, and indicate how many standard deviations above or below the expected count a particular observed count is.

*Table 5.3 Chance of job return, new job or non-employment*

| | | | Return job $n = 42$ | New job $n = 81$ | Non-employed $n = 102$ | All | |
|---|---|---|---|---|---|---|---|
| | | | % | % | % | % | N |
| All | | | 18.7 | 36.0 | 45.3 | 100.0 | 225 |
| *Prisoner characteristics* | | | | | | | |
| General Human capital | Educational level | Low | 19.2 | 48.5 | 32.3 | 100.0 | 130 |
| | | Medium/higher | 17.9 | 41.1 | 41.1 | 100.0 | 95 |
| | Work experience | Unemployed <= 1 year | 20.6 | 37.7 | 41.7 | 100.0 | 175 |
| | | Unemployed > 1 year | 12.0 | 30.0 | 58.0 | 100.0 | 50 |
| | Skill accumulation in prison | No | 20.0 | 33.1 | 46.9 | 100.0 | 160 |
| | | Yes | 15.4 | 43.1 | 41.5 | 100.0 | 65 |
| Crime severity | Imprisonment length | <= 3 months | 17.4 | 39.1 | 43.5 | 100.0 | 92 |
| | | > 3 months | 19.5 | 33.8 | 46.6 | 100.0 | 133 |
| | Type of crime | Non-violent crime | 14.7 | 36.7 | 48.6 | 100.0 | 109 |
| | | Violent crime | 22.0 | 35.8 | 42.2 | 100.0 | 109 |
| Motivation | Motivation to work ** | Low-high | 13.6 | 38.5 | 47.9 | 100.0 | 169 |
| | | Very high | 36.6* | 29.3 | 34.1 | 100.0 | 41 |
| | Satisfaction with job | Low-high | 14.7 | 37.1 | 48.3 | 100.0 | 143 |
| | | Very high | 25.6 | 34.1 | 40.2 | 100.0 | 82 |
| *Job characteristics* | | | | | | | |
| Job-specific human capital | Job duration * | <= 1 year | 11.2† | 39.3 | 49.4 | 100.0 | 89 |
| | | > 1 year | 25.7 | 32.7 | 41.6 | 100.0 | 113 |
| | Occupational level | Low | 17.4 | 36.8 | 45.8 | 100.0 | 144 |
| | | Medium/higher | 22.4 | 32.7 | 44.9 | 100.0 | 49 |

*Table 5.3 continued*

| | | | Return job $n = 42$ | New job $n = 81$ | Non-employed $n = 102$ | All | |
|---|---|---|---|---|---|---|---|
| | | | % | % | % | % | N |
| Employment industry | Industry | Hotel & catering | 14.3 | 61.9 | 23.8 | 100.0 | 21 |
| | | Logistics | 11.5 | 42.3 | 46.2 | 100.0 | 26 |
| | | Construction & maintenance | 21.4 | 31.4 | 47.1 | 100.0 | 70 |
| | | Sales | 20.8 | 33.3 | 45.8 | 100.0 | 24 |
| | | Security | 20.0 | 40.0 | 40.0 | 100.0 | 5 |
| | | Farming | 9.1 | 36.4 | 54.4 | 100.0 | 11 |
| | | Services | 20.8 | 29.2 | 50.0 | 100.0 | 24 |
| | | Manufacturing | 7.1 | 50.0 | 42.9 | 100.0 | 14 |
| | | Cleaning | 41.7 | 8.3 | 50.0 | 100.0 | 12 |
| | | Other | 7.7 | 30.8 | 61.5 | 100.0 | 13 |
| | Money/Customer interaction | No | 17.8 | 33.6 | 48.6 | 100.0 | 146 |
| | | Yes | 18.9 | 40.5 | 40.5 | 100.0 | 74 |

†$p<0.10$; *$p<0.05$; **$p<0.01$

The next step is to examine the joint effect of prisoner- and job characteristics on post-prison employment status in one model, in which "job return" is the omitted reference category. In Table 5.4, we first examine the predictors associated with non-employment versus job return. In line with our hypotheses, (see Table 5.1) we find that those who serve a longer prison spell are more likely to become non-employed than to return to their pre-prison job (Exp(B)=1.01), whereas work motivation and job satisfaction decrease the likelihood of non-employement versus job return (Exp(B)=0.44; Exp(B)=0.45). Contrary to our expectations, indicators of general and specific human capital did not make non-employment less likely than job return. Theory and previous work produced ambiguous results concerning the effect of type of crime on employment chances. We find that type of crime does not affect the chance to become non-employed versus returning to the pre-prison job. Lastly, those working under a permanent contract were less likely to end up non-employed than to return to their previous employer.

The second panel in Table 5.4 presents the coefficients for new employment versus job return. General human capital was expected to increase the likelihood of finding a new job over returning to the previous job because skilled prisoners are relatively better equipped to overcome the stigma of imprisonment in new hiring situations. The results corroborate this hypothesis and show that a higher educational level increases the likelihood of new employment over the likelihood of job return (Exp(B)=2.88). The effects of the other general human capital indicators are in the same direction but not statistically significant. We find that individuals who serve a longer prison spell are more likely to find new employment than to return to their previous job (Exp(B)=1.01). Next, prisoners who were more satisfied with their pre-prison job were less likely to find a new job than to return to their previous job (Exp(B)=0.41). With respect to job-specific human capital, we expected that a longer job duration or higher occupational level would make new employment less likely than job return. The results corroborate the effect of job duration (Exp(B)=0.99), but occupational level has no effect on post-prison employment status and neither has employment industry. Working under a permanent employment arrangement before imprisonment (Exp(B)=0.34) increases the likelihood of returning to this prior job. Finally, a higher national unemployment rate at the time of release (Exp(B)=0.76) decreases the chance to find new employment versus returning to the previous job.

*Table 5.4 Multinomial regression for post-prison employment status (n = 225)*[a]

| | | Non-employment | | | New employment | | |
|---|---|---|---|---|---|---|---|
| | | B | SE | Exp(B) | B | SE | Exp(B) |
| Intercept | | 15.50* | 7.10 | 0.00 | 18.96** | 7.29 | 0.00 |
| General human capital | Medium/higher educated | 0.59 | 0.50 | | 1.06* | 0.50 | 2.88 |
| | Proportion of time unemployed | 1.28 | 1.42 | | 0.60 | 1.48 | |
| | Skill accumulation in prison | -0.10 | 0.56 | | 0.39 | 0.56 | |
| Crime severity | Violent crime | 0.42 | 0.49 | | 0.16 | 0.49 | |
| | Imprisonment length | 0.01† | 0.00 | 1.01 | 0.01* | 0.00 | 1.01 |
| Motivation | Motivation to work | -0.81† | 0.47 | 0.44 | -0.27 | 0.47 | |
| | Satisfaction with job | -0.80* | 0.37 | 0.45 | -0.89* | 0.37 | 0.41 |
| Specific human capital | Duration job | -0.01 | 0.00 | | -0.01† | 0.00 | 0.99 |
| | Lower occupational level *(ref.)* | | | | | | |
| | Medium/higher occupational level | 0.13 | 0.58 | | -0.14 | 0.59 | |
| | Missing occupational level | -0.77 | 0.72 | | -0.66 | 0.73 | |
| | Industry with money contact | -0.27 | 0.50 | | 0.01 | 0.50 | |
| Control variables | Partner | 0.33 | 0.46 | | 0.12 | 0.47 | |
| | Child(ren) | 0.21 | 0.58 | | 0.12 | 0.60 | |
| | Age | 0.00 | 0.04 | | 0.02 | 0.04 | |
| | Non-ethnic background | 0.63 | 0.49 | | 0.69 | 0.50 | |
| | Permanent contract | -1.16* | 0.55 | 0.31 | -1.08† | 0.56 | 0.34 |
| | Employer knew about imprisonment | -1.31 | 0.82 | | -0.78 | 0.85 | |
| | Age of first arrest | 0.01 | 0.04 | | -0.04 | 0.04 | |
| | Previous prison spell | 0.73 | 0.65 | | 0.33 | 0.66 | |
| | Nr. of previous convictions | 0.02 | 0.07 | | -0.07 | 0.08 | |
| | National unemployment rate at release | -0.17 | 0.15 | | -0.27† | 0.15 | 0.76 |
| Nagelkerke $R^2$ | | 0.306 | | | | | |

[a] "Job return" is the reference category of the dependent variable in the analysis
†$p<0.10$; *$p<0.05$; **$p<0.01$

### *5.7.3 RQ 3: To what extent is the job quality of return jobs and new jobs comparable?*

Table 5.5 and 5.6 present descriptive statistics on post-release job quality for job returners and job changers, respectively. A quick glance at these tables indicates that return jobs are of a somewhat higher quality than new jobs. While median earnings are comparable (€1,450 for job returners versus €1,400 for job changers), job returners are more likely to work fulltime (80% versus 66.7%), have a permanent work agreement (90.5% versus 43.5%), a higher occupational level (33.3% versus 21.9%) and are on average more satisfied with their job (average score of 3.3 versus 3.0) than job changers. Yet, difference tests (not shown) revealed that these two groups only vary significantly in employment arrangement. Again, the lack of significant findings could be partly attributable to the relatively small sample size. In any case, both groups of working ex-prisoners work in generally low quality jobs compared to the Dutch labor force. For instance, the average Dutch male worker earns about €2,275 per month and occupies a job of a medium or higher occupational level (Statistics Netherlands, 2011).

Table 5.5 and 5.6 also present figures on the within-group mobility in job quality. We distinguish between individuals who scored similar on a job quality characteristic in the pre-prison job and the post-prison job (immobile) and those whose job quality improved (increase) or worsened (decrease) after release. Earnings represent the most dynamic job quality indicator. Even when we consider all changes below €250 as immobility, approximately 50 percent of the job returners and 80 percent of the job changers experience mobility in earnings after release. For both groups half of this mobility is attributable to a rise in earnings. We find high rates of immobility for the other job quality indicators, especially among job returners. Moreover, half of the working ex-prisoners show immobility on at least three of the five indicators. These exploratory analyses suggest that working ex-prisoners end up in a job that is similar to the pre-prison job and that this similarity is more prominent among job returners than job changers. The latter group experiences more mobility, both downwards and upwards. This reveals the diversity of this group; some individuals might be forced to work in lower quality jobs due to their prison record, while others were able to or strived to find a better job regardless of this record.

*Table 5.5 Job quality in sixth month after release for job returners (n = 42)*

| | Job quality | | | Mobility in job quality | | | |
|---|---|---|---|---|---|---|---|
| | Range | Median | Mean/ % | Similar | Increase | Decrease | N |
| | | | | % | % | % | |
| Earnings | €730-€3,300 | 1,450 | 1,585 | 17.1 | 48.8 | 34.1 | 41 |
| | /€250 | | | 51.2[a] | 24.4[a] | 24.4[a] | 41 |
| Fulltime employment | 0-1 | | 80.0 | 90.0 | 5.0 | 5.0 | 40 |
| Permanent employment arrangement | 0-1 | | 90.5 | 81.0 | 14.3 | 4.8 | 42 |
| Occupational level | 5 levels | 2.0 | 2.4 | 75.0 | 13.9 | 11.1 | 36 |
| | 2 levels | | 33.3 | 77.8 | 11.1 | 11.1 | 36 |
| Job satisfaction | 5 categories | 3.0 | 3.3 | 65.9[b] | 9.8[b] | 24.4[b] | 41 |

[a] Increase/decrease represents a change in earnings of € 250 or more.
[b] Increase/decrease represents a change in overall category (the continuous scale scores were regrouped in five categories).

*Table 5.6 Job quality in sixth month after release for job changers (n = 81)*

| | Job quality | | | Mobility in job quality | | | |
|---|---|---|---|---|---|---|---|
| | Range | Median | Mean/ % | Similar | Increase | Decrease | N |
| | | | | % | % | % | |
| Earnings | €60-€5,600 | 1,400 | 1,643 | 8.5 | 50.7 | 40.8 | 71 |
| | / €250 | | | 19.7[a] | 46.5[a] | 33.8[a] | 71 |
| Fulltime employment | 0-1 | | 66.7 | 69.3 | 13.3 | 17.3 | 75 |
| Permanent employment arrangement | 0-1 | | 43.5 | 61.3 | 14.5 | 24.2 | 62 |
| Occupational level | 5 levels | 2.0 | 2.1 | 59.4 | 12.5 | 28.1 | 64 |
| | 2 levels | | 21.9 | 79.7 | 9.4 | 10.9 | 64 |
| Job satisfaction | 5 categories | 3.0 | 3.0 | 43.4[b] | 23.7[b] | 32.9[b] | 76 |

[a] Increase/decrease represents a change in earnings of € 250 or more.
[b] Increase/decrease represents a change in overall category (the continuous scale scores were regrouped in five categories).

## 5.8 Discussion

Despite the overall weak labor market attachment among prison populations, a substantial share is employed prior to imprisonment. A prison spell interrupts existing work relations and might even disrupt them permanently. Previous literature presented job return as a potentially successful pathway to employment for ex-offenders, but offered no hard evidence for this phenomenon. The purpose of this study was to investigate to what extent previously employed prisoners returned to their pre-prison jobs after release. A subsample of self-report data of the Prison Project – a unique longitudinal data collection among male pretrial detainees in the Netherlands – allowed us to assess for 225 male prisoners if they returned to their pre-prison jobs, found new employment or remained jobless in the sixth month after release.

Our results showed that 35 percent of all prisoners and 55 percent of the previously employed prisoners were employed in the sixth month after release. Amongst the latter group, approximately 34 percent returned to the pre-prison job and 66 percent found a new job. This finding demonstrates the importance of pre-prison employment ties for successful reintegration after release and aligns the scarce evidence from previous studies (Martin & Webster, 1971; Nelson et al., 1999; Soothill, 1974; Visher et al., 2008). Our results likely even underestimate the prevalence of job return because we were limited to consider only those individuals who returned to their *last* pre-prison job and who returned to their former employer *immediately* after release, as job returners.

One-third of the job returners were unable to retain their job during the follow-up. Still, the vast majority of job returners stayed with their previous employer during the first half year after release, a hectic period in which they are at very high risk for crime. Moreover, while all post-release jobs are of relatively low quality compared to national figures, job returners seem to work in somewhat higher quality jobs than job changers. As such, our findings do not support the observation of Nelson et al. (1999) that job returners chose for job certainty *instead of* job quality. Future research will have to show whether our observation, that job return can increase job retention and job quality, stands when a longer period of follow-up and a larger sample size is used.

The findings imply that many former employers are willing to rehire ex-prisoners despite knowing about their prison record. This potentially aligns signaling theory, which states that former employers are more likely to diverge from the negative stereotypes that are generally associated with a prison record because they have access to more (positive) information about the applicant than new employers (Spence, 1973, see also Pager et al., 2009). From a policy point of view it could be useful to create incentives for employers to hire back employees, assuming of course that the criminal behavior which precipitated incarceration is unrelated to work activities. There is some evidence to suggest that financial incentives do not change the hiring behavior of employers who have previously indicated their resistance to hire hard-to-employ populations (Cove, 2003). In order to reduce employers' concerns, it could be beneficial to match the prisoner and employer to a third party who monitors the activities of the ex-prisoner. Such policy measures connect to a general trend towards community-based reentry interventions, in which resources of the prisoner's network are mobilized to increases the chance of a successful reintegration (e.g., Visher & Travis, 2011).

The overall post-release employment rate of 35 percent in the sixth month is lower than the employment rates found by administrative studies (Pettit & Lyons, 2007; Sabol, 2007; Tyler & Kling, 2007: ~45% in first two quarters), and previous survey research (Visher et al., 2011: 45% in eight month). In addition, even the post-release employment rate of previously employed prisoners (55%) is low when considering that all these respon-

dents were employed before imprisonment. Further analyses (not shown) indicated that 72 percent of the previously employed prisoners had a job *for some time* during the six month follow-up, which implies that more prisoners did work after imprisonment but were unable to keep this job until the sixth month after release. Further research is warranted to investigate which factors are associated with this inability.

The multivariate analyses showed that prisoners who were more satisfied with their pre-prison job, had worked there for a longer period of time and under a permanent employment agreement were more likely to return to their previous job after release than to find new employment or become non-employed. These findings imply, in line with human capital theory, that good and steady employment bonds were the most likely ones to be continued after release. Also, these results might be in line with Dutch laws designed to protect ex-offenders from labor market discrimination. In the Netherlands, imprisonment in itself is never a valid reason for dismissal and a permanent employment contract can be an additional "obstacle" for employers to fire former employees with a prison record. Another key finding was that higher educated prisoners were more likely to find new employment than to return to their previous job. In line with human capital theory and previous work (e.g., Finn & Fontaine, 1983), these higher skilled prisoners seem better equipped to overcome the stigma that is associated with a prison spell than their lower educated co-prisoners. A longer prison spell seems to put an additional strain on the existing work relationship as long-term prisoners were more likely to find new- or no employment than to return to their pre-prison job. Job return is more likely to occur (than new employment) when national unemployment rates are higher at time of release. Possibly, ex-prisoners put more effort in returning to their previous employer during tough economic times. In contrast to our expectation, the type of employment industry did not affect the post-release employment status. A potential explanation is that our general dichotomous measurement (the pre-prison job entails the handling of money *or* customer interaction) does not adequately capture employers' perception of the crime risk associated with rehiring offenders. Also, our data did not allow for the examination of the more direct link between the nature of the job and the crime.

While this study contributes to the substantial field of reentry research by providing insight into a successful pathway to re-employment, it also has some limitations that warrant further research. A first essential avenue for future research is to examine the reasons why jobs were disrupted by interviewing both employers and ex-prisoners. The vast majority of pre-prison employers were informed by their previous employees about the imprisonment already during the first weeks of detention. It is therefore unlikely that hiring decisions were made without knowledge of the prison record. Still, it remains uncertain whether this record played a decisive role in the decision. Moreover, we do not know whether the crime that led to the incarceration was committed at the workplace and if it legally restricted the prisoner from

returning to his previous job. Another potential reason for job disruption is that prisoners did not want to return. A reason for this reluctance that warrants further research is that this job did not protect them from committing crime(s) prior to imprisonment.

The second limitation concerns the generalization of findings. We used data from the Netherlands, an interesting case study with a relatively mild penal climate, restricted access to criminal history records and a generous social welfare regime. It is therefore a matter of speculation whether we would find similar results using data of other Western countries. Yet, especially countries in Northern Europe resemble the Netherlands in their policies and practices, and this could mean that our findings might apply to these countries. We furthermore discussed that the prevalence of job return might be lower in the United States because prison spells are longer and laws to protect ex-offenders from labor market discrimination are less stringent, compared to the Netherlands. On the other hand, job return rates might be higher in the United States because American prisoners are less likely to qualify for social benefits. Also, they might be more dependent on previous employers for work, since the open access to criminal background information is likely to deter potential new employers (e.g., Stoll & Bushway, 2008). Comparative research is warranted to examine to what extent our results are country-specific.

To close, it is encouraging that a substantial part of the previous employers is willing to rehire ex-prisoners despite knowing about their record. This finding motivates policy measures that help facilitate job return (e.g., help prisoners maintain employment relationships during imprisonment, offer financial incentives to employers). On a more general note, knowledge about the employability of released prisoners could help to ease both former- and new employers' concerns about hiring ex-offenders and as such improve the employment chances of those with and without recent work experience.

*Appendix 5.A Data collection Prison Project*

A total of 2,945 prisoners entered pretrial detention between the research period and met our general selection criteria. No less than 95 percent of these men were successfully approached at P1 and 65 percent of the total sample agreed to participate in the first wave, resulting in a sample of 1,909 prisoners. This sample was generally representative of all prisoners that met the selection criteria in terms of age, marital status, receiving an unconditional prison sentence for the index offense and committing a violent crime (as index offense). Participants and non-participants differ slightly in age of onset (18.9 vs.17.4), being employed before imprisonment (45.7% vs. 38.7%) and duration of actual time served (5.1 vs. 4.1 months). In addition, a comparison of criminal history measures revealed that participants have a somewhat less extensive criminal history than nonparticipants (on average: 3.4 vs. 5.0 previous spells; 7.7 vs. 9.8 previous convictions). The R1-sample comprises 842 ex-prisoners who participated in P1 and had been released for a minimum of six months when they were reinterviewed (up to January 2013). Some ex-prisoners refused permission to be approached in follow-up waves ($n$ = 43). As expected, the particular lifestyle of the sample made it difficult to contact the ex-prisoners who were eligible for participation in the R1-interview. Still, 52 percent agreed to participate in the R1-interview. This led to an overall response rate of approximately 34 percent (0.65*0.52). Importantly, difference tests showed comparability between the R1- and P1-samples across a wide range of baseline covariates (e.g., marital status, parenthood, educational level, homelessness, index offense, number of previous convictions, time served) including the selection variable in this study: employed before imprisonment. Yet, some caution is advised when generalizing the results from the R1-sample to the larger sample of P1-participants.

*Appendix 5.B Descriptive statistics pre-prison and post-prison covariates (n = 225)*

| | N | Minimum | Maximum | Mean | SD |
|---|---|---|---|---|---|
| *Pre-prison covariates* | | | | | |
| Medium/higher educated | 225 | 0.00 | 1.00 | 0.42 | 0.50 |
| Proportion of time unemployed since finishing school | 223 | 0.00 | 1.00 | 0.14 | 0.24 |
| Skill accumulation in prison | 225 | 0.00 | 1.00 | 0.29 | 0.45 |
| Comitted violent crime | 218 | 0.00 | 1.00 | 0.50 | 0.50 |
| Imprisonment length (days) | 225 | 14.00 | 538.00 | 157.95 | 129.72 |
| Work motivation[a] | 210 | 1.89 | 4.89 | 3.64 | 0.49 |
| Job satisfaction[a] | 225 | 1.55 | 5.00 | 3.76 | 0.73 |
| Job duration (months) | 202 | 0.20 | 398.23 | 43.77 | 69.64 |
| Occupational level[b] | 193 | 1.00 | 5.00 | 2.23 | 0.76 |
| Industry of employment | 220 | 1.00 | 10.00 | 4.49 | 2.67 |
| Industry with money/customer contact | 220 | 0.00 | 1.00 | 0.34 | 0.47 |
| Partner at time of arrest | 225 | 0.00 | 1.00 | 0.48 | 0.50 |
| Children | 225 | 0.00 | 1.00 | 0.32 | 0.47 |
| Age at arrest | 225 | 18.00 | 64.00 | 28.62 | 10.59 |
| Non-ethnic Dutch | 225 | 0.00 | 1.00 | 0.41 | 0.49 |
| Permanent contract | 225 | 0.00 | 1.00 | 0.60 | 0.49 |
| Employer knew about imprisonment | 225 | 0.00 | 1.00 | 0.83 | 0.38 |
| Age of first arrest | 224 | 11.74 | 64.15 | 20.56 | 9.41 |
| Number of previous convictions | 224 | 0.00 | 39.00 | 4.73 | 5.91 |
| Previous prison spell | 225 | 0.00 | 1.00 | 0.41 | 0.49 |
| National unemployment rate at time of release (*10) | 225 | 47.00 | 62.00 | 51.24 | 3.42 |
| *Post-prison covariates* | | | | | |
| Employed | 225 | 0.00 | 1.00 | 0.55 | 0.50 |
| Job return | 225 | 0.00 | 1.00 | 0.19 | 0.39 |
| Earnings | 116 | 60.00 | 5,600.00 | 1,622.71 | 970.75 |
| Fulltime employment | 115 | 0.00 | 1.00 | 0.71 | 0.45 |
| Permanent contract | 104 | 0.00 | 1.00 | 0.63 | 0.49 |
| Occupational level[b] | 114 | 1.00 | 5.00 | 2.17 | 0.72 |
| Job satisfaction[a] | 117 | 1.27 | 5.00 | 3.73 | 0.72 |

[a] Average score on several items, ranging from 1= totally disagree to 5=totally agree.

[b] Five occupational levels: 1=elementary level, 2=low level, 3=medium level, 4=higher level, 5=scientific level.

# 6 Employment (characteristics) and recidivism risks after release■


## Abstract

Employment is believed to function as a "turning point" for released offenders. Several theories state that employment can reduce recidivism, but offer different mechanisms to connect employment and crime. This study examines the effect of employment and employment characteristics on recidivism among Dutch ex-prisoners. Although recidivism risks are high among this group, longitudinal research on the effect of employment on recidivism risks is scarce. We based our analyses on longitudinal data of the Prison Project ($n$ = 842) and found that job stability reduces the risk of recidivism. The results indicate that not the guidance to a job, or to a high-quality job, but the guidance to stable employment could help to reduce crime rates among this high-risk offender group.



Key words: reintegration, imprisonment, employment, recidivism, longitudinal research.


■ An earlier version is accepted for publication in Dutch as: Ramakers, A.A.T., Nieuwbeerta, P., Van Wilsem, J.A., Dirkzwager, A and J. Reef. (forthcoming). Werk(kenmerken) en recidiverisico's na detentie. *Tijdschrift voor de Criminologie*. In production.

## 6.1 Introduction

Dutch prisons release approximately 40,000 prisoners each year.[1] Half of these ex-prisoners are convicted for a new crime within two years, and one-third return to prison within that period (Linckens & De Looff, 2013). The recidivism risk is highest in the first months following release (Wartna et al., 2011). Arguably, the dramatic change in circumstances and uncertainty that accompany release offer an explanation for this high recidivism rate. Many ex-prisoners report problems on one or more life domains, such as housing, health and income (Dirkzwager et al., 2009; Noordhuizen & Weijters, 2012).

Both ex-prisoners and professionals view a (quick) transition to employment as an important requirement for a successful reintegration (e.g., Graffam et al., 2008; Visher & Travis, 2011). The protective role of employment is also underscored in various criminological theories. To start, the informal social control theory states that involvement and ties to the workplace can prevent employees from committing crimes (Sampson & Laub, 1993). Employment also ensures a monthly income, which makes it, according to economic theories and strain theory (Becker, 1968; Merton, 1938; Agnew, 1992), less necessary to commit crimes. Moreover, routine activity theory expects that employment will restrict individuals in their daily activities and opportunity structure to commit crimes (Cohen & Felson, 1979; Miller, 2012).

Ex-prisoners are expected to face several barriers to employment. Their low levels of human capital (educational level and work experience) and the further erosion of this capital during imprisonment, offer a first important barrier. In addition, their criminal record can lead to rejection in hiring decisions (Pager, 2003). Moreover, this record can legally exclude them from working in certain sectors of employment (Boone, 2011).

On top of this, it is expected that those who do succeed in finding employment, end up in low quality jobs. By way of example, Western (2006) showed that ex-prisoners often work in temporary and low-wage jobs. Theoretical notions do, however, point out the relevance of job stability and job quality for the protective effect of employment among offenders (e.g., Sampson & Laub, 1990).

It remains, thus far, uncertain *whether* the kind of jobs ex-prisoners find can protect them from crime. Systematic research among this high-risk group is very scarce; administrative datasets include few information on employment (characteristics) and longitudinal surveys among ex-prisoners are costly (see also Skardhamer & Telle, 2012).

In addition, it remains unknown *which* employment characteristics are responsible for the protective effect of employment on crime, that was found by earlier scholars (see also Uggen, 1999). Theories that emphasize the importance of job quality for the protective effect of employment ascribe this

1 Some of these ex-prisoners were released multiple times. There were 39,617 releases in 2012, this involved 32,937 persons.

effect through different theoretical mechanisms to different job characteristics (e.g., stability, work intensity, earnings).

The current study aims to advance on the existing body of knowledge by examining the effect of employment and employment characteristics on recidivism among a large group of Dutch ex-prisoners ($n$ = 842). These ex-prisoners were interviewed in a longitudinal data collection – the Prison Project – shortly after entering pretrial detention as well as six months after release. Detailed measures of the employment situation, and various other life events, in the period prior, during and after imprisonment, enable us to examine the relationship between employment and crime rigorously. A long list of covariates is relevant for quantifying the impact of employment on criminal behavior adequately. To illustrate, if employed ex-prisoners are found to have a lower recidivism risk than a comparison group of unemployed ex-prisoners, this difference can be caused by employment but can also be the result of pre-existing differences between the two groups. By way of example, those who found employment might be more motivated to find a job (and deter from crime) than their unemployed counterparts, and this difference in motivation might have caused employed prisoners to commit fewer crimes. While most previous studies lack detailed information on pre-existing differences, we deal with the non-random selection of ex-prisoners into employment (and kind of job) by including a wide range of confounding variables. An additional advantage of this study is that we base the recidivism risk on two data sources: official registered crimes and self-reported crimes.

Our research question reads as follows: *To what extent do employment, and characteristics of this employment, affect ex-prisoners' recidivism risk in the first six months following release?* In other words, are ex-prisoners who find employment immediately after release more likely to deter from crime than those who do not find employment or at a later point in time? And, to what extent does this relationship rely on the kind of job these individuals find?

## 6.2 Theory and previous research

### *6.2.1 The effect of employment on recidivism*

Various theories relate employment (characteristics) to criminal behavior. The relatively short follow-up period in the current study leads us to address those theories in which employment is expected to lead to an immediate reduction in criminal behavior.

Merton's strain theory (1938) and Agnew's (1992) general strain theory interpret criminal behavior as an adaptive solution to frustrations that individuals feel when the legal means are insufficient to reach the desired material and immaterial goals. Employment assures individuals from an income and a certain status and therefore makes crimes (for financial gain) less necessary. Economic theories portray a similar rational way of thinking. Criminal behavior is expected to decline when the potential costs for this behavior, for instance

job loss, are higher than its potential returns (Becker, 1968). Routine activity theory emphasizes that if, and to what extent, individuals commit crimes relies on the opportunities to commit crimes. More specifically, the presence of motivated offenders is not enough, criminal behavior is dependent of the availability of suitable targets as well as the absence of guardians (Cohen & Felson, 1979; Miller, 2012). Employment is then expected to reduce criminal behavior because it limits the opportunity structure for such behavior.

The following general hypothesis can be derived from the aforementioned theories: *employed ex-prisoners have a lower recidivism risk than unemployed ex-prisoners*.[2, 3]

Reviews of longitudinal research on the work-crime relationship suggest that employment is indeed related to a significant reduction in criminal behavior (Lageson & Uggen, 2013; Uggen & Wakefield, 2008). Longitudinal studies are, however, scarce among ex-prisoners; we could find only five studies. Berg and Huebner (2011) and Piquero and colleagues (2002) used administrative data to examine, respectively, the effect of employment ($n$ = 401) and the effect of "stake in conformity" (combination measure of employment and marital status) ($n$ = 524) on recidivism among American ex-prisoners. Both studies found a significant negative relationship. Notably, Piquero et al. (2002) concluded that this crime-reduction was mostly attributable to the marital status of ex-prisoners. Skardhamer and Telle (2012) based their analyses on a large administrative Norwegian dataset ($n$ = 7,476) and concluded that employment also generates a protective effect among Norwegian ex-prisoners.

Two studies used survey data about ex-prisoners and found less convincing evidence for the protective influence of employment. Horney, Osgood, and Marshall (1995) found that employment can increase the likelihood that ex-prisoners report property crimes ($n$ = 658). Visher et al. (2008) concluded that employed ex-prisoners were as likely to report a crime in the first eight months following release as their unemployed counterparts ($n$ = 740).

### *6.2.2 The effect of employment characteristics on recidivism*

The abovementioned theories presume that the protective effect of employment depends on certain characteristics of that employment. Until now, few

2 Since we are interested in the immediate effects of employment on crime we only address dynamic theories. The static self-control theory of Gottfredson and Hirschi (1990) states that life transitions are merely the result of pre-existing differences that determine both the risk of experiencing this transition and the risk of committing crimes. Hence, they believe that life events, such as employment, cannot influence criminal behavior. To be sure, employment can also increase specific types of criminal behavior, such as fraud and embezzlement, because of the access and liberties that come with certain jobs. While this is plausible, this hypothesis seems more valuable to research that distinguishes between different types of crime.

3 In this study "unemployment" refers to all jobless ex-prisoners and is thus not limited to those ex-prisoners who are actively searching but cannot find a job.

longitudinal studies paid attention to the relationship between employment *characteristics* and recidivism, and even fewer scholars studied this relationship among ex-prisoners. As far as we know, Uggen's study (1999) forms the only exception. He found that ex-prisoners who worked in a higher quality job were relatively less likely to recidivate. Below, we, therefore, supplement the theoretical expectations with longitudinal research on the effect of job characteristics on crime among other high-risk groups and community samples. Specific attention is paid to the five job characteristics under investigation in the current study: job duration, returning to pre-prison employer, employee versus self-employed, working hours, and occupational level.

*Job duration & returning to pre-prison employer*. Based on Hirschi's social control theory (1969), Sampson and Laub (1993) stated that employment can lead to a reduction in criminal behavior through the accumulation of conventional ties that accompany steady employment. In other words, not so much employment in itself but stable employment is expected to deter offenders from crime. In this study we examine two indicators for job stability, namely the job duration of a new post-release job and returning to the pre-prison job after release.

When ex-prisoners are able to retain a new post-release job during the six-month follow-up they are able to accumulate bonds with their new employer and co-workers (conventional others). Based on notions of social control theories we therefore expect: *ex-prisoners who are able to retain the post-release job during the six-month follow-up have a lower recidivism risk than ex-prisoners who lose this job*.

Empirical studies are ambiguous concerning the effect of job stability. Sampson and Laub (1990, 1993) found that job stability (combination of employment situation, stability of most recent job and work performances) reduced both the registered and reported crime risk. Most recent studies based their measure of job stability on the duration of employment. Uggen (1999) did not find evidence for a crime-reducing effect of job duration (see also Wadsworth, 2006). Dutch longitudinal research among a young high-risk male offender population also did not find evidence for the protective effect of job stability (Van der Geest et al., 2011). Another study on partly the same dataset (including women) Verbruggen and colleagues (2012) performed different analyses and did find that a longer job duration decreased the likelihood of recidivism.

It can be argued that returning to the pre-prison employer after release – the second measure for job stability in this study – assures that the pre-prison ties to the workplace remain, at least partly, intact. We therefore also expect that *ex-prisoners who return to their pre-prison employer after release have a lower recidivism risk than ex-prisoners who work in a new job*.

A contrary view is that returning to the pre-prison employer will increase the recidivism risk as this job apparently did not prevent the individual from committing a crime before imprisonment. Especially when this job facilitated the crime that led to the imprisonment (crime was committed on the job), returning to the pre-prison employer is more likely to *increase*

than decrease the recidivism risk. However, in that case it is unlikely that the employer will rehire the ex-prisoner. We expect that returning to the pre-prison employer will reduce recidivism risks because of the stability in social control that accompanies this job. Especially in combination with improved circumstances in other domains (e.g., housing, health), returning to a previous job is expected to help ex-prisoners to reintegrate into society.

Several studies imply that previous employers are important sources of employment for ex-prisoners (Martin & Webster, 1971; Soothill, 1974, Visher, Debus-Sherril, & Yahner, 2011). Using a recent and large sample of released prisoners, Visher, Debus, and Yahner (2008) concluded that prisoners who contacted a previous employer were most successful in finding employment (see also Nelson, Dees, & Allen, 1999). While these scholars believe in the relevance of job return for successful reentry none of these studies was able to examine the influence of job return on recidivism risks.

*Employee versus self-employed*. Routine activity theory emphasizes that the amount of daily activities and free time determines the risk of reoffending (Cohen & Felson, 1979; Miller, 2012). The self-employed are less restricted in their opportunities to commit crimes by job tasks than employees, as self-employed individuals create their own daily schedule. This line of thinking connects to the power-control theory in which the presence of autonomy and absence of control in supervising functions are expected to increase criminal behavior (Hagan, Gillis, & Simpson, 1985). Following these theories we expect that *ex-prisoners who work as employees have a lower recidivism risk than self-employed ex-prisoners*.

Longitudinal studies among community samples of youngsters and adolescents have shown that jobs in which employees experience more autonomy, individuals are less likely to report lower recidivism rates, even after taking into account various other characteristics of that employment (Huiras, Uggen, & McMorris, 2000; Staff & Uggen, 2003).

*Full-time employment versus part-time employment*. Recall that routine activity theory emphasizes that whether, or how many, crimes individuals commit depends on the opportunity structure of their daily activities. Following this theory we can also derive a hypothesis concerning the effect of work intensity on crime. We expect that *ex-prisoners with a full-time job have a lower recidivism rate than ex-prisoners who have a part-time job*.

A substantial line of research investigated the effect of work hours on recidivism among community samples of young and adolescent individuals. Most of these studies suggest that youngsters who work more hours (>20 hours per week) report more recidivism (e.g., Bachman & Schuleberg, 1993). This finding contrasts our expectation about the role of work intensity among the adult offenders in the current study, but connects to the idea that the effect of life events, such as employment, can depend on an individual's stage in the life course (Sampson & Laub, 1993). Recent studies argue that these former studies presented a spurious relationship and could not adequately control for the non-random selection of more crime-prone individuals into more intensive jobs. For instance, Apel et al. (2007) found no overall

effect of work hours on the criminal behavior of a large youth sample when controlling for pre-existing differences between workers and non-workers.

*Occupational level.* Finally, we use economic theories to derive a hypothesis about the effect of job quality on recidivism. Jobs that generate a higher income, such as jobs of a higher occupational level, are difficult to replace. Following economic theories, the risk of losing this quality job would tip the balance in favor of being a law-abiding citizen. Strain theory also emphasizes the importance of job quality. Arguably, a higher quality job will make it easier to satisfy an individual's needs and desires through legitimate means. Following these economic theories we expect that *ex-prisoners with a job of a high occupational level will have a lower recidivism risk than ex-prisoners with a job of a low occupational level*.

In the only study on the effects of job characteristics on criminal behavior among ex-prisoners, Uggen (1999) studied a sector-dependent job quality measure, and showed that a job-shift from the food industry to skilled manual labor reduced the chance on recidivism with 11 percent. According to Uggen this measure of job quality represents "the overall desirability of occupations rather than the respondents' individual characteristics" (p.133). Previous studies measured job quality by means of income (e.g., Visher et al., 2008), job satisfaction (e.g., Huiras et al., 2000), employment arrangement (e.g., Van der Geest et al., 2011) and job certainty (e.g., Wadsworth, 2006). These studies also concluded that job quality reduced the risk of (re) offending.

### *6.2.3 Limitations of previous studies*

Empirical work seems to confirm the expectation that certain employment characteristics reduce the likelihood of reoffending. The existing body of knowledge is, however, characterized by a number of limitations. To start, recall that only one study examined the role of employment characteristics for the development of criminal behavior among ex-prisoners. Moreover, the majority of studies used (dated) American datasets pertaining to youngsters and adolescents (Sampson & Laub, 1990, 1993; Uggen, 1999, 2000). Second, previous work pays little attention to the influence of life events during and after release from prison. Recidivism research could however benefit from such a broader research approach, as finding a job presents only one of the many barriers most ex-prisoners face after release. Third, earlier studies provided limited insight into the underlying mechanisms of theories that ascribe the employment-effect to different job characteristics. Finally, the majority of studies based their conclusions on only one source of information with respect to recidivism (official data or self-report data). We aim to progress on previous work by using a detailed longitudinal dataset, that enables a study of the effect of employment and employment characteristics on recidivism risks among a substantial group of Dutch ex-prisoners.

## 6.3 Data

### *6.3.1 The Prison Project*

This study uses data of the Prison Project: a longitudinal research project among Dutch prisoners. The general aim of this project is to study the intended and unintended effects of imprisonment on several life domains of prisoners and their families. Data were collected in the beginning of pretrial detention, during confinement as well as six months after release from prison. The project targeted 2,945 male prisoners who entered a Dutch detention facility between October 2010 and March 2011, were born in the Netherlands, between 18 and 65 years old and did not suffer from severe psychological problems.

The first in-prison interview (P1) was held approximately two weeks after the beginning of pretrial detention and consisted of many retrospective questions. A response rate of 65 percent resulted in dataset of 1,909 participants. Difference tests showed that this sample was representative for the larger sample of prisoners on a wide range of background characteristics. Nonetheless, the participants did have a slightly less severe criminal history as the non-participants (3.4 versus 5.0 previous prison spells; 7.7 versus 9.8 previous convictions). In addition, a higher percentage of the participants reported to be employed at the time of arrest (45.7% versus 38.7%).

The analyses in the current study pertain to the 842 ex-prisoners who participated in this in-prison interview (P1) as well as in the first reentry wave (R1), which took place six months after release. The current study includes the reentry interviews that were held with prisoners who were released for a minimum of six months in January 2013. The hectic period after release made it a difficult task to find and contact participants. Nevertheless, we managed to contact 76 percent of them, and more than half of the released ex-prisoners (52%) eventually participated in the reentry interview. The detailed background measures collected in the P1-interview revealed that P1- and R1-participants were similar in many ways. Official records on the criminal behavior during the follow-up period was available for the larger P1-sample. We could therefore also compare the registered recidivism risk for both groups. Importantly, the groups showed a similar likelihood of reoffending within the first six months after release (P1: 30.9%; R1: 34.4%).

### *6.3.2 Recidivism*

Recidivism during the six months post-release is measured in two distinct ways. First, the *registered* recidivism rate is based on the General Documentation Files of the Dutch Ministry of Security and Justice, which contain

information on all registered crimes and convictions until July 11, 2012.[4] Hence, the registered recidivism risk is therefore available for the 754 R1-participants who were released for a minimum of six months at that time.[5] Based on these data, 34.4 percent of the prisoners recidivated within the first half year following release.

The second measure – *self reported* recidivism – is based on a life event calendar, in which respondents reported on their criminal behavior (among other information) during each month since their release from prison. These data result in a lower recidivism rate; approximately 22 percent of the ex-prisoners reported at least one crime within the six months post-release ($n$ = 773).[6, 7] Table 6.1 offers a descriptive overview of these dependent variables as well as the employment variables.

### *6.3.3 Employment and employment characteristics*

*Employed* are those individuals who reported to work at least twelve hours at a weekly basis in the first month after release (30.4%).[8]

We know whether those employed ex-prisoners worked as *employee* (68.4%) or were self-employed. In addition, we know whether these employed ex-prisoners were able to retain the same job during the follow-up. The measure *job retention* thus refers to the six months following release, whereas the other employment variables pertain to the situation in the immediate month after release. R1-data showed that 45.0 percent of the ex-prisoners who were employed in that first month were able to retain that job, at least until the sixth month after release.

Additional job information is available for ex-prisoners who worked as employees after release. First, we are able to measure whether these individuals *returned to their pre-prison employer* after release (38.8%). The second additional job characteristic refers to work intensity. We distinguish between individuals who worked fulltime (>32 hours per week) (69.4%) and part time (12-32 hours per week). Third, following the Standard for Classification

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4 Instead of looking into *reconvictions*, we look into whether or not *charges* were registered after release. In the current study, reconvictions are underestimated because not all charges that have been registered at the Prosecutor's Office will lead to a conviction within the follow-up period. This means that not all charges will necessarily result in a conviction. Given that, in 2011, approximately 90 percent of the charged suspects in the Netherlands are found guilty, this problem may be a minor concern (Van Rosmalen, Kalidien, & Heer-de Lange, 2012).

5 A few respondents could not be found in the General Documentation Files of the Dutch Ministry of Security and Justice.

6 For some respondents reliable life event calendar data were missing ($n$ = 69).

7 There is overlap between the two recidivism outcomes; 87.4 percent of those who are not registered for a new crime also do not report to have committed a crime. In contrast, only 41.9 percent of those who are registered for a new crime, reported a crime (we find an overlap of 63.0 percent the other way around).

8 Following Statistics Netherlands those who work twelve or more hours are considered to be employed.

of Occupations (SBC) of Statistics Netherlands (Westerman, 2010), information about the job title, type of business, and (executive) tasks was used to classify self-employed and salaried workers into one of five occupational levels: elementary, low, middle, high, or scientific. Individuals who were classified in one of the higher occupational levels are seen as workers with a higher occupational level (17.4%).

*Table 6.1 Recidivism and employment (characteristics)*

| | N | % |
|---|---|---|
| *All* | *842* | |
| *Dependent variables* | | |
| Registered recidivism | 754 | 34.4 |
| Self-reported recidivism | 773 | 22.3 |
| *Independent variables* | | |
| Employed in first month after release | 824 | 30.3 |
| *Employed in first month after release* | *250* | |
| Employee (vs. self-employed) | 234 | 68.4 |
| Retained job during six-month follow-up | 249 | 45.0 |
| *Employee in first month after release* | *160* | |
| Returned to pre-prison employer | 160 | 38.8 |
| Fulltime job | 160 | 69.4 |
| Higher occupational level | 155 | 17.4 |

### *6.3.4 Control variables*

In order to estimate the effect of employment on recidivism, we control for a range of background variables that pertain to the period prior, during or after release and are widely thought to influence both employment and criminal outcomes. Table 6.2 offers an overview of all 33 covariates.

We start by discussing the covariates that refer to the period prior to imprisonment. The data include information about sociodemographic characteristics, social ties, employment situation at the time of arrest, general measures on employment history and life style. In addition, we control for prisoners' motivation to work, based on nine items pertaining to motivation (e.g., "everyone who can work, should work", Cronbach's alpha=0.67). Moreover, we include detailed measures on the index offense and the criminal history as registered in the General Documentation Files of the Ministry of Security and Justice.

Two covariates pertain to the period during imprisonment. Imprisonment length refers to the actual time prisoners spent in detention. We also include whether or not the prisoners participated in an educational or vocational training during their imprisonment.

The aforementioned life event calendar was used to measure several post-release circumstances. We know whether the prisoners had a romantic partner or housing during the first half year following release (for at least

one month). In addition, this calendar enables us to measure whether or not ex-prisoners reported substance abuse in at least one of the six months (i.e., use drugs each day of the week/drink at least five glasses of alcohol each day of the week). Finally, we know whether the prisoners were in contact with the probation office during release, possessed a valid identification or debts, and whether they received benefits.

*Table 6.2 Descriptives covariates prior, during and after imprisonment*

| | N | Mean | Median | SD | Min. | Max. |
|---|---|---|---|---|---|---|
| *Covariates prior to imprisonment* | | | | | | |
| Age | 842 | 31.07 | 31.07 | 10.93 | 18 | 65 |
| Non-ethnic Dutch | 842 | 0.33 | | | 0 | 1 |
| Higher level of education[a] | 842 | 0.39 | | | 0 | 1 |
| Partner | 842 | 0.45 | | | 0 | 1 |
| Child(ren) | 842 | 0.37 | | | 0 | 1 |
| Employment before imprisonment | 841 | | | | | |
| Non-participant | | 0.23 | | | 0 | 1 |
| Unemployed | | 0.38 | | | 0 | 1 |
| Employed | | 0.27 | | | 0 | 1 |
| Self-employed | | 0.12 | | | 0 | 1 |
| Wage (€) | 842 | 1,228.5 | 0.00 | 5,734.6 | 0 | 100,000 |
| Duration longest job (years) | 766 | 4.40 | 2.92 | 5.46 | 0 | 45 |
| Duration unemployment (years) | 837 | 3.90 | 1.00 | 6.80 | 0 | 47 |
| Excessive drinking (almost every day > 5 glasses) | 839 | 0.12 | | | 0 | 1 |
| Excessive consumption of drugs (almost every day) | 839 | 0.30 | | | 0 | 1 |
| Homeless | 842 | 0.09 | | | 0 | 1 |
| Motivation to work[b] | 776 | 3.51 | 3.44 | 0.51 | 1.00 | 4.89 |
| Number of previous convictions | 841 | 7.61 | 4.00 | 8.94 | 0 | 92 |
| Number of previous prison sentences | 841 | 3.39 | 1.00 | 6.65 | 0 | 81 |
| Age of onset | 840 | 19.61 | 17.14 | 7.90 | 11.74 | 65.30 |
| Type of crime | 818 | | | | 1 | 3 |
| Violent | | 44.50 | | | 0 | 1 |
| Property | | 33.25 | | | 0 | 1 |
| Other | | 22.25 | | | 0 | 1 |
| *Covariates pertaining to imprisonment* | | | | | | |
| Length of imprisonment | 842 | 155.62 | 114.5 | 129.1 | 1 | 661 |
| Followed training/course | 841 | 0.24 | | | 0 | 1 |
| *Covariates after imprisonment* | | | | | | |
| Partner | 767 | 0.25 | | | 0 | 1 |
| Excessive drinking (almost every day > 5 glasses) | 776 | 0.10 | | | 0 | 1 |
| Excessive consumption of drugs (almost every day) | 775 | 0.23 | | | 0 | 1 |

*Table 6.2 continued*

| | N | Mean | Median | SD | Min. | Max. |
|---|---|---|---|---|---|---|
| Contact with probation officer | 834 | 2.55 | 3.00 | 1.34 | 1 | 4 |
| Valid identification | 829 | 0.86 | | | 0 | 1 |
| Debts | 831 | 0.60 | | | 0 | 1 |
| Homeless | 770 | 0.12 | | | 0 | 1 |
| Received benefits | 842 | 0.42 | | | 0 | 1 |

[a] Higher educated are those with a higher level of secondary schooling (HAVO/ VWO).
[b] Average score on nine items (1 = completely disagree – 5 = completely agree).

## 6.4 Methods

This study offers an insight into the relationship between employment, job characteristics and recidivism. We first present odds ratios to describe the bivariate associations between the independent and dependent variables (Table 6.3). Thereafter, we examine whether these associations remain after controlling for individual differences in the aforementioned covariates. The relatively small sample size, especially when we focus on the employed ex-prisoners ($n$ = 250) or ex-prisoners who work as employee ($n$ = 160), limits the appropriate number of covariates that can be included in the analyses. In order to reduce the number of covariates we performed three separate regression analyses, one for each time period (prior, during and after imprisonment). This inclusion in "blocks" takes the confounding of covariates into account (see for instance Mustaine & Tewksbury, 1998). Each block of variables was regressed against the two dependent variables (registered crime risk, self-reported crime risk) separately, and we kept the covariates with moderately significant explanatory powers ($\alpha$<0.10). Covariates that were not associated with the recidivism outcome ($\alpha$>0.10) were removed from the final model (see Appendix 6.A).

## 6.5 Results

### *6.5.1 Bivariate association*

Table 6.3 offers insight into the bivariate associations between employment and recidivism. Based on the registered recidivism risk 27.6 percent of the employed ex-prisoners commits a new crime in the six months following release (OR=0.69). This risk is significantly higher for unemployed ex-prisoners (37.0%). The difference in reported recidivism risk is smaller but also reveals a significantly lower recidivism risk among employed ex-prisoners (OR=0.71).

The risk of recidivism seems to be related to the kind of job that ex-prisoners find. Table 6.3 shows that those who are able to retain the same job

during the follow-up have a significantly lower risk of getting registered for a new crime (17.6% vs. 35.2%; OR=0.39) or reporting a new crime (10.5% vs. 25.0%; OR=0.35). Being self-employed or being employed as a salary worker does not seem to affect the registered recidivism risk. However, in contrast to our expectation, employees report a new crime more often than self-employed ex-prisoners (OR=2.48).

Ex-prisoners who return to their pre-prison employer are significantly less likely to get registered for a new crime (OR=0.30) or report a new crime (OR=0.33) than ex-prisoners who find a new job following release. Another notable finding is that jobs of a higher occupational level are related a lower registered recidivism risk than jobs of a lower occupational level (12.0% vs. 28.4%). Finally, work intensity does not seem to be related to recidivism risk.

*Table 6.3 Odds ratios employment (characteristics) and recidivism*

| | N | Category | Registered recidivism | | Self-reported recidivism | |
|---|---|---|---|---|---|---|
| | | | % | OR | % | OR |
| *All (n = 842)* | | | | | | |
| Employed in first month after release | 824 | | | 0.69* | | 0.71† |
| | | No | 37.0 | | 24.2 | |
| | | Yes | 27.6 | | 18.4 | |
| *Employed in first mont after release (n = 250)* | | | | | | |
| Type of employment | 234 | | | 0.87 | | 2.48* |
| | | Self-employed | 28.4 | | 10.1 | |
| | | Employee | 25.5 | | 21.9 | |
| Retained job during six-month follow-up | 249 | | | 0.39** | | 0.35** |
| | | No | 35.2 | | 25.0 | |
| | | Yes | 17.6 | | 10.5 | |
| *Employee in first month after release (n = 160)* | | | | | | |
| Retained job during six-month follow-up | 160 | | | 0.32* | | 0.34** |
| | | No | 33.30 | | 28.30 | |
| | | Yes | 13.80 | | 11.90 | |
| Returned to pre-prison employer | 160 | | | 0.30** | | 0.33* |
| | | No | 34.1 | | 28.6 | |
| | | Yes | 13.3 | | 11.7 | |
| Fulltime job | 160 | | | 0.74 | | 1.27 |
| | | No | 29.5 | | 19.0 | |
| | | Yes | 23.8 | | 22.9 | |
| Higher occupational level | 155 | | | 0.34† | | 0.39 |
| | | No | 28.4 | | 25.0 | |
| | | Yes | 12.0 | | 11.5 | |

†$p<0.10$; *$p<0.05$; **$p<0.01$

### 6.5.2 *Multivariate association*

Table 6.4 shows the results of the six final models with respect to (a) the effect of employment, (b) the effect of employment characteristics and, (c) the effect of employment characteristics for salary workers on registered and self-reported recidivism risk.

After controlling for the selection of covariates that were associated with the recidivism outcome ($\alpha$<0.10) (see Appendix 6.A), employment no longer seems to affect either of the recidivism measures. Employed and unemployed ex-prisoners have a similar chance of being *registered* for a new crime. Moreover, contrary to our expectation, we find that employed ex-prisoners *report* a new crime more often than unemployed ex-prisoners (OR=1.51).

The next step is to examine whether any of the employment characteristics have a crime-reducing effect. The multivariate analyses show that type of employment (salary worker or self-employed) is not significantly related to recidivism risk. Job retention, however, seems to reduce the risk of getting registered for a new crime, even after controlling for various confounding covariates (OR=0.46).

Shifting the focus to the models for salary workers exclusively, Table 6.4 shows that the likelihood of registered recidivism is relatively lower for workers who returned to their pre-prison employer after release (OR=0.26). Work intensity, occupational level and job retention are not related to lower recidivism risks.

*Table 6.4 Odds ratios employment(characteristics and recidivism controlled for covariates before, during and after imprisonment*

| | Registered recidivism [a] | | Self-reported recidivism [b] | |
|---|---|---|---|---|
| | OR | Exp(SE) | OR | Exp(SE) |
| *All (n = 842)* | | | | |
| Employed in first month after release | 1.06 | 1.22 | 1.51† | 1.28 |
| *Employed in first month after release (n = 250)* | | | | |
| Type of employment (employee vs. self-employed) | 0.52 | 1.53 | 2.26 | 1.88 |
| Retained job during six-month follow-up | 0.46† | 1.50 | 0.86 | 1.65 |
| *Employee in first month after release (n = 160)* | | | | |
| Retained job during six-month follow-up | 0.97 | 1.77 | 1.02 | 1.95 |
| Returned to pre-prison employer | 0.26* | 1.81 | 0.78 | 2.21 |
| Fulltime job | 0.69 | 1.65 | 1.79 | 1.79 |
| Higher occupational level | 0.27 | 2.25 | 0.48 | 2.21 |

†$p$<0.10; *$p$<0.05; **$p$<0.01

[a] We controlled for partner, duration of unemployment, number of previous convictions, number of previous prison sentences, type of crime, imprisonment length, followed training/course, excessive consumption of drugs after release, homeless (see Appendix 6.A)

[b] We controlled for age, ethnicity, partner, employment before imprisonment, excessive drinking before release, number of previous convictions, number of previous prison sentences, type of crime, imprisonment length, excessive consumption of drugs after release (see Appendix 6.A)

### *6.5.3 Sensitivity analyses*

Sensitivity analyses (not shown) were performed in order to inspect the robustness of our findings.[9] Recall that employment is not a random event. To the extent that employment is influenced by individual self-selection, the work-crime relationship is potentially spurious. And, the same is true for self-selection into employment characteristics. Only an experimental design, in which individuals are randomly assigned to employment would ensure that all possible confounders (including unobservables) are controlled. However, any bias caused by observable pre-existing covariates can be eliminated by conditioning on a propensity score (Rosenbaum, 2002; Rosenbaum & Rubin, 1983). This approach allowed us to control for a longer list of covariates and pay more specific attention to the non-random selection in employment (characteristics) than in the analyses discussed above.

We estimated individuals' propensity of employment by regressing all 33 covariates on the dichotomous measurement of employment. This propensity score was subsequently used to weigh the data and assure that ex-prisoners with a similar propensity of finding employment, but different employment status (employed or unemployed), are compared in recidivism risk. A similar approach was applied to all employment characteristics.

These sensitivity analyses confirmed the results of the main analytical strategy. Employment in itself did not affect the likelihood of reoffending but the two job stability measures seemed to decrease recidivism risks.

## 6.6 Discussion

The current study examined whether a quick transition to employment could be a "turning point" for a high-risk offender group. Using longitudinal data from the Netherlands, we examined the protective role of employment and employment characteristics for a large group of ex-prisoners ($n$ = 842) and during the hectic aftermath of imprisonment. We were able to control for the influence of a wide range of confounding factors – pertaining to the period prior to, during or after release from prison – on the work-crime relationship. In addition, this study offered a current insight into this relationship outside the Anglo-Saxon context. Moreover, recidivism risk was not only based on official data, but supplemented with self-reported recidivism data.

The first finding was that the mere presence or absence of a job did not reduce ex-prisoners' recidivism risks after we controlled for confounding factors. Employment did not lower the risk of getting registered for a new

9 These findings are omitted for reasons of space, but are available upon request.

crime and, in contrast to our expectation, employed ex-prisoners were *more* likely to report a new crime than unemployed ex-prisoners.

Although this finding might seem unexpected, surprisingly little prior research exists on whether employment can deter high-risk adult offenders, such as ex-prisoners, from criminal behavior. And, the handful of studies that are based on prisoner data showed ambiguous findings. Research based on administrative data seems to confirm the crime-reducing effect of employment (Berg & Huebner, 2005; Piquero et al., 2002; Skardhamer & Telle, 2012), while survey-based research was less conclusive (Horney et al., 1995; Visher et al., 2011). In the current survey-based study, employment data were based on ex-prisoners' reports and as such include all economic activity (e.g., self-employment, off-the-books employment, out-of-state employment). In contrast, administrative data only capture formal employment as reported by employers. This difference in the measurement of employment might offer an explanation for the lack of strong evidence for the protective effect of employment in survey-based studies. In the latter studies, employment could represent a wider range of (lower quality) jobs than the formal employment arrangements portrayed in administrative studies. Future research could test the validity of this explanation by using both survey and administrative data to measure the employment patterns of ex-prisoners.

In finding that employment increases the self-reported crime risk we connect to a study of Horney and colleagues (1995). They argued that this effect was caused by offenders who committed a property crime at the workplace (employment as facilitator). An alternative explanation could be that unemployed and employed ex-prisoners differ in how they report on their criminal behavior. Perhaps, unemployed ex-prisoners possess relatively more characteristics that correlate highly with underreporting such behavior. A comparison between employed and unemployed ex-prisoners on the two recidivism risks shows indeed somewhat smaller differences between employed (official data=28%, self-report data=18%) and unemployed ex-prisoners (official data=37%, self-report data=24%). Future research is warranted to better investigate these and other potential explanations.

A second important finding was that certain job characteristics *reduced* ex-prisoners' recidivism risks. Retaining a job in the six-month follow-up decreased this risk among employed ex-prisoners. A further analysis of the employment data pertaining to salary workers exclusively, indicated that especially those ex-prisoners who returned to a pre-prison employer after release were less likely to be registered for a new crime. We found similar, though non-significant, relationships between these job stability indicators and the reported recidivism risk. These findings connect to the work of Sampson and Laub (1990, 1993, 2005). They showed that a self-reported measure of job stability decreased offenders chances of getting registered for a new crime or reporting a crime. Recent Dutch research also confirmed the

crime-reducing effect of job duration, but among a high-risk group of adolescent offenders (Verbruggen et al., 2012).

Our study confirms the assumptions of the informal social control theory of Sampson and Laub (1993). They concluded that "…the stronger the adult ties to work and family, the less crime and deviance among both delinquents and nondelinquent controls" (2005, p.13). Social ties to co-workers and employers seem to decrease ex-prisoners' criminal involvement.

Future research could advance on the current work by looking not only into objective job stability indicators (the duration of a job, returning to pre-prison employer), but examining more precisely the perceived *quality* of the ties to the workplace. In addition, the finding that returning to a previous employer reduces recidivism risks after release warrants further research on this "new" indicator of job stability. Our results show that a job which previously did not protect an individual from committing a crime (for this individual was imprisoned in spite of being employed), can reduce recidivism risks after release. Future research should focus on examining how this pre-prison job is able to lower recidivism risks at a later time. Arguably, one important condition is that the crime that led to the imprisonment is unrelated to the job. A potential explanation for the protective effect of a pre-prison job after release is that this effect depends on the circumstances in other life domains after release (housing, social network, health). Also, ex-prisoners might be more willing to commit to a conventional lifestyle when they receive a second chance and renewed trust from a good employer.

A third notable finding was that the two recidivism outcomes led to somewhat different conclusions. Employment does not affect the chance of getting officially *registered* for a new crime, but seems to increase the risk of *self-reported* recidivism. And, while certain job characteristics seem to reduce ex-prisoners' chances on getting *registered* for a crime significantly, a similar but non-significant pattern of findings was found for *self-reported* recidivism risk. According to Hindelange, Hirschi, and Weis (1979) this difference in findings could potentially be explained by the difference in domain of criminal behavior that are tapped by these two different recidivism measures. They argued that self-report data are more likely to include less severe crimes (see also Thornberry & Krohn, 2000). This study did not distinguish between different types of crime. In order to test the validity of the aforementioned explanation and provide more insight into the similarities and differences between the two recidivism measures, future research should distinguish between different types of crime. Importantly, the difference in findings across recidivism measures implies that future researchers should strive to measure recidivism outcomes by using both official and self-reported data.

Some limitations of this study deserve attention in future research as well. To start, recall that observational data can only imperfectly approximate an experimental design, which would effectively rule out all potential confounders of the relationship between employment and recidivism outcomes. Our multivariate analyses only account for observable covariates

(measurable differences between unemployed and employed ex-prisoners) (see also Bushway, Johnson, & Slocum, 2007). Nonetheless, we are confident that our models severely reduce selection bias by accounting for many more potential confounders than most previous studies. Moreover, sensitivity analyses confirmed the robustness of findings. And, the analyses were based on fine-grained (monthly) units of time and therefore appropriate for a study of the temporal order of processes.

A second shortcoming is that we focused on the effect of the employment situation in the *immediate* month after release. Certain types of employment, such as return jobs or assigned jobs (as part of a reentry program), are arguably overrepresented due to our measurement of employment. Although a similar design was used in previous work (Berg & Huebner, 2011; Visher et al., 2008), we encourage future research to examine the robustness of our findings using a more dynamic measurement of employment outcomes.

Finally, the six-month follow-up period used in the current study is relatively short and limits a long-term investigation of ex-prisoners' employment and recidivism patterns. Future research will have to show to what extent our findings, specifically with respect to job stability, hold when a longer follow-up period is used. Nonetheless, it is encouraging to find that even a relatively short period of job retention can decrease the likelihood of reoffending.

Reviews on employment programs for ex-prisoners and other offender groups consistently reveal that these efforts have few to no impact on the criminal behavior of participants (Visher et al., 2005). Often, this null-effect is ascribed to the low quality and temporary nature of jobs to which ex-prisoners are guided (Uggen, 1999, 2000). This study indicates that not the guidance to *a* job, or a *high-quality* job, but guidance to *stable* employment could help to reduce crime rates among this high-risk offender group.

*Appendix 6.A Logistic regressions on recidivism outcomes*

| | Registered recidivism | | Self-reported recdivism | |
|---|---|---|---|---|
| | OR | Exp(SE) | OR | Exp(SE) |
| *Covariates prior to imprisonment* | | | | |
| Age | 0.98 | 1.02 | 0.93*** | 1.02 |
| Non-ethnic Dutch | 1.29 | 1.21 | 0.68† | 1.24 |
| Higher level of education | 1.09 | 1.20 | 1.30 | 1.23 |
| Partner | 0.67* | 1.20 | 0.58** | 1.23 |
| Child(ren) | 0.82 | 1.23 | 1.23 | 1.26 |
| Employment before imprisonment | | | | |
| Non-participant *(ref.)* | | | | |
| Unemployed | 0.78 | 1.26 | 1.06 | 1.27 |
| Employed | 0.82 | 1.30 | 0.48** | 1.37 |
| Self-employed | 0.94 | 1.43 | 0.64 | 1.60 |
| Wage (€) | 1.00 | 1.00 | 1.00 | 1.00 |
| Duration longest job (years) | 1.00 | 1.03 | 0.98 | 1.04 |
| Duration unemployment (years) | 1.02** | 1.01 | 1.01 | 1.01 |
| Excessive drinking (almost every day > 5 glasses) | 1.49 | 1.31 | 2.10** | 1.32 |
| Excessive consumption of drugs (almost every day) | 1.04 | 1.21 | 1.50† | 1.23 |
| Homeless | 1.59 | 1.34 | 0.74 | 1.36 |
| Motivation to work | 0.86 | 1.18 | 0.88 | 1.19 |
| Number of previous convictions | 1.05*** | 1.02 | 1.03* | 1.02 |
| Number of previous prison sentences | 2.19*** | 1.25 | 2.1*** | 1.28 |
| Age of onset | 0.98 | 1.02 | 1.02 | 1.02 |
| Type of crime | | | | |
| Violent *(ref.)* | | | | |
| Property | 1.53* | 1.23 | 1.90** | 1.26 |
| Other | 1.04 | 1.27 | 1.32 | 1.30 |
| *Covariates pertaining to imprisoment* | | | | |
| Length of imprisonment | 1.00* | 1.00 | 1.00† | 1.00 |
| Followed training/course | 0.67† | 1.23 | 0.96 | 1.24 |
| *Covariates after imprisonment* | | | | |
| Partner | 0.86 | 1.21 | 0.86 | 1.25 |
| Excessive drinking (almost every day > 5 glasses) | 2.17*** | 1.30 | 2.70*** | 1.31 |
| Excessive consumption of drugs (almost every day) | 1.14 | 1.22 | 2.93*** | 1.22 |
| Homeless | 2.03** | 1.29 | 2.21*** | 1.29 |
| Missing value calendar | 1.59 | 1.33 | 1.15 | 2.20 |
| Contact with probation officer | 1.00 | 1.18 | 0.99 | 1.22 |
| Valid identification | 0.78 | 1.25 | 0.93 | 1.30 |
| Debts | 0.91 | 1.18 | 1.16 | 1.21 |
| Income from benefits | 1.02 | 1.18 | 0.80 | 1.21 |

†$p<0.10$; *$p<0.05$; **$p<0.01$

# 7 General discussion

## 7.1 Introduction

Issues of prisoner reentry are of central concern to criminologists, policy makers and society at large. The salience of these issues typically stems from the fact that recidivism rates are exceptionally high after release (Langan & Levin, 2002; Linckens & De Looff, 2013). Scholars and professionals as well as prisoners themselves, note that the path to a successful reentry depends critically on a transition to employment. Finding and holding down a good job not only provides a steady income but is associated with numerous factors that promote desistance, such as personal wellbeing, affective relationships, and housing (e.g., Bushway & Reuter, 2002; Graffam et al., 2008; Visher & Travis, 2011).

This study examined how prisoners fare in the labor market, with a focus on how the prison experience affects their labor market opportunities and how these prospects subsequently affect their risk of reoffending in the aftermath of imprisonment. As such, it shares similarities with existing lines of research that showed that imprisonment decreases ex-prisoners' employment prospects (Apel & Sweeten, 2010; Waldfogel, 1994; Western, 2002), and that employment can foster desistance from crime (Lageson & Uggen, 2013; Uggen & Wakefield, 2008). As discussed in previous chapters, however, important differences between the current study and prior studies include a more in-depth investigation of pre-prison labor market experiences, the use of a Dutch rather than American sample of inmates, imprisonment lengths that average about four months rather than two years, the use of self-report and administrative data (instead of solely official data sources), and the availability of multiple employment measures as well as a broad array of covariates.

In addition, this thesis addressed several unexplored research questions, central to the dynamic paradigm of life course criminology. For instance, previous work focused primarily on employment likelihood and earnings, leaving open *which kind of jobs* ex-prisoners find, and how imprisonment might affect *job quality* and *stability*. Also, while prior work showed that imprisonment can have a collateral effect on employment outcomes, relatively little is known about the *mechanisms* underlying this effect and the role of *imprisonment length*. Moreover, studies on the work-crime relationship are based on community or general offender samples, measure employment on the basis of participation, and pay little attention to the theoretical mechanisms in which the protective effect of employment is linked to *job quality and stability*.

The general observation from this thesis is that imprisonment and employment can redirect employment-and criminal careers. This final chapter provides a summary of the main results (see also Table 7.1). After laying down the findings, a discussion of the study's theoretical implications is given. Thereafter, this thesis concludes with recommendations for future research and a reflection on criminal justice and labor market policies.

## 7.2 Summary of empirical findings

### *7.2.1 The selection of marginal workers into prison (chapter 2)*

*Chapter 2* described the labor market experiences of prisoners prior to imprisonment using data on the first wave of the Prison Project, and as such offered a baseline measurement of prisoners' employability. Do prisoners experience rapid deterioration in the months leading up to their prison spell – a time in which labor market activities are likely to be affected by the illegal activities that led to their imprisonment – or are their diminished prospects indicative of a longer-term trajectory that characterizes their entire employment history?

The results indicated that instability is a longstanding feature of prisoners' working lives. Starting with a low educational attainment, their subsequent employment career is characterized by long periods of unemployment, off-the-books employment, dismissals and job shifts. Those who were employed in the run-up to imprisonment worked in temporary, low-quality jobs. Especially prisoners with prior prison record(s), do not seem to succeed (or do not strive) to obtain a high quality job and stable work experience. Another notable finding was that many prisoners reported to be self-employed as independent contractors or owned small businesses. This is in line with previous work from other fields showing that entrepreneurship is preferred when the feasible employee-type arrangements do not pay a sufficiently high wage (Clark & Drinkwater, 2000; Parker, 2004).

Earlier studies failed to create insight into the magnitude of labor market disadvantage that prisoners already face prior to their imprisonment, because they lacked retrospective measures and a comparison group of non-incarcerated individuals. The comparison with the general labor force in *chapter 2* further emphasized that, even after controlling for sociodemographic differences in group composition (age, ethnicity and educational level), unemployment, low quality jobs and instability are longstanding features of prisoners' pre-prison employment careers. Notably, prison-recidivists reported a significantly higher wage in their pre-prison job than the general population. Perhaps prisoners are more driven by short-term profits instead of jobs that offer security and promotion in the long term. In line with this, Nagin and Waldfogel (1995) explained their finding that young convicted men earned relatively higher wages by pointing out that they are more often employed in "spot market" jobs instead of "career" jobs.

Overall, the findings showed that the individuals in this study face a human capital deficit even long before they enter prison.

### 7.2.2 *The effect of imprisonment on (time to) employment (chapter 3)*

Employing a quasi-experimental design with comparable groups *chapter 3* used administrative data from Statistics Netherlands on employment and imprisonment to examine whether imprisonment had "scarring" effects on formal job acquisition over and above regular unemployment. A group of *ex-prisoners* was compared in employment likelihood with a group of future prisoners who experienced a *regular time out* from the labor market. Ex-prisoners found a job more often and more quickly than unemployed future prisoners. Hence, imprisonment seemed, more than regular unemployment, to encourage the transition to the labor market. Within the follow-up period (maximum of two years), approximately 80 percent of the ex-prisoners were able to (re)connect to the labor market (for at least one month). Most of them found a job very quickly after release. This finding is in line with the conclusion of earlier administrative research in the United States that employment rates are relatively high in the immediate months after release (e.g., Pettit & Lyons, 2007; Sabol, 2007).

The higher employment rate among ex-prisoners might seem unexpected, as the majority of effect-studies found that their employment likelihood is worse than the employment likelihood of a non-incarcerated comparison group (e.g., Apel & Sweeten, 2010; Waldfogel, 1994; Western, 2002). It should be noted, however, that, in contrast to most previous work, the current study used a comparison sample of individuals who were truly *at risk* of imprisonment. Hence, the pernicious selection problem that complicates all effect-studies, was confronted by comparing the employment outcome of groups that experienced imprisonment, but at a *different point in time*. Moreover, individuals in both groups had recent work experience and were thus also in *the risk pool for employment*. The comparability between these two groups seems more suited for a comparison in employment outcomes, than studies that compare ex-prisoners with non-prisoners as the latter group of studies must impose heavier assumptions about this comparability. The difference between the current study and earlier (foremost American) work could also be attributable to the longer duration of spells considered in American studies. In order to further validate the findings, it is warranted to conduct further (Dutch) research using different control groups. An example is to examine the employment prospects after short-term imprisonment and community service (see Wermink et al., 2010).

### 7.2.3 *The effect of imprisonment length on employment prospects (chapter 4)*

The official data used in *chapter 3* fail to capture all economic activity (e.g., self-employment, off-the-books employment, out-of-state employment), especially for young men with a prior arrest record (Kornfeld & Bloom,

1999). Also, cause(s) of the quick transition to employment after release remain unknown. *Chapter 4* and *5* provided further insight into these issues.

*Chapter 4* was concerned with identifying the relationship between imprisonment length and various employment outcomes in the first six months after release. Using Prison Project data, the comparability of groups was warranted by comparing groups with different confinement lengths. The main finding was that longer prison spells (>6 months) correspond with deterioration in short-term employment prospects. Less than one-third of the long-term prisoners were employed during the follow-up period, whereas more than 40 percent of the short- (< 6 weeks) and medium-term prisoners (between 2 and 6 months) found employment. This difference is quite pronounced in light of the comparatively short spells in this sample; half of the prisoners were confined for less than three months and the maximum confinement length was one year. Sensitivity analyses in which length of imprisonment was treated as a continuous measurement, seemed to confirm this pattern: beyond six months, longer imprisonment corresponds with incremental deterioration in employment prospects.

Time served did not affect the stability of employment (i.e., timing, number of jobs, work disruption, and time employed). With respect to job quality (i.e., earnings and occupational level), the results show that ex-prisoners return to, or start working in, uniformly low-quality jobs which differ little by imprisonment length. Another noteworthy finding was that, similar to the administrative data in *chapter 3*, the vast majority of employed ex-prisoners reported to have found this job quickly.

The findings support the idea that imprisonment can have unintended (collateral) effects. The negative effect of longer imprisonment on employment likelihood seemed to be driven by a combination of job stability (short-term prisoners are more likely to return to their pre-prison job) and job change (short-term prisoners are more likely to find new employment). Notably, skill erosion and increased criminal embeddedness among long-term prisoner could not explain the lower employment likelihood among this group. Instead, long-term prisoners had more opportunities to accumulate skills and reported a similar recidivism risk as short- and medium-term prisoners. A longer prison spell thus seems to *decrease employment chances, increase skill accumulation, but does not seem to reduce recidivism risks* (for the latter finding see also Wermink, 2014).

The negative effect of imprisonment length on employment rates is not in line with previous reports in which longer spells increased post-release employment chances in the short-term (Jung, 2011; Kling, 2004, 2006; Pettit & Lyons, 2007, 2009). A possible explanation for the contrast in findings can be that this chapter was based on self-reported employment data. Most studies are restricted to formal labor market participation, and cannot measure all economic activity (e.g., off-the-books employment). Also, the negative effect of longer imprisonment on employment rates may be conditional on serving a maximum sentence of one year. Previous work was based on American prisoners that serve an average prison sentence of two years on

average (Guerino et al., 2011). In finding that longer imprisonment does not affect recidivism outcomes, this thesis *does* connect to previous (American) research (e.g., Loughran et al., 2009).

### *7.2.4 Job return as potentially successful pathway to re-employment (chapter 5)*

Despite their relatively weak labor market attachment, a substantial share of the prison population was employed at the time of their arrest (40%). *Chapter 5* used a subsample of the Prison Project data to examine whether previously employed prisoners (salary workers) returned to their former employer after release, and identified factors that facilitated or hindered this employment outcome.

The results revealed the general importance of (recent) work experience for employment success after release. Approximately twenty percent of the individuals who were jobless prior to imprisonment found employment after release, while more than half of the previously employed prisoners succeeded in this regard. Amongst them, 34 percent worked in their pre-prison job and 66 percent found a new job in the sixth month after release. Importantly, the data showed that these employers rehired their former employees while knowing about the prison spell.

This finding convincingly demonstrates the importance of both (*recent) work experience* and *pre-prison employment ties* for successful reintegration after release. Moreover, this finding aligns the expectation of various scholars who seemed to believe in the relevance of job return for successful labor market reentry but could not offer hard evidence (Berg & Huebner, 2011; Martin & Webster, 1971; Soothill, 1974; Visher et al., 2008).

Prisoners who were highly motivated to work, satisfied with their job and worked in a fixed employment arrangement were most likely to return to the pre-prison employer after release. In addition, skilled prisoners seemed relatively better equipped to overcome the stigma that is associated with a prison spell as they were more likely to find new employment than to return to their previous job.

The majority of returning prisoners were able to retain their job, at least during the first crucial half year after release. And, even though all post-release jobs were of relatively low quality compared to national figures, returners' jobs seemed to be of somewhat higher quality than new-found jobs. Job return can thus be a successful pathway to re-employment.

### *7.2.5 The effect of employment (qualities) on recidivism (chapter 6)*

The sixth chapter moved a step further along the life course and assessed the effect of post-release employment qualities on reoffending, using both official and self-reported data on recidivism. A quick transition to employment is expected to play a crucial role in reintegration processes after release. Yet, after controlling for a wide range of pre- and post-release between-individual differences available in the Prison project data,

employed and non-employed ex-prisoners seemed to have a similar chance on being *registered* for a crime. And, employed ex-prisoners even *reported* a slightly higher crime-likelihood than their non-employed counterparts.

These findings do not correspond with the general observation of previous research on the effect of work on crime (Uggen & Wakefield, 2008; Lageson & Uggen, 2013). However, research among ex-prisoners is scarce and the handful of existing studies showed mixed results concerning the protective function of employment among this group. Also, further investigation of the work-crime relationship nuanced the null-finding, indicating that the protective effect of employment depends on the *kind of jobs* offenders find (Sampson & Laub, 1993; Uggen & Wakefield, 2008; Uggen & Staff, 2001; Lageson & Uggen, 2013).

Several job characteristics, related to concepts of job quality and job stability, seemd to be associated with a lowered recidivism risk (occupational level, employee vs. self-employed, and job stability). After controlling for all job characteristics, only both indicators for job stability (returning to the pre-prison job and holding down a post-release job during the follow-up) led to an independent reduction in registered recidivism risk. A similar, though non-significant, pattern of findings was found with respect to self-reported recidivism.

In sum, even among a high-risk offender group, such as ex-prisoners, a quick transition to employment can reduce recidivism risks in the first crucial months after release. Job stability seems to be a relevant requirement to generate this protective effect.

## 7.3 Reflection on theoretical framework

This thesis set out to progress on earlier theoretical assessments in the field of life course criminology, that have been mostly tested on American data. The current work focused on the existence and direction of imprisonment and employment-effects, presented a first step towards disentangling the mechanisms underlying these effects, and used data from the Netherlands.

The findings of *chapter 3* and *chapter 4* confirm that a period of imprisonment can indeed impact employment careers. More specifically, this thesis indicates that it is not so much the *prison experience* but the *duration of confinement* that deteriorates post-release employment patterns. And, the findings of *chapter 6* show that certain employment qualities influence the development of criminal behavior. As such, this thesis provides empirical support for the dynamic perspective of life course criminology in which life events are seen as turning points that can redirect offenders' lives. The section below discusses how the empirical findings relate to the assumptions of the main theories that can be applied to the effect of imprisonment on employment and the effect of employment on criminal behavior.

### 7.3.1 Imprisonment and employment

The existing literature offers a wide range of theories applicable to the study of imprisonment-effects. This thesis used a prisoner-perspective and was therefore mainly based on supply-side explanations for the labor market behavior of prisoners: deterrence theory, learning theories, and human capital theory. In addition, theoretical notions of labeling theories, a demand-side explanation, were considered in order to include employers' role in employment outcomes.

Starting with deterrence theory, the expectation was that a prison experience can deter offenders and redirect them towards a conventional lifestyle (Beccaria, [1764] 1995). In line with this theory, c*hapter 3* showed that ex-prisoners found employment more often and sooner than a comparison group of unemployed future prisoners. In addition, the increased employment chances after release from prison, as found in *chapter 3* (and *4*), may be the result of (short-run) deterrence. Unfortunately, the administrative data did not allow a more direct test of this theory. In order to enhance theoretical insights, further research could replicate the study presented in *chapter 3* using both more detailed data on the theoretical concept "deterrence" as well as alternative comparison groups.

Following learning theories, such as the differential association theory of Sutherland et al. (1992), imprisonment reduces employment prospects because prisoners learn non-conventional values and norms as well as new criminal skills through their interaction with other prisoners. This can subsequently increase their involvement in criminal behavior (or criminal embeddedness) (Hagan, 1993; McCarthy et al., 2002). As such, longer imprisonment is expected to further deepen prisoners' criminal embeddedness. *Chapter 4* examined whether this criminal embeddedness could potentially explain the lower employment likelihood among long-term prisoners by looking at the recidivism rates of groups with different confinement lengths. In contrast to this expectation, similar levels of post-release recidivism were found across groups with different lengths of imprisonment. A deepened embeddedness in criminal behavior, as expected by learning theories, seemed therefore incapable of explaining the lower employment rates among long-term prisoners.

*Human capital theory* can be used to derive ambiguous hypotheses concerning the effect of imprisonment on employment. First, the restriction in skill accumulation and erosion of work-related skills during imprisonment are expected to cause the lower employment rates among (long-term) prisoners (Becker, 1964). *Chapter 4* showed that, while long-term prisoners were barred from employment for a longer period of time, they also had more opportunities to compensate for their time out of the labor force by following training and programs in prison. The lower employment likelihood among long-term prisoners was therefore less likely caused by an erosion of human capital. Second, guidance and skill accumulation in prison can increase employment opportunities after release. *Chapter 3* showed that ex-prisoners were more likely to find employment after release than unem-

ployed future prisoners. The latter group was less likely to receive assistance during their time out from the labor market than prisoners. This difference in guidance could potentially explain the different employment likelihood between groups. Unfortunately, the administrative data did not allow a more direct test of this human capital mechanism.

In addition, human capital indicators were used to predict ex-prisoners chances of finding employment after release and returning to the pre-prison employer. *Chapter 5* showed that recent work experience substantially increased the post-release employment likelihood. Moreover, prisoners who had worked for their pre-prison employer for a longer period of time were more likely to return to their previous job. This could be attributable to the amount of specific (on-the-job) human capital that is valuable for the pre-prison employer. Finally, higher skilled prisoners seem better equipped to overcome any stigma that is expected to be associated with a prison spell by labeling theories, as they might be less dependent on returning to their previous job for employment than their low-educated counterparts.

*Labeling theories* expect that imprisonment decreases employment prospects (and increases criminal behavior) because it generates labeling-mechanisms which close doors to norm-consistent behavior (Becker, 1963). In studying ex-prisoners' opportunities to return to their pre-prison employer, *chapter 5* provided insight into the validity of this demand-side explanation for the generally low employment likelihood among ex-prisoners. The finding that many former employers knowingly rehired ex-prisoners contrasts the hypothesis that a prison record leads to stigmatization and rejection in hiring situations. Instead, it seems to align a type of labeling theory that is often used by labor economists. This signaling theory states that the absence of perfect information about applicants' true productivity forces employers to translate applicants' information into positive and negative signals regarding that productivity (Spence, 1973). As such, signaling theory implies that the negative stereotyping associated with imprisonment might be conditional upon the access to positive information about the employee. Hence, former employers might be more likely to diverge from the negative stereotypes that are generally associated with a prison record because they have access to more (positive) information about the applicant than new employers.

### *7.3.2 Employment and criminal behavior*

Economic theories, routine activity theory and social control theories connect employment to a reduced involvement in criminal behavior. The findings in *chapter 6* showed that a quick transition to employment does not necessarily reduce the risk of reoffending as expected by these various mainstream theories. Instead, the findings are in line with the expectation that the protective effect of employment relies on more than just the presence or absence of a job and is conditional on *the kind of job* offenders find (e.g., Sampson & Laub, 1993). The aforementioned theories were used to derive specific hypotheses about the effect of certain job characteristics on crime.

Following economic theories, the expectation was that especially jobs of a higher occupational level would reduce criminal behavior, as a higher income makes illegitimate behavior unnecessary. Routine activity theory points out the importance of looking into the role of work intensity and type of employment (self-employed, salary worker), because daily activities determine the opportunity structure to commit crimes. Finally, the age-graded informal social control theory of Sampson and Laub (1993) states that stable employment reduces criminal behavior through the conventional ties that accompany such employment.

*Chapter 6* confirmed the assumptions of informal social control theory of Sampson and Laub (1993). The *ties to employment* are more important for a reduction in criminal involvement than merely being employed, occupational level, working as employee or being self-employed and work intensity. Hence, the findings do not confirm the underlying mechanisms of economic theories and routine activity theory.

### *7.3.3 Theory development*

Theories are used to derive an hypothesis concerning the effect of a life event, but scholars rarely derive more specific hypotheses that would lead to the rejection or validation of a theory's underlying assumption. The current study falls within the first line of research that aims to disentangle the mechanisms that underlie the effect of imprisonment on employment, and the effect of employment on crime. An important task for future scholars is to further develop and validate the wide range of life course theories by ways of explanatory research. The increasing amount of detailed longitudinal data enables such research. Moreover, a deeper understanding of the processes underlying the effects of life events, such as imprisonment and employment, requires *qualitative* research. By way of example, scholars could aim to measure latent theoretical concepts, such as human capital erosion and criminal embeddedness, more precisely. A study of Trimbur (2009) offers an example of how ethnographic field work can help to understand how the decisions and identity transformation of reentering individuals are shaped by their experiences, as well as their own and external attitudes. Such data enable an examination of the validity of the aforementioned theoretical interpretations and create new insights for theory development.

## 7.4 Recommendations for future research

Using varied data sources and empirical methodologies, the chapters of this thesis examined how released prisoners fare in the labor market. This thesis advanced on previous work by revisiting questions concerning pre-prison labor market attachment (*chapter 2*). In addition, the effects of imprisonment and employment are examined using advanced statistical methods and rich longitudinal data from the Netherlands (*chapters 3-6*). Moreover, several

largely unexplored areas were addressed. *Chapter 3-6* explore a broad range of employment outcomes related to timing, quality and stability. *Chapter 4* examined whether, and through which mechanisms, imprisonment limits not only employment likelihood but also the kind of jobs that ex-prisoners find. *Chapter 5* is among the first to provide insight into a potentially successful pathway to labor market reintegration by focusing on the role of recent work experience. Moving one step further along the life course, *chapter 6* emphasized the role of job quality and job stability in the effect of employment on criminal behavior.

Besides these strengths, a number of limitations have to be addressed, and need to be considered when interpreting the findings. Moreover, below, specific attention is paid to important avenues for future research with respect to data, methodology and research questions.

### *7.4.1 Data*

An important direction for future research is to study the labor market participation of (ex-)prisoners by combining administrative data with self-report data on employment and recidivism. The self-reports used in most chapters of this thesis include very detailed information. Yet a potential downside is that social desirability and memory loss invalidate responses, especially when surveying disadvantaged (low-educated) groups such as prisoners. A general recommendation is to pay attention to how different modes of self-administration vary in their effects on socially desirable responding (Kreuter, Presser, & Tourangeau, 2008) as well as on different (disadvantaged) groups of respondents. Throughout this thesis, potential biases were minimized in several ways. For example, the data used here mainly resulted from computer-assisted personal interviews which were held by trained interviewers. In addition, retrospective questions concerned recent events, both traditional as well as calendar-based questionnaires were used to measure labor market participation, and survey data were complemented with data from official data sources. Moreover, data from both sources led to some similar findings (e.g., the quick transition to employment in *chapter 3* and *4*, based on administrative and self-report data respectively). However, some differences in findings indicate that it is advisable to use data from multiple sources (e.g., the difference between registered and self-reported recidivism) (see Hindelange et al., 1979).

A second recommendation for future research is to examine whether this study's observations stand when a longer period of follow-up is used. A weakness of the data used in this study is the relatively short follow-up period (six months in *chapters 2*, *4-6* and maximum of two years in *chapter 3*). Although the first months after release represent an important period of time in ex-prisoners' lives – many of them are arrested for a new crime within this period – future research that examines to what extent ex-prisoners are able to find and hold down jobs over a longer period of time seems warranted. Third, future research on prisoner samples will have to show to

what extent the findings of this thesis can be generalized to the wider population of Dutch prisoners. Most chapters of this thesis merely focused on male prisoners, who were between 18 and 65 years old at the time of prison entry, were born in the Netherlands (including second-generation immigrants), started their confinement in pretrial detention and were confined for a maximum of one year. As Dutch prisons house mostly male prisoners (94,6%) and 80 percent of all confinements are shorter than six months, our findings speak to a large part of the total prison population. It should, however, be noted that pretrial detainees represent a group of relatively serious offenders within the prison population (49% of the population). Also, women, a small but rapidly growing segment of the prison population in the Netherlands, and many other Western countries, were excluded from participation. The same is true for the relatively large group of prisoners who are born outside the Netherlands (44%) (Linckens & De Looff, 2013). The latter two groups were excluded for practical reasons but warrant further research (see section 7.4.3).[1]

Some caution is also advised when generalizing the post-release findings (based on the interviews six months after release) to the original sample of 1,909 prisoners who participated in the first wave shortly after the start of retrial detention. For instance, because of the timing of the data collection and time frame of this thesis, short-term prisoners are modestly overrepresented in the current sample. Importantly, difference tests showed comparability between the post-release and initial sample across a wide range of baseline covariates (see *chapters 2, 4-6* for more information).

Finally, cross-national research on prisoner reentry is warranted. The data used in this study pertain to large samples of Dutch prisoners. As such, it offers a significant contribution to the body of knowledge on prisoner reentry that is currently dominated by American scholars and generally lacking in the Netherlands. The Netherlands has a relatively mild penal climate, restricted access to criminal history records, and a relatively generous social welfare regime (Becker, 2000; Esping-Andersen, 1990; Lappi-Seppälä, 2011). The findings are therefore more likely to apply to Northern European countries than to the United States. Indeed, while most American studies found a negative effect of imprisonment on employment and a short-term positive effect of imprisonment length, we found opposite effects (*chapter 3-4*). Future comparative research is needed to investigate to what extent these difference in findings can be attributed to country differences. The difference in penal climate and confinement lengths are plausible candidates. Nonetheless, the importance of work experience for post-release success, the

1 In order to analyze data of female prisoners in a similar way as male prisoners, it would have been necessary to include almost all of them in the data collection. Moreover, nonresponse would have reduced the number of female prisoners and complicate quantitative analyses. Non-Dutch prisoners were excluded because of the complexity of a multi-language data collection. Moreover, their history outside the Netherlands limits the access to official data sources entailing, for instance, criminal records.

finding that imprisonment length does not impact recidivism outcomes, and the finding that employment rates are relatively high after release align a growing body of American research (*chapter 3-5*). In addition, following two influential American scholars, this thesis confirmed the relative importance of job stability for crime reduction and reintegration (Sampson & Laub, 1993) (*chapter 6*).

### *7.4.2 Methodology*

A recommendation for future research is to confront the pernicious issue of selection bias by reporting on the advantages and disadvantages of the applied statistical methods and performing sensitivity analyses to confirm the robustness of the obtained effects. A methodological complication of this thesis is that none of the longitudinal research designs can perfectly approximate an experimental design, in which individuals are randomly sentenced to prison or an alternative sentence, to different lengths of confinement, or to employment or unemployment. Hence, the designs in this study are unable to estimate causal effects because they presumably cannot rule out all potential confounders of the relationships under investigation. Nonetheless, we are confident to have reduced selection biases severely by accounting for many potential confounders, using advanced statistical methods and comparable treatment and control groups. Moreover, sensitivity analyses confirmed the robustness of findings (*chapter 3*,*4* and *6*). Finally, the analyses were based on fine-grained (monthly) units of time and are therefore appropriate for a study of the temporal order of processes.

Both the regression analyses and the more advanced propensity score methodology account for observable and measured differences between groups. Hence, these methods only control for unobserved individual characteristics in the extent that they are associated with the observed characteristics included in the model. Fixed effect models overcome this problem by using individuals as their own controls. For instance, the post-prison employment likelihood of an individual is compared to the employment likelihood of that individual in the period prior to imprisonment. Such models seemed however less appropriate for the empirical chapters in the current study because of the relatively short follow-up period, especially since this technique excludes individuals that do not vary during the follow-up (e.g., remain unemployed).

To summarize, advanced statistical methods that can be applied to observational data all have their own drawbacks (this includes growth models, group-based trajectory modeling, etc.). Importantly, however, this does not mean that findings resulting from quasi-experimental designs are necessarily subordinate to those of experimental designs. The latter designs might be better suited for isolating a causal effect (high internal validity), but the small sample sizes and laboratorial settings make findings less suitable for generalization to the real outside world that ex-prisoners face (low external validity) (see Sampson, 2010).

### 7.4.3 Research questions

The findings of the current study address several important issues related to the labor market reentry of prisoners, but leave other issues underexplored. To start, an essential avenue for future research is to examine offenders' *willingness to work* in the formal labor market. The current study accounted for prisoners' motivation to work by including it as control variable in the analyses presented in *chapters 4-6*.[2] Based on this measurement prisoners seemed to be quite motivated to work and search for employment after release (see for instance Table 6.2) (see also Visher et al., 2008 for similar findings in the United States). Yet, half of the ex-prisoners were unemployed six months after release. Following subcultural theories prisoners' employment rates are low because peer groups disapprove of such conventional behavior and have different norms and values (Miller, 1958; Wilson, 1987). Moreover, illegal activities might be more attractive for these individuals as their low levels of human capital makes them merely eligible for low status jobs. In a report on the role of work in the lives of disadvantaged workers in the Netherlands, Van Echtelt (2010) stated that while the work motivation of unemployed individuals was similar to the motivation of their working counterparts, the aforementioned group put in little effort in actually finding a job. Apel and Sweeten (2010) found some evidence for non-participation (versus unemployment) among a sample of young American ex-prisoners. Future research is warranted to examine to what extent this is the case among Dutch ex-prisoners and look into the role of prisoners' expectations about work. Prang, Van Wingerden, and Timmer (2010) noted, for instance, that ex-prisoners have high expectations concerning the type of jobs for which they may successfully apply. Qualitative research methods seem more suited to acquire knowledge concerning both prisoners' (and employers') motives and attitudes in hiring procedures.

Such research efforts could also enhance the insight into possibilities to connect prisoners without recent work experiences to employment after release. In finding that recent work experience and returning to a pre-prison employer are important determinants of labor market success after release, this thesis indirectly suggests that finding work is particularly difficult for the group of prisoners without recent work experience.

A second recommendation is to enhance knowledge concerning the demand-side of the labor market: employers' attitudes towards hiring ex-prisoners. This study used the prisoner perspective in studying labor mar-

2 Motivation to work was based on the average score on a Likert-scale entailing nine items with answer categories ranging from 1 "totally disagree" to 5 "totally agree": I feel happiest when I work hard/ If you want to enjoy life, you should be prepared to work hard/ If you are able to obtain a better job you should always do so/ Everyone who can work, should work/ Doing what you love can only when you did your duties/ If you can get promoted, you always should/ Work should be a top-priority, even if it means less free time/ If I cannot make ends meet, society should help me/ Society should take care of my needs.

ket (re)entry processes. The finding that a substantial part of the previous employers knowingly rehired ex-prisoners after release seems to contrast previous work that found strong evidence for the stigma-hypothesis (e.g., Pager, 2003). Future (qualitative) research should examine the conditions under which employers are more or less likely to (re)hire individuals with a criminal record.

Third, future research could examine whether the effects of imprisonment and employment are homogenous. In all likelihood, transitions do not have the same effect on all prisoners. The current study paid some attention to this by distinguishing between individuals with different imprisonment lengths and employment qualities. Sampson and Laub (1993, 2005) have persuasively argued that the impact of life events can also depend on an *individual's stage in the life course*. From late adolescence to early adulthood individuals complete their educational training and accumulate valuable experiences and social contacts on the labor market. Hence, it is argued that a prison record during these formative years will certainly make it more difficult for individuals to form an enduring attachment to the labor market. Future work could examine whether the effect of the two life events under investigation here, are in fact dependent on prisoners' stage in the life course.

The effects of imprisonment and employment could also be dependent on the *gender* and *ethnic background* of prisoners. For instance, the consequences of imprisonment may differ between women and men because female inmates are often the primary caregiver prior to incarceration (Lalonde & Cho, 2008). Following the focal concerns theory of criminal sentencing (Steffensmeier et al., 1998), ethnic minorities could represent a different group of offenders because they are relatively more likely to receive a prison sentence than Dutch prisoners with a similar criminal history. In addition, research showed that employers are reluctant to hire ethnic minorities (Andriessen, Nievers, Dagevos, & Faulk, 2012), and that the negative effect of a criminal record is stronger for ethnic minorities (Pager, 2003). The current study addressed the influence of ethnicity to some extent by including second-generation immigrants. Yet, the role of ethnicity warrants more attention in prisoner reentry research.

In a similar vein, it is plausible that effects are dependent on the *context* to which prisoners return. For instance, it is easier to find employment in urban areas and in times of economic boom than in rural areas and times of economic recession. Arguably, this is especially the case for ex-prisoners, and other low-skilled groups, who are often employed in sectors, such as building and transportation, in which the demand for employment is driven by the economy. Moreover, de-industrialization and the growing service intensity of the economy have decreased the demand for low-skilled workers. These changes could have increased ex-prisoners' barriers to employment over time (Fletcher, 2008).

## 7.5 Relevance to policy

The general observation from this thesis is that imprisonment and employment can redirect employment-and criminal careers. While a short period of imprisonment does not *further* deteriorate employment prospects (*chapter 3-4)*, longer imprisonment can worsen these prospects (*chapter 4*). Those who find employment, find it soon after release (*chapter 3-4*), a substantial part of the ex-prisoners return to previous employers, and a transition to stable employment can help to reduce ex-prisoners' recidivism risk (*chapter 6*). The section below discusses how the findings of this thesis speak on possible avenues for general and specific policies pertaining to criminal justice, the labor market as well as prisoner reentry.

### *7.5.1 General policy suggestions*

With respect to criminal policy, research, like the current study – which provides a fuller accounting of both the intended and unintended costs and benefits of imprisonment – points current debates in the direction of a less punitive legislation, and specifically, shorter prison spells. This recommendation contrasts the trend towards more punitive sentencing (e.g., Staatsblad, 2006, 11). Stricter penal policies are now often motivated as a crime-reduction strategy that deters offenders from crime. The findings of the current work show that while short-term imprisonment not necessarily worsens labor market participation, longer prison spells seem to deteriorate the employment likelihood of reentering men. Moreover, post-release recidivism rates are very high and seem uncorrelated with length of imprisonment. As such, this thesis adds to a growing body of knowledge showing that (longer) imprisonment does not seem to achieve two of its intended punishment goals: rehabilitation and specific deterrence (e.g., Loughran et al., 2009; Nagin et al., 2009; Nagin & Snodgrass, 2013; Wermink, et al., 2010). In accordance with the trend towards evidence-based policies, alternatives for imprisonment deserve more attention. It might for instance be worthwhile to replace the last part of a prison spell with a non-custodial intervention. Such alternatives seem furthermore warranted in light of the substantial increase in financial costs associated with the prison system (Molenaar, 2007).

Electronic detention towards the end of a sentence (as was proposed recently: Kamerstukken [Parliamentary documents] II 2013/14, 33 745, no. 3) could function as an effective alternative to longer imprisonment, but only when supplemented with professional reintegration assistance. Such assistance is warranted to enable these individuals to hold down a job and help them to make work (or education) a more prominent topic in their lives. Without such supervision, many of these individuals are not triggered enough to change their daily structure. Moreover, society misses out on the opportunity to push this high-risk offender group to change their behavioral patterns while residing in their own environment. Research indicates

that an intervention in the community (versus institutional settings) is likely to increase treatment effectiveness (Petersilia, 2004).

A labor market- and social policy recommendation worth pursuing is to invest in *preventative measures* that stimulate educational- and skill attainment. The baseline measurement of prisoners' employability in the current study unmistakably indicated that the majority of Dutch prisoners lack human capital long before they enter prison. This deficit hindered them to find (quality) employment before imprisonment and will continue to present a barrier after release. Hence, reentry policies might be too limited in reach and implemented too late in the life course (see also Petersilia, 2003). Steps have been taken to increase the human capital of offenders. By way of example, a recent bill proposes to enable judges to sentence young and adolescent offenders (younger than 23) to obtain a basic educational qualification, and oblige schools to take on these individuals (Kamerstukken [Parliamentary documents] II 2013/14, 31 839, no. 357). Such policies, as well as more general preventative measures (e.g., reduce school drop-out) seem required to decrease the number of individuals that enter prison, and better prepare those who will eventually experience a prison spell to reintegrate after release.

In addition to these general policies, the *(employment) assistance during and after confinement* should be increased and intensified in order to improve ex-prisoners' employment prospects. There are plans to downsize the number of prisoners that qualify for personalized assistance by selecting only well-behaving prisoners who are motivated to change (Kamerstukken [Parliamentary documents] II 2013/14, 33 745, no. 3). These plans likely lead to the exclusion of prisoners who need assistance. In addition to their socioeconomic disadvantage, many prisoners are intellectually challenged, cope with mental illnesses or have substance abuse problems (Dirkzwager et al., 2009). Assistance is therefore warranted. The relatively new policy initiative in which the different organizations that come in contact with ex-prisoners (e.g., penitentiaries, police, health services, employment insurance agencies) are encouraged to improve collaboration, represents a step in the right direction (Vereniging Nederlandse Gemeenten [Association of Netherlands Municipalities], 2009). Yet, thus far, this approach has not resulted in a systematic and standardized approach to connect ex-prisoners to employment (Inspectie Social Zaken en Werkgelegenheid (SZW) [Inspection social affairs and employment], 2012). The aftercare program, in which ex-prisoners receive assistance on five relevant life domains, offers another example of how policies seem to improve circumstances but fail to address the complexity of problems that prisoners face after release (Noordhuizen & Weijters, 2013).

In order to increase ex-prisoners' chances on a successful reintegration and justify two important punishment goals – specific deterrence and rehabilitation – a suggested course of action is therefore to rethink the downsizing of reentry programming. Furthermore, because of the high costs associated with the prosecution of recidivating offenders, budget-cuts in reentry

programming might result in higher material (and immaterial) costs in the long-run. In the words of Western (2007): "If we measure prisoner reentry programs against the fiscal and social costs of incarceration and the ineffectiveness of imprisonment at reducing recidivism, even small (and cheap) program effects may be efficient" (p. 355) (see also McCollister, et al., 2003). Unfortunately, knowledge about the (cost-) effectiveness of interventions remains limited because of the high diversity in interventions. And, methodological rigorous study designs still remain an exception in this field of research (e.g., Wartna et al., 2013). Several countries, including the Netherlands, target this diversity in programs and aim to increase the (cost-) effectiveness of reentry programming by authorizing committees of experts to assess interventions before implementing them (Aarten et al., 2009). The Accreditation Committee for Behavioral Interventions assesses the potential effectiveness of behavioral interventions based on criteria derived from the "what works" literature. More research is warranted to help develop such evidence-based interventions.

### *7.5.2 Specific policy suggestions*

Based on the findings of the current study, a few more specific policy suggestions are discussed below. These recommendations might increase the participation rate of ex-prisoners without necessitating much additional investment of public funds in prisoner reentry or harming the interests of employers.

One recommendation is that employment assistance in- and outside the prison walls should focus on connecting prisoners to a *stable job*. The findings emphasized the importance of job stability for a successful (re)connection to the labor market and lowered recidivism risks after release. Review studies on the effect of employment programs, in which offenders are assigned to jobs, consistently found few differences in employment (and rearrest) between program participants and non-participants (Visher et al., 2005). A drawback of such programs is that they often connect offenders to temporary and low-skilled employment. While their human capital deficit complicates the guidance to high-quality jobs, it might be possible to help place ex-prisoners in more sustainable employment. Given the beneficial effect of stable employment found in this study, this seems a goal worth pursuing.

Another recommendation would be to help ex-prisoners connect to *prior employers*. The current study showed that, besides holding down a job, returning to a pre-prison employer increased the chances of a successful reintegration after release. Prisoners should be stimulated and facilitated to maintain relationships with their pre-prison employers, or search contact with prior employers during their imprisonment.

In order to reduce employers' concerns about hiring ex-prisoners, it might prove beneficial to match the prisoner and employer to *a third party* who monitors the activities of the ex-prisoner. The finding that a substantial

part of the employers are willing to rehire ex-prisoners nuanced the common expectation that employers do not want to hire this group of stigmatized workers. Hence, it suggests that employers might be less adverse to hiring ex-prisoners when they are rightfully informed about the qualities of the job applicant. Pager (2006) mentioned that private labor market intermediaries are promising in facilitating employment among returning American prisoners. They make the first contact with employers, list the needs of both employers and potential applicants, vouch for the ex-offender and provide additional supervision to ensure the commitment of new employees. In addition, over time such labor market intermediaries establish long-term relationships and credibility with employers and are thus more (cost)effective in placing their clients in employment (Raphael, 2008). Such organizations also operate in the Netherlands, but on a small scale, mostly through regional initiatives, and they use different approaches (e.g., Inspectie SZW, 2012).

A final and more general recommendation is to share the knowledge about the employability of released prisoners. This could help to ease employers' concerns about hiring ex-offenders, and subsequently improve the employment chances of those with a criminal record. While further research is warranted, policies in which employers are given (financial) incentives upon hiring ex-prisoners (and other disadvantaged groups) might prove beneficial.

On a final note, boosting the employment rates of ex-prisoners will require changes on both the supply-and demand-side of the labor market. Supply-side incentives could focus on increasing the human capital of prisoners and demand-side efforts should be aimed at increasing employers' willingness to hire from, and facilitate contact with, this particular labor pool. This study addressed an important part of the problems faced by ex-prisoners, and provided insights into how policies and punishment can be targeted more effectively. Yet, it represents not the last word on the topic. In order to increase ex-prisoners' chances of a successful (re)integration, future research should be directed at better understanding the full costs as well as benefits of imprisonment, and effective ways to connect ex-prisoners to conventional society.

*Table 7.1 Research questions, main findings and policy implications per empirical chapter*

| Chapter | Research question | Main findings | Policy recommendations |
|---|---|---|---|
| 2 | RQ 1. What does the employment history of prisoners look like? And, to what extent is the employment history of prisoners comparable to the employment history of the general labor force in the Netherlands? | • Prisoners face a severe human capital deficit even before imprisonment, especially when compared to the general labor force.<br>• The majority of prisoners is low educated.<br>• Less than half is employed in the run-up to imprisonment (40%), and those who were employed often worked in low-status, temporary jobs.<br>• Job instability is a longstanding feature of prisoners' working lives (many different employers, long spells of unemployment, high frequency of dismissals and off-the-books employment).<br>• Prison-recidivists score worse on a wide range of employment measures than first-time prisoners | • Invest in general preventative policies to improve educational attainment and work experiences.<br>• Develop policies that stimulate ex-offenders to give employment a more prominent place in their daily lives. |
| 3 | RQ 2. To what extent do two types of labor market absence – imprisonment and unemployment – affect the time to employment? | • Ex-prisoners find a job more often and sooner than a comparison group of unemployed future prisoners.<br>• Among disadvantaged workers with recent work experience, imprisonment seems to encourage a transition to the labor market more so than regular labor market absence.<br>• Ex-prisoners who were able to reconnect to the labor market found a job quickly after release. | • Among disadvantaged workers with recent work experience, short to medium-term imprisonment can potentially encourage a transition towards employment. |
| 4 | RQ 3. To what extent does imprisonment length affect employment prospects? | • Imprisonment length is inversely related to employment probabilities; long-term prisoners (6-12 months) have a lower employment likelihood than prisoners who serve a shorter prison spell.<br>• Imprisonment length does not affect the kind of jobs ex-prisoners find.<br>• Employed ex-prisoners generally work in low-quality jobs, and the majority is able to hold on to the same job, at least during the first crucial half year after release from prison. | • Reconsider trends towards sending offenders to prison for a longer period of time.<br>• Replace the last part of a prison spell with a non-custodial intervention. |

*Table 7.1 continued*

| Chapter | Research question | Main findings | Policy recommendations |
|---|---|---|---|
| 5 | RQ 4. To what extent are previously employed ex-prisoners able to return to their pre-prison job, find new employment or become non-employed? | • (Recent) prior work experience increases the likelihood of post-release employment substantially.<br>• Over half of the previously employed ex-prisoners were employed in the sixth month after release.<br>• One-third of this selection of employed ex-prisoners returned to the pre-prison job and two-thirds started working for a new employer.<br>• Good (satisfactory) and steady employment bonds are more likely to be continued after release.<br>• Higher educated prisoners are more likely to find new employment than to return to their pre-prison job. | • Help prisoners to maintain contact with pre-prison employer (or other previous employers)<br>• Match the prisoner and employer to a third party (i.e., labor market intermediary)<br>• Help to ease employers' concerns about hiring ex-offenders (by sharing knowledge about successful work relationships with ex-offenders)<br>• Offer incentives to employers to hire disadvantaged workers |
| 6 | RQ 5. To what extent do post-release employment (characteristics) affect the risk of recidivism? | • A quick transition to employment does not necessarily reduce the recidivism risks among ex-prisoners.<br>• The protective effect of employment is dependent on job characteristics<br>• Job stability, especially, reduces the risk of recidivism among ex-prisoners<br>  • Ex-prisoners who returned to their pre-prison employer were less likely to recidivate.<br>  • Ex-prisoners who retained their post-release job during the follow-up period were less likely to recidivate. | • Guide prisoners to stable employment |

# Nederlandse samenvatting (Summary in Dutch)

## Uitgesloten van werk? Een studie over arbeidsmarktperspectieven voor en na detentie

### Inleiding

In dit proefschrift is getracht meer inzicht te krijgen in het effect van detentie op de arbeidsmarktervaringen van ex-gedetineerden. De meer algemene doelstelling van dit proefschrift is om de ervaringen op de arbeidsmarkt voor en na detentie uitgebreid in kaart te brengen. Werk wordt door gedetineerden en professionals belangrijk geacht voor een succesvolle re-integratie. Deze overtuiging kan onderbouwd worden met criminologische theorieën die aan werk een beschermende rol toekennen. Zo zouden bindingen op de werkplaats werkenden ervan weerhouden om delicten te plegen en creëert werk een dagbesteding en inkomen waardoor er respectievelijk minder tijd en noodzaak is om delicten te plegen. Daarnaast is begeleiding naar werk, naast het strafrechtssysteem, één van de weinige beleidsinstrumenten die de overheid in kan zetten om criminaliteit te verminderen. Kennis over de arbeidsmarktervaringen van gedetineerden kan leiden tot een meer doelgerichte hulpverlening en geeft bovendien inzicht in resocialisatie als één van de strafdoelen.

*De bedoelde en onbedoelde effecten van detentie*

Gevangenisstraf is de zwaarste straf die Nederlandse rechters op kunnen leggen. Jaarlijks wordt er ongeveer 40.000 keer een gevangenisstraf opgelegd.[1] Vrijwel alle gedetineerden keren na het uitzitten van de straf terug in de vrije maatschappij. Recidivecijfers zijn hoog na vrijlating; de helft van de gedetineerden wordt binnen twee jaar opnieuw veroordeeld en een derde keert binnen die periode terug in detentie. Veel ex-gedetineerden lijken er dus niet in te slagen te re-integreren in de maatschappij.

Bij de oplegging van een straf neemt de rechter een mix van strafdoelen in overweging. Met een gevangenisstraf beoogt de rechter een dader te straffen (retributie/vergelding), een algemeen signaal af te geven dat bepaald gedrag bestraft wordt (algemene preventie), een dader af te schrikken van toekomstig crimineel gedrag (specifieke preventie) en een dader te resocialiseren. Met dit laatste strafdoel wordt bedoeld dat een periode in detentie de mogelijkheid biedt om door middel van begeleiding en training de kans op een zinvolle dagbesteding en succesvolle re-integratie na vrijlating te vergroten.

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1 Een aantal van deze ex-gedetineerden is meer dan één keer uitgestroomd. In 2012 was de totale uitstroom 39.617 en bedroeg dit 32.937 unieke personen (Linckens & De Looff, 2013).

Naast deze zogenaamde *bedoelde* effecten, kan een detentie *onbedoelde* effecten hebben. Zo kan een periode van opsluiting er voor zorgen dat een eventuele opleiding of werkcontract wordt onderbroken, woonlasten niet betaald kunnen worden en familiebanden verzwakken. Detentie heeft dan onbedoelde *negatieve* effecten die de kans op een succesvolle re-integratie verkleinen. Onderzoek laat namelijk zien dat juist deze levensomstandigheden (wonen, werk en wederhelft) cruciaal zijn voor een succesvolle re-integratie.

Behalve de hoge recidivecijfers is echter weinig bekend over de levensomstandigheden na detentie. Het is dus onduidelijk hoe het gedetineerden vergaat na vrijlating. Daarnaast is onbekend in hoeverre een periode in detentie de levensomstandigheden verslechtert. Systematisch onderzoek naar zowel de bedoelde als onbedoelde effecten van detentie is namelijk schaars, met name buiten de Verenigde Staten. Eerder onderzoek impliceert dat veel gedetineerden al voorafgaand aan detentie kenmerken bezitten die conventionele deelname aan de maatschappij bemoeilijken (o.a. laag opgeleid, psychische problematiek). Dit compliceert het vaststellen van de causaliteit (oorzaak-gevolg relaties) in onderzoek naar straffen. De vraag is namelijk in hoeverre de relatief slechte positie van ex-gedetineerden veroorzaakt wordt door een periode van detentie, of dat de ex-gedetineerden sowieso lagere kansen hebben in de maatschappij en die dus ook al hadden voorafgaand aan detentie. Tot dusver is deze vraag zo goed als onbeantwoord gebleven.

In dit proefschrift wordt het effect van detentie op de arbeidsmarktervaringen van ex-gedetineerden bestudeerd. Daarnaast worden de arbeidsmarktervaringen van gedetineerden in de periode voorafgaand aan detentie en het eerste half jaar na vrijlating uitgebreid in kaart gebracht.

## Onderzoeksvragen

De eerste onderzoeksvraag van deze dissertatie betreft de arbeidsmarktervaringen *voorafgaand* aan detentie (Hoofdstuk 2). Uit algemeen arbeidsmarktonderzoek is gebleken dat werkervaring een belangrijke voorspeller is voor toekomstig succes op de arbeidsmarkt. Systematisch onderzoek naar het arbeidsverleden van ex-gedetineerden ontbreekt echter. Hoewel eerder onderzoek enig bewijs levert voor de zwakke arbeidsmarktpositie van gevangenen direct voorafgaand aan hun detentie, zijn deze uitkomsten, gezien de timing, vermoedelijk beïnvloed door de criminele activiteiten die leidden tot de detentie. Onduidelijk is of gedetineerden alleen in de aanloop naar detentie een marginale positie innamen of dat deze positie kenmerkend is voor de gehele arbeidsloopbaan (sinds verlaten van voltijd dagonderwijs). In deze dissertatie is het arbeidsmarktverleden van gedetineerden daarom uitgebreid in kaart gebracht en geijkt aan de arbeidsmarktervaringen van de algemene beroepsbevolking. Hierdoor wordt ook inzicht verkregen in de *mate* waarin de gemiddelde gedetineerde verschilt van de gemiddelde Nederlander.

Ten tweede besteedt dit proefschrift aandacht aan het effect van detentie op werk en het soort werk waarin ex-gedetineerden terechtkomen (Hoofdstuk 3 en 4). In veel eerdere studies is het gehanteerde onderzoeksdesign niet geschikt om uitspraken te doen over de *effecten* van detentie. Ook is in eerder onderzoek enkel aandacht geweest voor het effect van detentie op werkkansen en loon. In dit proefschrift is aan de hand van zogenaamde quasi-experimentele onderzoeksdesigns bekeken in hoeverre detentie en detentieduur van invloed zijn op werkkansen en loon, en daarnaast ook op de tijd tot een baan, baanstabiliteit en baankwaliteit. Bovendien wordt inzicht verkregen in mechanismen die verklaren waarom sommige ex-gedetineerden wel een baan vinden en anderen niet (Hoofdstuk 3 en 4). Eerdere studies besteden relatief weinig aandacht aan dergelijke onderzoeksvragen. Een verklaring hiervoor ligt in het feit dat veel studies gebaseerd zijn op registratiedata en zodoende niet beschikken over data waarmee verklaringen kunnen worden getoetst. Registratiedata bevatten doorgaans namelijk weinig gedetailleerde informatie over betrokkenen. In dit proefschrift kan aan de hand van de gedetailleerde interviewdata uit het Prison Project meer inzicht worden verkregen in mogelijke verklaringen, zoals werkervaring, banden met vorige werkgevers en genoten begeleiding gedurende detentie.

Als derde wordt in dit proefschrift onderzocht in hoeverre de ex-gedetineerden die erin slagen een baan te vinden, zich daadwerkelijk onthouden van crimineel gedrag (Hoofdstuk 5). Gezien de eerder geconstateerde hoge recidivecijfers onder ex-gedetineerden is het relevant om na te gaan waarom het zo vaak opnieuw fout gaat – en in hoeverre een baan daarin een beschermende rol kan spelen. Hoewel veel eerder onderzoek naar de relatie tussen werk en criminaliteit laat zien dat werk leidt tot een vermindering in crimineel gedrag, is dergelijk onderzoek veelal gebaseerd op algemene steekproeven of jonge delinquenten en schaars onder ex-gedetineerden. Bovendien is ook in dit onderzoeksveld weinig aandacht voor de rol van werkkenmerken, terwijl theoretische perspectieven juist wijzen op het belang van het *soort* baan voor de beschermende invloed van die baan. Dit proefschrift besteedt aandacht aan het effect van werk op recidive onder ex-gedetineerden en maakt daarbij gebruik van gedetailleerde informatie over werkkenmerken (o.a. baanstabiliteit en baankwaliteit).

In het vervolg van deze samenvatting wordt kort aandacht besteed aan het Prison Project; de dataverzameling waarop de empirische hoofdstukken in dit proefschrift grotendeels gebaseerd zijn. Daarna worden de kernbevindingen uit de drie onderdelen van deze dissertatie besproken. Deze samenvatting wordt afgesloten met een algemene conclusie en aanbevelingen voor beleid en vervolgonderzoek

## Het Prison project

Het Prison Project is een longitudinale dataverzameling onder Nederlandse preventief gehechte gedetineerden. De doelstelling van dit project is om

inzicht te krijgen in de bedoelde en onbedoelde effecten van detentie op het leven van gedetineerden en hun families. Gedetineerden zijn tijdens en na hun verblijf in detentie bevraagd over een groot domein aan levensomstandigheden. Mannen die gedurende de periode oktober 2010 tot en met maart 2011 in een huis van bewaring binnenkwamen, in Nederland zijn geboren, hier legaal verblijven en ten tijde van binnenkomst tussen de 18 en 65 jaar oud waren, zijn gevraagd om mee te werken aan het onderzoek. Dit resulteerde in een dataset van bijna 2.000 gedetineerden. Dergelijke gedetailleerde data zijn uniek voor Nederland en ver daarbuiten. In de empirische hoofdstukken van dit proefschrift is voornamelijk gebruikgemaakt van de interviewdata die vergaard zijn vlak na binnenkomst in het huis van bewaring en zes maanden na vrijlating.

## Werkervaringen voorafgaand aan detentie

In hoofdstuk 2 is het arbeidsmarktverleden van ex-gedetineerden onderzocht en werd een vergelijking gemaakt tussen het arbeidsmarktverleden van de deelnemers van het Prison Project en de algemene beroepsbevolking in Nederland (Arbeidsaanbodpanel van de Organisatie Strategisch Arbeidsmarktonderzoek).

Dit hoofdstuk levert empirisch ondersteuning voor de verwachting dat gedetineerden al voorafgaand aan detentie een relatief lange afstand tot de arbeidsmarkt kennen. Hun arbeidsloopbaan kan gekenmerkt worden als instabiel door het hoge aantal werkgevers, de lange werkloosheidsduur en de frequentie van ontslag en zwart werk. Wat betreft de recentste arbeidssituatie vonden we – overeenkomstig met eerder onderzoek op dit terrein – dat veel gedetineerden vlak voor detentie werkloos zijn (44%) en een uitkering ontvangen (38%). In aanvulling hierop zagen we dat de banen van werkenden veelal van laag niveau en tijdelijke aard waren. Studies die de arbeidsloopbaan van ex-gedetineerden bestuderen vinden dat zij vaak werken in dergelijke 'secondary jobs'. Onze resultaten suggereren dat gedetineerden al voor detentie in dit type banen werken. We vonden ook dat ongeveer een derde van de werkende gedetineerden voor detentie als zelfstandige werkzaam was (versus 8% van de algemene beroepsbevolking). Het gebrek aan mogelijkheden om een goede baan als werknemer te krijgen zou hier een verklaring voor kunnen zijn.

## De invloed van detentie op werk(kenmerken)

In hoofdstuk 3 en 4 wordt het effect van respectievelijk detentie en detentieduur onderzocht op de werksituatie na detentie.

In hoofdstuk 3 is bekeken hoe een periode in detentie de kans op (en tijd tot) werk beïnvloedt in vergelijking met een periode van *reguliere* werkloosheid. Dit hoofdstuk is gebaseerd op registratiedata over formele arbeids-

marktparticipatie van het Centraal Bureau voor de Statistiek en de in- en uitstroomdata van gedetineerden zoals gedocumenteerd in het justitiële informatiesysteem TULP (tenuitvoerlegging van vrijheidsbenemende straffen en maatregelen in penitentiaire inrichtingen). Er is gebruikgemaakt van een quasi-experimenteel design, waarbij ex-gedetineerden werden vergeleken met werklozen die in de toekomst detentie zouden ondergaan. Deze opzet maakt het beter mogelijk om causale uitspraken te doen ten opzichte van eerdere studies waarin ex-gedetineerden werden vergeleken met niet-gedetineerden. Ex-gedetineerden en niet-gedetineerden verschillen namelijk op zoveel punten van elkaar – en dus niet alleen op het wel of niet ondergaan van gevangenisstraf – dat het moeilijk is om bij een dergelijke vergelijking het detentie-effect te 'isoleren'. In Hoofdstuk 3 speelt dit probleem in veel mindere mate en kunnen verschillen in arbeidsmarktkansen daarom met meer vertrouwen worden toegeschreven aan het ondergaan van de gevangenisstraf. Uit deze vergelijking bleek dat ex-gedetineerden sneller en vaker een baan vinden dan reguliere werklozen die in de toekomst gedetineerd raken. Dit impliceert dat een gevangenisstraf werkkansen niet hoeft te verkleinen en sluit aan bij enkele studies waarin relatief hoge werkkansen werden gevonden kort na vrijlating. Toch lijkt deze bevinding tegen-intuïtief en komt het niet overeen met ander onderzoek dat een negatief effect vond van detentie op werkkansen. Mogelijk komen de verschillen in uitkomsten met eerdere studies voort uit het feit dat er niet eerder met een zo vergelijkbare controlegroep een studie is uitgevoerd. Ook is de gemiddelde detentieduur in deze studie velen malen korter dan in eerdere studies, die veelal gebaseerd zijn op Amerikaanse data.

In hoofdstuk 4 is onderzocht in hoeverre detentieduur (variërend van zes weken tot 12 maanden) een effect heeft op de arbeidssituatie na detentie. Deelnemers van het Prison Project met een verschillende detentieduur zijn vergeleken in de kans op een baan, de tijd die het kost om een baan te vinden, baanstabiliteit en de kwaliteit van een eventueel gevonden baan. Om rekening te houden met mogelijke selectie-effecten – en het effect van detentieduur daarmee zo goed mogelijk te schatten – wordt door middel van "stratification on propensity scores" gecontroleerd voor een uitgebreide lijst aan kenmerken van de gedetineerde. Ongeveer de helft van hen vindt een baan binnen de eerste zes maanden na vrijlating. De analyses laten zien dat er geen verschillen in werkkansen zijn tussen gedetineerden die minimaal drie weken en maximaal zes maanden hebben vastgezeten. Een detentieduur van langer dan zes maanden verkleint de kans op werk echter wel. Deze langer gestraften verschillen echter niet van korter gestraften wat betreft de tijd die het hen kost om een baan te vinden en het soort werk dat ze vinden. Degenen die een baan vinden lijken in staat deze vast te houden (in ieder geval gedurende de onderzoeksperiode van zes maanden), maar de baankwaliteit is over het algemeen laag.

Aanvullende analyses laten zien dat de relatief lage werkkansen van langer gestraften niet verklaard kunnen worden door minder begeleiding tijdens detentie of hogere recidivecijfers na detentie. Langer gestraften krij-

gen juist meer mogelijkheden om het gebrek aan werkervaring bij te spijkeren tijdens detentie dan korter gestraften en er lijkt geen verschil te zijn in recidivecijfers tussen de groepen met een verschillende detentieduur. De begeleiding in detentie lijkt dus niet voldoende compensatie te bieden en een langere detentie lijkt niet het gewenste afschrikkende effect te hebben.

In hoofdstuk 5 wordt aandacht besteed aan één mogelijke verklaring voor het gegeven dat sommige ex-gedetineerden er wel in slagen werk te vinden terwijl anderen werkloos blijven.

Eerder onderzoek liet zien dat werkervaring een belangrijke voorspeller is voor succes op de arbeidsmarkt na vrijlating, en impliceerde dat banden met vroegere werkgevers belangrijke bronnen van werk zouden kunnen zijn voor deze marginale groep op de arbeidsmarkt. Deze studies waren echter niet in staat om empirisch na te gaan of ex-gedetineerden terugkeerden naar een vorige werkgever. In Hoofdstuk 5 wordt hier met data uit het Prison Project aandacht aan besteed. De resultaten tonen dat een aanzienlijk deel van de werkende ex-gedetineerden inderdaad terugkeert naar een vorige werkgever (34%). Daarnaast blijkt dat de baankwaliteit van degenen die terugkeren naar een vorige werkgever relatief gezien beter is dan de baankwaliteit van degenen die een nieuwe baan vinden. Terugkeren naar een vorige werkgever lijkt dus een succesvolle zoekstrategie te zijn voor ex-gedetineerden.

## De invloed van werk(kenmerken) op recidive

In hoofdstuk 6 is onderzocht of een baan leidt tot minder recidive. Daarnaast is in dit hoofdstuk bekeken of, zoals verondersteld wordt in de literatuur, het soort baan van invloed is op het recidiverisico na detentie.

Om zicht te krijgen op het geïsoleerde effect van werk(kenmerken) op recidive, is gecontroleerd voor een brede reeks aan kenmerken betreffende de periode voor, tijdens en na detentie, die gerelateerd zijn aan werk- en recidivekansen. Recidive is gemeten op basis van zowel registratiedata als gerapporteerde data. Dit laatste is van belang omdat beide recidivebronnen niet uitsluitend zijn en ook andersoortig crimineel gedrag kunnen meten. De registratiegegevens wezen uit dat ongeveer een derde van de gedetineerden binnen het eerste half jaar na detentie opnieuw met justitie in aanraking komt. Slechts iets meer dan een vijfde van de gedetineerden rapporteerde gedurende het interview zes maanden na detentie dat hij weer een delict had gepleegd.

Enkel het hebben van werk lijkt niet te zorgen voor een afname in het geregistreerde of gerapporteerde criminele gedrag na vrijlating. Het blijkt echter dat zowel degenen die in staat zijn een nieuwe baan te behouden gedurende het eerste half jaar na detentie, als degenen die na detentie voor langere tijd terugkeren naar een vorige werkgever, relatief minder recidiveren na vrijlating. De bevindingen in dit laatste empirische hoofdstuk impliceren dus dat niet zozeer begeleiding naar een baan of naar een baan van

hoger niveau, maar begeleiding naar een *stabiele* baan crimineel gedrag vermindert.

## Conclusie

De algemene bevinding van dit proefschrift is dat – overeenkomstig met het gedachtengoed van het dynamische paradigma binnen de levensloopcriminologie – transities invloed hebben op toekomstig gedrag. Zowel een periode in detentie als de transitie naar werk hebben effect op het toekomstige gedrag van ex-gedetineerden.

Concluderend laat hoofdstuk 2 zien dat gedetineerden al voorafgaand aan detentie een marginale positie innemen op de arbeidsmarkt. Deze bevinding impliceert dat hoewel veel onderzoek gericht is op de *re*-integratie na detentie, de mate van *integratie* reeds voorafgaand aan detentie beperkt is. Uit hoofdstuk 3 en 4 blijkt dat ongeveer de helft van de ex-gedetineerden werk vindt binnen de onderzoeksperiode. Dit betekent dat velen dus niet (re-)integreren op de arbeidsmarkt na vrijlating. Hoofdstuk 3 laat zien dat een periode in detentie niet per se werkkansen verder verslechtert. Hoofdstuk 4 sluit hierbij aan, maar toont eveneens aan dat een detentie van meer dan zes maanden wel kan zorgen voor een achteruitgang in arbeidsmarktperspectieven bovenop de reeds bestaande achterstand. Uit hoofdstuk 5 blijkt dat terugkeren naar een vorige werkgever een succesvolle strategie kan zijn voor ex-gedetineerden die op zoek zijn naar een baan. Het laatste empirische hoofdstuk laat zien dat recidivecijfers hoog zijn en dat niet iedere baan een beschermende invloed heeft onder ex-gedetineerden. Enkel de ex-gedetineerden die in staat zijn een nieuwe baan voor langere tijd te behouden of terugkeren naar een vorige werkgever hebben een kleiner recidiverisico.

## Beleidsaanbevelingen

De bevindingen van dit proefschrift impliceren dat veel gedetineerden al voorafgaand aan hun detentie zwakke banden hebben met de arbeidsmarkt. Zes maanden na detentie heeft ongeveer de helft werk, maar de overige helft slaagt er niet in om werk te vinden (of is niet bereid / in staat om te werken). Ook zijn de recidiverisico's, overeenkomstig met landelijke cijfers, reeds in het eerste half jaar na detentie hoog. Op basis van dit proefschrift kan dus worden vastgesteld dat een aanzienlijk deel van de ex-gedetineerden hulp nodig heeft bij het vinden en vasthouden van (gepast) werk. Om de kansen op een succesvolle re-integratie in de vrije maatschappij te vergroten en tegemoet te komen aan het gedachtegoed achter twee bedoelde effecten van detentie – resocialisatie en specifieke preventie – is het aan te bevelen om bezuinigingen op de behandeling en begeleiding van gedetineerden tegen te gaan. Hoewel verder onderzoek naar effectieve begeleiding wenselijk is en meer aandacht voor resocialisatie tot meer kosten op de

kortere termijn leidt, zal een dergelijke investering op de langere termijn een betere (re-)integratie en minder criminaliteit tot gevolg hebben.

Op basis van dit proefschrift kunnen ook enkele meer specifieke beleidsaanbevelingen geformuleerd worden. In de begeleiding naar werk moet vooral getracht worden ex-gedetineerden te begeleiden naar een stabiele baan. Vroegere werkgevers kunnen een belangrijke rol spelen in de begeleiding naar een dergelijke baan. Het lijkt daarom wenselijk gedetineerden tijdens detentie te stimuleren om contact te zoeken met vroegere werkgevers en dit ook te faciliteren. Hoewel vervolgonderzoek aan te bevelen is, kan beleid dat als doel heeft om werkgevers in te lichten over het in dienst nemen van ex-gedetineerden en eventueel financiële prikkels geeft daartoe, ook de participatie van ex-gedetineerden op de arbeidsmarkt verhogen.

## Suggesties voor vervolgonderzoek

Dit proefschrift bouwt voort op bestaand onderzoek binnen het terrein van de levensloopcriminologie door reeds gestelde onderzoeksvragen te beantwoorden voor Nederland, nieuwe onderzoeksvragen te behandelen en geavanceerde analysetechnieken toe te passen op gedetailleerde longitudinale data over een grote groep Nederlandse gedetineerden. Dit proefschrift kent echter ook een aantal beperkingen, die aanknopingspunten bieden voor vervolgonderzoek.

De Prison Project data zijn gerapporteerde data en dus afkomstig van de gedetineerden. Sociale wenselijkheid en geheugenverlies kunnen, met name onder deze achtergestelde groep, geleid hebben tot een vertekening van de data. Er is getracht deze vertekening te minimaliseren door capi-interviews af te nemen (computer assisted personal interviews), meerdere vragen te stellen om concepten te meten (o.a. arbeidsmarktparticipatie meten door middel van algemene vragen en de kalendermethode) en gerapporteerde data aan te vullen met geregistreerde gegevens. Een suggestie voor vervolgonderzoek is om deze aanpak verder uit te breiden. Hoewel aan geregistreerde participatiecijfers ook nadelen kleven (die meten bijvoorbeeld alleen formele arbeid) zou een combinatie van beide soorten data meer inzicht kunnen geven in de daadwerkelijke arbeidsmarktparticipatie van ex-gedetineerden. Vervolgonderzoek op aanvullende data creëert ook mogelijkheden om na te gaan of de bevindingen uit dit proefschrift te generaliseren zijn naar een langere volgperiode (langer dan zes maanden) en andere groepen gedetineerden (o.a. vrouwen, personen geboren buiten Nederland).

In dit proefschrift is uitvoerig aandacht besteed aan de uitdagingen die gepaard gaan met onderzoek naar de effecten van transities op toekomstig gedrag (effect van detentie op werk, effect van werk op recidive). Geen van de onderzoeksdesigns in dit proefschrift is experimenteel van aard. Hierdoor is ondanks het gebruik van quasi-experimentele designs en geavanceerde analysetechnieken voorzichtigheid geboden bij het doen van uitspraken over causaliteit (oorzaak-gevolgrelaties). Experimenteel onderzoek naar

de effecten van detentie en werk is daarentegen vrijwel onmogelijk (en in het geval van detentie zelf onethisch te noemen). Bovendien is de vraag in hoeverre de hogere interne validiteit (zicht op causaliteit) van die studies opweegt tegen de hogere externe validiteit (gelijkenis met de werkelijkheid) van quasi-experimentele studies. Verder onderzoek op basis van quasi-experimentele designs is daarom aan te bevelen. Een aandachtspunt is om daarbij uitvoerig te rapporteren over de voor-en nadelen van dat design en sensitiviteitsanalyses uit te voeren.

In dit proefschrift worden verscheidene aspecten omtrent de arbeidsmarkre-integratie van ex-gedetineerden behandeld, maar blijven een aantal onderzoeksvragen onbeantwoord. Een aanbeveling voor vervolgonderzoek is om aandacht te besteden aan de bereidheid en motivatie van gedetineerden om te werken. Een van de bevindingen is dat een groot deel van de gedetineerden geen werk heeft na detentie. Een gebrek aan motivatie zou een verklaring kunnen bieden. In verscheidene hoofdstukken in dit proefschrift is een maat voor werkmotivatie meegenomen in de analyses en bleken gedetineerden hier niet uitermate laag op te scoren. Desondanks verdient dit onderwerp meer aandacht in vervolgonderzoek. Kwalitatieve onderzoeksmethoden lijken meer geschikt voor dergelijk onderzoek dan kwantitatieve onderzoeksmethoden en zouden bovendien andere nieuwe inzichten kunnen opleveren over de relatie van (ex-)gedetineerden met werk.

Dit proefschrift onderzoekt de arbeidsmarktre-integratie van ex-gedetineerden voornamelijk vanuit het uitgangspunt van deze individuen. Een suggestie voor vervolgonderzoek is om meer inzicht te krijgen in de vraagzijde van de arbeidsmarkt, zijnde de werkgevers. De bevinding dat vroegere werkgevers een belangrijke bron van werk zijn voor ex-gedetineerden ondersteunt het belang van verder onderzoek op dit terrein.

# References


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# Nawoord (Acknowledgements)

Op deze plek wil ik een aantal personen bedanken die een bijdrage hebben geleverd aan dit proefschrift.

Allereerst wil ik Paul, mijn promotor, bedanken. Ik heb veel van jou mogen leren de afgelopen jaren en ben verheugd dat we onze prettige samenwerking de komende jaren voort kunnen zetten (op prachtige data!). Johan, bedankt dat je mijn copromotor wilde zijn en in het bijzonder voor je betrokkenheid, humor, expertise en vertrouwen in mij. Bob, thanks for introducing me into the American world of criminology. I look forward to continuing our collaboration in Leiden and New Jersey. Ook bedank ik de leden van de leescommissie voor de bereidheid om dit proefschrift te beoordelen: Koen Caminada, Frans Leeuw, Martin Moerings, Peter van der Laan, Joanne van der Leun en Tanja van der Lippe.

Dit proefschrift is grotendeels gebaseerd op data uit het Prison Project. Velen hebben meegewerkt aan de totstandkoming van deze dataverzameling. Mijn dank gaat uit naar de respondenten, medewerkers in de gevangenissen en de vele interviewers. Ook noem ik mijn Prison-collega's; we hebben de afgelopen jaren intensief samengewerkt bij de coördinatie van dit project. Zowel de projectleiders (Paul en Anja), de overige leden van de stuurgroep (Peter en Joni), de aio's waarmee ik dit traject begon (Ellen, Hilde, Karin, Ruben en Willemijn), de nieuwere aio's (Anouk, Jennifer, Maaike en Susanne) en overige onderzoekers (Hanneke, Marieke, Sanne en Veroni) wil ik bedanken voor de fijne samenwerking. Het Openbaar Ministerie en het Wetenschappelijk Onderzoek- en Documentatiecentrum (WODC) van het ministerie van Veiligheid en Justitie ben ik dankbaar voor de toegang tot geregistreerde gegevens over veroordelingen. Graag bedank ik hier ook de medewerkers van het Centraal Bureau voor de Statistiek, in het bijzonder Heike, Michelle en Rob voor de toegang tot de mooie data en het alsmaar verlengen van mijn toegangspasje.

Collega's van het instituut strafrecht en criminologie in Leiden; de fijne sfeer op de gang en de goede mix van criminologen en juristen hebben absoluut bijgedragen aan de totstandkoming van dit proefschrift. In het bijzonder wil ik Ellen, Hilde, Soenita en Marjolein bedanken voor de welkome afleiding tijdens de lunch en overige dates. Hilde, wat fijn en bijzonder dat we elkaars paranimf zijn. Soenita, (roomie!), de gezelligheid en relativerende gesprekken (over "worse-case-scenarios") op onze kamer maakten een verschil tijdens dit promotietraject. Gabry en Karlijn, ook jullie wil ik bedanken voor de fijne gesprekken op het werk, in de trein en daar buiten. Sigrid (stata-team!), Maartje en Natasja, fijn dat ik bij jullie ook altijd terecht kon met vragen.

Ik bedank hier ook mijn vriendinnen. Wat een rijkdom dat ik met jullie altijd over (andere) belangrijke zaken kan praten. Lieve limbo's; Lisanne, Stephanie, Lieke, Caro, Maaike en Jessie, jullie vriendschap betekent erg veel voor mij. Lisanne, ik ben blij dat wij nog steeds zo dicht bij elkaar in de buurt wonen. Bedankt voor alle goede zorgen, met name tijdens het laatste jaar van het promotietraject. Ilse, Jolien, Marloes, Roza en Wieteke – mijn medesociologen – na de studie werd afspreken lastiger, maar onze vriendschap niet minder hecht. Bedankt voor het luisterend oor en de afleiding tijdens vele bijzondere uitjes.

De familie Schönlau bedank ik voor hun interesse en zorgzaamheid, en de extra dosis hiervan gedurende het afgelopen jaar. Geerte, mijn slimme zusje en paranimf(!), bedankt dat je er voor me bent en naast me wil staan tijdens de verdediging van dit proefschrift. Lieve pap en mam, jullie bijdrage aan dit proefschrift en mijn verdere leven is niet in dit dankwoord te vatten. Bedankt dat jullie mij altijd gestimuleerd hebben het beste uit mezelf te halen en voor al jullie steun en vertrouwen. Als laatste noem ik Maarten, bedankt dat je al zo lang mijn allerbeste vriend bent. Ik kijk ontzettend uit naar het vervolg van ons avontuur, in NYC en daarna.

Anke,
april 2014

# Curriculum Vitae

Anke Antonia Theodora was born on July 16, 1986 in Roermond, the Netherlands. After graduating from secondary school at the "Stedelijk Lyceum" in Roermond in 2004, she obtained a bachelor's degree in Sociology and a degree for the research master Social Cultural Science at the Radboud University in Nijmegen. Upon graduation (2009) she started working as Ph.D student at the Department of Criminology in the Institute of Criminal Law and Criminology at Leiden University. As part of this Ph.D project she played an active role in the coordination of the Prison Project – a longitudinal study among nearly 2,000 Dutch prisoners. In addition, she followed statistics courses at the winter school of the European Consortium for Political Research (ECPR) in Vienna and visited the Department of Criminal Justice of both the University of Albany (NY) and Rutgers University (NJ) in the United States. She is currently employed as Assistant Professor at the Department of Criminology at Leiden University.

In the range of books published by the Meijers Research Institute and Graduate School of Leiden Law School, Leiden University, the following titles were published in 2014:

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