The London School of Economics and Political Science

Performance based contracting as a policy tool for promoting timely exits from out-of-home care: A comparative analysis

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Abstract

Ever since the late 1950s, one of the main objectives of child protection policies in the United States has been to reduce the amount of time children spend in out-of-home care. For nearly four decades, policymakers have sought to achieve this goal primarily by providing various types of services to help children reunify with their parents more quickly. However, in recent years a new approach has emerged which emphasises the use of quantitative targets to expedite exits from care, even when this entails terminating parental rights or pursuing alternatives to family reunification such as child adoption. Since then, states have adopted very different policy approaches to promote timely exits from out-of-home care. Yet relatively few comparative studies have been undertaken to examine which approaches have yielded better outcomes. Further, the evidence base on whether some approaches may be associated with negative distortionary effects, particularly with regard to permanency outcomes, remains limited.

In this research, I focus on performance-based contracting (PBC); a type of policy approach which links compensation of child welfare agencies to the achievement of specific quantitative targets. My analysis focuses on four states: two that have employed PBC to reduce the amount of time children spend in care—Illinois and North Carolina—and two that have not—New Jersey and Washington state, using multi-year, multi-state entry cohorts based on the Adoption and Foster Care Analysis and Reporting System (AFCARS). I find that PBC states recorded greater improvements in the timeliness of permanency outcomes compared to states that do not employ PBC during the period considered. I also find that compositional effects related to the race of children entering care and the type of placement setting chosen, in combination with other influences including secular trends, may play a part in shaping this outcome for particular groups. I am, however, unable to conclude whether these outcomes are the result of PBC alone or a combination of other factors, which I am not able to capture or control for with the data utilised. Further, my analysis cannot conclusively determine whether some of these outcomes might be accompanied by various distortionary effects, including "cherry picking" or other types of gaming. My research, however, does cast doubt on some of the "mechanisms" through which changes in the timeliness in permanency outcomes are achieved as well as raises the need for a more nuanced and complex theoretical framework to explain how PBC might shape the timeliness of permanency outcomes.

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List of acronyms

AFCARS	Adoption and Foster Care Analysis and Reporting System
APA	Adoption Promotion Act
ARA	Adoption Promotion Act
ASFA	Adoption and Safe Families Act
ATE	Average treatment effect
BI/D	Bureaucratic institutions/diffuse
BI/N	Bureaucratic institutions/narrow
CFSR	Child and Family Service Reviews
CID	Composite identifier
CPPP	Center for Public Policy Priorities
CWOR	Child Welfare Outcome Reports to Congress
DAE	Disparity at entry
DID	Difference-in-difference
DTE	Disparity in timely exits
EBP	Evidence-based policy-making
FCSIAA	Fostering Connections to Success and Increasing Adoptions Act
IIA	Independence of irrelevant alternatives
MBD	Multiple baseline design
MEPA	Multiethnic Placement Act
OPPAGA	Office of Program Policy Analysis and Government Accountability
OVB	Omitted variables bias
PBC	Performance-based contracting
PIP	Program improvement plan
PIT	Point-in-time
PSBI/ND	Primordial solidarities-bureaucratic institutions/narrow-diffuse
PSM	Propensity score matching
QED	Quasi-experimental designs
SCM	Synthetic control methods
SSA	Social Security Act
RCT	Randomised controlled trials
RDE	Racial disproportionality at entry (rate)
RE	Randomised experiments
ROC	Receiver operating characteristic
TANF	Temporary Assistance to Needy Families
TPR	Termination of parental rights
WFSE	Washington Federation of State Employees

1 Performance based contracting as a tool to improve the timeliness of permanency outcomes

1.1 The scope of the research: an overview

Ever since the late 1950s, one of the main objectives of child protection policies in the United States of America (henceforth United States) has been to reduce the amount of time children spend in out-of-home care; defined here as any formal arrangement, whereby a child is cared for in a temporary, alternative residential setting (Lewit 1993).[1] For nearly four decades, policymakers have sought to achieve the goal of timeliness[2] primarily by providing various types of services to help children reunify with their parents more quickly. However, in recent years a new approach has emerged which emphasises the use of quantitative targets to expedite exits from care and achieve permanency,[3] even when this entails terminating parental rights or pursuing alternatives to family reunification such as child adoption.

Since then, states have adopted very different policy approaches to promoting timely exits from out-of-home care. Yet relatively few comparative studies have been undertaken to examine which of these approaches has yielded better outcomes (examples of such

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[1] I use the term "formal" to convey the fact that my research focuses on children who are under the legal responsibility of the state. The term "temporary" was chosen to express the provisional nature of out-of-care arrangements, which are to be completed in the shortest time possible, without endangering the safety and wellbeing of the child. The expression "foster care" is used only when it is a direct citation. Throughout the study, the term "care" is used as a synonym of out-of-home care.

[2] In this study, I consider placements that last more than twenty-four months from the time of entry to be long-term or untimely, while exits that occur within twenty-four months of the child entering care are considered to be timely. Exits that occur within twelve months are considered "very timely", while those which occur after twelve months but within twenty-four months of placement are deemed to be of intermediate timeliness. The choice of these thresholds is based on the composite measures outlined in the Child Welfare Outcome Reports to Congress (CWOR) and in the Child and Family Service Reviews (CFSR)—the two main analytical tools used by the U.S. Children's Bureau to monitor the implementation of federal child welfare policies (see also Table A.1.1).

[3] I define achieving permanency as finding a legally permanent, nurturing home for every child in out-of-home care. Permanency outcomes include reunification, adoption, legal guardianship and emancipation. For reasons of analytical convenience, throughout this research I equate exiting care with achieving permanency. The implications of this choice are discussed in chapter 10.

studies include Golden and Macomber 2009; Caplick Weigensberg 2009; Courtney, et al. 2011a, 2011b; Courtney and Hook 2012). In this research, I seek to address this gap by focusing on performance-based contracting (PBC); an approach to programme management which links compensation of child welfare agencies to the achievement of quantitative targets. Specifically, I explore the extent to which the use of PBC is associated with the timeliness of exits from out-of-home care.

This chapter is structured as follows. First, I briefly describe the rationale for this study focusing on the policy relevance of PBC and timeliness. I then offer an overview of the evidence base on the relationship between PBC and timeliness and outline the expected as well as the actual contributions of my study to existing knowledge. I also present my research questions and define the research hypotheses explored in my analysis. Lastly, I outline the structure of the study.

1.2   What is PBC and what factors contributed to its emergence as a policy tool?

PBC is an approach to programme management whereby a contractor's compensation is tied, in whole or part, to the achievement of certain quantitative targets. Instead of paying contractors through a flat, *per diem* rate based on the number of persons served, PBC "focuses on the *outputs*, *quality* and *outcomes* of service provision" (Martin 1999 p. 8). In practice this means that agencies that are unable to meet specific quantitative targets receive either a smaller amount per child—as in the case of the caseload models or the models based on incentives and penalties—or none at all such as in the case of the pure pay-for-performance model.[4]

PBC[5] was first introduced in child protection and welfare services in the mid-1990s (Alpert and Meezan, 2012; McBeath 2006; McBeath and Meezan 2010; Stecher, et al.

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[4] In models based on incentives and penalties, providers receive a flat monthly fee for services as well as a small bonus for achieving certain quantitative targets. In caseload models, providers are required to accept a certain share of their caseload in new referrals, and move a certain percentage to permanency each year, while in the pure pay-for-performance model contracting agencies are compensated only when they have met specific quantitative targets (Planning and Learning Technologies, Inc. and The University of Kentucky 2006, 2009). The incentives and penalties model tend to present the lowest risk for providers while the pay-for performance model tend to be the highest.

[5] PBC was first employed in public procurement in the United States in the 1980s in the area of defence (Else, et al. 1992; Martin 2002).

2010). Since then, the number of states availing themselves of PBC has risen sharply
(Collins-Camargo, et al. 2011a; U.S. Department of Health and Human Services, Office of
the Assistant Secretary for Planning and Evaluation 2007). According to a 2009 survey by
the Quality Improvement Center on the Privatization of Child Welfare Services, more than
half of all states utilised some form of PBC in their child welfare service contracts;
compared to only a handful of states a decade earlier (Planning and Learning Technologies,
Inc. and The University of Kentucky 2009).

In my opinion, three main factors help explain why the use of PBC became so
widespread in the U.S. child protection and welfare system in so short a time span (see also
Axford and Morpeth 2013; Collins-Camargo, et al. 2011a, 2011b; Flaherty, et al. 2008;
Lynch-Cerullo and Cooney 2011).

First, there was mounting pressure on government entities to reduce the costs of child
welfare and protection programmes. During the first half of the 1990s, the cost of
providing for children in care had risen rapidly, climbing to 4.2 billion U.S. dollars in 1996
up from less than 0.9 billion U.S. dollars a decade earlier (Anyon 2011; U.S. Congress,
U.S. House of Representatives, Committee on Ways and Means 1998, 2000). In an
attempt to cut costs, many state and local authorities began to hire external contractors to
provide services on their behalf. Among the services frequently subcontracted were those
related to placement, reunification and permanency, as well as various services aimed at
promoting the safety and wellbeing of children in care. Government entities generally
retained the role of "referring children for care, holding legal custody, and reporting to the
court" (Berlin 2007 p. 6) as well as the responsibility for overseeing the performance of the
various subcontracting agencies. [6]

Faced with the need to cut costs, many policymakers turned to PBC as a means of
inserting "quasi-market competition into a historically noncompetitive service
environment" (Shaver and Taylor 2010 p. 295). Specifically, by compelling providers to
compete with one another for the renewal of contracts (Berlin 2007 p. 8), many
policymakers saw PBC as a tool for inducing private contractors to become more cost-

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[6] An exception is the state of Kansas, where the "government (…) contracted with the private sector to
purchase certain outcomes" (Berlin 2007 p. 2). In Kansas the legal custody of children shifted from the
county or state social services system to a private sector "lead agency" which reported directly to the courts.
This approach remains relatively uncommon.

efficient in order to remain profitable and "stay in business".[7] This, in turn, was expected to lower overall service delivery costs.

Second, there was growing public dissatisfaction with the quality of child protection and welfare services. Several high-profile cases of child abuse in the late 1980s and early 1990s had created a sense that children were not safe while in out-of-home care (Allen and Bissell 2004). At the same time, the number of children in care had doubled (see Figure 1.1). Policies such as the Family Preservation and the Support Services Program Act (FPSSPA) of 1993 with their emphasis on family reunification were blamed for the rising number of children seemingly "adrift" in care (Epstein 1999; Gainsborough 2010; Ingram 1996; Testa 2004). This contributed to a sense that the child welfare system was not doing enough to find permanent homes for children and help them exit care in a timely manner. By delinking providers' compensation from the number of children served, PBC was seen as addressing the potential conflict of interest agencies might have to retain clients in care beyond what was strictly necessary.

Figure 1.1. Number of children in care, entering care and exiting care, 1980-2010
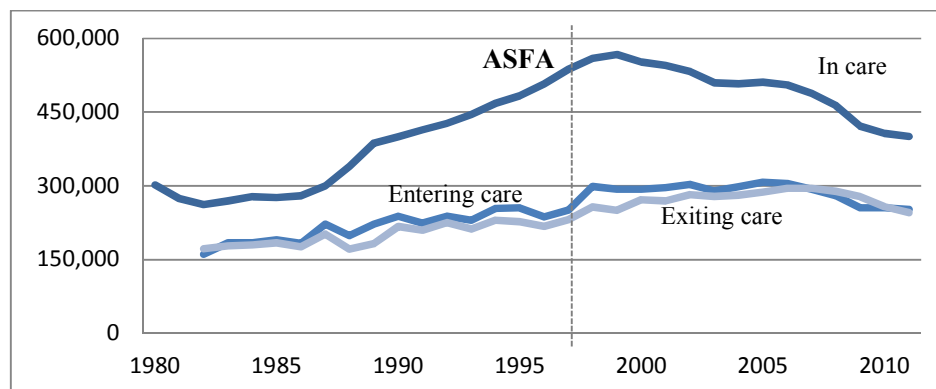
Sources: U.S. Department of Health and Human Services (2006a, 2012a); U.S. Congress, U.S. House of Representatives, Committee on Ways and Means (2000).

Third, an increasing number of state and federal policies began to embrace quantitative targets as a way of promoting performance. In the domain of child protection,

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[7] While PBC often involves the use of private contractors, it should not be confused with privatization. Rather, as Stecher, et al. (2010 p. 6) point out, PBC aims to improve the efficiency of a system, "through goals, incentives and measures", regardless of whether the provider of the services is a public or a private entity.

federal laws such as the Adoption and Safe Families Act (ASFA) of 1997[8] made federal funding partially contingent on meeting a series of quantitative outcomes related to the children's safety, permanency and wellbeing.[9] Specifically, the ASFA was perceived to have shifted the emphasis away from merely fulfilling various administrative or service targets—the traditional benchmarks of performance for the out-of-home care system in the United States—to achieving better "outcomes" for children and their families (Beem 2006; Elder, et al. 2012).[10] This focus on achieving concrete "results", which is so central to the ASFA, is also viewed by authors such as Berlin (2007) and Shaver and Taylor (2010) as one of the main factors that contributed to the emergence of PBC. Shaver and Taylor (2010 p. 295), in particular, contend that PBC shifted provider agency accountability from "Did you do what you were told to do?" to "Did what you do work?" and "What difference did it make in the outcomes for children?"

In outlining these factors, I do not contend that this is how PBC works in practice. On the contrary, I question many of the assertions presented above—for instance, I am skeptical that an analytical framework developed to monitor PBC can shed light on such conceptually and methodologically complex child welfare outcomes as those outlined in the ASFA. Nonetheless, I believe that presenting these factors is important as it provides some insight into the context in which this policy tool emerged as well as its intended objectives.

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[8] According to Spar and Shuman (2004 p. i), the ASFA sought to ensure that "consideration of children's safety is paramount in child welfare decisions, so that children are not returned to unsafe homes" and that "necessary legal procedures occur expeditiously, so that children who cannot return home may be placed for adoption or another permanent arrangement quickly." In relation to these areas, namely the child's safety, permanency and wellbeing, the U.S. Department of Health and Human Services created a series of outcomes measures to monitor and assesses state performance in operating child protection and child welfare systems. These measures are also discussed in chapter 2.

[9] For instance, the ASFA's Adoption Incentive Program stipulates that states should be compensated through monetary bonuses for performing above certain targets (Hansen 2007).

[10] Taylor and Shaver (2010 p. 296) provide a helpful description of the difference between outcomes and administrative or service inputs. Outcomes in context of the child protection and welfare system in the United States refer to improving the child's safety, permanency and wellbeing. Administrative or service inputs refer to services that are "paid for" such as the number of beds available for child placements or the resources dedicated to counseling and care management.

1.3 Why is it important to study PBC?

While the use of PBC in the child welfare system has become more widespread since the 1990s, it still remains highly controversial. Proponents, who believe that child welfare agencies perform better when fiscal accountability is linked to programmatic accountability (Kearney, et al. 2012a p. 96), tend to view such contracts as a useful management tool, which can lead to a greater focus on performance outcomes rather than the fulfilment of administrative or service measures (Martin 2005; Taylor and Shaver 2010). They also tend to view the free-market competition between various contactors occasioned by PBC as the best way to ensure an agency's responsiveness to client needs (Steen and Smith 2012; Steen and Duran 2013), resulting in what Lawler and Foster (2013 p. 139) have referred to as "a win-win-win to government, providers, and, most importantly, the people being served".

Conversely, critics view PBC's emphasis on competition as disruptive to organizational capacity as well as detrimental to institutional integrity and neutrality (Armstrong and McCullough 2010; Center for Public Policy Priorities 2008; Lee and Ensign 2007; Martin 2002; Zullo 2009). Further, a number of authors have expressed concern that the use of PBC may not necessarily prioritise the best interests of children and their families. Instead, it may give rise to conflicts of interest, whereby the decision-making process of agencies is shaped by the pressure to meet specific targets rather than the needs of their clients (Chuang 2010; Freundlich and Gerstenzang 2003; Johnston and Romzek 2008; Karatekin 2014; McBeath 2006; McBeath and Meezan 2008). According to Carnochan, et al. (2010 p. 5) this can lead to the so-called *"performance paradox*, in which external accountability designed to improve outcomes results in agency responses that either have no effect on true outcomes, or, in the worst cases, decrease service quality and lead to more negative outcomes."

The lack of consensus that surrounds the use of this performance management tool in the literature, underscores, in my opinion, the need for more research on PBC (see also section 1.8). My analysis does not, however, address whether these views, some which are both theoretically complex and difficult to assess in practice, are well founded or not. This is something that, I argue, should be pursued in future research (see chapter 10).

1.4 Why focus on the timeliness of exits from care?

As anticipated in the previous section, reducing the amount of time children spend in out-of-home care so that they can achieve permanency more rapidly is one of the mainstays of

child welfare policies in the United States[11] (Lawrence-Webb, et al. 2006; Raghavan 2010).[12] Yet since the mid-1990s the emphasis on promoting timeliness has increased. Laws such as the ASFA of 1997[13] introduced a number of provisions aimed at reducing the amount of time children spend in care including some perceived as controversial such as the so-called 15 of 22 month standard (Beem 2007; Freundlich 2010).[14] Subsequent federal laws in the United States have continued to emphasise expediting permanency outcomes, especially through adoption, as an important goal (Table A.1.2). The Adoption Promotion Act (APA) of 2003, for instance, added financial incentives to encourage the adoption of children known to be slower in achieving permanency. Likewise, the Fostering Connections to Success and Increasing Adoptions Act (FCSIAA) of 2008 retained the importance accorded in the ASFA to promoting timely permanency outcomes by renewing the adoption incentives programme and doubling the financial incentives for the adoption of older children and other children with special needs[15] (Golden and Macomber 2009).

As a result of this, nearly all states recognise the importance of promoting timely exits from care in their statutes. For instance, all fifty states and the District of Columbia have adopted the so-called fast-track provision, meaning that they exonerate child services from making reasonable efforts to reunite children with their families or prevent their

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[11] Both the CFSR and the CWOR contain a number of composite measures related to the timeliness of permanency (see Table A.1.1).

[12] The theoretical assumptions underlying permanency planning are that children are best raised in a permanent and stable family setting and that the child's development depends on his or her capacity to create a continuous and stable bond with a parental figure (Breen 2002).

[13] An example of another law that emphasised time-bound targets is the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) of 1996.

[14] Parents whose children remain in care longer than fifteen of the previous twenty-two consecutive months and who do not meet certain criteria can see their parental rights terminated. Such criteria include when: (1) the child is being cared for by a relative, (2) the Department of Human Resources has documented a compelling reason for determining that filing a petition would not be in the best interests of the child, or (3) the department has not provided the family of the child with the services deems necessary for the safe return of the child to his or her home (Child Welfare Information Gateway 2013a).

[15] Children with special needs include those with a disability, those who belong to an ethnic or racial minority, and those who have siblings who are also in need of adoption.

removal from home under a prescribed set of circumstances.[16] Likewise, all but twelve states limit the maximum amount of time a child can spend in care before initiating termination proceedings (Child Welfare Information Gateway 2010a). Overall, forty states plus the District of Columbia meet or exceed federal standards for timeliness, while ten states fall short of those provisions.

While improving the timeliness of exits from out-of-home care continues to be a widely shared policy objective in the United States, it also remains highly divisive. Those who support timeliness tend to cite the research on the *psychological parent* by Goldstein, Fraud and Solnit (1973, 1979) arguing that, because children perceive the passing of time differently than adults, permanency should be achieved in the shortest time possible. They also tend to cite the extensive body of literature suggesting that children who spend long amounts of time in out-of-home care may have more difficulties in forming intimate, trusting adult relationships as well as have a higher incidence of medical and developmental problems as evidence for limiting long-term placements (Bellamy 2008; Buehler, et al. 2000; Clausen, et al. 1998; Connell, et al. 2009; Hollander 2002; Klee and Halfon 1987; Kools 1997; Lloyd and Barth 2011; Simms, et al. 2000; Villegas, et al. 2011; Villegas and Pecora 2012; Wexler 1990). Partially because of these arguments, proponents of timeliness often call for public funds to be used to promote various permanency options, including adoption, rather than for long-term care (Barth, et al. 2006; Bartholet 1999; Hansen 2007).

A number of studies, however, have expressed reservations about pursuing timeliness as a goal in-of-itself. Specifically, they have cast doubt on the validity of the findings that long-term placement in care has a negative impact on children's wellbeing (Beem 2007; Roberts 2002). Others have shown that children who exit care too quickly may have a higher likelihood of re-entering care and may be at higher risk of being exposed to abuse and maltreatment (McDonald, et al. 2006; Wulczyn, et al. 2000; Wulczyn

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[16] Under the provisions of ASFA, reasonable efforts to preserve or reunify the family are not required when the court has determined that the parent: (1) subjected the child to aggravated circumstances as defined by State law, including, but not limited to, abandonment, torture, chronic abuse, and sexual abuse; (2) committed murder of another child of the parent; (3) committed voluntary manslaughter of another child of the parent; (4) aided or abetted, attempted, conspired, or solicited to commit such a murder or voluntary manslaughter; (5) committed a felony assault that resulted in serious bodily injury to the child or another child of the parent; and (6) involuntarily lost the parental rights of the parent to a sibling of the child (Child Welfare Information Gateway 2009a).

2004). Others still have raised concern that an excessive emphasis on timelines may arbitrarily attenuate parental rights and even lead to an unwarranted decision to terminate such rights, when, with appropriate support and services, parents might have been able to regain custody of their children (Beem 2006; Cowan 2004; Myers 2008; Wilkinson-Hagen 2004).

In my research, I do not seek to address these aspects, nor do I contend that long-term placements are predictive of, or associated with, the wellbeing of children in out-of-home care. Rather, I recognise that timeliness is currently an important policy objective in the United States. Having established this, my research seeks to explore how different approaches to promoting timely permanency outcomes, particularly through the use of PBC, are associated with this stated objective.

1.5   What do we know about PBC as a tool to improve the timeliness of exits?

At least fourteen states[17] have employed PBC with either the direct or indirect purpose of reducing the amount of time children spend in care (Alpert and Meezan 2012; Chuang 2010; Steen and Dura 2013). States have employed different models of PBC to promote timeliness.[18] In Illinois, for instance, private agencies are under contractual obligation to move at least one-quarter of their caseload to permanency within twelve months (Berlin 2007; Kearney, et al. 2012a). Contractors that do not meet those targets receive fewer resources per child and can be removed from the list of eligible providers. Missouri and Tennessee have employed a similar approach (Alpert and Meezan 2012; Planning and Learning Technologies, Inc. and The University of Kentucky 2009). In North Dakota, providers receive additional payments for completing adoptions in a timely manner,[19] while in North Carolina contractors bare all costs for adoption, including for recruiting, supporting, and training prospective adoptive families, until the adoption had been finalised, implying that they have a considerable financial incentive in ensuring that

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[17] Some twenty-seven states were using PBC in their child welfare system in 2009; though not necessarily with the goal of reducing the amount of time children spend in care (Planning and Learning Technologies, Inc. and The University of Kentucky 2009).

[18] See also note 4.

[19] Within twelve months of the termination of parental rights (TPR).

adoptions take place as quickly as possible (Planning and Learning Technologies, Inc. and The University of Kentucky 2006, 2009).

The evidence base on whether PBC has been effective in expediting exits from care remains quite limited (for a more detailed literature review see chapter 3). Further, many of the studies that have examined the relationship between PBC and the timeliness of permanency outcomes have been methodologically flawed, relying on point-in-time (PIT) estimates[20] or exit cohorts, rather than perspective cohort measures. Other methodological limitations of these studies include focusing on a small number of permanency outcomes, restricting the scope of the analysis to one locality or point in time, or failing to control for various "compositional" effects, namely differences across states in the type of out-of-home care populations served.

In addition to the methodological limitations listed above, still relatively little is known about the mechanisms through which timeliness is affected in PBC states, including various negative effects—which I refer to henceforth collectively as negative distortionary effects—associated with the use of PBC. One concern, for instance, is that PBC might lead to creaming or "cherry picking" clients, whereby contractors favour clients who they perceive to be more likely to achieve a desirable outcome by providing additional services. Another, is that the use of PBC may be associated with another type of gaming behaviour known as "parking", which occurs when providers "avoid serving more difficult children to improve their likelihood of achieving contract performance benchmarks" (Kearney, et al. 2012a p. 91).[21] While various forms of gaming have been documented in the sphere of health or employment policies that tie compensation to the achievement of certain targets (see for example Courty, et al. 2011; Koning and Heinrich 2013), they remain largely unexplored in relation to child welfare policies.

The effect of PBC on permanency outcomes is another negative aspect which has been raised in the literature. In particular, a small number of studies have shown that the use of PBC may be associated with a lower likelihood of exiting care to reunification

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[20] Point-in-time estimates, in this study, refer to the out-of-home care population at a certain date in time.

[21] While it is unlikely that children who are victims of severe abuse or considered to be at high risk of abuse would remain out of the care system simply because of a provider's desire to perform better in relation to certain quantitative targets, it is possible that low-risk cases, perceived to be less likely to exit care in a timely manner, could be diverted from the formal care system and placed in informal guardianship (see also chapters 8 and 9).

(McBeath and Meezan 2006, 2008, 2010). This could be construed as a negative distortionary effect since, according to the Social Security Act (SSA),[22] reunification remains the primary permanency objective in the United States.

1.6 Research questions

In this study I have identified four interconnected research questions. With regard to the first question, I seek to explore whether states that have employed PBC have been more successful in improving the timeliness of exits from out-of-home care compared to states that have not. I then focus on how different models of PBC might relate to differences in the amount of time children spend in out-of-home care. In the third question, I consider whether states that employ PBC experience various forms of gaming or whether other factors might also come into play in modifying the timeliness of exits. In the fourth, I examine whether the use of PBC is associated with different trends in terms of permanency outcomes and in particular distortionary effects on family reunifications.

My four research questions are as follows:

- Do states that employ PBC record more timely exits from care compared to states that do not employ PBC?
- Do states that employ different models of PBC experience different outcomes in terms of the timeliness of exits?
- Is there evidence of various types of gaming, including "cherry picking" among states that employ PBC? What other mechanisms might influence the timeliness of exits in PBC states?
- Is the use of PBC accompanied by reductions in reunifications compared to other permanency outcomes?

To address these questions I chose to utilise multi-year, multi-state entry cohorts (see chapter 4) and compare changes in the timeliness of permanency outcomes over time and across different localities. I also decided to control for factors commonly associated with

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[22] The SSA endorses, in order of preference, the following permanency outcomes: (1) reunification with the child's own family; (2) adoption; (3) guardianship; (4) long-term foster care; and (5) emancipation (Altstein and McRoy 2000; Henry 1999). The attachment theory developed by John Bowlby (1973, 1980, 1984) is one of the central concepts cited by authors who endorse this hierarchy of placement.

the timeliness of exits from care, namely selected characteristics of children entering care and their placement setting.[23]

1.7 The hypothesized impact of the use of PBC on the timeliness of exits from out-of-home care

On the basis of these four research questions, I put forward six hypotheses. It is important to stress that these hypotheses do not reflect my own views about how PBC would relate to timeliness in the "real world" but rather what I believe to be the "intended" purpose for which this policy tool was developed (see also chapter 2 for a discussion of the theoretical and analytical underpinnings of my research hypotheses). By testing these hypotheses against what I view as their intended outcomes, I seek to cast light on whether PBC achieved its intended objectives. This is an important exercise given what Patton (2008 p. 349) has referred to as the need for testing "plausibility of theory and the likelihood that stated goals will be accomplished".

My first hypothesis is that states that employ PBC[24] would record more timely permanency outcomes compared to non-PBC states. Specifically, I hypothesise, based on the theory of social exchange (see section 2.4), that agencies operating in states where compensation is tied in whole or in part to the achievement of specific performance outcomes would have a greater incentive to meet their stated objective compared to other states which follow more traditional methods of programme management, which link compensation to caseload size.

Further elaborating on the theory of social exchange, I hypothesise that states which employ different models of PBC (see also section 1.2) would record different outcomes in terms of the timeliness of exits from care. In particular, my second hypothesis is that states which use a more stringent model of PBC such as the pure pay-for-performance model, which ties all compensation to the achievement of specific targets and goals, would experience more timely exits from care compared to states that use PBC merely as an incentive to promote better performance. Because child protection agencies operating in

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[23] Settings in care, or placement settings, include unrelated foster families, kinship care, group homes and institutions, and other settings including pre-adoptive homes, supervised independent homes and trial homes.

[24] Henceforth, states that employ PBC are also referred to PBC states or treatment states, while states that do not employ PBC are referred to as non-PBC states or control states.

the former states have more to "lose" if they fail to meet their stated goals—namely they receive no compensation for their services—I expect their "culture" on the ground to be more supportive of the goal of promoting timely exits from care.

Based on the theory of social exchange, child welfare agencies operating in states that link compensation to the timeliness of permanency outcomes would have an incentive to reduce the average amount of time children spend in out-of-home care. I argue that there are at least three ways in which this goal might be achieved. The first way is for agencies to focus on improving the timeliness of groups of children known to be slowest in attaining permanency. As indicated in the literature review (see also section 3.3), African American children,[25] infants, as well as children placed with relatives (kinship care)[26] are less likely to exit care in a timely manner compared to other children (Becker, et al. 2007; Caplick Weigensberg 2009; Courtney, et al. 2011a, 2011b; Shaw 2010; Yampolskaya, et al. 2007; Wulczyn, et al. 2007). My third hypothesis, therefore, is that in states that employ PBC, the timeliness of exits of the most "underperforming" groups would improve, narrowing the gap—i.e., the disparity—in the amount of time various groups of children spend in care. I expect these changes to account for some of the difference, post-PBC, in the timeliness of exits between treatment and control states.

While child welfare agencies have an incentive to improve the timeliness of their out-of-home care population by closing gaps in performance, at the same time they have limited ability or resources to influence those outcomes. For instance, parents with drug or alcohol dependencies, or who are incarcerated may not be able to care for their children simply because an agency has a financial incentive for them to do so. Further, the child protection system cannot generate would-be adoptive parents at will. After an initial outreach to persons who have not considered adoption as an option before, the "pool" of persons interested and willing to become adoptive parents of children in care is likely to plateau. Therefore, agencies that are operating under a rational assumption of self-interest have an incentive to modify the conditions which they can more easily affect and which are known to be associated with the timeliness of exits. Faced with these limitations, child welfare agencies operating in states that employ PBC could either: (1) focus on improving

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[25] Throughout this study, I use the terms African American and black interchangeably.

[26] In this study, kinship care refers to the formal care provided to an offspring by a relative of blood or marriage.

the timeliness of permanency for the so-called "marginal cases", namely children for whom timely exits are more likely, or (2) attempt to alter the composition of children in care by, for example, placing fewer children in settings known to be associated with slower permanency outcomes.

Table 1.1. Relationship between the research questions and hypotheses

Research questions	Research hypotheses and expected outcome
1) Do states that employ PBC record more timely exits from care compared to states that do not employ PBC?	1) PBC states record more timely permanency outcomes compared to non-PBC states
2) Do states that employ different models of PBC experience different outcomes in terms of the timeliness of exits?	2) States which employ more stringent models of PBC (i.e., the pure pay-for-performance model) experience more timely exits from care compared to states that use PBC merely as an incentive to promote better performance
3) Is there evidence of various types of gaming, including "cherry picking" among states that employ PBC? What other mechanisms mightinfluence the timeliness of exits in PBC states?	3) In PBC states, the timeliness of exits for the most "underperforming" groups improves, narrowing the disparity, i.e., the gap in the amount of time various groups of children spend in care 4) In PBC states, the timeliness of exits for "marginal cases" improves, increasing the gap in the amount of time various groups of children spend in care 5) In PBC states, the proportion of children with characteristics known to be associated with less timely permanency outcomes, such as children placed with kin, declines
4) Is the use of PBC accompanied by reductions in reunifications compared to other permanency outcomes?	6) PBC states experience an increase in the permanency goals and outcomes that are alternatives to reunification, particularly adoption and guardianship

My fourth hypothesis, therefore, is that the timeliness of exits of marginal cases would improve in PBC states, thus increasing the gap in the average amount of time various groups of children spend in care, while my firth hypothesis is that states which employ PBC would record a decline in the proportion of children with characteristics known to be associated with less timely permanency outcomes compared to the control states. The former could be construed as a form of "cherry picking", with contractors favouring clients they consider to be more likely to exit care in a timely manner, while the latter could be interpreted as "parking" (see section 1.5), with providers reducing their reliance on, among others, settings perceived to be associated with longer permanency in care. I expect some of the difference in the timeliness of exits between PBC and non-PBC

states to be associated with differences in those factors and how they have changed over time.

Lastly, I hypothesise that states which employ PBC would experience an increase in the permanency goals and outcomes that are alternatives to reunification, particularly adoption and guardianship (sixth hypothesis). The reason for this is that states which tie the compensation of child welfare agencies to expediting children's exits from care would have an incentive to pursue alternative permanency outcomes, once timely reunification for a child has been ruled out.

1.8 Expected contribution of my study and challenges encountered

Initially I had expected my study to contribute to existing knowledge in two ways. My first expected contribution was to provide a more methodologically sound evaluation of differences in the timeliness of exits from care for PBC and non-PBC states than the one available in the literature. I viewed this as important since many of the studies available at the time had either focused on one state or county (Koh and Testa 2011; Rockhill, et al. 2007; Vericker, et al. 2007; Wells and Guo 1999, 2006; Wulczyn, et al. 2007), one type of permanency outcome (Blackstone, et al. 2004; Hansen 2007; Wulczyn, et al. 2009) or one point in time (Courtney, et al. 2011a, 2011b; McDonald, et al. 2006; Peters 2012; Snowden, et al. 2008) (see also section 3.4). Having completed this study, I believe to have addressed some of the methodological limitations of previous research by using multi-year, multi-state entry cohorts. Further, my research considers differences in the timeliness of permanency outcomes both before and after the enactment of PBC, examines a more complete spectrum of permanency outcomes, and controls for differences among states in some of the factors known in the literature to be associated with the timeliness of exits from care, including some of the characteristics of children entering care and their placement setting.

However, in undertaking this study, I have also come to realise that I had initially underestimated the complexity inherent in measuring the relationship between a programme management tool such as PBC and its desired outcomes (see also my second point below). While these methodological advances are not sufficient to allow me to draw causal inferences about the relationship between PBC and the timeliness of permanency outcomes, I contend that they represent a step towards being able to more critically assess the impact of a programme management tool such as PBC.

My second expected contribution was threefold. First, I sought to add to the existing body of literature on the relationship between PBC and the timeliness of permanency outcomes as well as on the possible negative distortionary effects of PBC. I considered this an important objective since a number of previous studies had called for more research on policies and practices associated with reductions in the amount of time children stay in out-of-home care, including PBC (see for example Caplick Weigensberg 2009; Courtney, et al. 2011a, 2011b; Flaherty, et al. 2008; Golden and Macomber 2009; Wulczyn, et al. 2009). Further, much of the literature on the relationship between PBC and timeliness available at the time focused on one state: Michigan. Second, I expected my study to make a contribution from a policy perspective since several states including California, Louisiana, Texas and Washington, as well as a number of countries outside of the United States were exploring the idea of introducing PBC in some part of their child welfare system (Haly 2010; Stanley et al. 2013), despite a relatively limited evidence base on the relationship between PBC and the timeliness of exits from care. Third, since the theoretical framework underpinning PBC (see chapter 2 for a discussion and critique of this theory) presumed a positive relationship between the implementation of this programme management tool and the timeliness of permanency outcomes, I sought to explore whether this assumption might be true.

Having completed this study, I find that my analysis contributes to expanding the existing body of literature on the relationship between PBC and the timeliness of exits from care by shedding some light on this relationship in some additional states, namely Illinois and North Carolina. In conducting my analysis, however, I also came to realise that I am unable to make policy recommendations since both the data and research design utilised do not allow me causal to draw inferences regarding the relationship between PBC, timeliness and permanency outcomes. My findings suggest that states that employ PBC may experience an improvement in the timeliness of exits for certain groups of children. I am, however, unable to conclude whether these outcomes are the result of PBC or a combination of other factors, including secular trends, which I am not able to capture or control for with the research design, methods and data utilised. Further, my analysis cannot conclusively determine whether some of these outcomes might be accompanied by various negative distortionary effects, including "cherry picking" or other types of gaming. I raised the latter as an important question but was unable to examine it extensively owing to limitations with my research design and data. My research, however, does cast doubt on some of the "mechanisms" through which changes in the timeliness in permanency

outcomes are achieved as well as raises the need for a more nuanced theoretical framework to explain how PBC might shape the timeliness of permanency outcomes (see also chapters 2 and 10).

1.9   Structure of the thesis

This study is comprised of a total of ten chapters, including the present one. Chapter 2 reviews the three main theoretical and analytical frameworks referenced in this research, while chapter 3 provides an overview of the literature on the relationship between the timeliness of permanency outcomes and PBC as well as gaps in the evidence base. Chapter 4 presents the data source, research design, and statistical models employed throughout this study, while chapter 5 provides an overview of some of the basic contextual information on the states considered in the analysis. Chapters 6 through 9 address the four research questions outlined in section 1.6. Lastly, chapter 10 reviews the main findings of the study, offers some comments on its limitations, and outlines some implications for practice, theory and future research.

2 Theoretical underpinnings of my study: system theory, the relational models theory and the theory of social exchange

2.1 The three theoretical models underpinnings my research hypotheses

There are a number of possible analytical frameworks and theoretical constructs to explain how policy approaches such as PBC might be related to the amount of time children spend in care. In this chapter, I make reference to three distinct models, which provide the analytical or theoretical underpinnings of my research hypotheses outlined in the previous chapter.

The first, developed by Wulczyn, et al. (2010), serves as a framework for conceptualising how the implementation of different policy approaches aimed at expediting children's exits from care might relate to specific timeliness outcomes at the state level (the first research hypothesis outlined in section 1.7). The model, which draws on systems theory, also offers the theoretical justification for an important methodological objective of this study: namely, to better control for differences at the state and county level in selected characteristics of the out-of-home population and other contextual variables (see also chapter 4).

The second model, based on the analytical framework by Testa (2001, 2008), provides a conceptual tool for classifying different approaches to promoting timely exits from care. Specifically, I use the analytical categories identified by Testa to develop a simple typology, which serves as the basis for selecting the treatment and control states in my analysis. As seen in chapter 1, the distinction between treatment states (PBC) and control states (non-PBC) is central to my first, third, fourth, fifth and sixth hypotheses. This framework is also useful for addressing my second research hypothesis, which focuses on the relationship between various models of PBC and timeliness outcomes.

Lastly, the third model, based on the theory of social exchange, provides the analytical construct for framing my research hypotheses. In particular, it offers the justification for why PBC states should, at least in theory, record more timely exits from care compared to states that do not utilise this programme management tool (first hypothesis) as well as the rationale for why states that employ more stringent models of PBC should experience more timely exits compared to states that use PBC merely as an incentive to promote better performance (second hypothesis). Lastly, the model establishes the conceptual underpinnings for the possible distortionary effects of PBC in terms of

various gaming behaviours (my fourth and fifth hypotheses) and permanency outcomes (sixth hypothesis).

In the chapter, I present an overview of each of these models and describe how they are relevant for my research. In addition, I provide a justification for why I chose them and discuss some of their more salient strengths and limitations.

2.2 System theory and the "new" approach to child protection

The analytical framework developed by Wulczyn, et al. (2010)—referred to by its authors as a "new" approach to child protection— represents a particularly useful model for conceptualising the relationship between a policy tool—in this case PBC—and a child welfare outcome such as reducing the amount of time children spend in out-of-home care. The model, which builds on system theory,[27] identifies a number of elements which are central to my analysis (see Figure 2.1). I briefly discuss four of these below.

First, the framework recognises that systems—defined as "a collection of components or parts that are organized (i.e., connected to each other) around a common purpose or goal" (p. 10)—are influenced by their stated objectives within the normative framework of "laws, policies and commitments". In my research, the normative framework is represented by the various federal laws which emphasise timeliness as an important policy objective, including the ASFA, the APA and the FCSIAA (see chapter 1); while the child welfare goal is to expedite children's exits from care in order to achieve permanency in a timely manner (see Figure 2.1).

Second, the framework acknowledges that there is a critical relationship between the stated objectives of a system and its functions, i.e., the organised activities the system undertakes to achieve its goals. In my research, federal laws have established a series of provisions aimed at reducing the amount of time children spend in care. These include, as indicated in chapter 1, time-sensitive measures for the termination of parental rights (TPR), shortened judicial and administrative timeframes for hearings as well as measures to promote adoptions as a permanency alternative for children who were unlikely to exit care in a timely manner (Freundlich 2010) (see also Table A.1.2). Yet, while many of these

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[27] The basic premises of systems theory—an interdisciplinary, overarching body of theory used in sociology, biology and engineering—is that systems do not function in isolation. Rather, there are interactions, interdependencies and synergies between the system and the context in which that system was developed.

federal laws are top-down, requiring states to modify their statutes or potentially lose all or part of their federal funding, states have followed different approaches to promoting timely exits from care (Beem 2006). For instance, some states have employed PBC, while others have relied on more traditional models which do not tie the compensation of child welfare agencies to specific performance outcomes. Wulczyn's framework, therefore, recognizes that, while the functions of various state and local actors are shaped by the federal normative framework, they may pursue those objectives through different approaches and with different means. This distinction is important in the context of my research since I seek to compare changes in the timeliness of permanency outcomes in PBC and non-PBC states.

Figure 2.1. Analytical model for describing how different policy approaches might relate to the timeliness of exits from care at the state level

-Child population served
-State and local contextual variables

State contexts and actors

State child protection system
(Structures, functions and capacities at the state level)

-Measures to promote timeliness
-Use of PBC
-Placement settings and permanency outcomes favored or available

Change including social change

Outcome at the state level
(Children spend less time in out-of-home care)

Federal child welfare goal
(To improve the timeliness of permanency outcomes)

Federal normative framework
(ASFA, APA, FCSIAA, etc.)

Source: Based on Wulczyn, et al. (2010 p. 19).

Third, the framework recognises that policy goals are not pursued in isolation. Rather, individual factors related to the child, the family and community the child

originates from, as well as the state they live in—what Wulczyn, et al. (2010) refer to as "actors and contexts"—also influence the ability of a system to achieve its stated objectives.[28] Hence the amount of time children spend in care is not only related to various normative and policy frameworks at the state and local levels, but also to the characteristics of individual children, such as their age and race, as well as the characteristics of their families and their environment at large.

Fourth, while the objectives of the system influence its functions, structures and capacities, the latter are also shaped by contextual factors. For instance, even though states might share a common objective of reducing the amount of time children spend in care, they continue to differ in their availability and preference for certain types of placement settings, with some states, for instance, favouring placement with kin, and others placement with unrelated foster families (Mitchell, et al. 2005). These differences also relate to contextual and other factors at the state and local level, including the administration and structure of service provision within child welfare agencies (McBeath and Meezan 2010; Wulczyn, et al. 2009).

While these elements represent a useful starting point for framing my research, the framework by Wulczyn, et al. also relies on a number of assumptions that warrant further discussion. First, underlying the framework is a deterministic interpretation of the relationship between a policy intervention and a specific set of outcomes—what Lynch-Cerullo and Cooney (2011 p. 370) have referred to as "why, based on research, a program's key components are expected to achieve results". Yet, in practice, being able to ascribe a cause-and-effect relationship between a policy tool and an outcome is far from straightforward. The fact that a policy is accompanied by a positive outcome, for instance, does not necessarily imply that the policy is effective; rather other confounding factors, which might have been neither observed nor controlled for, could have intervened to obtain that result. The same applies to negative outcomes. In addition, outcomes might be positive for certain groups of children but not for others or be confined to a certain period time, as was the case in the state of Kansas where an initiative to "shorten stays and decrease the number of children in the foster care system" was so successful at first that it

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[28] In this aspect, the framework by Wulczyn, et al. somewhat resembles the socio-ecological models developed by Urie Bronfenbrenner according to which outcomes are influenced by interactions at different levels.

distorted the composition of the population left in care, ultimately resulting in a significant worsening of the overall outcome measured (Berlin 2007 p. 4). In practice, being able to establish a cause-effect relationship between a dependent variable and a set of explanatory variables depends largely on the type of research design employed as well as the type of data available. As indicated in section 1.8, my analysis is ill suited for exploring this type of relationship (see also sections 3.3 and 4.3); a realization that I came to recognise in the course of my analysis.

Second, the framework by Wulczyn, et al. embraces an evidence-based approach to policy-making (EBP). This approach is essential to ensuring that a system has the ability to adjust and recalibrate itself to achieve what Testa (2010b p. 78) has referred to as "double-loop learning", meaning the ability to "curtail current operations or develop alternative theory of action for attaining the desired outcomes" when policies fail to achieve their expected effects. Yet this emphasis on EBP can be questioned. Axford and Morpeth (2013), for instance, have put forward an articulate critique of EBP based on five distinct grounds (scientific, ideological, cultural, organizational and professional). In my opinion, one of their strongest arguments relates to the meaning of "good practices" when the outcome measure employed lacks validity, meaning that it fails to capture what it is intended to measure. This is why ensuring that outcome measures are adequately specified and measured is an important objective of my study (see section 1.8). It is also the main reason for my extensive discussion of the validity of the measures of timeliness presented in the literature review (see section 3.3) as well as for my decisions to measure timeliness both as a categorical variable and as a continuous one (see section 4.5 for a more in-depth discussion of the rationale for this choice).

2.3 The relational models theory and the PSBI/ND framework

The analytical framework developed by Testa (2001, 2008), henceforth referred to as the primordial solidarities-bureaucratic institutions/narrow-diffuse (PSBI/ND) framework, provides a useful model for classifying different state approaches to expediting exits from care. Specifically, Testa (2008 p. 110), building on the relational models theory developed by the anthropologist Alan Fiske (1992),[29] categorized child welfare policies within a

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[29] While Testa and Poertner (2010) refer to Fiske's relational models theory, earlier versions of the model did not.

rectangle (see Figure 2.2). Two sides of the rectangle are defined by the scope of public interest, which can be either narrow or diffuse,[30] while the other two sides are defined by the principle of social organization, which can either be informed by primordial solidarities or by bureaucratic institutions. [31]

Figure 2.2. The PSBI/ND framework

	Narrow scope of public interest (N)
Authority ranking	*Market pricing*
Communal sharing	*Equality matching*
	Diffuse scope of public interest (D)

Primordial solidarities (PS) — Bureaucratic institutions (BI)
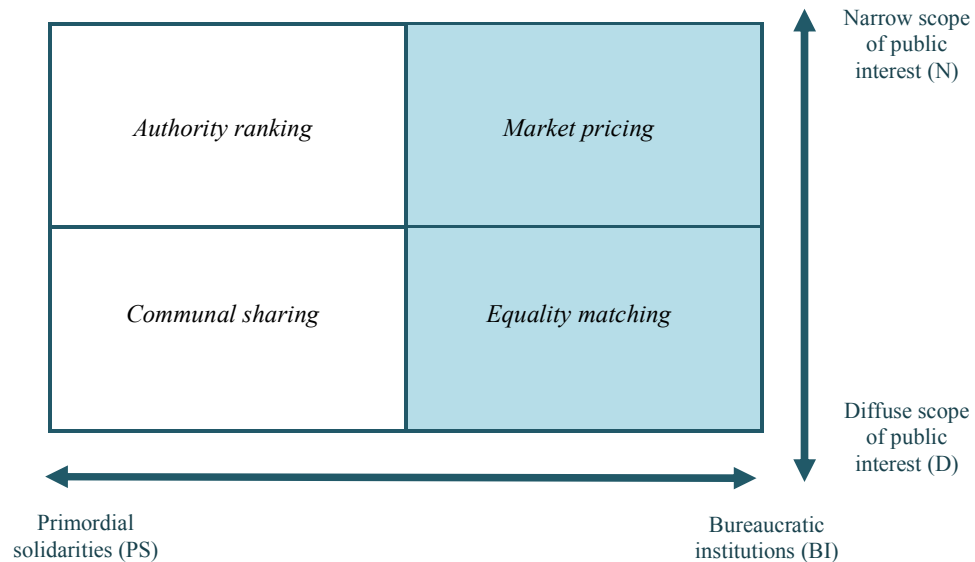
Sources: Based on Testa and Poertner (2010 p. 49) and Testa (2008 p. 110).

Notes: The above figure represents a simplified, combined representation of two versions of the framework by Testa. The text in italics refers to the categories identified by Fiske. The light shaded area refers to the BI approach.

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[30] The narrow scope of public interest recognizes that "intervention into autonomous family life is justified *only* if the physical safety, health, and sustenance needs of the child are jeopardized, e.g., when there are bruises, burns, malnutrition, or other bodily threats (…). Under a more *diffuse* scope of interest, public intervention into the family is justified *whenever* it advances the overall well-being of the child" (Testa 2008 p. 109).

[31] According to the primordial perspective, biological and kinship ties are paramount in making decisions regarding a child's wellbeing. Specifically, birth families, extended kin as well as close approximations of biological kinship "based on ethnicity, nationality, and religion" (Testa and Poertner 2010 p. 50) are the most suitable agents for promoting the best interests of the child. Conversely, according to the bureaucratic perspective, parental rights are to be subordinated to considerations regarding who is the best agent to advance "the child's well-being regardless of continuity with birth family or ascribed heritage" (Testa 2008 p. 109).

According to Testa, policies that establish time-bound goals to improve the efficiency of the child welfare system fall under the bureaucratic institutions (BI) principle. In choosing the relational models theory, I decided to restrict my analysis to these so-called "BI states". My reason for doing so was simple: namely, to select a set of states that were all "highly" committed to the goal of improving the timeliness of permanency outcomes, so that, from a policy perspective, the main difference between the treatment and control states was whether or not they use PBC, rather than their normative stands towards timeliness.

To identify the so-called "BI states", I used the five provisions outlined in the ASFA related to promoting timely exits from out-of-home care.[32] For each measure, I assigned a score of one to states that complied with the guidelines for timeliness set out in the ASFA, while states that fell short or exceeded those provisions were given a value of either zero or two, respectively. I then summed the scores across the five measures. States that had a score of four or higher were classified as "meeting or exceeding" the guidelines related to promoting timely permanency outcomes established in federal law. Conversely, states that scored less than four on the index were considered to have fallen short of those provisions. On the basis of this classification, forty states plus the District of Columbia met or exceeded federal provisions related to timeliness, while ten states fell short. I considered all states that met or exceeded those provisions to be following the BI approach and restricted my analysis to this set of states.

The PSBI/ND framework also provides a useful analytical construct to distinguish between states that employ (treatment) or do not employ (control) PBC. Specifically, according to Testa and Poertner (2010 p. 51) under a narrow, market based interpretation of public interest, "bureaucratic agents are best held accountable by financial incentives, performance contracts, and monitoring systems (…) that discourage self-interested defections from norms of responsible child caring". I, therefore, classified states that follow a BI approach and use PBC as BI/N, while I considered all other states BI/D,[33] where "N" stands for "narrow" and "D" for diffuse scope of public interest. Based on the

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[32] The five measures are as follows: (1) concurrent planning, (2) the 15 of 22 month standard, (3) case reviews within six months, (4) permanency hearings within twelve months of the initial placement; and
(5) permanency hearings every twelve months thereafter.

[33] For simplicity, I also classify states that fall between the narrow and diffuse scope of public interest a "D".

above classification, eight states, including Illinois, Kansas and North Carolina, can be considered BI/N, while thirty-three states, including California, New Jersey and Washington follow the BI/D approach since they were not employing this performance management tool at the time of this research. I used the former group to select my treatment states, while I used the latter to identify the controls (see also section 4.3).

In addition, the above mentioned classification can be used to differentiate between various models of PBC. Specifically, the more stringent models of PBC, such as the pure pay-for-performance model, can be conceptualised as falling under the narrower dimension of the spectrum of public interest, while models that rely on PBC merely as an incentive to promote better performance can be seen as following somewhere in between narrow and diffuse scope of public interest.

While the PSBI/ND framework allows me to group states into a series of mutually exclusive categories, a number of decisions related to the operationalisation of this framework warrant further discussion. One such choice was to limit my analysis to a sample of states rather than all children entering care in the United States. This decision, which was informed mainly by considerations related to data availability and completeness (see also chapter 4), raised the challenge of minimising potential selection bias. I employed the PSBI/ND framework partially for this purpose. In reality, nearly any sample, unless identified from a robust sampling frame, with a rigorous sampling design, is likely to introduce some sort of bias in the interpretation of results as well as limit the generalizability of findings. I return to discuss this issue in chapters 4 and 10.

A second aspect that requires further clarification relates to the research design employed. Specifically, I chose to use a multiple baseline design (see section 4.3) which calls for both treatment and controls.[34] While this type of design falls short of the more rigorous requirements for establishing causal relationships, using the PSBI/ND framework to distinguish between treatment and control states represents a step towards minimising some of the aspects which might confound the interpretation of results, such as states' normative stands towards timeliness. I consider the latter to be particularly important since states that actively pursue the goal of improving the timeliness of permanency outcomes

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[34] In making this choice, I distanced myself from much of the previous literature on the relationship between PBC and the timeliness of permanency outcomes, which has tended to focus on one state at a time (see sections 3.2 and 3.3).

are more likely to experience a reduction in the amount of time children spend in care, regardless of whether or not they employ PBC. Failing to account for such differences, therefore, could bias the interpretation of results. However, I also recognize that limiting my analysis to BI states represents only a crude proxy of a state's "commitment" to the goal of timeliness. Further, the use of the PSBI/ND framework does not account for other confounding or intervening factors that might be related to timeliness of permanency outcomes such as states' emphasis on reducing racial disproportionality at entry, their preferences for various placement settings or the fact that states which are less successful in expediting children's exits from care may be more likely to adopt a more "interventionist" approach such as PBC (see also chapters 3 and 4).

Lastly, my choice of using the five provisions outlined in the ASFA as a way to identify the BI states requires some further discussion. While this decision can be justified in light of the importance the ASFA places on timeliness, my choice of using an index is probably too simplistic. Further, other measures could have been chosen to complement the ones put forward, including responses by state or local administrators to the National Survey of Child and Adolescent Well-Being (NSCAW). I decided not to use such measures because, owing to reasons of data confidentiality, I was unable to access NSCAW data with the appropriate level of disaggregation. Future research could also consider collecting primary data from state or local policymakers and practitioners on this subject (see also chapter 10).

2.4 Theory of social exchange: a theoretical framework for approaching PBC

In my view, one of the most useful models for approaching PBC is the theory of social exchange; a body of theory widely used in sociology and psychology (Blau 1964; Thibaut and Kelley 1959).[35] One of the central tenants of this theory is that systems, like individuals, are motivated mainly by rational self-interest and that, consequently, their performance can be influenced by financial incentives or penalties. Under this deterministic assumption, monetary compensation alone would be enough to induce performance, without the mediation of other intervening factors, since the individuals

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[35] A number of other theoretical frameworks have been used in relation to PBC, including principal agent theory, institutional theory, and resource dependency (Kearney, et al. 2012a; McBeath 2006; Taylor and Shaver 2010). I briefly discuss the latter in relation to the limitations of the theory of social exchange.

which make up the system would collectively conform to more beneficial social behaviours while seeking to avoid the potential costs of noncompliance. Implicit in this theoretical framework is also the assumption that without such incentives, rational actors would not collectively strive to achieve a stated policy objective, overlooking the value that individuals might assign to other non-monetary factors such as group solidarity or personal satisfaction.

A second important aspect of this theory is that it presumes a positivist approach to programme evaluation, whereby not only there is consensus on which outcomes should be pursued, but also confidence that such outcomes can be adequately quantified and measured. In the case of PBC, this means that all actors involved, be they caseworkers, administrators or managers of child welfare systems, are assumed to have access to information about the costs and benefits associated with their behaviour. Further, it implies that the outcome measures on the basis of which penalties and incentives are apportioned are aligned with the policy objectives of the child welfare system and that the system discourages and seeks to correct gaming behaviours such as "parking".

In presenting the theory of social exchange, I am aware of some of its limitations. Below I outline three of the most salient of these in relation to the objectives of my study. A first limitation is that, according to the literature on institutional theory, entities tend to respond differently to institutional processes and pressures. These responses include compliance, avoidance, defiance and manipulation (Lynch-Cerullo and Cooney 2011). In systems with higher levels of resource dependencies, meaning that the benefits are closely aligned for various actors, there is often a higher tendency to comply with policy objectives. While it is possible, as assumed by the proponents of PBC, that the interests of the contracting agencies generally converge with those of the state, it is probable that the existence of incentives might engender manipulative behaviours as well. Private entities, for instance, might seek to meet quantitative targets by providing additional services to children who are more likely to exit care in a timely manner; the so-called marginal cases.[36] This, in turn, might change the composition of the child population served, with

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[36] As seen in section 1.7, if the timeliness of permanency was to improve for groups of children known to exit care more quickly, but not for groups known to be slower in achieving permanency, this might represent an indication of "cherry picking".

the more "difficult" cases remaining in care, which, in turn, might have a negative impact on the timeliness of exits in the long run. I return to explore these issues in chapter 8.

A second limitation of the theory of social exchange is that it does not adequately address the complex nature of the relationship between the so-called principal—which in the case of this study is the state—and the various entities hired to provide the contracted services—the agents. This issue, which has also been referred to as the "principal-agent problem", arises when a principal "compensates an agent for performing certain acts in a world of conflicting interests, information asymmetry, uncertainty, and strategic action" (Taylor and Shaver 2010 p. 292). Based on the theory of social exchange, for instance, both the principal and the agents operating in states that employ PBC should share the common objective of reducing the number of placements in care, particularly of children less likely to exit care in a timely manner.[37] However, the interests of the state and contractors may not always converge, with the government entities responsible for investigating and making placement decisions primarily motivated by concerns about the child's safety, and the private agencies hired to provide back-end services mainly seeking to expedite children's exits from care in order to maximise their own profit.[38] Further, even when the principal and agents share a common interest, they often lack access to the necessary information to make rational choices. McCullough and Associates, Inc. (2005) identified at least fifteen distinct limitations which may go beyond the individual contractor's ability to exercise agency and that might hinder results in a PBC setting.[39] I return to discuss these types of principle-agent problems in conjunction with my fourth and fifth hypotheses in chapter 8.

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[37] According to Taylor and Shaver (2010 p. 313) the state also has much to lose if placements in-care increase, while, "if intake decreas(es), PBC present(s) the public sector with a straightforward mechanism to capture savings". Likewise, the contracting entities benefit from having smaller number of children entering care since it is easier for them to provide high-quality services.

[38] The theory of resource dependency also raises similar concern by highlighting the lack of strategic alignment between the entities that make decisions and control resources and those which are dependent on the latter.

[39] These include: (1) lack of coordination and poor communication between the staff of the principal and agents; (2) inadequate service capacity on the part of the agents; (3) inadequate financing for the services to be provided; (4) lack of understanding of legal issues and experience in engaging with the courts by the agents; and (5) lack of sensitivity to cultural and linguistic competence.

A third limitation relates to what Powell and DiMaggio's (1991) have referred to as the theory of *new institutionalism*.[40] According to this theory, the rational-actor models of classical economics are not always appropriate for explaining performance in more complex social systems. Specifically, the authors reject the notion that a system's outcomes can be "reduced to aggregations or direct consequences of individuals' attributes or motives". Instead, they argue that every system's performance is largely shaped by its broader social, economic and political environment. Whether individual agent's decisions are affected by PBC and how the latter interact with broader environmental aspects is a complex issue. It is likely, however, as anticipated in section 2.2, that a number of contextual factors, including policies at both the federal and state level, as well as secular trends contribute to shaping the timeliness of permanency outcomes which cannot be attributed to the influence of financial incentives alone. While my analysis, owing to constraints in both the data and research design, is unable to address these aspects in detail, I recognise the need for a more nuanced theoretical framework to shed light on the relationship between PBC and timeliness (see also chapter 10).

In spite of these limitations, there are at least two reasons why I believe that the theory of social exchange provides a useful construct for "framing" the research hypotheses outlined in section 1.7. First, I think that it reflects the broader theoretical assumptions of how PBC is designed to work, at least on paper. Government entities hire contractors to provide a series of services and monitor their performance in relation to a series of quantitative outcomes, which in turn reflect the broader objectives of the child welfare system. The contractors strive to achieve the stated outcomes because doing so will maximise their own utility, expressed in monetary terms. As a result, they chose to conform to the "culture" and norms promoted by the state. Further, the government is presumed to have the necessary information and analytical tools to assess and evaluate contractors' performance through changes in outcomes. Contractors that perform well are rewarded through additional contracts and higher compensation for their services, while the underperforming contractors are forced out of business by market pressures. In presenting these narrow set of assumptions, I do not suggest that this is how PBC operates in reality. Rather, I contend that this is a simplistic approximation of how PBC is intended to work.

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[40] The theory of new institutionalism is part of the broader institutional theory.

Second, I believe that any evaluation of the "effectiveness" of PBC should be undertaken within a framework that reflects its intended policy objectives. My reason for choosing this approach is simple: if PBC were to fall short of achieving its own stated objectives, measured in terms of outcomes, even within the narrow "confines" of the theoretical framework in which it was formulated, then I would argue that this policy tool needs to be examined more critically. For this reason, I content that the theoretical assumptions underlying PBC, which are central to the hypotheses outlined in section 1.7, need to be evaluated and tested alongside the outcomes themselves.

3 Performance based contracting and the timeliness of permanency outcomes: an overview of the evidence base and gaps in knowledge

3.1 Scope and structure of the literature review

This chapter provides an overview of the literature on the relationship between the use of PBC and the timeliness of exits from care, as well as on various negative distortionary effects which might accompany the use of this performance management tool. The chapter considers forty studies out of some eighty articles and reports that were reviewed overall.[41] To identify these studies, I carried out a search in several online bibliographic databases, including ScienceDirect and ProQuest using, among others, the keywords and phrases "performance-based contracting", "foster care", "timeliness", "permanency" and "exit". For titles which I deemed of particular importance, I carried out a reverse citation search. In addition, I undertook an extensive review of the so-called grey literature on the timeliness of permanency outcomes, comprising reports, statistical analyses and policy briefs prepared by the federal government, state authorities, as well as by non-profit organizations, including the Annie E. Casey Foundation and the Urban Institute. In conducting the literature review, I also made use of the comprehensive bibliography on the subject compiled by the Child Welfare Information Gateway of the U.S. Department of Health and Human Services' Children's Bureau, covering research published between 2007 and 2012.

The chapter is structured as followed. First, I provide a brief overview of the literature that has examined the relationship between the use of PBC and the timeliness of permanency outcomes. I then focus on some of the methodological limitations of existing studies. I briefly describe some of the main findings regarding possible negative distortionary effects of PBC both in terms of gaming as well as on permanency outcomes. Lastly, I summarise the main findings in the literature relevant to my study and describe how my research seeks to address some of the gaps in the evidence base.

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[41] Because the body of literature on PBC is relatively limited, I decided to include in this review papers and articles, which I deem to be methodologically or otherwise relevant, even when they do not explicitly seek to explore the relationship between this particular type of performance management tool and the amount of time children spend in care.

3.2   Evidence on the relationship between PBC and the timeliness of exits from care

The majority of the studies that have focused on the relationship between the use of PBC and the timeliness of permanency outcomes, have found this type of programme management tool to be positively associated with timely exits from care (see also Table 3.1). For instance, according to Garstka, et al. (2012) Illinois recorded a significant reduction in the amount of time children spent in residential care following the implementation of PBC. Likewise in Florida, where PBC came into effect between 1998 and 2003 (Myslewicz 2008), the percentage of children exiting care within twelve months of entry rose from 30 per cent in 1999 to 54 per cent in 2004 (Office of Program Policy Analysis and Government Accountability - OPPAGA 2006 pp. 4-5). Other studies that have found a positive relationship between the use of PBC and the timeliness of permanency outcomes include those by Alpert, et al. (2011) for Tennessee, Haslag, et al. (2012) for Missouri, Shaver (2006) for Cook County, Illinois, and Vargo, et al. (2006) for Florida.

While this body of research suggests that the timeliness of exits may have improved in states that employ PBC, the validity of these findings has been challenged by a small number of studies that have used alternative measures of timeliness. The Children and Family Research Center of the University of Illinois at Urbana-Champaign, for instance, focusing on cohorts of children who entered care in the 1990s, concluded that there had been little change in the median amount of time children spent in care in Illinois since the introduction of PBC (Fuller, et al. 2010 p. 2-16). Likewise, Meezan and McBeath (2003a), focusing on Wayne County, Michigan, found that, after controlling for differences in child population served, the six agencies which employed PBC did not record more timely permanency outcomes compared to the three control agencies.[42]

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[42] Timely exits in this study refer to exits that occurred within 300 days of placement; a "threshold" that was selected because agencies received a cash payment of 1,850 U.S. dollars for every child that achieved permanency within that timeline.

The Child Welfare Outcome Reports to Congress (CWOR) and the Child and Family Services Reviews (CFSR)[43]—the main tools employed in the United States to monitor performance with regard to federal child welfare requirements and standards—also appear to cast doubt on the positive association between the use of PBC and timely exits from care. A number of states including Florida, Illinois and Kansas, all of which employ this performance management tool, have consistently performed below national standards in terms of the proportion of timely reunifications or adoptions. However, because the CWOR and CFSR do not control for differences in levels of timeliness between states prior to the implementation of PBC, interpreting the meaning of this relationship based on these reports is not straightforward (see also chapters 4 and 7). Specifically, states that have less timely outcomes to start with may be more likely to embrace a programme management tool perceived to be associated with improved permanency outcomes compared to states that are already satisfied with their performance. The fact that states with less timely exits employ PBC, therefore, could be a consequence, rather than a "cause" of the longer amount of time spent by children in care in those states.

The complexity of interpreting the evidence base on the relationship between the use of PBC and the timeliness of permanency outcomes is also apparent from the debate on whether various states should privatise their child welfare systems. The report prepared by the Center for Public Policy Priorities (CPPP) (2008), a non-profit institute focused on public policies in Texas, provides an example. The study, which was undertaken to explore whether the state should implement PBC, compares the timeliness of permanency outcomes in Texas with that of two states that privatised their child welfare system and employed PBC (Kansas and Florida), and concludes that Texas, which did not employ this performance management tool, fared better than the two PBC states in terms of both the percentage of children who were reunited with their families within twelve months of entry

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[43] The CWORs are annual reports published since 1998 in accordance with section 203(a) of the ASFA, while the CFSRs, which were first introduced in 2000, aim to ensure greater conformity with federal child welfare requirements, namely Title IV-E of the Social Security Act (SSA)—the federal programme which oversees funding for out-of-home care and adoption services in the United States—and Title IV-B of the SSA—the federal programme which oversees funding for child and family services in the United States. At the time of this research, two rounds of the CFSR have been conducted and a third round was being planned for the period 2015 to 2018. The CFSR and CWOR are both published by the Children Bureau of the U.S. Department of Health and Human Services Administration for Children and Families.

into care, as well as the proportion of adoptions within twenty-four months of a child's placement in care.

The Texas Alliance for Children and Family Services (TACFS), a nonprofit organisation dedicated to providing services to children and families, however, objected to the way in which the CPPP presented the evidence on the timeliness of permanency outcomes in Florida, arguing that while Florida had failed to meet many of "the state standards and goals for performance indicators", agencies were "making progress in coming closer to the state standards"; a finding that the authors felt was not made explicit in the report by the CPPP (Texas Alliance for Children and Family Services 2008 pp. 10-11).

Table 3.1. Selected studies that refer to the relationship between PBC and the timeliness of various permanency outcomes

Study	Study population and sample size	Statistical method
Alpert, et al. (2011)	Survey with key informants in Tennessee conducted between February and April 2010 (N=51) and aggregate data collected by the Tennessee Department of Children's Services on all children in care in the state	Descriptive statistics
CPPP (2008)	All children in care in Florida, Kansas and Texas based on the CFSR for the fiscal years 2005 and 2006	Descriptive statistics
Fuller, et al. (2010)	All children entering care in Illinois based on the Illinois Department of Children and Family Services for the years 2003-2010	Descriptive statistics
Garstka, et al. (2012)	Survey with key informants in Florida, Illinois and Missouri conducted between 2007-2010 (N=554)	Descriptive statistics
Haslag, et al. (2012)	All children in care in Missouri for the years 2005-2008	Descriptive statistics
Meezan and McBeath (2003a)	Structured telephone interviews from pilot and non-pilot agencies (N=84) and a sample of children entering care (N=244) in Wayne County, Michigan in 2001	Descriptive statistics and multivariate logistic regression
Vargo, et al. (2006)	All children entering care in Florida based on the State Child Welfare Information System for the years 2001-2005 (N=373,528)	Descriptive statistics

A number of reports focused on the state of Washington raise similar issues. The report prepared by Washington Federation of State Employees (WFSE) (2010), suggests that Washington recorded more timely adoption or reunification compared to a number of

states that employed PBC, including Florida, Illinois and Kansas. Armstrong and McCullough (2010 p. 13 p. 15), however, criticised this study noting that "two of the comparison states (Florida, Kansas) have significantly lower median and mean lengths of stay than Washington", further adding that "many factors must be considered when comparing one state's performance to another on any one measure or across measures or in describing trends over time".

3.3   Some of the methodological limitations of studies focused on the timeliness of exits from care

So far I have illustrated some of the challenges which can arise in interpreting the findings in the literature. [44] In the sections below, I further elaborate on why, on the basis of the current body of evidence, it is difficult to make inferences about the effectiveness of PBC in expediting timely exits from care. These reasons fall into two broad categories: those which relate to the validity of the outcome measures selected, and those associated with the type of research design chosen. [45] In relation to the former, the outcome measures employed to assess the effectiveness of a policy have to be valid, meaning that they "capture" what they are intended to measure. Measures of timeliness which rely on PIT estimates or exit cohorts, as well as measures which focus on a limited spectrum of permanency outcomes do not fulfil this criterion.

In relation to the latter, because randomised experiments are often unfeasible in research on child welfare policies because of ethical or other considerations, most of the studies considered are based on quasi-experimental designs or case studies (see also chapter 4). However, for such studies to have some degree of internal and external

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[44] As anticipated in the beginning of the chapter, I decided to include in this review papers and articles, which I deemed to be relevant, even though they did not directly explore the relationship between PBC and the timeliness of exits from care. The fact that the objective of many of these studies was different from my own may explain, in part, the reason for the difference in outcome measures and design chosen.

[45] According to Campbell (1957), there are two types of validity in a research design: internal validity, which refers to "the truth value that can be assigned to the conclusion that a cause-effect relationship between an independent variable and a dependent variable has been established within the context of the particular research setting" and external validity, which refers to the generalizability of causal findings (Brewer and Crano 2014 p. 12). I discussion these aspects in more detail in the sub-sections related to the validity of the research design.

validity, they need to meet a number of requirements. First they must include a pre- and a post-, meaning that evaluations are carried out over time, before and after the implementation of the policy being assessed. Second, they need to contain a control group so that inferences about the impact of the intervention can be drawn based on a group which was not exposed to the policy being considered. Lastly, they need to account for differences between the treatment and control groups in terms of various factors, and particularly those which are known to have a mediating or confounding effect on the outcome variables of interest.

Validity of the outcome measure: PIT estimates or exit cohorts

Most of the studies of children in out-of-home care in the United States, including the annual reports published by the U.S. Department of Health and Human Services,[46] have focused on PIT estimates; an approach which is increasingly being viewed as unsuitable for studying changes in the timeliness of exits (Courtney, et al. 2004; McDonald and Testa 2010; U.S. General Accounting Office 2002; Wulczyn, et al. 2007). Specifically, there is concern that PIT estimates may give more weight to children who have been in care for longer amounts of time, thus potentially confounding the interpretation of policy interventions.

The practice employed in both the CWOR and the CFSR of monitoring the timeliness of permanency outcomes through exit cohorts is also inappropriate; since it tends to underestimate the amount of time it takes for children to exit care, masking the challenges faced by children with longer placement spells, who also tend to be the most vulnerable and the most difficult to serve (Courtney, et al. 2004).[47]

This is why the U.S. General Accounting Office (2002) argues that PIT estimates and exit cohorts are not suitable for studying changes in permanency outcomes over time. Studies based on prospective cohorts, that follow a group of children from the time of entry

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[46] The CWOR and CFSR monitor the timeliness of permanency outcomes through a variety of indicators and composite measures; many of which are only presented for a cross-sectional "snapshot" of children in care at a certain point in time (McDonald and Testa 2010). Further, this approach fails to account for truncated, selected and censored data.

[47] See also Table A.1.1 for a list of the composite measures related to the timeliness of permanency in the CWOR and the CFSR.

into out-of-home care until the time of exit, are preferable from a methodological perspective, although from a practical standpoint the data required are often difficult to obtain or generate (see also chapter 4).

Table 3.2. Selected studies that employ entry cohorts to assess the timeliness of exits from out-of-home care

Study	Study population and sample size	Statistical method
Courtney and Hook (2012)	Children entering care between 2001 and 2007 in Washington state, using data from the Case and Management Information System (N=36,797)	Event history models for competing risks
Koh and Testa (2011)	Sample of all children entering care in Illinois between 2001 and 2007 using the AFCARS dataset (N=62,278)	Propensity score matching and survival analysis
Shaw (2010)	All children who entered care between 2001 and 2003 in California using data from the California Child Welfare Services System (N=74,321)	Logistic regression and survival analysis
Taylor and Shaver (2010)	All children who entered care in Cook County, Illinois between 1990 and 2000 and Philadelphia, Pennsylvania between 2002 and 2005	Descriptive statistics
Testa (2010a)	All children entering care in Illinois between 1981 and 2007 using the AFCARS dataset	Logistic regression
Wulczyn, et al. (2007)	Pooled multi-state cohort of children entering care between 2000 and 2005 using the MFCDA dataset (N=348,695)	Cox proportional hazards

Note: Relevant studies are reported in the tables as they first occur. Hence the studies by Fuller, et al. (2010) and Vargo, et al. (2006) are presented in Table 2.1 but not in Table 2.2. The same applies to the other tables in chapter 2.

A relatively large number of studies, including those by Courtney and Hook (2012), Koh and Testa (2011), Shaw (2010) and Wulczyn, e al. (2007) have examined the amount of time children spend in care using entry cohorts without, however, explicitly focusing on the relationship between timeliness and PBC (see Table 3.2). Only a handful of the studies that have examined the relationship between PBC and the amount of time children spend in care have used prospective cohorts (Fuller, et al. 2010; Taylor and Shaver 2010; Testa 2010a; Vargo, et al. 2006).

Validity of the outcome measure: a limited spectrum of permanency outcomes

Another limitation of much of the evidence base reviewed in this chapter is that it tends to focus only on a specific permanency outcome, usually adoption or reunification (see for instance Blackstone, et al. 2004; Hansen 2007; McDonald, et al. 2000; Snowden, et al. 2008; Wells and Guo 2004; Wulczyn, et al. 2009). This can be misleading since, depending on the type of outcome measure chosen, a state can emerge as either very effective or very ineffective at promoting timely exits from care. For instance, in 2010 the state of Vermont was among the most successful in promoting adoption in a timely manner, but among the least effective in expediting reunifications (see Figure 3.1).

Figure 3.1. Percentage of children exiting care in a timely manner through reunification or adoption
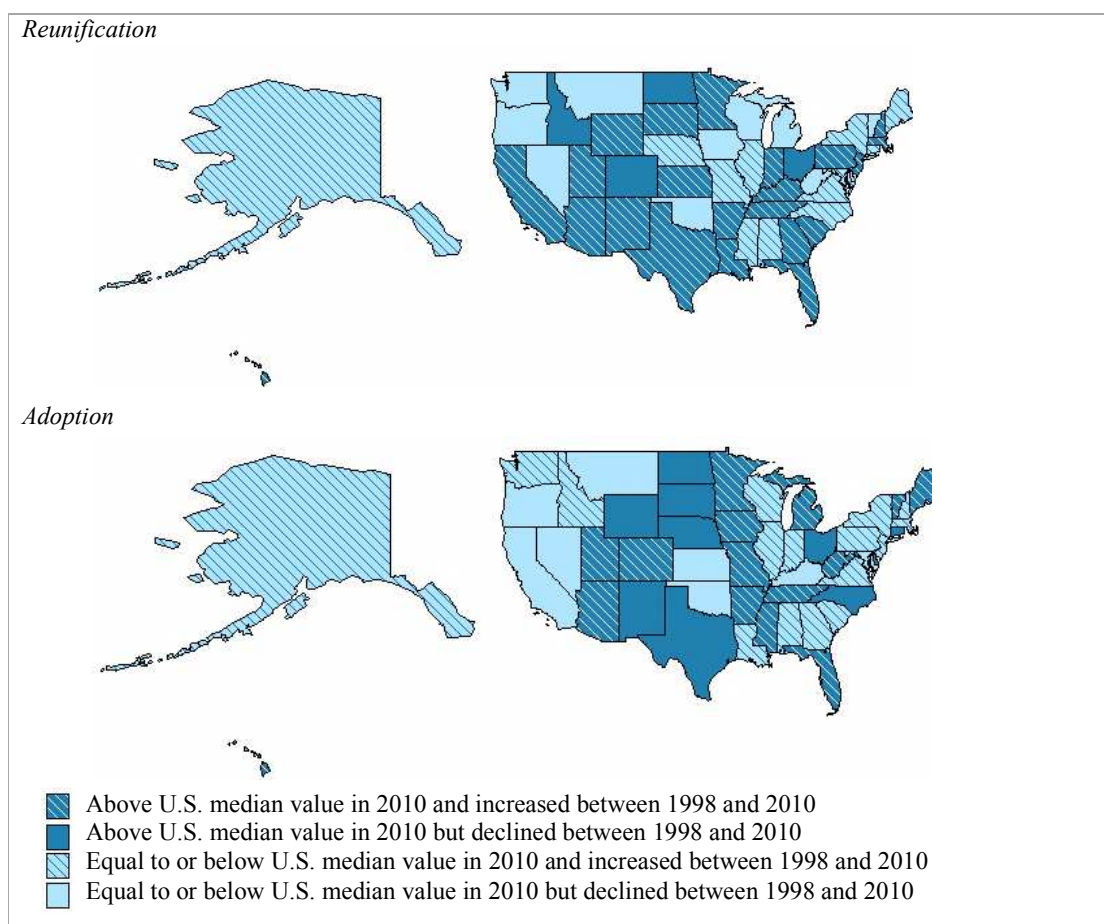
Sources: Based on U.S. Department of Health and Human Services, Administration for Children and Families, Children's Bureau (2002, 2012c, 2012d)

Note: The median value for children reunified or adopted within twenty-four months of placement in 2010 was 90.2 per cent and 32.6 per cent, respectively.

Further, assessments which focus primarily on reunification or adoption,[48] such as those in the CWORs and the CFSRs, tend to underreport other permanency options such as guardianship or placement with relatives, which are increasingly being pursued for children who are unable to exit care in a timely manner through other permanency outcomes. In states such as Illinois or North Carolina, which rank among the lowest in terms of promoting adoption or reunification in a timely manner, guardianship has been used successfully to reduce children's length of stay in care (Department of Children and Family Services, State of Illinois 2009; North Carolina Department of Health and Human Services, Division of Social Services 2007). Examining the full range of permanency outcomes, therefore, is important to obtain a more complete and accurate picture of differences in timeliness of exits from out-of-home care across states.

Another reason for including the full spectrum of permanency is that studies that have considered a broader range of such outcomes generally confirm that the timeliness of exits varies considerably depending on the type of permanency outcome children experience. Specifically, children who exit care through adoption tend to be less likely to achieve permanency during the first year in care, but tend to exit more rapidly thereafter (Akin 2011; Caplick Weigensberg 2009; Connell, et al. 2006; Courtney and Wong 1996; Testa, et al. 2008; Wulczyn 2004; Wulczyn, et al. 2000, 2006b). In contrast, among children who exit through reunification, the longer they remain in care the less likely they are to achieve permanency in a timely manner; a phenomenon known as negative duration dependence (Courtney 1994; Courtney and Wong 1996; Goerge 1990). Since some permanency outcomes are associated with more timely exits from care, it is important to control for such differences across sites (Akin 2011; Wulczyn, et al. 2006b). Specifically, actors—be they child welfare agencies or larger administrative entities such as counties or states—that favour one type of permanency outcome may experience, by virtue of that preference alone, very different overall durations in care compared to others that mainly pursue other permanency options. Examining the full spectrum of permanency outcomes

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[48] The emphasis on reunification and adoption in the CWORs and the CFSRs is consistent with the preference accorded to these two permanency outcomes in U.S. laws such as the SSA (see also footnote 22). Further, at the time when these measures were first developed for the CWORs, other permanency options respresented much smaller shares of all permanency outcomes. While the CFSRs added meaures focusing on the proprtion of guardianship—though not with an emphais on timeliness—they mainly sought to maintain "consistency" with the existing CWORs.

is also important from a policy perspective, since "(t)he manner in which agencies and workers move towards different client outcomes, and the crowding out that may occur when one outcome is privileged over others, remain unobserved when linked program outcomes are studied in isolation" (McBeath and Meezan 2010 p. 103).

Validity of the research design: studies that focus only on one point in time or locality
As anticipated in chapter 1, it is difficult to assess the relationship between a policy and an outcome focusing on only one point in time since other factors, including secular trends, could confound the interpretation of results. Yet, relatively few studies include a time component in their design and of these even fewer focus on the period preceding and following the implementation of the policy they seek to assess (see Table 3.3). The need to include information on more than one point in time—preferably prior to and after the implementation of the policy being examined—stems from what McDonald and Testa (2010 p. 106) have referred to as the need for "historical controls", namely the ability to compare outcome measures over time as a way of assessing performance with respect to specific child welfare goals or targets.

Table 3.3. Selected studies on permanency that have incorporated a time component

Study	Study population and sample size	Statistical method
Green, et al. (2007)	Sample of mothers in Oregon who had at least one child placed in care either in 1996-1998 or in 1999-2001 (N=1,911)	Logistic regression
McDonald, et al. (2000)	Sample of children in care in Kentucky between 1994 and 1998 using the state database CARE (N=2,538)	Survival analysis
Mitchell, et al. (2005)	Interviews with public child welfare agencies from 92 counties, 1999- 2000 using the Local Agency Survey	Descriptive statistics
Vericker, et al. (2007)	All children entering care between 2000 and 2003 using the AFCARS dataset (N=252,000)	Descriptive statistics
Wells and Guo (2004)	All children entering care in Cuyahoga County, Ohio between 1995-1996 and 1998-1999 (N=903)	Cox proportional hazards
Wulczyn, et al. (2000)	Children entering care in twelve states between 1983 and 1998 using the MFCDA dataset (N=1,432,499)	Cox proportional hazards
Wulczyn, et al. (2005)	Pooled multi-state cohort of children entering care between 1990 and 2002 in seven states using the MFCDA dataset (N=611,674)	Cox proportional hazards
Wulczyn, et al. (2006a)	Pooled multi-state cohort of children entering care between 1990 and 2002 in six states using the MFCDA dataset (N=390,348)	Discrete-time hazard
Wulczyn, et al. (2006b)	Children entering care between 2000 and 2005 in Tennessee using the MFCDA dataset (N=25,795)	Descriptive statistics and regression

In addition to considering historical controls, it is also important to include more than one locality at a time. This information is necessary to address one of the major criticisms levelled by various authors including Courtney, et al. (2011a, 2011b), Courtney and Hook (2012) and Golden and Macomber (2009) against studies that have attempted to examine changes in the timeliness of permanency outcomes, namely that they do not take into consideration cross-state variability in policy approaches or in populations served (see also Table 3.4). Information on different localities can serve to differentiate the target or treatment population—in the case of my research the states that employ PBC—from the control group—namely, states that do not.[49]

Why is it necessary to include such controls? One of the main reasons is that, owing to what are often referred to as secular trends, states may record improvements in the timeliness of outcomes for reasons other than the policy being evaluated (Taylor and Shaver 2010). In the case of PBC, if no controls were employed, one might erroneously attribute all change to the implementation of that policy intervention alone, rather than looking at other factors, which might have a mediating or confounding effect. In my research, there are a number of normative and policy trends which might be relevant to consider (see discussion in section 3.5 below). In reality, accounting for heterogeneity in populations is not straightforward and only comparative studies that use random assignment are able to minimise some of the systematic differences between groups (see also section 4.3 and chapter 5).

Unfortunately much of the literature on the timeliness of permanency outcomes focuses on only one state or county at a time, meaning that many of these studies lack a control (Akin 2011; Caplick Weigensberg 2009; Cheng 2010; Elder, et al. 2012; Kearney, et al. 2012a; Koh and Testa 2011; McBeath and Meezan 2009; Rockhill, et al. 2007; Yampolskaya et al. 2011). Others have pooled entry cohorts across states (Wulczyn, et al. 2005, 2006a, 2007), making it challenging to assess whether approaches at the state level

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[49] Finding an appropriate control is challenging and depends both on the purpose of the research as well as data availability and other constraints. As indicated in chapter 4, random assignment is often viewed as yielding the most valid controls. Statistical techniques such as propensity score matching can also be used to minimise some of the heterogeneity between groups, however, such approaches also have limitations, including the inability to control for unobserved variables and secular trends.

are associated with different outcomes in terms of the amount of time children spend in care.

Table 3.4. Selected studies on permanency that have incorporated a spatial dimension

Study	Study population and sample size	Statistical method
Courtney, et al. (2011a)	Children entering care between 2001 and 2007 in Washington state, using data from the Case and Management Information System (N=36,797)	Event history models for competing risks and Kaplan-Meier estimate of survival
Courtney and Wong (1996)	A sample of children entering care in California during the first half of 1988 and who exited care by December 1992 (N=8,625)	Cox proportional Hazards
Marcenko, et al. (2011)	A matched sample of children in out-of-home care (N=696) in Washington and their parents (N=408) between 2007 and 2010, using administrative data	Cox proportional Hazards
McDonald, et al. (2006)	Children entering care on or after January 1, 1999 in Oklahoma, using administrative data for thirty-three counties (N=20,291)	Regression
Peters (2012)	Sample of children in care who had their seventeenth birthday between 1997 and 2005 in Illinois, using administrative data (N=12,272)	Ordinary least squares regression
Smith (2003)	Cohort of children who became eligible for adoption following TPR in October 1997 using the AFCARS dataset (N=1,995)	Cox proportional Hazards
Snowden, et al. (2008)	Random selection of a cohort of children in care based on the AFCARS dataset (N=60,000)	Classification tree analysis Optimal Data Analysis (ODA)
Testa, et al. (2008)	Cohort of children entering care in four states using the AFCARS dataset	Descriptive statistics
U.S. Children Bureau, CWORs (annual)	All children entering care in the United States using the AFCARS dataset	Descriptive statistics
U.S. Children Bureau, CFSRs (two rounds)	All children entering care in the United States using the AFCARS dataset	Descriptive statistics

To my knowledge, only a small number of studies have employed a multi-year, multi-state perspective to examine the timeliness of permanency outcomes. The study by Wulczyn, et al. (2000), for instance, used cohorts of children who entered care between 1990 and 1998 in seven states (Illinois, Michigan, Missouri, New Jersey, New York, and Wisconsin) and children who entered care between 1983 and 1998 in four states (Illinois, Michigan, Missouri, and New York) to examine the duration of spells in care. The authors found that the median length of time in care varied greatly among the states considered,

with Iowa recording the lowest median value (around three months) and Illinois the highest (over three years). The results are potentially confounded, however, because the study did not control for differences in the race or placement setting of children in care or for other policy or contextual variables at the state or local level; making it difficult to distinguish between the direct effect of state policies on the intended outcome—more timely exits from care—from the indirect relationship of the outcome to "population characteristics and agent choices" (Testa 2010b p. 84). Other studies that have employed a comparative, multi-state perspective include Blackstone, et al. (2004) and Garstka, et al. (2012). However, again, these studies do not control for differences in the out-of-home care populations among the states considered, hampering the interpretation of the results.

Validity of the research design: studies that fail to control for various mediating factors
As indicated in the previous chapter, it is important to control for differences in various factors identified in the literature as being predictive of the amount to time children spend in care. Studies that fail to do so, may reach erroneous conclusions regarding differences in the performance among states, since, as a result of compositional effects, states with higher proportions of children with certain characteristics as well as states that rely more heavily on certain types of placement settings may record different average lengths of stay in care compared to other states, regardless of how successful their policies are in expediting exits from out-of-home care.

Yet many of the reports used to monitor the timeliness of permanency outcomes do not adequately take into account factors commonly identified in the literature as being predictive of the timeliness of exits, such as the social and demographic characteristics of children entering out-of-home care or the type of setting children are placed in while in care (see Courtney and Hook 2012; Testa 2010a, 2010b). The latter is a particularly unfortunate omission, since the literature has consistently shown that children who belong to certain racial minorities, infant children[50] as well as children placed with relatives tend to remain in care longer than other children (Becker, et al. 2007; Caplick Weigensberg 2009; Connell, et al. 2006; Courtney, et al. 2011a, 2011b; Noonan and Burke 2005; Potter and Klein-Rothschild 2002; Romney, et al. 2006; Shaw 2010; Smith 2003; Yampolskaya, et al. 2006, 2007; Wulczyn, et al. 2006b, 2007).

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[50] Infants in this study are children aged one year or younger.

A small number of studies have attempted to control for these factors. Among them, the majority find that differences among states in terms of the populations served account for some, although not all, of the variability in the timeliness of permanency outcomes. Smith (2003), for instance, using the Adoption and Foster Care Analysis and Reporting System (AFCARS)[51] dataset, concluded that the likelihood of exiting care varied greatly across states. Controlling for differences in caseload demographics, notably their age, race and placement setting, Smith found that children from Northern and Western states experienced more timely exits from care compared to children from Midwestern or Southern states. Smith concluded that "the state variables represent proxies for state-level policies and practices which are not otherwise accounted for in the analysis" (2003 p. 978).

Likewise, the study by Snowden, et al. (2008)—also based on the AFCARS dataset—found that, while the characteristics of children in care accounted for some of the variability in the timeliness of exits, states still recorded significantly different likelihoods of adoption. The authors, however, did not discuss the reasons for those differences but called for more research to "explore potential policy explanations for state differences" (Snowden, et al. 2008 p. 1326). Two more recent studies by Courtney, et al. (2011a) and Courtney and Hook (2012) also found that controlling for selected characteristics of children entering care—notably their sex, age, race and ethnicity—reduced some of the differences in the timeliness of exits among the six geographical jurisdictions considered. However, differences in the child population served did not explain all of the observed disparities. The authors suggested that such variability might be attributable to differences in juvenile court practices and services available at the local level.

A number of studies have found that controlling for policy and contextual variables at the state and local level is also important. Peters (2012), for instance, in his study of exits from care among older adolescents, found that controlling for the individual characteristics of children did not explain all of the variability in the probability of children exiting care among the three groups of counties considered. The study also found that including a county variable increased the predictive power of the models. Likewise, McDonald, et al. (2006), in their paper on reunification and re-entry into care in thirty-

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[51] The AFCARS is a federally mandated administrative dataset containing information on all children in out-of-home care in the United States, which is used to track progress with respect to the timeliness of permanency outcomes. It is also the main data source employ in chapters 5 through 9 of this study.

three counties in Oklahoma, noted that one of their most striking findings was the range of reunification rates across the state. The authors concluded that, while their research did not "[explain] this variation, the variation does raise questions about worker decision-making, the influence of county or agency policy on these decisions, or the influence of other systems and stakeholders such as juvenile and family court judges" (McDonald, et al. 2006 p. 55); all of which required further investigation. Other studies that have controlled for differences in child-level and other characteristics associated with the timeliness of exits, though not necessarily in relation to PBC, include those by Meezan and McBeath (2008), Yampolskaya, et al. (2011) and Wulczyn, et al. (2009).

Several of the papers reviewed have made an explicit call for additional research controlling for various mediating or confounding factors. Wulczyn, et al. (2006a p. 605), for instance, concluded that "[f]urther research is required to examine how state and local child welfare policies and practices have affected the implementation of various provisions in ASFA in attempting to speed up permanency". Likewise, Courtney, et al. (2011a p. 1) called for a better understanding of differences in permanency outcomes between geographic jurisdictions, arguing that:

> "if observed differences in outcomes are due entirely to differences in the characteristics of the populations served, in other words, if some jurisdictions more than others serve populations for which permanency is more difficult to achieve, then accountability mechanisms should take that into account. (…) On the other hand, if differences in outcomes between jurisdictions cannot be explained by population characteristics, then it behooves program managers and policymakers to better understand the characteristics of child welfare and related systems that contribute to these differences in order to seek improvements in outcomes."

3.4   Evidence regarding the possible distortionary impacts of PBC

In this section, I focus on two types of negative distortionary effects related to PBC that have been identified in the literature, namely: (1) various types of gaming behaviours, including "cherry picking" and (2) compositional effects on permanency outcomes. I chose not to review the literature on other possible distortionary effects of PBC, including on placement stability, re-entry into care as well as recurrence of maltreatment (see for example the studies by the Office of Program Policy Analysis and Government Accountability 2006; Yampolskaya, et al. 2011) because it falls outside of the scope of this research. I return to discuss some of these aspects in chapter 4, where I focus on various

methodological considerations that shaped my analysis including the complexity of measuring placement stability and spells in out-of-home care, and in chapter 10, where I review the limitations of this study and outline areas for future research.

Various gaming behaviours including "cherry picking"

A number of authors have raised concern about the issue of gaming. This type of behaviour ensues when an agency manipulates placement or permanency decision in order to achieve certain performance outcomes. As anticipated in section 1.5, creaming or "cherry picking" occurs when contractors provide additional services to clients they perceive to be more likely to achieve a desirable outcome, while "parking" occurs when agencies seek to avoid serving children considered to be less likely to exit care in a timely manner (Kearney, et al. 2012a). To my knowledge there is relatively little empirical evidence to either prove or disprove the existence of such behaviours among states that employ PBC in their child welfare system (Meezan and McBeath 2003b).

McBeath and Meezan (2010 p. i121), in their study of the impact of PBC on permanency outcomes in Wayne County, Michigan, found some evidence of gaming. Specifically, they noted that "easier-to-serve" children, particularly youth, received more services and exited care more rapidly compared to children with greater social, emotional and physical needs. A similar conclusion was reached in an earlier study by McBeath (2006).

Berlin (2007) also made an indirect reference to "cherry picking" in discussing the impact of managed care and PBC[52] in Kansas. Specifically, Berlin (2007 p. 4) noted that as a result of the state's success in reducing the amount of time children spent in care, the number of children in out-of-home care declined. However, because the children remaining in care were "proportionately more difficult and more expensive to care for", the cost of out-of-home care per child skyrocketed; a phenomenon also known as adverse selection.

States that have implemented PBC appear to be aware of the risk of such practices—particularly "parking"—and have employed a number of strategies requiring agencies to "share the risks" (Raghavan 2010). Taylor and Shaver (2010 pp. 304-305), for instance, note that both Chicago and Philadelphia made a concerted effort to "level the playing field"

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[52] See also note 6.

by among others, ensuring that "agencies had a similar client caseload mix at the start of PBC" and that each agency "received a similar mix of clients as referrals".[53] Likewise in Missouri, caseloads were equalized by "distributing children and sibling groups to providers based on a number of factors associated with risk (gender, ethnicity, age, and length of time in out-of-home care)" and "randomly assigned subsequent referrals to help ensure (that) the caseload remained equitable" (Garstka, et al. 2012 p. 33).

There is some circumstantial evidence that various types of gaming may be taking place in spite of these efforts. In a presentation made in February 2012 to the Alliance for Children and Families' Senior Leadership Conference, for instance, Kearney and Hollie (2012b p. 40) noted that staff in lower performing agencies often "blamed the children and youth for their poor performance", arguing that in spite of efforts to adjust for difference in populations served through random assignment, some agencies still perceived their caseloads to be "tougher than anyone else's". Evidence also suggests that agencies are uncomfortable with being held accountable for factors beyond their control, including the type of child population they serve. According to Flaherty, et al. (2008 p. 817), for instance, private agency representatives interviewed in twelve states "explained that it was unreasonable to penalize providers for not meeting performance standards if providers could not make key decisions about services and placements".

In light of the principal-agent problem raised in chapter 2, more research is needed on the mechanisms through which changes in the timeliness in permanency outcomes are achieved, including the possible negative distortionary effects of PBC. This is particularly important given that "(i)n high-risk environments, shifting financial risk to contractors may not be optimal because it provides incentives for child welfare contractors to reduce their own risk exposure, regardless of whether their actions have a detrimental effect on desired performance outcomes in the long term" (Chuang 2010 p. 20).

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[53] This approach is meant to ensure that no agency is penalised by having to serve a "more difficult" out-of-home care population. Agencies cannot, for instance, decide to select or refuse children based on their preferences. If the latter were the case, private contractors could manipulate the composition of the child population they provide services to, which, in turn, could affect outcomes.

Impacts on permanency outcomes

A small number of papers have focused on the potentially distortionary relationship between PBC and permanency outcomes. McBeath and Meezan (2008), using a longitudinal natural experiment, found, after controlling for child, family, and caseworker characteristics, that children served by agencies using PBC "were less likely to be reunified and more likely to enter kinship foster homes" compared to those served through more traditional approaches (p. 388). The authors attributed some of these differences to reductions in important services to clients, a finding that was supported in later research (McBeath and Meezan 2010). In an earlier study, McBeath and Meezan (2006 p. 40), using telephone interviews with administrators and supervisors in nine child welfare agencies, found that "agencies' service delivery patterns, interdepartmental activities, and inter-organizational relationships were substantially affected by the transition to this new contracting arrangement", and that, as a result, children were less likely to receive the services required to promote reunifications.

An important trend that emerges from the literature on PBC is that many of the states that employed this type of performance management tool, including Florida, Illinois, Kansas and North Carolina, recorded pronounced increases in the number of adoptions. According to Berlin (2007), for instance, between 1997 and 2002 the number of adoption and guardian cases in Illinois increased by nearly four-fold. Likewise, Blackstone, et al. (2004) concluded that the use of PBC in both Illinois and Kansas was accompanied by improvement in the number of adoptions, while Vargo, et al. (2006) identified a statistically significant increase in the proportion of children with finalized adoptions between 2001 and 2004 in Florida.

While increases in the number of adoptions do not necessarily imply a negative "distortion" of permanency outcomes, a small number of studies suggest that caregivers or administrators in states that employ PBC may feel pressured to promote adoptions at the "expense" of reunification, both because of the financial incentives offered as well as the emphasis placed on timeliness. In Illinois, for instance, the Governor's Task Force Report indicated that "many stakeholders felt that the emphasis on financial incentives has pushed caregivers to "rush" to adoption, put children at risk, and lowered the numbers of children reunifying with their parents" (Department of Children and Family Services, State of Illinois 2003 p. 95). Likewise, according to Karp (1999, cited in Berlin 2007 p. 9) "(i)n

Illinois, the new system created a very strong demand by the state for foster parents to adopt their foster children or risk losing contact with children they loved".[54]

3.5 Various factors, including secular trends, that might confound the interpretation of findings

There are a number of normative and policy trends besides PBC which might have a bearing on the speed of permanency outcomes. One such trend, already anticipated in section 1.4, is the support accorded by recent federal laws for the objective of promoting timely permanency outcomes. While states differ in the degree to which they have embraced this policy goal (see also section 2.3), almost all states have modified their statutes to include at least some of the provisions aimed at reducing the amount of time children spend in care in accordance with federal guidelines. Based on this trend alone, therefore, states might be expected to witness a reduction in the amount of time children spend in care, regardless of whether or not they implemented PBC.[55]

A second trend worth considering is the increasing emphasis on reducing racial disproportionality[56] at entry or exit (Anyon 2011; Child Welfare Information Gateway 2011c; Hill 2006). In recent years, a growing number of states and localities have sought to address racial disproportionality in various ways. These interventions, by modifying the composition of children entering care, might also have affected the overall timeliness of exits,[57] leading to a distorted interpretation of the relationship between PBC and timeliness in states that employ this type of programme management tool.

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[54] Since the state was actively pursuing the goal of permanency, families that did not adopt the children placed with them could see their placement terminated.

[55] I used the PSBI/ND framework (see section 2.3) to address this concern. Specifically, I chose to focus my analysis solely on states that embraced a BI approach to promoting timely exits from care. However, as stated in that chapter, I am also aware that this approach is not, in-of-itself, sufficient to account for differences in state attitudes towards timeliness.

[56] Racial disproportionality is defined as the overrepresentation of a certain racial group among all children entering, or in, out-of-home care compared to the proportion of that group in the overall population.

[57] For instance, the trend towards reducing racial disproportionality at entry could result in-of-itself in an improvement in the timeliness of permanency outcomes even in the absence of other policy interventions simply because African American children spend, on average, longer spells in care.

A third secular trend worth considering relates to changes in preference accorded to reunification as a permanency outcome. According to Wulczyn (2004 p. 96) "the bedrock assumption underlying child welfare policy [in the U.S.] is that children are better off if raised by their natural parents. This preference for the role of natural parents is codified in law and provides the rationale for retaining reunification as a core outcome for children placed in foster care". However, since the passage of the 1997 ASFA, priorities have shifted and the child's safety has become the primary concern of child welfare policies. As a result, policymakers have been rethinking the appropriateness of promoting reunification at all costs;[58] a shift which is also evidenced by the increasing use of federal funding to promote adoptions and subsidise guardianship (Bartholet 1999; Parkinson 2003; Roberts 2002). While reunification continues to be viewed as the most desirable permanency option and over one half of all American children in out-of-home care are reunited with their biological parents (U.S. Department of Health and Human Services 2005), since the passage of the ASFA, the percentage of children who have been reunified has declined somewhat (U.S. Department of Health and Human Services 2003).

A fourth potentially relevant trend relates to the emphasis given to placement with kin (Berrick 1997; Geen 2000; Schwartz 2002). Since the passage of the Supreme Court Decision of *Miller versus Youakin* in 1979, states have been required to give the same financial support to kinship caregivers as non-related foster parents, provided that the child was eligible for Aid to Families with Dependent Children (AFDC) and the kinship home met licensing standards (Gleeson 1996; Ingram 1996). The SSA reflects this position by calling on states to "consider giving preference to an adult relative over a non-related caregiver when determining a placement for a child" (42 U.S.C. §671, SEC. 471, B, para.

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[58] Shear, in reference to incarcerated parents, observes that "[a] common perception is that the children are more likely to become successful, positive members of American society if they are adopted into new families instead of being reunited with their own parents after the parents are released from prison. The "do good" zeal that underlies this "save the children" philosophy has its roots in the same sort of fear and prejudice that initially brought about the child welfare movement in America in the late nineteenth and early twentieth century, when upright "child savers" wanted to "rescue" children of impoverished immigrants, whom they distrusted" (Shear 2007 p. 23). Partially because of this, placement in care continues to be perceived as a form of punishment or social control, motivated by anti-immigrant, minority and religious biases.

19).[59]   However, in recent years, placements with relative caretakers have come under increasing scrutiny. Specifically, the ASFA, by emphasising child safety, made it more difficult for kinship caregivers to qualify for Title IV-E, the most important federally-funded dedicated entitlement available for out-of-home care (Vericker, et al. 2007; US Department of Health and Human Services 2006).[60] The fact that fewer kinship caregivers are eligible for federal funding as a result of the ASFA's emphasis on safety may have contributed to decreasing reliance on such placements (see also chapter 8). It may also have indirectly modified the timeliness of permanency outcomes since children placed in unrelated foster families or pre-adoptive homes are known to exit care more quickly than children placed with relatives (Courtney, et al. 2011a, 2011b; Needell, et al. 2005; Shaw 2010).

A number of studies appear to confirm the existence of such broad secular trends. Several states, for instance, have shown progress in reducing the amount of time children spend in care without having introduced PBC (Rockhill, et al. 2007; Wulczyn, et al. 2006a). Likewise, a number of studies point to significant reductions in racial disproportionality at entry or in out-of-home care (Shaw 2010; Wulczyn, et al. 2006b, 2007). These secular trends, in turn, may confound the interpretation of findings. I return to discuss the implications of such trends on the interpretation of my results in chapters 4, 8 and 10.

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[59] The preference accorded by the SSA for placement with relatives, was also shaped by the passing of the Indian Child Welfare Act (ICWA) in 1978 and the adoption of the Multiethnic Placement Act (MEPA) in 1994. The ICWA identified a prioritised list of settings and required states to place Native American children in kinship homes whenever possible (Geen 2000; Mannes 1995). The ICWA had the effect of favouring same-with-same placements, meaning that, whenever possible, preference was given to placing children of a given ethnic, racial and even religious background with a caregiver with similar characteristics. This in turn led to an increasing reliance on placements with kin (Schwartz 2002). In 1994, MEPA reversed the preference for same-with-same placements and described this practice as discriminatory (see also chapter 9).

[60] Children placed with unlicensed caregivers are ineligible for federal funds such as Title IV-E and instead have to rely on other forms of support such as child-only Temporary Assistance to Needy Families (TANF) or state or local funding which tend to be smaller and are not proportional to the number of children cared for.

3.6 Summary of main findings and gaps in the evidence base

In this literature review I have sought to provide additional evidence justifying the aims of my study. As stated earlier (see section 1.8), the main objectives of my research were to: (1) provide a more methodologically sound evaluation of differences in the timeliness of exits among entities employing and not employing PBC, and (2) contribute to the existing body of literature on the relationship between PBC and timeliness as well as on the possible negative distortionary effects of PBC, including on permanency outcomes. While, as anticipated in chapter 1, my study is unable to explore the causal nexus between PBC, timeliness and permanency owing to limitations with the data and research design chosen, this review identifies a number of elements, which, in my view, support my initial claim regarding the need for additional research.

First, the evidence on the relationship between the use of PBC and the timeliness of exits from care is fragmented and difficult to interpret. While a small number of studies have shown that there may be a positive relationship between the two, it is difficult to generalise these finding given that such studies are often limited in terms of both the scope of the outcome measures employed, as well as their research design. In relation to the former, relatively few of the studies reviewed in this chapter have used entry cohorts or the full spectrum of permanency outcomes to examine the relationship between PBC and the amount of time children spend in care. In terms of the research design, the literature contains a relatively small array of studies that have employed a multi-year, multi-state approach to examine differences in the amount of time children spend in care and even fewer that have explicitly focused on the use of PBC.

Second, in order to gain insight into the relationship between PBC and timeliness one must seek to control for various confounding or intervening variables including the demographic and social characteristics of children entering care, secular trends, as well as various policy and contextual variables at the state and county level (Courtney, et al. 2011a, 2011b; Courtney and Hook 2012; Golden and Macomber 2009). Of the studies reviewed in this chapter, most have found that selected child characteristics as well as geographical or administrative variables accounted for significant differences in the timeliness of permanency outcomes. One of the shortcomings of these papers, however, is that the choice of treatment and controls appears to have been dictated by factors such as convenience or sample size. Because of this, the findings from these studies are difficult to generalise (see also chapter 4).

Third, the evidence base on the mechanisms through which PBC states achieve timely permanency outcomes, including various types of gaming behaviours remains limited. Information on the phenomenon of "cherry picking" or "parking" is fragmented and mainly anecdotal. Further, only a small number of studies—mostly focused on Wayne County, Michigan—have identified a negative relationship between the use of PBC and reunification.

As stated in chapter 1, my study has sought to address some of these concerns. Specifically, it examined differences in the timeliness of exits from care between PBC and non-PBC states, using multi-year, multi-state entry cohorts. Further, my research has attempted to consider differences in the timeliness of permanency outcomes both before and after the enactment of PBC, examine a more complete spectrum of permanency outcomes, as well as control for differences among states in some of the factors known to be associated with the timeliness of exits from care, including the characteristics of children entering care and the placement setting. I also drew attention to a number of policy and other factors, including secular trends, which might confound the interpretation of the results of my analysis. While these efforts are clearly not sufficient to ascribe a causal relationship between the use of PBC and timeliness of exits from care, they represent a contribution towards being able to more critically assess the type of information needed to monitor the impact of a policy tool such as PBC as well as a step towards reviewing the theoretical and policy implications of this relationship in a more nuanced and informed manner.

4   Methods

4.1   Addressing the research questions and hypotheses: structure and rationale of the chapter

This chapter provides an overview of the methods used to address the research questions and hypotheses outlined in chapter 1. First, I describe the AFCARS dataset, highlighting its main strengths and limitations. I then briefly present an overview of the research design utilised and outline the criteria employed in selecting the treatment and control states as well as the timeframe for my analysis. I also provide an overview of the criteria used to create the multi-year, multi-state entry cohorts and the outcome measures employed. Lastly, the chapter provides an overview of the independent variables and covariates used, as well as a description of the main statistical methods employed in chapter 6 through 9.

4.2   The data source

The analysis in this research is based on the AFCARS dataset, the only data source containing information on all children in out-of-home care in the United States. Administered by the Children's Bureau of the U.S. Department of Health and Human Services, this dataset was designed to "address policy development and program management issues at both the state and federal levels" as well as to provide useful information "for researchers interested in analysing aspects of the United States' foster care and adoption programs" (National Data Archive on Child Abuse and Neglect 2002 p. iv).

The AFCARS dataset on out-of-home care contains 66 data elements, including basic demographic and social characteristics of children in care, their primary caregiver and out-of-home caregivers. The set also provides a unique encrypted identifier for every child in the out-of-home care system[61] as well as information on the characteristics of placement settings and permanency outcomes.

One of the main disadvantages of the AFCARS dataset is that it includes only one record per child. If a child re-enters care several times during the same fiscal year, only the

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[61] As the AFCARS codebook notes "(f)or most states, but not all, this ID is consistent from year to year, allowing the tracking of a child from one data year to the next" (National Data Archive on Child Abuse and Neglect 2012 p. 13). As indicated in section 4.4, I utilise this variable as one of the elements to match the multi-year, multi-state cohorts.

most recent spell is entered in the annual database (National Data Archive on Child Abuse and Neglect, et al. 2002). For this reason, the AFCARS is not well suited for studying children's re-entry into care.

A second issue relates to the reliability and validity of the data. In the case of AFCARS, as with most administrative sources, the data are subject to various types of errors, including data entry errors and duplicate cases. The Children's Bureau regularly reviews the data and provides training to states on how to maintain their quality. Despite these efforts, challenges remain. Specifically, some states do not provide information on certain types of variables, particularly on the characteristics of the primary caregiver and out-of-home caregivers.

A third drawback of the AFCARS dataset is that its scope is rather limited. Unlike other sources such as the NSCAW, which contains a rich array of data gathered from interviews with children in care, their primary caregivers, teachers and caseworkers, the AFCARS is a relatively sparse in contextual information on the child and his or her surroundings. Further, it does not provide information on a number of important aspects including: (1) the wellbeing, health or safety of children in care; (2) the types of services received by children in out-of-home care or their families; (3) the characteristics of individual caseworkers or administrators involved in each child's case; or (4) other policy or contextual variables at the state or county level which might relate to performance outcomes.

While the AFCARS has several limitations, it also has a number of notable advantages compared to other data sources. First, it is the only dataset available in the United States with case-level information on all children under the care of state welfare agencies. According to section 479 of the SSA, states are required to submit these data on a biannual basis.[62] Because states are subject to financial penalties if they fail to comply, the AFCARS data tend to be comparable across time and locality, making the dataset particularly amenable to study changes over time with respect to various performance outcomes, including timeliness. Second, data are available for a relatively long time series, even though the datasets prior to 2000 are not as complete or reliable as the more recent

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[62] In the first years after the introduction of the AFCARS (between 1996 and 2000) not all states reported the required data in a systematic manner. This is one of the reasons why my analysis focuses on a sub-set of states with complete data for the periods 1996-2011 (see section 4.3 below).

data.[63] Lastly, the various annual datasets can be transformed into a longitudinal source
through appropriate linking procedures (see section 4.4). This is important given that one
of the main criticisms advanced against research on out-of-home care in the United States
is that it relies on small samples and lacks a longitudinal component (Courtney, et al. 2004;
McDonald and Testa 2010).

4.3   Aspects related to the research design

As indicated in previous chapters, my research seeks to explore whether the use of PBC is
associated with better outcomes in terms of the timeliness of exits. Ideally, this type of
research question would be addressed by comparing outcomes for children randomly
assigned to agencies that employ and do not employ PBC. This type of design, referred to
as a randomised experiment (RE) or controlled trial (RCT), is often viewed as the gold
standard for exploring causal relationships (Payne and Gainey 2002). In the case of the
child welfare policies, however, such designs are often not possible for ethical or other
reasons. To my knowledge only a handful of such examples exist in practice, one being
the case of Wayne County, Michigan, where PBC was piloted in six agencies, with three
agencies serving as control (Meezan and McBeath 2003a, 2003b).

The multiple baseline design

An alternative, though less robust design is the quasi-experimental design (QED). An
example of QED is the case of Cook County, Illinois, where PBC was implemented as part
of a pilot project one year earlier than for the rest of the state (Taylor and Shaver 2010).
Other examples include evaluations of Title IV-E [64] Flexible Funding Child Welfare
Waiver Demonstrations in Indiana, North Carolina, Ohio and Oregon (James Bell
Associates 2013; U.S. Department of Health and Human Services, Administration for
Children and Families 2011c).

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[63] Only ten states report complete AFCARS datasets prior to the year 2000.

[64] Title IV-E of the SSA is the federal programme which oversees funding for out-of-home care and adoption
services in the United States. It comprises three specific sub-programmes: (a) the foster care maintenance
payments programme, (b) the adoption and guardianship assistance programme, and (c) John H. Chafee
foster care independence programme.

The main limitation of QED compared to RE is that, because the treatment and control groups are not randomly assigned, the interpretation of outcomes may be biased by prior differences between the selected groups. This can lead to a misinterpretation of the effectiveness of a policy intervention, resulting in both false positives—namely, that the programme had an impact when in fact it didn't—and false negatives—the programme didn't have an impact when in reality it did.

However, QED also has an important advantage. In the context of my research, where children were not randomly assigned to treatment and control groups, this type of research design makes it possible to explore the relationship between a policy intervention and its outcomes even though no explicit provisions were made to assess the impacts of the policy *a priori*.

The research design I decided to employ in this study—referred to as multiple baseline design (MBD)—is a particular type of QED. The key features of MBD are that individuals in different groups receive a treatment at different points in time and that the timing of the effect of this treatment is synchronized with the timing of the introduction of the intervention. In my research, the groups are the states, while the individuals are the children within each state. MBD requires a relatively long-time frame, with multiple measures prior to—referred to as baseline—and following the treatment—referred to as observations. My analysis meets these conditions since I have data both preceding and following the enactment of PBC for multiple states. Figure 4.1. offers a visual representation of the MBD for four states, two of which employed PBC—state 2 from year *a+1* onward and state 4 from the period *a+2* onward—and two which did not—state 1 and state 3.

Figure 4.1. Simplified representation of a multiple baseline design
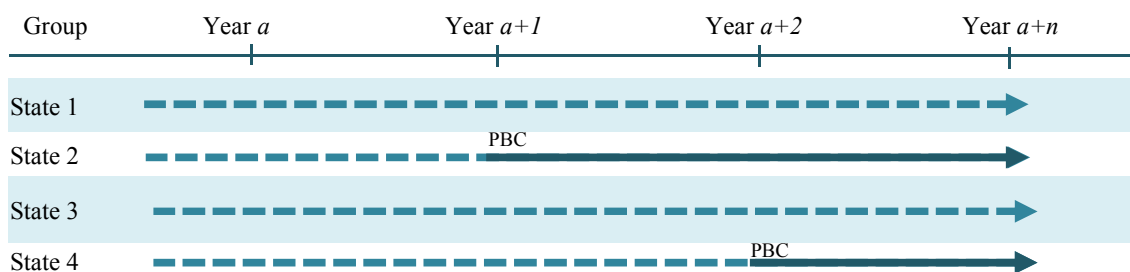
While MBD provides a useful framework for assessing changes in outcomes over time, it is not a suitable design for drawing causal inferences. In particular, as indicated in

chapters 2 and 3, it does not allow to distinguish between the effects of the treatment and other confounding effects including differences between states in terms of unobserved contextual and normative variables. My research acknowledges this. Specifically, rather than attempting to determine causal relationships as I had initially planned, I seek to explore the association between the use of PBC and outcomes in the timeliness of exits from out-of-home care at the state level, controlling for theoretically relevant mediating and confounding factors. I also acknowledge that it is likely that there are significant differences between PBC and non-PBC states. For instance, states with slower permanency outcomes to begin with are probably more likely to adopt a more interventionist policy compared to states that are more successful in expediting timely exits from care. Likewise, the caseload volume and the composition of children entering and in care are likely to differ (see also chapter 5). I seek to address these aspects by focusing only on BI states (see section 2.3) and controlling for differences in out-of-home care population served; well aware that the lack of random assignment in my research design is likely to bias the interpretation of results. In spite of these limitations, I contend that MBD is an appropriate design in the context of my study where, owing to ethical and other practical considerations, it would have been difficult to randomly "exclude" a group of children from the treatment, namely from PBC.

The selection of the control and treatment states

In selecting the treatment and control states for my analysis I relied on three criteria (see Figure 4.2). First, I only included states that had data covering the mid-1990s; that is prior to the introduction of PBC in most states. States that did not have data from 1996 onwards were excluded. In total, only ten states reported complete AFCARS data between 1996 and 2011: Alaska, California, Colorado, Florida, Illinois, Maine, New Jersey, North Carolina, Vermont and Washington.

Second, I limited my analysis to states with a high percentage of successful child-case matches in the multi-year, multi-state longitudinal entry files (see section 4.4). A number of states were excluded from the analysis because the scrambling algorithm used for the composite identifier—henceforth referred to as CID—did not permit to accurately match across annual data files. California, Colorado and Maine, for example, each had annual AFCARS data files with fewer than 90 per cent successful matches.

Figure 4.2. Graphical representation of the selection of treatment and control states
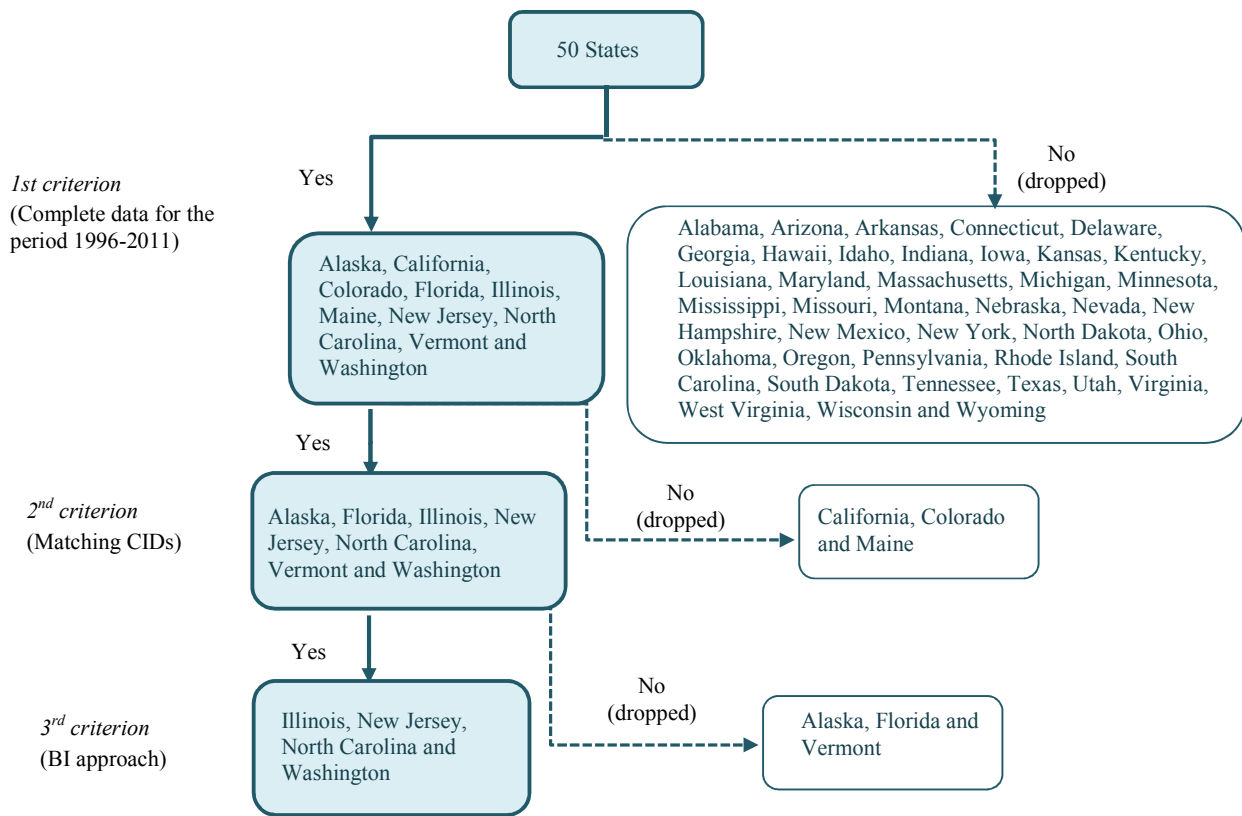
Third, based on the analytical framework outlined in section 2.3, I restricted my analysis to states that followed the BI approach, meaning that they were largely in conformity with federal provisions related to promoting timely permanency outcomes. I excluded three states from my analysis—Alaska, Florida and Vermont—because they did not fulfil this requirement.

Based on these three criteria, I identify four states: two—Illinois and North Carolina—which adopted the BI/N approach, and two—New Jersey and Washington—that followed the BI/D approach. It is important to note that the two groups of states are in many respects similar (see also chapter 5). For instance, all four states comprise a relatively large urban and poor child population (U.S. Department of Health and Human Services, Administration for Children and Families, Children's Bureau 2002, 2012c, 2012d). The fact that there are a number of similarities across the two groups of states is helpful in the context of my analysis, given that it potentially reduces some of the unobserved variability and hence selection bias discussed above in relation to QED.

The selection of the time periods

I decided to group the data in my analysis into three multi-year periods: the years immediately preceding the implementation of PBC, which refer to the period 1996 to 1998; the years immediately following the enactment of PBC, which roughly correspond to the period 1999 to 2004; and the five years thereafter, namely between 2005 and 2009. This categorization, which was chosen mainly for analytical convenience,[65] has the advantage of masking some of the random noise present in the data, while capturing overall trends. It also has the advantage of minimizing serial correlation as well as autocorrelation across the multi-year, multi-state entry cohorts,[66] while offering a more nuanced picture than the one obtained from only two points in time. I used this time categorisation to compute the difference-in-difference estimators utilised in several of my analytical chapters (see also section 4.7), as well as to create time-varying covariates in chapters 6 and 7. I, however, acknowledge that the decision to focus my analysis on three distinct time periods instead of fourteen individual years may confound the interpretation of my results.

Because states and counties introduced PBC in different years, the pre-PBC period and the first period after the introduction of PBC—also referred to in various tables and figures in chapters 5 through 9 as "Post-PBC (first period)"—differ slightly depending on the county or state considered. For both North Carolina and Cook County, Illinois, for instance, the pre-PBC period refers to the period 1 October 1995 to 30 September 1997, inclusive. For the rest of Illinois, where PBC was introduced one year later, the pre-PBC period refers to the period 1 October 1995 to 30 September 1998. Thus, the "Post-PBC (first period)" for both North Carolina and Cook County, Illinois denotes the period 1 October 1997 to 30 September 2004, while for the remaining counties in Illinois it refers to the period 1 October 1998 to 30 September 2004.

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[65] For instance, I was concerned that the post-PBC period was more than twice as long as the pre-PBC period. AFCARS data were only available from 1996 onwards.

[66] This can be a concern, for instance, for panel data, which in this study refers to the second-level units, i.e., counties or states (Bertrand, et al. 2003).

In order to ensure that the control states had a comparable time-frame,[67] I created a simple random sample without replacement of children from the two control states proportional to the size of the child population entering care in those of the localities where PBC was implemented earlier—namely Cook County and North Carolina—over the overall population entering care in states that employed PBC—namely Illinois and North Carolina. I then "removed" this sample from the pre-PBC period and added it to the "Post-PBC (first period)".

4.4   The criteria for creating the entry cohorts

Much of the evidence used to monitor the timeliness of exits from care across states has relied on cross-sectional data on children in care or exit cohorts, which, as seen in previous chapters, is not appropriate for monitoring changes in the timeliness of permanency outcomes (for a critique of these measures see also Courtney, et al. 2004; McDonald and Testa 2010; Wulczyn, et al. 2007). Instead prospective cohorts, which follow each child from the time of entry intro care until the time of exit should be used to create measures of timeliness.

In order to create the multi-year, multi-state files from the AFCARS dataset, I followed a number of steps. First, using the cross-sectional AFCARS data for year *a*, I identified all children who had entered care between 1 October of year *a-1* and 30 September of year *a*. For instance, for the cross-sectional dataset 1996, the entry cohort refers to children who entered care between 1 October 1995 and 30 September 1996. I then created an identifier which I refer to as CID by concatenating a string of data, uniquely combining for each child the following AFCARS variables: state, record number (henceforth referred to as ID), date of birth, sex, race and latest date of entry. I also generated a cross-sectional "in care file" for year *a+1*. Next, I linked the entry file from

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[67] My decision to ensure that the treatment and control states had comparable pre- and post-time periods was motivated by a desire to minimise the effect of some unobserved secular trends. One such trend, documented in the United States after the implementation of the ASFA, is the changing attitude towards racial disproportionality. Another is the increasing pressure faced by child protection services to reduce the amount of time children spend in care by promoting alternatives to family reunification (see also chapters 3 and 8).

year *a* with the "in care" file for year *a+1* using the CID code. In the majority of cases,[68] the CID code matched, meaning that the child was either still in care or had exited care between 1 October of year *a-1* and 30 September of year *a+1*. Where the CID did not match across the two files, I first examined whether the child had exited care during the period considered (see Figure 4.3). If the entry cohort file did not indicate that the child had exited care during that period, I simplified the CID by removing one of the conditions, starting from the date of latest entry. I than repeated the matching procedure, excluding from the files children who had either already been successfully matched, or had exited care between 1 October of year *a-1* and 30 September of year *a+1*.

I repeated the same procedure using the cross-sectional "in care" file for year *a+2*, but replacing the original entry cohort file with the linked *a* to *a+1* file, described above. As in the first iteration, I did not restrict the matching procedure to children who had remained uninterruptedly in care. Children who exited care between 1 October of year *a-1* and 30 September of year *a+1* and re-entered care prior to 30 September of year *a+1* were matched with the cross-sectional "in care" file for year *a+2*. This means that in this study spells in care—what I also refer to duration in care or amount of time spent in care—are computed based on the latest, rather than first exit from care. While, in many cases the two coincide, I chose this approach because it gives less "weight" to permanency outcomes which disrupted within the first years of exit. However, it also means that my analysis may underestimate permanency disruptions for children who exit or re-exit care towards the end of year *a+2* compared to children who exit care earlier on in the observed period.[69]

On the basis of this matching procedure, I created fourteen multi-state prospective cohorts of children who entered care between the years 1996 and 2009, with each entry cohort covering a maximum duration of three years in out-of-home care per child. On average, around 5 per cent of cases were matched with the more simplified CID. Around 1 per cent of cases did not match after using simplified CIDs and were dropped from my analysis.

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[68] As indicated in section 4.3, I excluded from my analysis states with fewer than 90 per cent "matches". For the states included in my analysis, the percentage of successful matches ranges from 98 per cent to 100 per cent depending on the state and year.

[69] See section 4.5 for a discussion of the implications of these decisions.

Figure 4.3. Graphical representation of the criteria used for creating the entry cohorts

Step 1: Match with in care file for year *a+1* based on CIDs

Entry cohort for year *a* (child entered care between 1 October of year *a-1* and 30 September of year *a*)

Child exited care between 1 October of year *a-1* and 30 September of year *a+1*

Child in care on 30 September of year *a+1*

No match found

Step 2: Match with in care file for year *a+1* based on simplified CIDs

No match found

Child exited care between 1 October of year *a-1* and 30 September of year *a+1*

Child still in care on 30 September of year *a+1*

Step 3: Match with in care file for year *a+2* based on CIDs

Child exited care between 1 October of year *a+1* and 30 September of year *a+2*

Child still in care on 30 September of year *a+2*

Step 4: Match with in care file for year *a+2* based on simplified CIDs

No match found

Child exited care between 1 October of year *a+1* and 30 September of year *a+2*

No match found

Child still in care on 30 September of year *a+2*

Final linked entry cohort for year *a*

The linked entry cohort includes:

- Children who exited care between 1 October of year *a-1* and 30 September of year *a+2* and did not re-enter care by 30 September of year *a+2*
- Children still in care by 30 September of year *a+2* and who:
  - Never exited care between 1 October of year *a-1* and 30 September of year *a+2;* or
  - Exited care between 1 October of year *a-1* and 30 September of year *a+2* and re-entered care (one or more times) by 30 September of year *a+2*

A small number of studies have employed a similar approach. Testa, et al. (2008), for instance, used the AFCARS dataset to create a linked, multi-year longitudinal dataset to

calculate prospective measures of child permanence for five states—Arizona, Illinois, Missouri, Ohio and Wisconsin. The authors matched the identifiers and controlled for other characteristics such as the child's date of birth and the date of latest placement. A similar method was used by Koh and Testa (2008) to examine the impact of placement with kin on reunification, adoption and guardianship rates and by Koh and Testa (2011) to study re-entries. All three of these studies relied on software developed by Hornby-Zeller Associates.

 While there are a number of similarities between the approach I utilised to create the entry cohorts and the one developed by Hornby-Zeller Associates, there are also a number of differences. Unlike my approach, the Hornby-Zeller software imputed missing values for date of birth, sex and race, which may create some "false" positives in the linked files. A second difference relates to the fact that the Hornby-Zeller software uses six-month AFCARS cross-sectional submissions. Conversely, I was only able to obtain annual AFCARS datasets, signifying that the cohorts used by Testa, et al. (2008) and Koh and Testa (2008, 2011) are better suited for measuring re-entries. It is important to note, however, that even though such data may "capture" more short-term permanency disruptions, they are nonetheless unable to measure re-entries which occurred within each six-month cross-sectional file. Lastly, the method developed by Hornby-Zeller Associates focused on first entry into care, while my approach considers any entry that occurred in a given year, regardless of whether the child had already been in care. As a result, the approach by Hornby-Zeller Associates is more suited for following a child's path through care. My approach, on the other hand, is more geared towards examining changes in the average number of timely exits for different entry cohorts.[70] I briefly return to discuss some of these aspects, which also have a bearing on the statistical methods employed, in section 4.8 below as well as in chapters 6, 7 and 10.

4.5 Outcome measures[71]

On the basis of the multi-year, multi-state entry cohorts described above, I created a variable which I refer to as the *amount of time children spend in care*. I computed this

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[70] This approach is also better suited to address my research questions and hypotheses (see sections 1.6 and 1.7), which focus on state-level averages, rather than individual child outcomes.

[71] Through this study, I use the terms outcome measure and dependent variable interchangeably.

variable by subtracting the date of entry into care from the date of latest exit from care. Data for children who had not exited within thirty-six months of entry were considered right censored.[72] I employed this outcome variable in chapters 6 and 7.

I also created a series of outcome measures to approximate the concept of timeliness.[73] I defined *timely exits* as those occurring within twenty-four months of a child's entry into care and *untimely exit* as those taking place thereafter. I then subdivided timely exits into *very timely*, namely those occurring within twelve months of a child's placement, and *somewhat timely*, namely those taking place after twelve months but within twenty-four months of entry (see Table 4.1). These categorical measures are the main dependent variables analysed in chapters 6 through 8.[74]

<p align="center">**Table 4.1. Main outcome measures**</p>

Measure	Variable type and values
Amount of time children spend in care	Continous
Timely exits	Categorical (yes, no)
Very timely	Categorical (yes, no)
Somewhat timely	Categorical (yes, no)

As stated in chapter 1, the choice of these thresholds is primarily based on the composite measures used by the U.S. government to monitor the timeliness of reunifications and adoptions (see Table A.1.1). My decision to include twenty-four months

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[72] A number of studies on the timeliness of exits have employed various statistical methods including survival analysis to address the issue of right censoring. I chose not to avail myself of this type of statistical method for a number of reasons, including the unsuitability of my multi-year, multi-state entry cohorts for capturing placement instability and re-entries. However, I did specify that the amount of time children spent in care was right censored at thirty-six months. I used the script *gsem* from the statistical software package Stata 13 to generate a series of regression models for censored data (Wooldridge 2009). I then computed state-level marginal averages, taking into account this censoring (see chapter 6 and 7).

[73] These measures are also more suited to address my research questions, which focus on *timely exits*, rather than the average amount of time children spend in care.

[74] Initially, I had sought to employ only one detailed measure of timeliness in the statistical models presented in chapters 6 and 7. This measure was to assume the values *very timely*, *somewhat timely* and *untimely*. However, because a number of assumptions were violated in the multinomial logistic regression and ordinal logistic regression models using this outcome measure (see also section 4.8), I created two additional dichotomous variables *very timely* and *somewhat timely*.

was further dictated by the fact that adoptions are less likely to occur within the first twelve months of placement (Conell, et al. 2006; Courtney and Wong 1996; Wulczyn 2004).[75] Considering twelve months alone, therefore, might have masked changes in permanency outcomes, particularly with regards to adoption.

I am aware that my choice of outcome measures has a number of possible negative implications. One such drawback is that none of the measures employed are well suited for addressing the issue of permanency disruptions and re-entries. The main reason for not considering these aspects is that, as indicated in section 4.2, the AFCARS dataset is not optimal for capturing placement instability and re-entries. The AFCARS is particularly inadequate for measuring multiple permanency disruptions within the same fiscal year since the most recent spell "overwrites" any previous spells in the dataset (National Data Archive on Child Abuse and Neglect, et al. 2002). As a result, measures of timeliness based on the AFCARS tend to underestimate placement and permanency instability; a problem which is further compounded for analyses that seeks to follow entry cohorts over multiple years.[76]

I acknowledge that this is a serious shortcoming, particularly since a disruption in permanency may be more damaging to a child's wellbeing and safety than a longer stay in out-of-home care. In practice, my linked multi-year entry cohorts do not distinguish between children who experienced permanency disruptions—i.e., who exited and re-entered care within three years of entry—and children who remained continuously in care. Instead, my analysis focuses on whether the child exited in a timely manner during the

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[75] According to Conell, et al. (2006 p. 794) this trend may be a result of the "amount of time necessary to pursue legal processes that free a child for adoption (e.g., termination of parental rights), as well as the tendency to pursue alternative permanency avenues (e.g., reunification or guardianship) before proceeding to adoption."

[76] Partially because of these limitations, many of the studies that have focused on spells in care have either limited their analysis to one year (McDonald, et al. 2000; Smith 2003; Wells and Guo 1999) or have relied on other types of state-specific administrative data (Courtney and Hook 2012; Marcenko, et al. 2011; Shaw 2010). These approaches, however, are also not optimal since the literature suggests that there is often an inverse relationship between the length of stay in care and re-entries, signifying that twelve months are an insufficient timeframe for studying the timeliness of permanency outcomes, particularly adoptions (McDonald, et al. 2006; Wells and Guo 1999). Further, state-specific administrative sources do not allow for a multi-state perspective; a shortcoming identified in much of the relevant literature (see for instance Courtney, et al. 2011a, 2011b; Courtney and Hook 2012; Golden and Macomber 2009).

timeframe considered. While this approach is reasonable given the objectives of my study, I recognise that future research should devote greater attention to exploring the relationship between PBC, timeliness and permanency disruptions (see also chapter 10).

Another aspect that warrants further discussion is that, owing to limitations with my multi-year linked entry cohorts, my analysis is only able to follow timeliness outcomes within three years of entry. [77] This means that my analysis is more likely to view as "untimely" placements that disrupt earlier on in the observed period compared to those which occur towards the end of year $a+2$.[78] This, in turn, may underestimate the disruption of adoptions compared to reunifications, since the latter are more likely to occur earlier on after placement, while the probability of a child being adopted tends to be low in the first year in care (see also note 75). Unfortunately, I am unable with the current dataset[79] to establish whether differences in the amount of time children spend in out-of-home care prior to exiting have a bearing on the stability of their permanency outcomes. This relationship should be explored in future research (see chapter 10).

In focusing my analysis on the timeliness of exits, I am aware that this goal should not be pursued in isolation. The fact that reunification services tend to be more effective when they are provided over a longer period of time or that re-entry rates are higher for children who exit care more quickly are two examples of why an emphasis on timeliness alone may be detrimental to a child's prospects of permanency, especially in cases where the permanency goal is reunification (Bagdasaryan 2005; Barth, et al. 2008; Courtney, et al. 1997; Littell and Schuerman 2002).

The issue of whether timeliness is a "worthy" policy objective in-of-itself is further complicated by the fact that interpretations of what permanency entails vary greatly (see section 1.4). The notion that discriminatory criteria are often applied in placement and permanency decisions, and that the child protection system is not always able to provide the necessary support and services to out-of-home care children and their families remains

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[77] Based on PIT estimates, approximately one-sixth of children exit care after three years of placement (U.S. Department of Health and Human Services, Administration for Children and Families, Children's Bureau 2012e).

[78] The literature suggests that most permanency outcomes that disrupt do so shortly after a child's exit from care.

[79] As stated in section 4.4., the multi-year, multi-state entry cohorts do not allow me to examine spells in care. Children who exited care and re-entered within thirty-six months of entry were considered to be still in care.

central to the debate on whether federal and state resources should be devoted to promoting timely exits.[80]

4.6 Independent variables

In my analysis I employ three different types of independent variables: (1) variables related to the characteristics of children in care, (2) variables related to placement or permanency characteristics, and (3) county and state level variables. The choice of these three groups of variables is consistent with the analytical framework by Wulczyn, et al. (2010) described in chapter 2, which recognizes the need to control for contexts and actors, as well as the "structures, functions and capacities" of the state and local child protection system. In my analysis, the actors and contexts are the children served as well as their permanency and placement characteristics. The "structures, functions and capacities" refer to the two main dimensions highlighted in chapter 2 in relation to the PSBI/ND framework, namely whether the state: (1) uses PBC to expedite exits from care, and (2) follows the provisions related to promoting timely permanency outcomes in the ASFA.

The three types of independent variables are described below (see Table 4.2), referring, where relevant, to the AFCARS codebook as well as to significant relationships identified in the literature, which provide the theoretical justification for their inclusion in the various models discussed in chapters 6 through 9. While these variables are based on the data contained in the AFCARS dataset, in a number of cases I modified the original variable by combining various categories or performing other transformations. Prior to doing this, I examined the frequency distributions of the relevant variables and assessed the effect of their inclusion, or of a relevant transformation thereof, on the goodness of fit of the models employed in chapters 6 through 9. Decisions to modify the original variables were primarily based on considerations related to analytical relevance and sample size.

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[80] Central to this debate is the issue of whether adoption by a "stranger" is preferable to remaining in the care of biological parents or relatives. Authors such as Bartholet, for example, (1999 p. 196), citing the concept of psychological parent, have argued that "[i]t is essential not only that [children] be spared damaging disruption and get permanent homes, but that they get the kind of permanent homes likely to provide true parenting". However, since adoptive parents are often white, while the biological parents of children in out-of-home care tend to belong to ethnic or racial minorities this can exacerbate issues of cultural sensitivity. Roberts in particular has objected to what she perceives as the negative portrayal of biological families as risky and violent and of adoptive families as loving and safe (Roberts, 2002).

Table 4.2. Independent variables included in the analysis

Measure	Variable type and values
Characteristics of the child	
Age	Continuous
Infant	Categorical (yes, no)
Sex	Categorical (male, female)
Race	Categorical (white, African American, other race)
African American	Categorical (yes, no)
Ethnicity	Categorical (Hispanic: yes, no)
Placement or permanency characteristics	
Placement setting	Categorical (unrelated foster care home, kinship care, group home or institution, other setting)
Placement with kin	Categorical (yes, no)
TPR	Categorical (yes, no)
Permanency outcome	Categorical (reunification, adoption, legal guardianship or placement with relative, other permanency outcome)
Permanency goal	Categorical (reunification, adoption, legal guardianship or placement with relative, other permanency goal, not yet established)
Reason for placement	Categorical (physical or sexual abuse or neglect, other)
Number of previous placement settings	Categorical (none, one to two, more than two)
County and state level	
State ID	Categorical
County ID	Categorical

Characteristics of the child

In my analysis, I included six variables related to the characteristics of children (see Table 4.2). These are: (1) the age of children at entry, (2) whether or not the child is an infant, (3) the sex of the child, (4) the race of the child, (5) whether or not the child is African American, and (6) the child's ethnicity. I decided not to include a number of variables which have been identified as being related to the timeliness of exits in the literature. These included the health or disability status of the child as well as whether the child received various types of subsidies—which can be used as a proxy for the income of the child's family of origin. I made this decision because, for some of the states in my analysis such variables were either missing or incomplete.

The *age of the child* is continuous variable, which refers to the age of the child at the time of placement, expressed in years. I created this variable by subtracting the date of birth of the child from the date of placement in care. Both dates were originally expressed in "day, month, year" format. The literature confirms that controlling for a child's age is

important, since it can be associated with the settings children are placed in while in care, their permanency outcomes, as well as the timeliness of their exits from care.

I also computed a transformation of this variable—the square of the child's age expressed in years—to capture the fact that, while teenagers tend to exit care more slowly, once they reach the age of majority[81] they automatically exit the out-of-home care system.[82] I chose to employ the variable *age (squared)* after verifying that its inclusion increased the predictive power and goodness of fit of my multivariate statistical models compared to the models containing the variable *age*; thus confirming the non-linear nature of the relationship between age and timeliness.

I also created an additional categorical age variable, referred to as *infant*, which measures whether the child is aged one year or less, or is older than one year of age. I choose to create this variable because children under the age of one account for the largest single group of children entering care (see also section 5.3) and infants often differ from other age groups in terms of permanency outcomes. Specifically, a number of studies have shown that infants are more likely to be adopted than older children (Becker, et al. 2007; Koh and Testa 2008; McDonald, et al. 2007; Snowden, et al. 2008; Yampolskaya, et al. 2007).

Sex is a categorical variable which refers to the child's biological sex. In my analysis, this variable can assume two values: male or female. Sex in the AFCARS dataset does not refer to a child's gender, which is a more complex social construct, not captured by these administrative data. While sex is an important variable, the literature suggests that the timeliness of exits is rarely significantly related to the sex of the child.

Race[83] is a categorical variable which I recoded to assume three values: (1) white, (2) black, and (3) other race.[84] The choice of focusing on these three categories was motivated

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[81] For some states this threshold is the age of twenty-one, rather than eighteen.

[82] I chose to include the variables age squared because of the non-linear relationship between timeliness and age of the child. This, as well as my decision to focus on the analytically relevant category *infant*, explains why I decided not to use a series of dummy variables for age.

[83] According to the AFCARS codebook, while race is usually a self-determined characteristic, "(i)n the case of young children, parents determine the race of the child" (National Data Archive on Child Abuse and Neglect 2002 p. 24).

[84] The category "other race" includes children who are American Indian/Alaskan Natives and Asian/Pacific Islanders, as well as children of unknown race.

primarily by the need to ensure a relatively similar size for the racial groups in my analysis[85] as well as to ensure greater comparability of the racial composition of the out-of-home care population across the treatment and control states.

As with other data sources in the United States, including the U.S. Population Census and the American Community Survey, the AFCARS dataset modified the way it measures *race* over the time period considered in my analysis. While in the files prior to 2000, the data on the child's race were presented for five categorical values—(1) white, (2) black, (3) American Indian/Alaskan Native, (4) Asian/Pacific Islander, and (5) unable to determine—after 2000, the coding of race was modified so that each child could record more than one race. As a result, in the post-2000 definition of the variable race, a child can be classified as "belonging" to up to a maximum of four different races at a time.

In order to ensure consistency with the earlier time series and because I was primarily interested in the timeliness of exits for African American children compared to other racial groups, I coded all children who included black as one of their racial attributes in the annual datasets after 2000 as being African American. I also created the dichotomous variable[86] *African American*, which assumes the value one if the child is black and zero if the child is of another racial background.[87] This variable was included in the multivariate statistical models in chapters 6 through 9.

As discussed in chapter 3, controlling for the race of children entering care as well as how the racial composition of children entering care may have changed over time is very important, since race is one of the most significant predictors of timeliness of permanency outcomes identified in the literature. A large number of studies, for instance, have shown that African American children exit care more slowly compared to children of other races (Becker, et al. 2007; Connell, et al. 2006; Potter and Klein-Rothschild 2002; Romney, et al. 2006; Shaw 2010; Smith 2003; Yampolskaya, et al. 2006, 2007; Wulczyn, et al. 2006b). African American children also tend to experience different permanency outcomes (Connell, et al. 2006; Koh and Testa 2011; Snowden, et al. 2008).

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[85] This is important from a statistical perspective since uneven distribution across categories can contribute to unstable multivariate models.

[86] Dichotomous variables are a type of binary variable, which assume the values 0 or 1.

[87] In my analysis, I refer to children of other racial backgrounds interchangeably as children of other races, not-African American, or not-black.

Ethnicity is a categorical variable, which refers, in my analysis, to whether a child is Hispanic or not. Unlike in many other data sources in the United States, where it is considered one of the possible categories in the racial distribution, in the AFCARS dataset it is a distinct attribute. I decided to include this variable in my models because the literature suggests that Hispanic children may be less likely to be placed in care compared to other African or Native Americans and may also experience different permanency outcomes (Cheng 2010; Needell, et al. 2003).

Placement or permanency characteristics

In relation to placement or permanency characteristics, I identified seven variables which I included in my analysis. These are: (1) the setting a child is placed in while in care, (2) whether or not the child was placed with kin, (3) whether the parental rights of the child had been terminated, (4) the permanency outcome through which the child exits care, (5) the child's case plan goal, (6) the reasons for placement in care, and (7) the number of previous settings the child was placed in.

The variable *placement setting* refers to the type of setting the child lived in since the latest removal. I recoded the original values of placement setting reported in the AFCARS data into four categories: (1) unrelated foster family homes,[88] (2) kinship care or related foster family,[89] (3) group homes or institutions,[90] and (4) other settings which include supervised independent living homes, trial home visit homes, and pre-adoptive homes.

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[88] The AFCARS codebook defines an unrelated foster family home as a "licensed foster family home regarded by the state as a foster care living arrangement" (National Data Archive on Child Abuse and Neglect 2012 p. 23).

[89] The AFCARS codebook defines kinship care or related foster family as "a licensed or unlicensed home of the child's relatives regarded by the state as a foster care living arrangement for the child" (National Data Archive on Child Abuse and Neglect 2012 p. 23).

[90] The AFCARS codebook defines group home as a "licensed or approved home providing 24-hour care for children in a small group setting that generally has from seven to twelve children". Institutions are defined as a "child care facility operated by a public or private agency and providing 24-hour care and/or treatment for children who require separation from their own homes and group living experience. These facilities may include: child care institutions; residential treatment facilities; maternity homes; etc." (National Data Archive on Child Abuse and Neglect 2012 p. 23). According to the AFCARS, the main difference between a group home and an institution is the number of children that they are licenced to care for. Group homes usually host a maximum of twelve children.

Again my motivation for combining the original values of the variable into a more limited set of categories was influenced by the number of cases for each of the original values as well as their analytical relevance in the context of my research.

On the basis of this variable, I created a dichotomous variable *placement with kin*, where one indicates that children are in kinship care, and zero that they are in another type of placement setting. I included this variable in the analysis in chapters 6 through 9. As indicated in previous chapters, the setting children are placed in while care has been found to be significantly associated with the timeliness of exits in a number of studies (Caplick Weigensberg 2009; Courtney, et al. 2011a, 2011b; Needell, et al. 2005; Noonan and Burke 2005; Scannapieco, et al. 1997; Shaw 2010; Smith 2003; Wulczyn, et al. 2007). Several authors have also found that children may experience different permanency outcomes depending on their placement setting in care (Berrick, et al. 1997; Weil 1999; Chipman, et al. 2002).

TPR is a categorical variable which refers to whether the parental rights of the child were terminated.[91] The AFCARS dataset includes two separate variables related to TPR: one for the mother and one for the father. I decided to combine these variables, and coded the resulting variable as one if: (1) both parents had experienced TPR, or (2) only one parent had lost TPR and the child had only one parent. In all other cases, I coded this variable as zero (or no TPR). A number of studies have identified an association between TPR, the timeliness of exits, and various permanency outcomes (Connell, et al. 2006; Noonan and Burke 2005; Potter and Klein-Rothschild 2002), suggesting that this variable should be included in the analysis.

Permanency outcome is a categorical variable which refers to the reason why a child was discharged from out-of-home care. Before including this variable in my analysis, I recoded the values reported in the AFCARS into four categories: (1) reunification with parent or a primary caretaker, (2) adoption, (3) placement with a relative or guardians, and (4) other permanency outcomes, including emancipation from care due to the age of the

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[91] TPR, in addition to being related to timeliness, can also be influenced by policy tools such as PBC, raising concerns of endogeneity. I tested whether the inclusion of this variable had a significant impact on the models discussed in chapters 6 through 9 and concluded that it did not alter the interpretation of the DID estimator (the alternative models are also presented in the relevant annex tables). I decided to retain the variable in the models since it has been included in a number of previous studies (see above) and contributed to improving my models' predictive power.

child. As with some of the variables described above, the decision to combine some of the categories was based on considerations of analytical relevance and sample size.

The literature indicates that children who achieve permanency through adoption experience different timeliness patterns compared to children who exit care through reunification or guardianship (Akin 2011; Caplick Weigensberg 2009; Wulczyn, et al. 2000; Wulczyn, et al. 2006b). Further, the likelihood of adoption or reunification is related to a number of factors, including the setting the child is placed in while in care as well as the age and race of the child (Connell, et al. 2006; Courtney and Wong 1996; Koh and Testa 2011). Permanency outcome is one of two explanatory variables analysed in chapter 9; the other being the *permanency goal*.[92] In my analysis, permanency goal is a categorical variable which can assume five values: (1) reunification, (2) adoption, (3) placement with relatives or guardianship, (4) other permanency goal, which includes emancipation, and (5) case goal not yet established.

Reason for placement is a categorical variable which in my analysis can assume two values: (1) placement for physical or sexual abuse, or neglect, and (2) other reasons for placement. The AFCARS dataset includes sixteen different dichotomous variables to classify the reasons for placement, which range from inadequate housing to the disability of the child, and from a parent having been incarcerated to the death of the child's primary caregiver. While for many of these variables the number of cases is very small, I am able to address this concern by "collapsing" the three variables related to maltreatment— namely, placement for physical abuse, sexual abuse or neglect—into one variable. Further, from a substantive perspective, this choice appears to be reasonable since a number of studies have identified a relationship between a similar, simplified set of measures of maltreatment and permanency outcomes (Connell, et al. 2006; McDonald, et al. 2007). This variable is employed in chapter 9.

Number of previous placement settings is a categorical variable which refers to the number of placement setting a child has lived in, including the most recent setting. I recoded the values included in the AFCARS dataset as follows: zero if the most recent was the only placement the child had experienced, one for children who had been in one or two settings, including the most recent one, and two for all other cases. A number of studies have found an association between placement instability and the type of setting children

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[92] The same considerations related to TPR apply to the variable *permanency goal* (see also note 91).

are placed in (Berrick, et al. 1997; Koh and Testa 2008; Webster, et al. 2000; Wulczyn, et al. 2003).

County and state level variables

In my analysis, I included two variables which identify the state or the county: *state ID* and *county ID*. On the basis of the first variable, I created two additional state categorisations: a first to distinguish between the treatment and control states (used in chapter 6), and a second to classify states into three groups—Illinois, North Carolina and the states which did not employ PBC—used in chapters 7 through 9. In combination with the year of entry described above, these two state classifications also serve to compute various DID estimators, as well as the time-varying covariates used in chapters 6 and 7.

     County ID is a categorical variable used to identify the second level in the multilevel models presented in chapter 6 and 7. In particular, I employ it to control for time-invariant fixed effect at the county level (see also section 4.7).

4.7   Estimators and other measures

In addition to the independent variables described above, in my analysis in chapters 6 through 9, I avail myself of a series of estimators and other measures. Below I briefly discuss three of them.

Difference-in-difference estimator

One of the central measures in my analysis is the so-called difference-in-difference (DID) estimator. The DID estimator is one of the most widely used tools to evaluate the relationship between a policy intervention and selected outcomes (Abadie 2005; Wooldridge 2009). In its simplest form, the DID estimator can be expressed as follows:

$$\hat{\beta}_1^{DID} = (\bar{Y}^{Treatment,Post} - \bar{Y}^{Treatment,Pre}) - (\bar{Y}^{Control,Post} - \bar{Y}^{Control,Pre}) \qquad 4.1$$

where $\bar{Y}$ represent the average outcome at two points in time—pre- and post-intervention—for two groups—the treatment and the control (see also Figure 4.4).

    One of the main assumptions of the DID estimator is that the average outcome for the treatment and control groups follows parallel trends over time. Based on this assumption, the difference between the treatment group and its counterfactual, the so-

called average treatment effect (ATE), reflects the effect of the intervention, whereas the trend for the control and the counterfactual are attributed to other factors, including secular trends. In the case of my analysis, this assumption can be loosely interpreted as follows: had PBC had not been introduced, the treatment states would have experienced the same trend in terms of the timeliness of exits as the control states, albeit starting from different initial levels.

Figure 4.4. Visual representation of the DID estimator
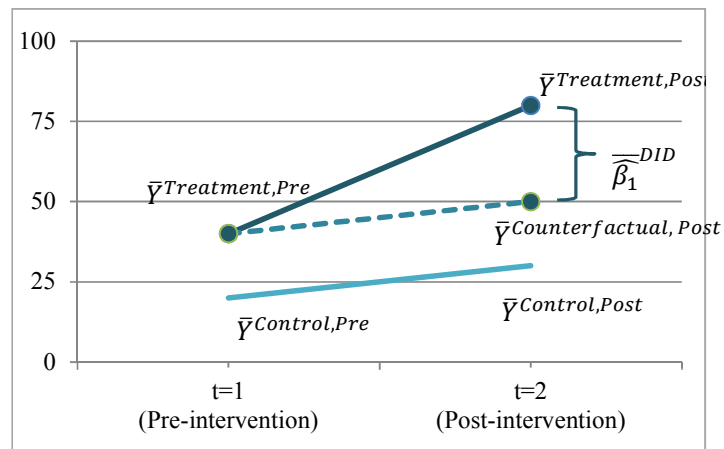
I included the DID estimator in a number of statistical models in my analysis, (see chapters 6 through 9) to examine differences between PBC and non-PBC states in the timeliness of exits.[93] Doing so has several advantages, including the relative simplicity of calculating standard errors and the possibility to control for the effect of other independent variables which could reduce the residual variance. However, for the interpretation of DID to be valid, the parallel trend assumption must hold. This assumption is violated when something besides the treatment changes in one group but not the other. In practice this "requires verifying that PBC actually improves permanence and stability while the children are in foster care and the changes were not the result of other extraneous factors (e.g., changes in the kinds of children entering care, general improvements in the economic climate, or sweeping policy changes that affect all programs regardless of the intervention)" (Taylor and Shaver 2010 p. 303).

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[93] In these cases, the DID estimator refers to modeled averages.

As indicated in section 4.3, one of the limitations of my study is that I was unable to randomly assign observations to the treatment and control groups owing to both practical and ethical considerations. I sought to minimise the potential bias introduced by this less robust type of research design by controlling for differences in child characteristics and other contextual factors. In reality, ensuring the comparability of the composition of out-of-home care caseloads as well as other normative and policy practices over time is challenging (see also chapters 3 and 5). This means that some of the assumptions underlying DID may have been violated, which in turn could partially compromise the interpretation of my results. A number of factors such as the speed at which the state implemented the ASFA, budgetary constraints, the culture on the ground among the child protection services, attitudes towards permanency options, availability of different placement settings as well as various secular trends are examples of factors that are likely to have changed in different ways over time, across the states and counties considered (Berliner and Fine 2001; Whittaker and Maluccio 2002). Bertrand, et al. (2003) have suggested two possible solutions to address this problem: the first is to block bootstrap standard errors by sampling states with replacement, the second is to cluster standard errors at the state level. I chose to use the latter approach in my analysis. I am aware, however, that the interpretation of ATE is often problematic and that assessments based on ATE have to be made with great caution. One aspect that requires particular attention is the plausibility of generalising trends based on the controls. For instance, given the pressure that states face to reduce the amount of time children spend in care (see also chapter 1), non-PBC states are likely to have implemented other strategies to promote timeliness. As a result, the counterfactual will reflect those policies and interventions as well, rather than simply the "absence" of PBC. A second concern stems from the fact that the slope of the counterfactual does not take into account the level of the outcome measures considered. This is equivalent to saying that a policy intervention would have the "same" impact on the treatment and control groups, regardless of their initial level of timeliness. In reality, states that already record large proportions of timely exits may find it more difficult to improve their performance further. In contrast, in states where children spend, on average, long amounts of time in care it may be easier to achieve an improvement. I return to discuss these limitations in chapters 6, 7 and 10.

Other measures: DTE and DAE

In chapter 8, I seek to explore the mechanisms through which PBC states achieve timely permanency outcomes, including various types of gaming behaviours. In order to better explore the research hypotheses related to this question, namely my third, fourth and fifth hypotheses, I created two measures: (1) *disproportionality in timely exits* or DTE and (2) *disparity at entry* or DAE.

I defined DTE as the difference in period *t* of the proportion *p* of timely exits from care for selected sets of bivariate characteristics. For instance, DTE by race is defined as the difference between the proportion of black children ($p_{b=1}$) exiting care in a timely manner and the proportion of children of other racial backgrounds ($p_{b=0}$) exiting care within twenty-four months of entry at time *t*.

$$DTE_{t=0,..2} = p_{t|b=1} - p_{t|b=0} \qquad 4.2$$

For DTE, *t* assumes three values: 0, which refers to the period 1996-1998, 1 which refers to the period 1999-2004, and 2, which refers to the period 2005-2009. Values of DTE close to zero signify that there is convergence in timely exits for the set of bivariate child attributes considered. In contrast, values which diverge from zero indicate that DTE widened.

I defined DAE as the differences in the proportion of children entering care with certain bivariate sets of characteristics (see equation 4.3). For example, DAE by race can be defined as the difference between the proportion of black children ($q_{b=1}$) and the proportion of children of other racial backgrounds ($q_{b=0}$) entering care at time *t*.

$$DAE_{t=0,..2} = q_{t|b=1} - q_{t|b=0} \qquad 4.3$$

A value above zero points to a greater proportion of black children entering care compared to children of other races, whereas a value of less than zero indicates that fewer African American children entered care compared to children of other racial backgrounds. A value close to zero signifies that the same proportion of children entered care for both groups. DAE is not the same as disproportionality at entry, which instead refers to the proportion of children with a certain characteristic over the proportion of children with the same characteristic in the overall child population (see also chapter 8).

4.8   Statistical methods

For each of the variables described in section 4.6, I examined their frequency distribution, measures of central tendency, as well as their dispersion around such measures. On the basis of this, I deleted a small number of records that were either outliers or had missing values. I then focused on identifying relationships between two variables at a time (bivariate analysis). Where relevant, I conducted cross-tabulations and computed various measures to assess the significance of bivariate associations (Pearson's correlation coefficient and Cramer's V). In addition, I tested the significance of differences between proportions through a series of the two-proportions z-tests. Because the number of observations in my analysis is very large (over 300,000 records), many of these bivariate tests are highly significant.

To examine the relationship between more than two variables as a time (multivariate analysis), I used a number of statistical models including logistic regression and regression for censored data, as well as multilevel models for binary and continuous censored data. For the binary outcome variables, I chose to use a logistic regression model because of: (1) its appropriateness given my choice of dependent variables, (2) its relative computational simplicity, and (3) its prior use in a number of quantitative studies focused on the timeliness of exits from care (Green, et al. 2007; Shaw 2010). The logistic regressions models included in my analytical chapters were generated using the statistical software package Stata 13, using the script *logit*. For the continuous outcome variables, I employed the script *gsem* for censored regression models. Before running the models, I carried out standard diagnostic tests, examined outliers and residuals through various graphical tools. I also checked for goodness of fit of the models, and quantified the predictive ability of the various models through receiver operating characteristic (ROC) curves.

I decided to use multilevel models because the framework developed by Wulczyn, et al. (2010) recognizes that system are not isolated but are nested within broader context comprising families, communities, and states (see also chapter 2). Multilevel models are well suited to reflect the nested structure of my data, where children are clustered within counties and states. Failing to consider the population structure, could result in biased estimate of the standard error, which in turn could produce a biased interpretation of the significance of any relevant coefficients. The fact that, at least in some states, counties have considerable autonomy in administering programmes and allocating resources and

that the AFCARS dataset is very sparse in terms of contextual information is an additional reason for employing multilevel models in my analysis, since this approach allows to "cluster" group level variability at the state and county levels. To compute the multilevel models, I used the Stata 13 script *melogit* for the binary outcomes, and the script *gsem* for the continuous censored outcomes.

In selecting these models, I made the decision not to use a number of other statistical models which have been employed to study the amount of time children spend in care, such as survival analysis (Courtney 1995; Lewandowski and Pierce 2004), as well as to control for differences in out-of-home care populations, such as propensity score matching (PSM) (Koh and Testa 2011; Testa 2010c). For survival analysis, the main reasons for not selecting these models were that: (1) I was interested in state-level averages, rather than in a more detailed, time-to-event type of analysis focused on the individual child, (2) I was not seeking to explore permanency disruptions or re-entries, and (3) my models did not require controlling for individual-specific time-varying covariates. For PSM as well synthetic control methods (SCM) for comparative case studies, I made this choice because: (1) the treatment and control groups differed considerably for a number of important covariates, including the race of the child or the type of placement setting used, (2) owing to the limited scope of the AFCARS dataset, I was unable to match the treatment and control groups for all relevant covariates associated with my dependent variables, and (3) the number of aggregate units—counties or states—was too small for SCM.

There were also a number of statistical models which I tested and then discarded after some important assumption had been violated. These included multinomial logistic regression as well as ordinal logistic regression, which in my analysis violated, respectively, the Suest-based test of independence of irrelevant alternatives (IIA) assumption, derived from the Hausman specification test, and the Brant test of the parallel regression assumption. I also chose not to use nested logit regression because the Stata script *nlogit* was unable to handle factor type variables, which are included in my multivariate statistical models.

Logistic regression

Based on the notation used in Rabe-Hesketh and Skrondal (2012 pp. 502-203), the logistic regression can be expressed as follows:

$$logit\{\pi(y_i = 1|x_i)\} = \ln\left[\frac{\pi(y_i=1|x_i)}{1-\pi(y_i=1|x_i)}\right] = \beta_0 + \Sigma_{j=1}^{p}\beta_j x_{ij} \qquad 4.4$$

$$Odds(y_i = 1 \mid x_i)$$

where y_i is a dichotomous dependent variable, x_{ij} is a vector of covariates and β is the regression coefficient. The logit function can also be expressed as an exponential function of $Odds(y_i = 1|x_i) = e^{\beta_0 + \Sigma_{j=1}^{p}\beta_j x_{ij}}$. Given that probability can be expressed as a function of odds—specifically as $\pi = \frac{Odds}{1+Odds}$—the probability of a dependent variable being equal to 1 in the logit model can be specified as:

$$\pi(y_i = 1|x_i) = \frac{e^{\beta_0 + \Sigma_{j=1}^{p}\beta_j x_{ij}}}{1 + e^{\beta_0 + \Sigma_{j=1}^{p}\beta_j x_{ij}}}$$

Regression for censored data

Based on the notation used in Wooldridge (2009 p. 601), a regression for censored data can be expressed as follows:

$$y_i = \beta_0 + \beta x_i + u_i, u_i| x_i, c_i \qquad 4.5$$

$$w_i = \min(y_i, c_i) \qquad 4.6$$

where y_i is a dependent variable right censored at c_i and u_i is an error term. Based on the assumptions in 4.5 and 4.6, β can be estimated by maximum likelihood, given a random sample on (x_i, w_i). For uncensored observations, $w_i = y_i$, and the density of w_i is the same as that for y_i. For censored observations, the probability that w_i equals the censoring value, c_i, given x_i (see also Wooldridge 2009 p. 602).

Multilevel logistic regression

In chapters 6 and 7, I use a two-level logistic mixed-effects regression model. Conditional on a set of random effects u_i, and a series of $j = 1, ..., M$ independent clusters, the probability of a dependent variable being equal to 1 for observation $i = 1, ... n_j$ can be expressed as:

$$\pi(y_{ij} = 1|x_{ij}, u_i) = H(x_{ij}\beta + z_{ij}u_j) \qquad\qquad 4.7$$

where y_{ij} is the binary dependent variable, x_{ij} is a vector of covariates for the fixed effects as in the standard logistic regression model and β is the fixed effects regression coefficient, z_{ij} is a vector of the covariates corresponding to the random effects and H is the logistic cumulative function. This formula is based on the Stata documentation for multilevel logistic mixed-effects regressions.

5 PBC and non-PBC states: an overview of out-of-home care trends and the child protection system

5.1 Rationale and outline of the chapter

This chapter provides an overview of some of the basic contextual information for the four states considered in my analysis. The reasons for including this discussion are twofold. First, given the lack of random assignment in my research design, it is important to establish whether the treatment and control groups are comparable for a number of observed characteristics. Barring this, it would be difficult to address the first research hypothesis outlined in chapter 1, which focuses on comparing the timeliness of permanency outcomes in two distinct groups, namely PBC and non-PBC states. Second, given the centrality of the assumption of parallel trends for the validity of the interpretation of the DID estimator (see section 4.7), it is critical to ascertain whether anything besides the treatment—i.e., the implementation of PBC—changed over time in the four states considered.

In this chapter I present some basic descriptive statistics on out-of-home care population in the two treatment—Illinois and North Carolina—and two control states— New Jersey and Washington. In particular, the chapter outlines trends in the number of children entering and exiting care between 1996 and 2009. It also provides a comparison of the child population in the four states focusing in particular of their race and age as well as their placement and permanency characteristics (see also section 4.6). Lastly, the chapter presents a brief overview of some contextual variables in the four states and outlines some key features of their child protection and welfare systems that might have a bearing of the timeliness of permanency outcomes.

5.2 The number of children entering and exiting care

There are a number of similarities between the PBC and non-PBC states in terms of the number of children entering out-of-home care. For instance, during the period 1996 to 2009, the number of entries in each of the four states considered was, on average, between five and seven thousand children per year. Washington had the largest average annual number of children entering care (around 6,500), while New Jersey had the smallest (around 5,000).

In terms of trends, both Illinois and Washington experienced a progressive decline in the average annual number of children entering out-of-home care, with the two states recording, respectively, a 40 per cent and a nearly 20 per cent decline between the pre-PBC and the second post-PBC period. In contrast, in both North Carolina and New Jersey the average annual number of children entering care increased between 1996 and 2004. Even though both states experienced a decline in the second post-PBC period, the average annual number of children entering care was significantly higher in 2009 compared to 1996.[95]

Figure 5.1. Trend in the average annual number of children entering and exiting care in Illinois, New Jersey, North Carolina and Washington

Sources: The data on exits are based on U.S. Department of Health and Human Services, Administration for Children and Families, Children's Bureau (2006a, 2008b, 2012c).

Note: Data refer to the average annual number of children entering and exiting care. The pre-PBC period refers to 1996-1998, the post-PBC (1st period) to 1999-2004 and the post-PBC (2nd period) to 2005-2009 (see also section 4.3).

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[95] In the remainder of this chapter, as well as in chapters 6 through 9, I use t tests, chi-squared tests, as well as two-proportion z-tests. Unless otherwise specified, all tests reported as statistically significant are so at a value of $p < 0.001$.

For exits, there are also some striking similarities between the PBC and non-PBC states.[96] Both Illinois and Washington, for example, recorded a decline in the average annual number of children exiting care between 1996 and 2009, while both New Jersey and North Carolina experienced an increase during the same period. It is worth noting that Illinois differs from the other three states in terms of the level of exits in the period 1996-1998. During this period, the average annual number of exits in Illinois was nearly twice that of Washington and nearly three times that of New Jersey and North Carolina. I return briefly to discuss the implications of this difference for the timeliness of exits in chapter 10.

5.3   Selected characteristics of children entering care: age and race

As anticipated in chapter 3, one of the main limitations of the existing literature on the timeliness of permanency outcomes is that it fails to control for various "compositional" effects, namely differences across states in the type of out-of-home care populations served. In this study, I seek to address this limitation by controlling for a sub-set of child characteristics, known in the literature to be associated with a child's timely exit from out-of-home care, notably the age and race of children.

Age

Evidence from the multi-year, multi-state entry cohorts constructed using the AFCARS dataset, indicates that in all four states, infants, i.e., children under the age of one, make-up the largest group of children entering care. Illinois had the largest share[97] of children entering care as infants—around one-fourth of entries—followed by New Jersey, North Carolina and Washington—between one-fifth and one-sixth of entries. While the age distribution is unimodal, all four states recorded relatively high proportions of adolescents—defined here as children between 12 and 16 years of age—entering care.

As with entries, there are some striking similarities between PBC and non-PBC states in terms of trends in the age distribution (see Figure 5.2). Focusing on the proportion

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[96] Exits here refer to all children exiting care during a certain fiscal year regardless of their entry cohort and are based on data compiled by the U.S. Department of Health and Human Services, Administration for Children and Families, Children's Bureau.

[97] Throughout this study, I use the terms proportion, share and percentage interchangeably.

of children entering care as infants, I found that Illinois and New Jersey recorded almost no change between 1996 and 2009. In contrast, in North Carolina and Washington the share of infants entering care increased significantly. Another notable difference relates to the proportion of children aged 12 to 16 years. New Jersey, North Carolina and Washington all witnessed a decline in the share of children entering at these ages during the period 1996 to 2009, while Illinois recorded a slight increase. Using a two-sample Kolmogorov-Smirnov (KS) test, a non-parametric method for comparing cumulative probability distributions, I found that the probability that random chance alone might produce the observed difference was very small (KS test, p<0.000).

Figure 5.2. Proportion of children entering care by age
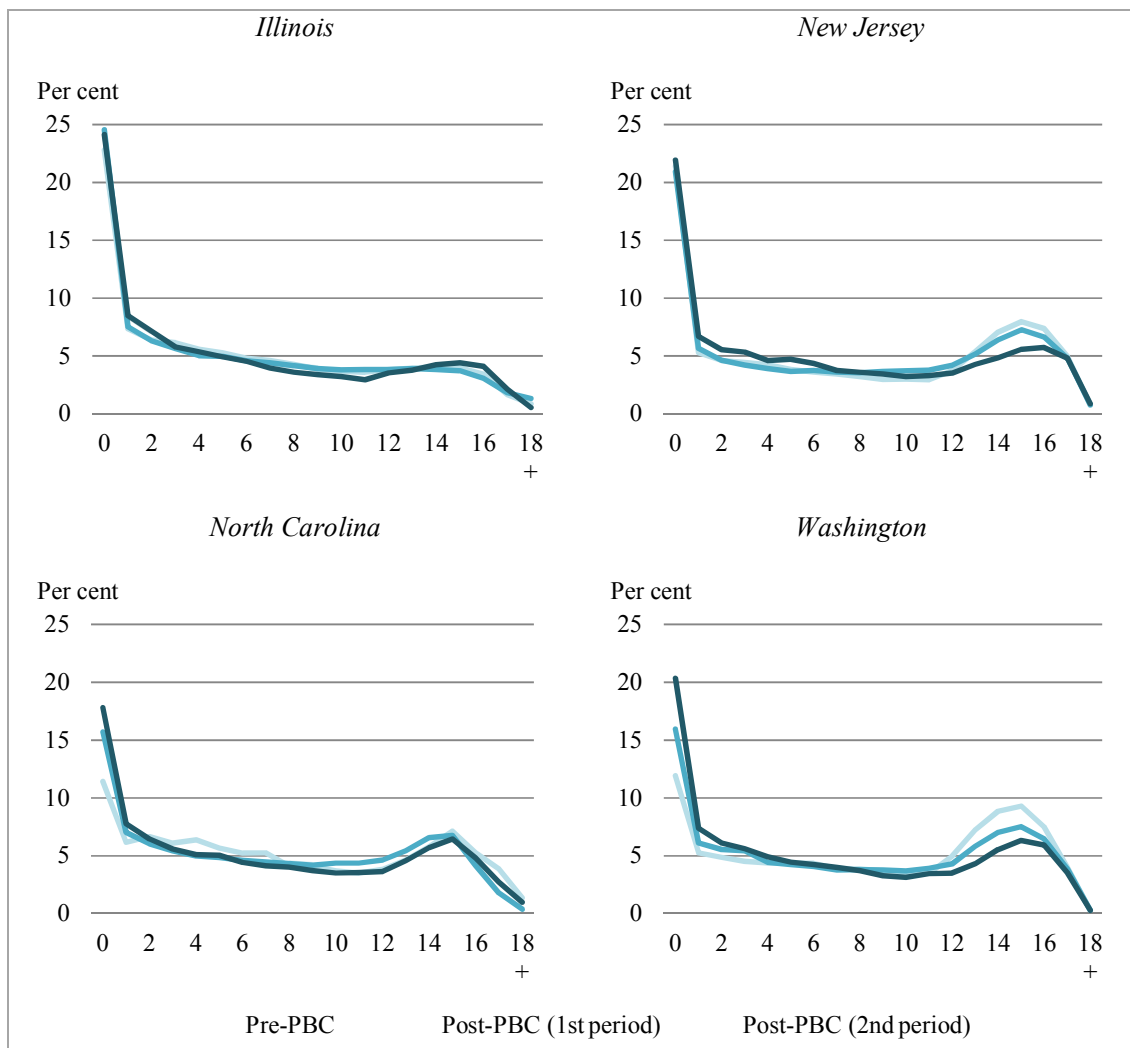
Race

There are considerable similarities in the racial composition of children entering care in the four states considered. In both Illinois and New Jersey, for instance, the majority of children entering care between 1996 and 2009 were African American, while in North Carolina and Washington more than 50 per cent of all children entering care were white.

Strikingly, both the PBC and the non-PBC states witnessed a significant decline in the proportion of African American children entering care between 1996 and 2009. The decline was particularly noteworthy for Illinois, New Jersey and North Carolina, where the share on African American children entering care fell by more than 10 percentage points during this period. Washington also witnessed a decline, though less pronounced (around 4 percentage points) in the proportion of black children placed in care.

Figure 5.3. Proportion of children entering care by race
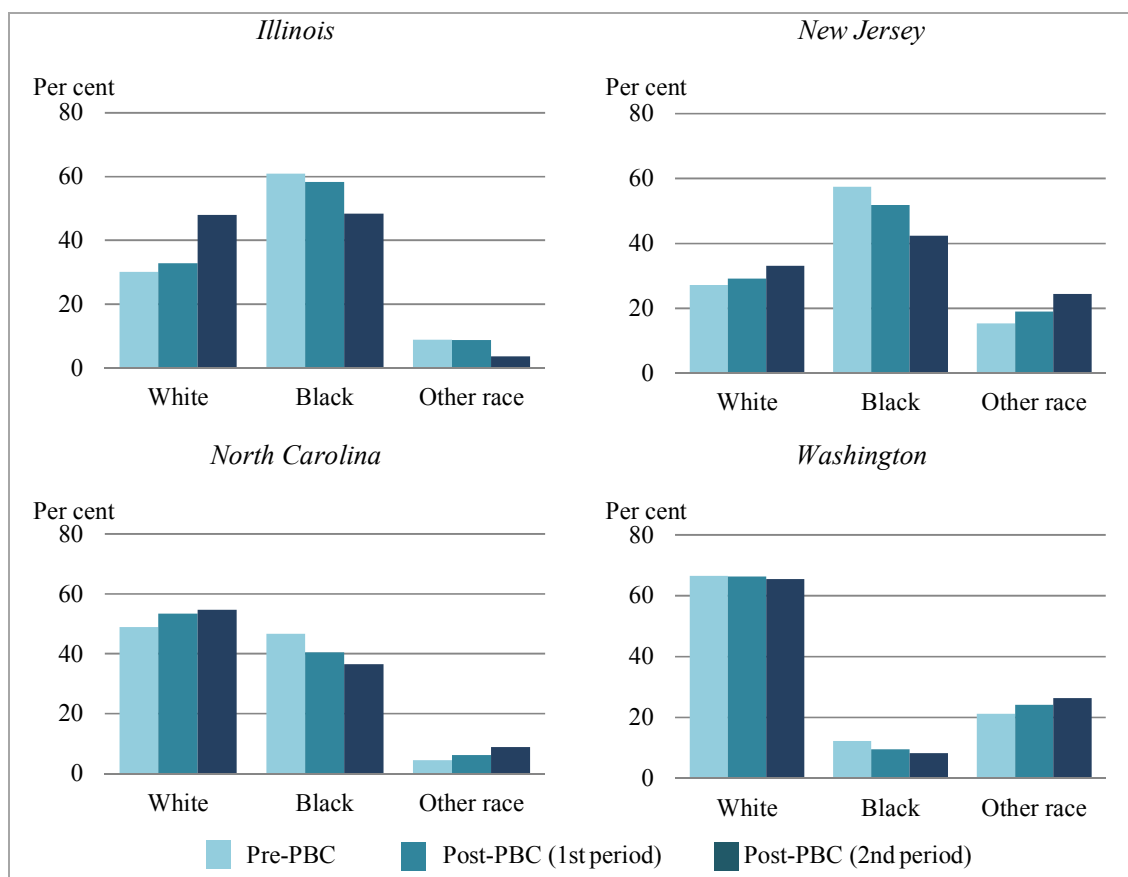
While all four states experienced a decline in the share of black children entering care, they differ somewhat in terms of trends for other racial groups. In Illinois, for instance, the decline in the proportion of black children was accompanied primarily by an

increase in the proportion of white children entering care. In New Jersey and North Carolina, both the share of white children and children classified as "other race" increased, while in Washington the share of white children did not change significantly, while the state recorded an upturn in the proportion of children classified as "other race", which includes children of American Indian/Alaskan Natives and Asian/Pacific Islanders, as well as children of more than one race.[98]

5.4 Permanency and placement characteristics

In addition to the characteristic of children entering care, it is also important to control for other factors known in the literature to be associated with the timeliness of exits. These factors, which fall under what Wulczyn, et al. (2010) refer to as the states' "structures, functions and capacities" (see also chapter 2), include the placement setting and the child's permanency outcome.

Placement settings

There are a number of differences between the PBC and non-PBC states in terms of their placement setting. For instance, during the period 1996 to 2009, more than half of all children who entered care in New Jersey and Washington were place in an unrelated foster family, while in Illinois and North Carolina the average share placed in this setting was less than 40 per cent. Illinois, North Carolina and Washington also recorded relatively large shares of children placed with relatives—between one-third and one-fourth of all children entering care. In contrast, in New Jersey the proportion of children placed with kin was relatively small—around one-tenth. In addition, New Jersey, North Carolina and Washington had a sizable proportion of children placed in group homes or institutions— between one-fifth and one-fourth of all children entering care—while in Illinois and North Carolina approximately one-sixth of children entering care were placed in other settings, which include supervised independent living homes, trial home visit homes and pre-adoptive homes.

PBC and non-PBC states also experienced somewhat different trends in the share of children placed in various settings. In all four states, the share of children placed with a relative increased between the period 1996-1998 and the period 2005-2009. The increase,

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[98] Children of more than one race, for whom at least one of the reported values was "African American" were considered African American (see also section 4.6).

however, was much more pronounced for New Jersey and Washington than for Illinois and North Carolina. Further, in Illinois the share of children placed with kin declined slightly during the period immediately following the implementation of PBC.

For placements in unrelated foster homes, the share of children placed in this setting increased during the first post-PBC period in Illinois and New Jersey, only to return to the levels comparable to those of 1996-1998 by the second post-PBC period. In contrast, in Washington, the proportion of children placed with unrelated foster families declined, offsetting the increase in the proportion of children placed with relatives, while in North Carolina the share of children placed in unrelated family settings increased significantly.

Figure 5.4. Proportion of children entering care by placement setting
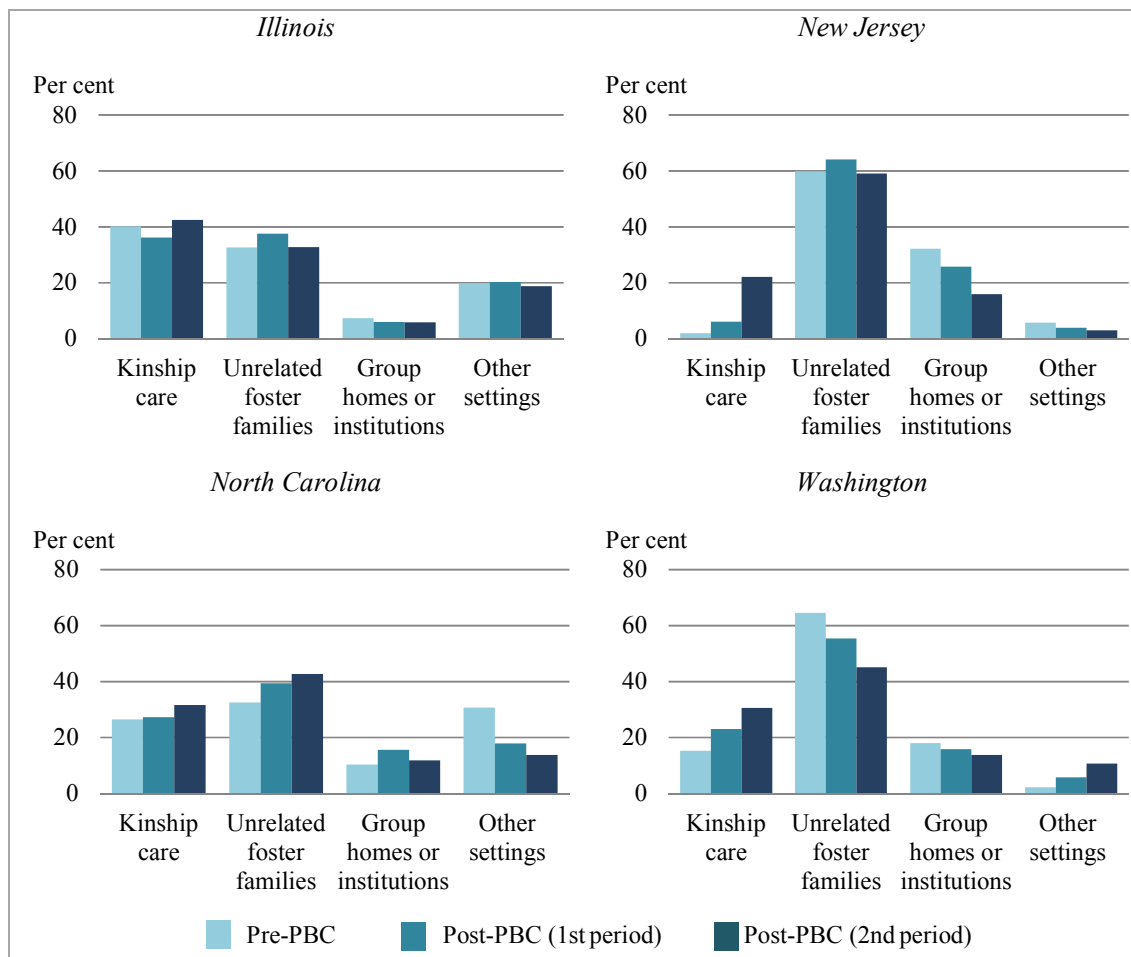
In relation to the proportion of children placed in group homes or other settings, states either experienced little change or a significant decline. An exception was

Washington where the share of children placed in other settings increased significantly between the periods 1996-1998 and 2005-2009.

Permanency outcomes within thirty-six months of entry

Based on the multi-year, multi-state entry cohorts created using the AFACRS dataset, I find that reunification is by far the most common means of achieving permanency in all four states considered. After three years of entry, two-thirds of the children in Illinois, New Jersey and Washington and over half of the children in North Carolina had exited care through this permanency outcome. Adoption was the second most common permanency outcome, followed by guardianship—the exception being North Carolina where exits to guardianship overtook adoptions following the implementation of PBC.

Figure 5.5. Proportion of children exiting care within thirty-six months of entry by type of permanency outcome
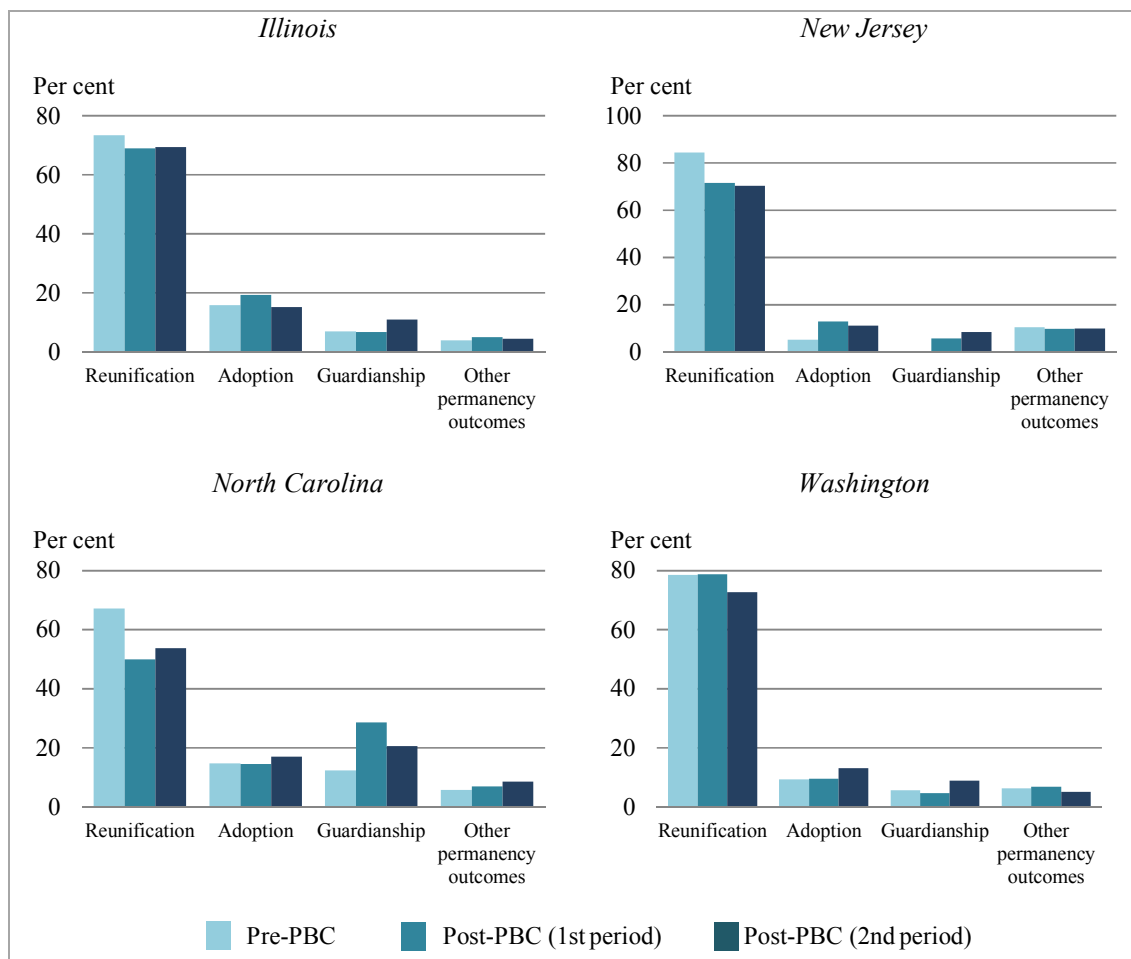
Note: Other permanency outcomes include emancipation from care due to the age of the child.

In all four states, the proportion of children who exited care to reunification declined significantly during the period considered. In Illinois and Washington, for instance, the proportion of children who were reunited with their parent or another caregiver fell by around 5 per cent between the period 1996-1998 and the period 1999-2004, while North Carolina and New Jersey recorded an even more pronounced decline—over 15 per cent— during the same time span. While North Carolina and, to a lesser degree, Illinois witnessed an upturn in the proportion of children who were reunified during the period 2005-2009 compared to the period 1999-2004, levels of reunification remained below those recorded prior to the introduction of PBC.

There are also many similarities between PBC and non-PBC states in terms of trends for adoptions. In Illinois and New Jersey, the proportion of children who exited to adoption rose between the period 1996-1998 and the first period following the implementation of PBC. However, during the period 2005-2009, the proportion of adoptions among children exiting care within thirty-six months of entry declined in both states, with levels falling below those recorded during the period 1996-1998 in Illinois. North Carolina and Washington experienced an almost opposite trend, with the proportion of adoptions changing little during the period 1999-2004 compared to the period prior to the implementation of PBC, and then increasing during the period 2005-2009.

Permanency outcomes besides reunification and adoption also changed. All four states, for instance, experienced an increase in the proportion of children who exited care to guardianship. In North Carolina, the share of such exits rose to 29 per cent in the first period after the implementation of PBC; more than double the proportion recorded during the period 1996-1998. By the period 2005-2009, however, the share of children exiting to guardianship declined, falling to around 21 per cent of all exits from care. In contrast, in Illinois and Washington the proportion of children who exited care to live with a guardian or a relative changed relatively little between the periods 1996-1998 and 1999-2004. By the period 2005-2009, however, this proportion had nearly doubled compared to the period preceding the implementation of PBC.

5.5 Selected contextual variables and key features of the child protection and welfare system

In addition to the characteristics of the population entering care, placement setting and permanency outcomes, it is useful to consider selected contextual variables in the four

states considered as well as outline some of the key features of the states' child protection and welfare systems that might be related to the timeliness of exits from care.

Contextual variables

In terms of the contextual variables, I briefly present four which have been identified in the literature as being predictive or associated with relevant characteristics and outcomes in the out-of-home care population. These include the size of the state's child population, the racial composition of the child population, the proportion of children living in urban areas and the proportion of children living in poverty.[99] In order to ascertain whether these variables changed over time, I report them for two points in time: 1998 and 2009 (see Table 5.1).

Table 5.1. Selected demographic and social characteristics of the child population in the four states

	Illinois		New Jersey		North Carolina		Washington	
	1998	2009	1998	2009	1998	2009	1998	2009
Population under18 (thousands)	3,187	3,177	1,990	2,046	1,920	2,278	1,472	1,569
Racial distribution (percentage)								
Black	18.5	16.9	15.9	14.6	26.6	23.4	3.8	4.3
Hispanic	14.4	22.2	15.5	21.6	3.3	13.0	9.7	17.6
White	63.6	54.3	62.4	53.2	66.8	57.6	77.9	64.0
Other race	..	2.2	..	2.2	3.3	6.0	8.6	14.1
Children living in urban areas (percentage)	80.1	..	100.0	..	72.8	..	76.5	..
Children living in poverty (percentage)	17.5	18.9	15.0	13.5	16.9	22.5	15.0	16.2

Sources: Based on U.S. Department of Health and Human Services, Administration for Children and Families, Children's Bureau (2006a, 2012d).

Note: Data collected by the U.S. Census Bureau. The classification of race differs somewhat from that reported in the AFCARS dataset where "Hispanic" is recorded as the separate variable "ethnicity" rather than as a racial category.

Based on these variables, it emerges that the four states are, in many respects, similar. All four states, for instance, comprise relatively large urban and poor child populations. Further, in all four states more than half of the child population is white. There are,

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[99] These variables are also reported as contextual variables in the annual CWORs.

however, some differences with regard to the other racial groups. North Carolina has the highest share of African Americans in its child population (around one in four), followed by Illinois and New Jersey (around one in six). Washington, on the other hand, where the share of black children is much lower (less than 5 per cent), has a much larger proportion of children classified as "other race", the majority of whom are Native American.

Selected features of the child protection and welfare system

In this section, I focus on five key features of the child protection and welfare system in the four states considered, namely: (1) the type of administrative framework employed; (2) the state's normative stands towards timeliness; (3) the state's preference for various types of placement settings; (4) the existence of policies that allow relatives to become permanent guardians of children in out-of-home care; and (5) the amount of federal funding received by the state for children in out-of-home care as well as for adoptions.

In terms of the type of administrative framework for child welfare services and programmes, there are some differences between the states considered. Specifically, Illinois, New Jersey and Washington have a centralised administrative system, while North Carolina has a county administered system.

With regard to the normative stands towards timeliness, the four states have a somewhat similar approach. As indicated in chapter 2, all four states have implemented the five measures outlined in the ASFA to promote timeliness. These measures are: (1) concurrent planning, (2) the 15 of 22 month standard, (3) case reviews within six months, (4) permanency hearings within twelve months of the initial placement; and (5) permanency hearings every twelve months thereafter.

For placement settings, all four states give preference to placements with kin in their statutes. Illinois, New Jersey and Washington require relatives to undergo a criminal background check before the child can be placed in their care. In North Carolina and Washington the court can "transfer legal custody of the child to the relative as an alternative to a foster care placement" while in Illinois and New Jersey, the custody of the child remains with the state social services (Child Welfare Information Gateway 2013c p. 3). While all four states favour placements with kin, none of them explicitly provide relatives with additional services.

In terms of policies to promote permanency through guardianship, the four states have followed somewhat different approaches. Specifically, Illinois, New Jersey and

North Carolina explicitly promote guardianship with kin as a permanency option when "efforts to reunite the child with his or her family have been unsuccessful and permanency through adoption is either not possible or not appropriate" (Child Welfare Information Gateway. 2015 p. 2), while Washington does not. In New Jersey, kinship guardians are eligible for state-funded guardianship assistance payments, while in Illinois and Washington they can be granted federally funded title IV-E relative guardianship assistance. In addition, Illinois and North Carolina have implemented a subsidised guardianship waiver demonstrations programme.[100] States that have implemented such programmes to subsidise guardianship can utilise title IV-E funds to "pay subsidies to caregivers who assume physical and legal custody of children in their care" (Based on U.S. Department of Health and Human Services, Administration for Children and Families, Children's Bureau 2011c p. i).

With regard to federal funding, the four states received between 12,000 U.S. dollars and 16,000 U.S. dollars in federal funds under title IV-E for each eligible child, with North Carolina recording the highest amount per caseload and New Jersey the lowest (U.S. Congress, U.S. House of Representatives, Committee on Ways and Means 2004). With regard to adoption assistance, the average amount per child ranged from 3,000 U.S. dollars to 6,000 U.S. dollars, with New Jersey receiving the highest amount per caseload and Illinois the lowest.

Illinois spent the lowest amount of federal funding for assistance payments to families, administration and child placement services, while Washington spent the largest amount (see Figure 5.6). In Illinois, nearly half of the federal out-of-home care funding was employed for waiver demonstration programmes such as the guardianship subsidising programme described above. North Carolina, which also availed itself of demonstration waivers, dedicated considerably fewer federal resources to such programmes—around one-fourth of its title IV-E funds. With regards to adoption assistance, North Carolina dedicated the largest amount per caseload to assistance payments, while New Jersey spent the most on state and local administration of the programme.

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[100] Federal child welfare waivers were devised to accord states greater flexibility in the use of federal funds such as title IV-E funds.

5.6   Summary of the main findings and discussion

With regards to the dynamics of the out-of-home care populations, Illinois (PBC state) and Washington (non-PBC state) followed relatively similar trends, with both states experiencing a marked decline over the time period considered in the number of children entering and exiting care. In contrast, both New Jersey (non-PBC state) and North Carolina (PBC state) recorded an increase in the number of entries and exits during the same period.

Figure 5.6. Estimated federal funding under title IV-E per caseload for out-of-home care and adoption assistance in U.S. dollars
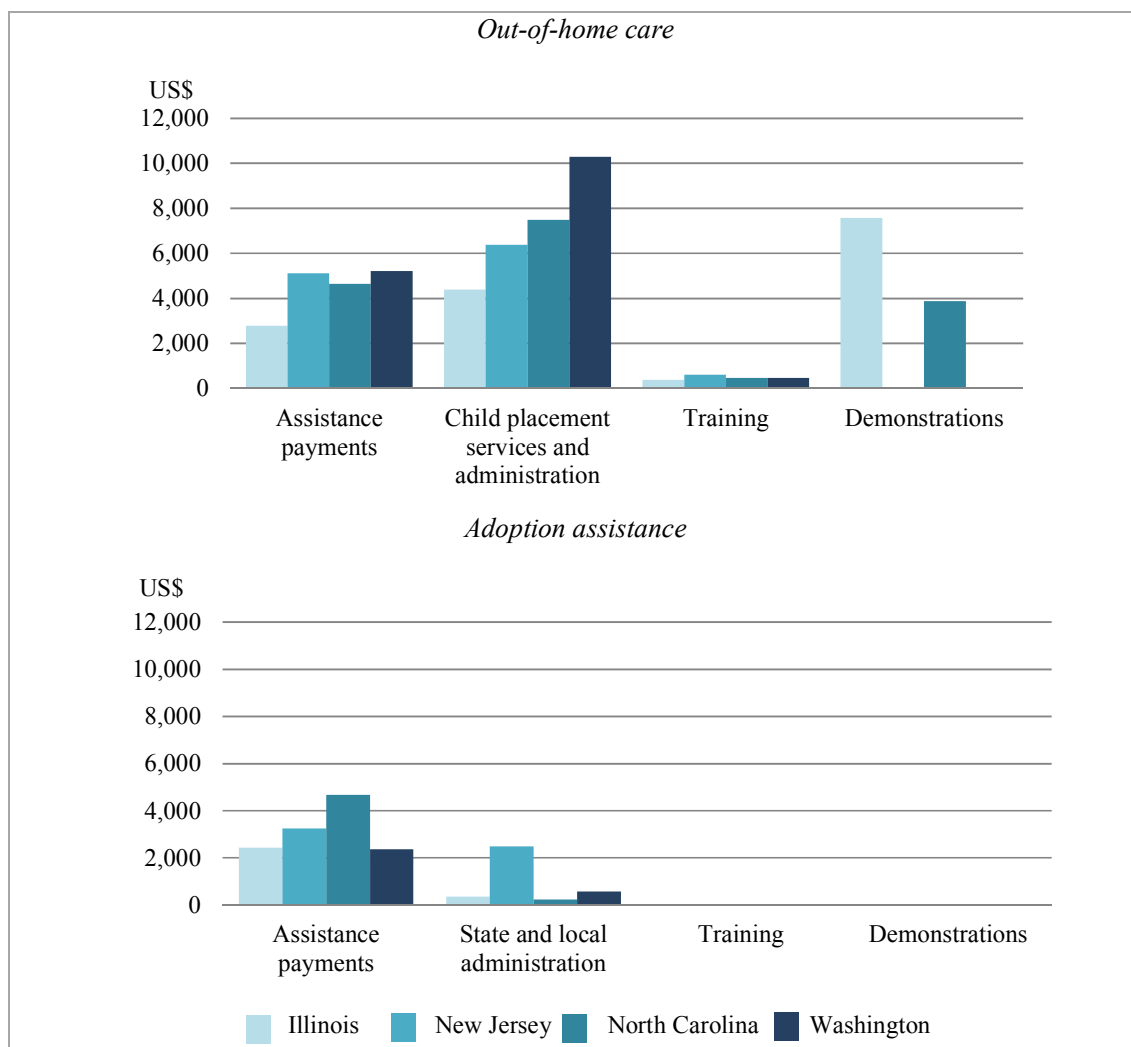
Source: Based on U.S. Congress, U.S. House of Representatives, Committee on Ways and Means (2004).

Notes: The figures refer to the average amount per caseload in 2002.

In terms of the age of children, all four states witnessed an increase in the proportion of children entering care as infants. However, for North Carolina and Washington this increase was more pronounced. The proportion of infants entering care rose by over 6 percentage points in North Carolina and by over 8 percentage points in Washington between the periods 1996-1998 and 2005-2009. In Illinois, the proportion of children entering care as infants rose by a comparatively more modest 2 percentage points.

For race, all four states witnessed a significant decline in the proportion of African American children entering care during the time period considered. The decline was particularly striking for New Jersey and Illinois. North Carolina, which had a lower percentage of African American children entering care to start with compared to those two states, also witnessed a marked decline in the proportion of black children placed in care between the periods 1996-1998 to 2005-2009.

Focusing on the placement setting of children, the four states experienced somewhat different trends. In Illinois, the proportion of children placed with relatives declined in the period immediately following the introduction of PBC, and then increased, returning to levels comparable to those prior to the enactment of PBC. North Carolina also experienced a significant increase in the proportion of children placed with kin following the implementation of PBC. However, in the two control states, where the share of children placed in kinship care at entry was significantly lower than in the treatment sates, this proportion increased much more rapidly.

In terms of permanency outcomes, all four states experienced a reduction in the share of reunifications, with North Carolina and Washington recording the largest declines. All states, with the exception of Illinois, experienced an increase in the share of adoptions between the period 1996-and the period 2005-2009. All four states also witnessed an increase in the share of children exiting through guardianship.

In terms of the contextual variables, the four states have somewhat similar populations, with relatively large proportions of urban and poor children. All states, with the exception of Washington, also have a relatively large proportion of African American children. In addition, all four states actively promote the timeliness of permanency outcomes and favor placement with kin.

As anticipated in the introduction to this chapter, these similarities are important given my decision to compare PBC and non-PBC states as distinct groups (see also chapter 6). They are also central for the validity of the interpretation of the ATE in the DID estimator. There are, however, some notable differences that warrant further discussion,

including trends for placement with related caregivers as well as for adoptions within thirty-six months of entering care. Other aspects that require additional attention are the differences in policies towards guardianship and the use of waiver demonstration programmes in the two PBC states. The fact that North Carolina has a different administrative framework compared to the other states could also have implications for the interpretation of results, since different types of administration can impact "child welfare funding, policymaking, licensing, training for workers, and more" (Child Welfare Information Gateway 2012c p.1). I return to discuss these aspects in chapters 8 through 10.

6 Differences in the timeliness of exits from out-of-home care among states that employ and do not employ PBC

6.1 The use of PBC and its relationship with timely permanency outcomes: introduction and outline of the chapter

This chapter addresses the first research question outlined in chapter 1, focusing on differences in the timeliness of exits in states that employ PBC compared to states that do not. According to the theory of social exchange (see chapter 2), PBC states should record more timely exits from care compared to the control states. Specifically, since states that employ this type of programme management tool tie the compensation of child welfare agencies, in whole or in part, to their performance with respect to specific outcomes, they should have a greater financial incentive to meet those quantitative targets. I would expect states that employ PBC, therefore, to record more timely exits from care compared to a set of control states.

The chapter consists of three parts. In the first part, I examine various measures of timeliness based on the multi-year, multi-state entry cohorts created with the AFCARS dataset, and focus on how these measures have changed over time for the two groups of states. In the second part, I conduct a multivariate statistical analysis, controlling for differences among the states considered in their out-of-home care populations as well as for trends in how such populations might have changed over time. Lastly, I discuss the main findings of my analysis and provide a synthesis of the main results.

6.2 The timeliness of exits from care: differences between PBC states and the control states

In this chapter, I examine different measures of timeliness (see also section 4.5). First, I focus on the average amount of time children spend in care.[101] I then consider the proportion of children who exit care in a timely manner, with timeliness defined in terms of a series of thresholds.[102]

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[101] As stated in chapter 4, this measure is right censored.

[102] These thresholds are: (1) *timely exits*, defined as those taking place within twenty-four months of a child's entry intro care, and (2) *untimely exits*, which are those occurring after twenty-four months of entry. I also use a more detailed classification of timely exits, with *very timely exits* defined as those taking place within twelve months of a child's entry intro care, and *somewhat timely exits* as those occurring between twelve and

The average amount of time children spend in care

To explore whether PBC states record more timely permanency outcomes, I started by examining the average amount of time children spend in care in PBC and non-PBC states. I employed the script *gsem* from the statistical software package Stata 13 to account for the fact that my data are right censored (see chapter 4). The comparison reveals that between 1996 and 2009, children in the two PBC states spent a significantly longer amount of time in care, on average, compared to the non-PBC states: 3.5 years versus 1.7 years. However, it also indicates that the mean amount of time spent in care decreased in the PBC states from around 3.5 years in the period 1996-1998 to around 2.8 years in the period 2005-2009, equivalent to a nearly 20 per cent decline (see Figure 6.1). In contrast, in the control states, the mean amount of time in care increased: from 1.6 years in the period prior to the implementation of PBC to 1.9 years by the second post-PBC period.

Figure 6.1. The average amount of time spent in care in PBC states and non-PBC states
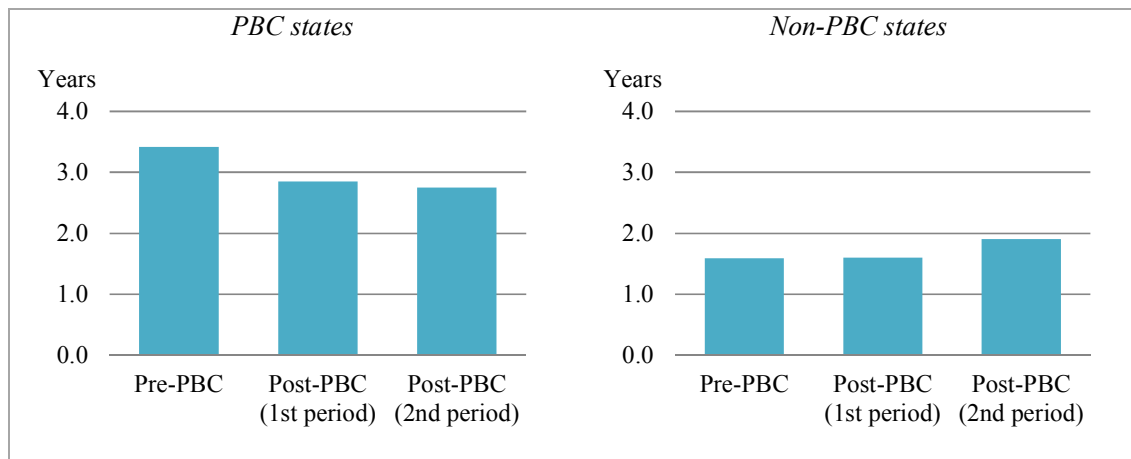
Note: See note to Table 5.1. The reported values refer to modelled averages and were computed based on all children entering care. See also Table A.6.1.

The proportion of timely exits

While the above comparison indicates that PBC states may have experienced a reduction in the average amount of time children spent in care, it does not shed light on whether exits in PBC states became more timely after the implementation of this programme management tool. To explore this, I computed the proportion of children who exited care in a timely

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twenty-four months of entry.

manner in the two groups of states. Based on this measure, I find that over the fourteen year period considered, approximately half of all children in the PBC states exited care in a timely manner compared to around 70 per cent of children in the non-PBC states.

Figure 6.2. The percentage of timely and untimely exits in PBC states and non-PBC states
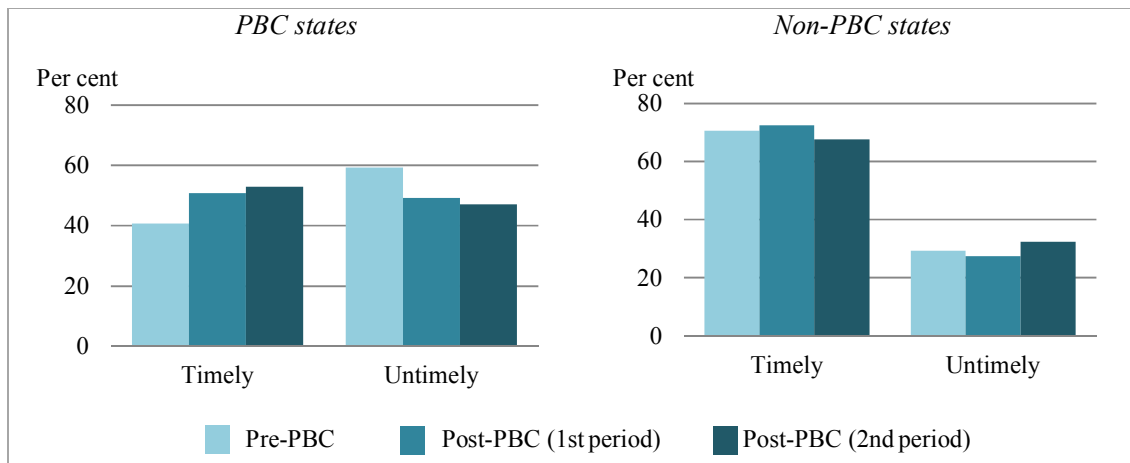
Note: The reported values refer to modelled proportions and were computed based on all children entering care. See also Table A.6.1.

While PBC states recorded relatively fewer timely exits from care, the gap in the percentage of timely exits between the two groups of states narrowed over time (Figure 6.2). Treatment states witnessed a statistically significant increase in the percentage of timely exits from care following the introduction of this programme management tool, while non-PBC states saw the timeliness of their permanency outcomes decline significantly during the same period. As of the period 2005-2009, the gap in the proportion of timely exits between the two groups of states was reduced by half compared to the period prior to the implementation of PBC.

Using the more detailed categorization of timeliness, I find that PBC states witnessed a statistically significant increase in the percentage of very timely exits: from 30 per cent in the period prior to the implementation of PBC to 33 per cent by the second post-PBC period. The percentage of children exiting care in a somewhat timely manner rose even faster during this period—by nearly 9 percentage points. Conversely, non-PBC states witnessed a significant decline in the percentage of children exiting care within twelve months of entry: from around 59 per cent in the period 1996-1998 to 50 per cent during the period 2005-2009. The percentage of children exiting care in a somewhat timely manner

increased in the period 1999-2004 and then remained unchanged during the period 2005-2009 in the two control states.

Figure 6.3. The percentage of very timely, somewhat timely and untimely exits in PBC states and non-PBC states
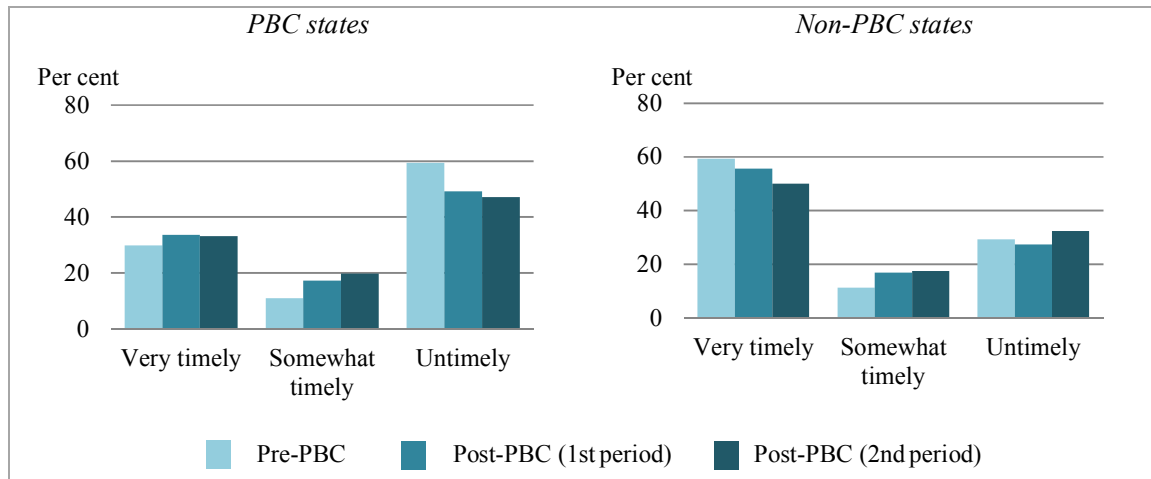
Note: See note to Figure 6.1.

Difference-in-difference estimator

Based on the above comparison, it is difficult to assess whether the treatment states recorded more timely permanency outcomes compared to the control states, given the difference in timeliness between the two groups of states prior to the implementation of PBC. To adjust for this difference, I computed the so-called DID estimator (see also section 4.7). Based on this comparison, I find that states that employed PBC fared significantly better than the counterfactual based on the two control states both in terms of the average amount of time spent in care and in terms of the proportion of children achieving permanency in a timely manner (Figure 6.4).

By the period 1999-2004, the percentage of timely exits in the treatment states was approximately 8 percentage points higher than would have been expected based on the counterfactual. By the period 2005-2009, the difference had grown even larger: to 15 percentage points, equal to nearly 29 per cent more than if the treatment states had followed the trend of the states that did not employ PBC. The average amount of time children spent in care in PBC states also declined during the period considered. Further, by the period 2005-2009, this average was significantly lower—nearly one year less—than the counterfactual based on the two control states.

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Figure 6.4. The average amount of time spent in care and the proportion of timely, very timely and somewhat timely exits for PBC states and non-PBC states: DID-only model

Average amount of time spent in care

Proportion of children exiting care in a timely manner

Proportion of children exiting care in a very timely manner

Proportion of children exiting care in a somewhat timely manner

PBC states
Counterfactual (based on non-PBC states)
Non-PBC states
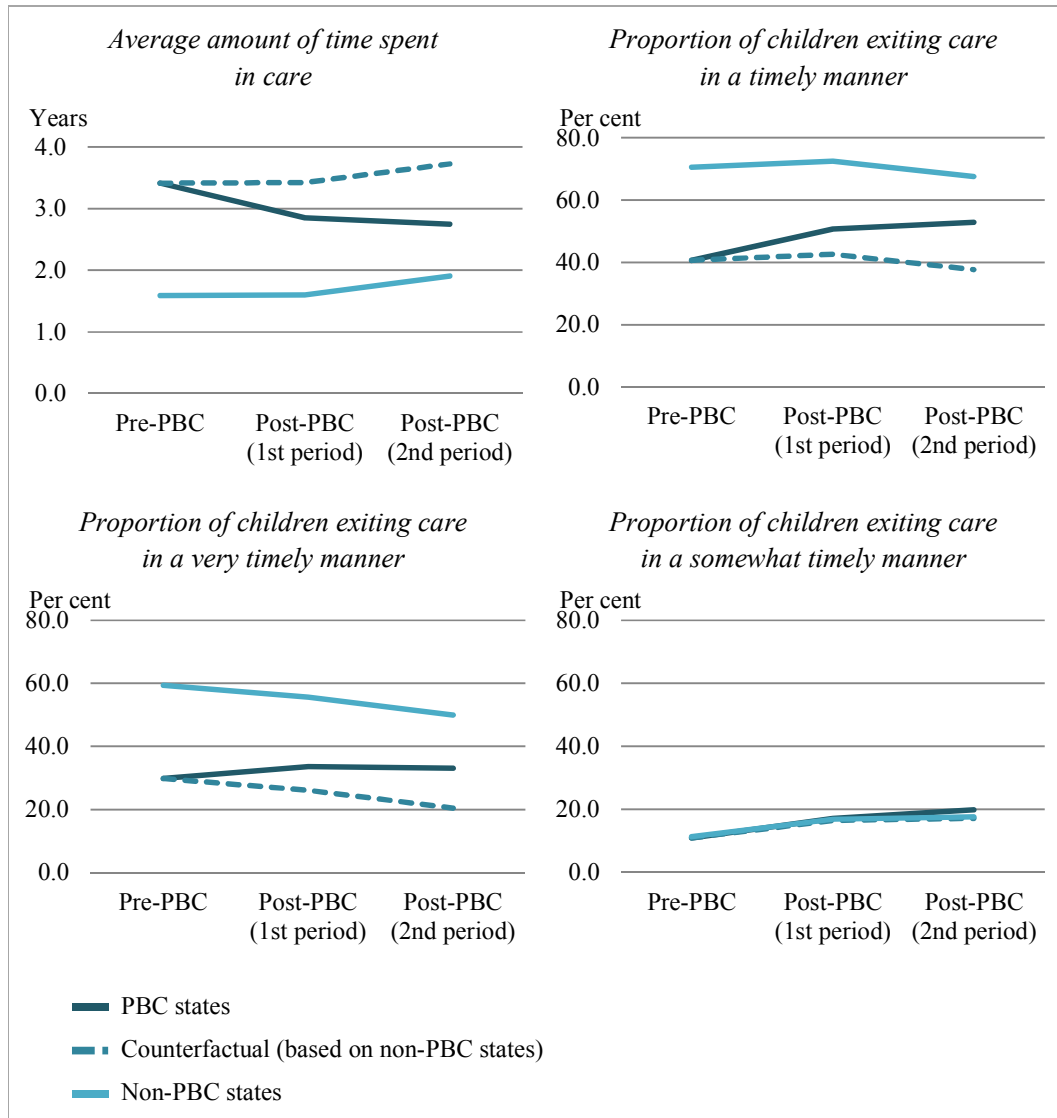
Note: The reported values refer to modelled averages and proportions and were computed based on all children entering care. See also Table A.6.1 and Table A.6.2.

In terms of the more detailed classification of timeliness, I find that even the relatively modest increase in the proportion of very timely exits recorded by states that employed PBC between 1996 and 2009 is highly significant compared to the counterfactual: nearly 13 percentage points, or 38 per cent more than expected. In contrast, because both groups of states recorded an increase in the proportion of somewhat timely exits during the period considered, the difference between the treatment states and the

counterfactual was smaller, though still statistically significant. The more detailed classification of timeliness, therefore, confirms that the use of PBC is positively associated with both very timely exits as well as somewhat timely exits from out-of-home care.

In order to more formally quantify these differences, I created three models which contain the DID estimator (see Table 6.1), expressed here as the interaction between the two groups of states and the three time periods considered. The outcome measures in the various models refer either to the continuous variable, amount of time spent by children in care (model 1), or to the dichotomous variables, indicating whether or not a child experienced a timely (model 2), a very timely (model 3) or a somewhat timely exit from care (model 4).[103]

Table 6.1. Schematic representation of the multivariate models

Covariates	Dependent variable	Statistical method
DID-only	Amount of time spent in care (model 1)	Regression for censored data
	Timely exits (model 2)	Logistic regression
	Very timely exits (model 3)	Logistic regression
	Somewhat timely exits (model 4)	Logistic regression
DID and time-invariant	Amount of time spent in care (model 5)	Regression for censored data
	Timely exits (model 6)	Logistic regression
	Very timely exits (model 7)	Logistic regression
	Somewhat timely exits (model 8)	Logistic regression
DID, time-invariant and time-varying	Amount of time spent in care (model 9)	Regression for censored data
	Timely exits (model 10)	Logistic regression
	Very timely exits (model 11)	Logistic regression
	Somewhat timely exits (model 12)	Logistic regression
DID-only	Amount of time spent in care (model 13)	Multilevel regression for censored data
	Timely exits (model 14)	Multilevel logistic regression
DID, time-invariant and time-varying (fixed effects)	Amount of time spent in care (model 15)	Multilevel regression for censored data
	Timely exits (model 16)	Multilevel logistic regression

Note: See also Table A.6.1-Table A.6.7 in annex.

To ensure that the DID estimators were more easily comparable across models, I calculated respectively the average marginal effects and the predicted probabilities of the

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[103] Initially, I had used multinomial logistic regression and ordinal logistic regression. Ultimately, I had to discard them because they violated critical assumptions (see section 4.8). While I do not include these models in this chapter, the predicted probabilities for the DID estimator were consistent with those obtained with the three logistic regressions.

DID estimator. The models confirm what already emerged visually from Figure 6.4, namely that regardless of the measure selected, the PBC states recorded a statistically significant improvement in the timeliness of exits from care compared to the control states.

6.3   The timeliness of exits controlling for various covariates

While the findings in the above section suggest that the introduction of PBC may have been positively associated with timely outcomes in the two treatment states compared to the two non-PBC states, it is important to control for differences between states in terms of the child populations served, as well as how those factors might have changed over time.[104] As stated in chapters 3 and 4, controlling for these factors is needed to ensure that improvements in the timeliness of permanency outcomes are not the result of other factors such as compositional changes in the child population served (Taylor and Shaver 2010).

To do so, I added a number of covariates, identified as being relevant in the literature (see also section 4.6), to the two statistical models described above. The covariates are as follows: (1) age of the child (squared),[105] (2) child is an infant, (3) sex, (4) child is African American, (5) child is placed with kin, (6) the child is assigned the permanency goal reunification, (7) the child is assigned the permanency goal adoption, (8) number of previous placement settings, and (9) TPR.[106] In a first iteration, I included only time-invariant covariates that contributed to the statistical significance of the models. I refer to these models as time-invariant, since they do not include time interactions (see Table A.6.3).

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[104] In this part of the analysis, I am chiefly interested in the DID estimator and the impact that including various covariates has on its interpretation. Because of this, I do not discuss the relationship between the covariates and the dependent variables in this chapter. I return to discuss some of them, namely the age, race and placement setting in chapter 8.

[105] I computed an alternate version of models 5 through 12 with the continuous variable age instead of the continuous variable age squared and the dichotomous variable infant (the results are reported in annex in Table A.6.3b and Table A.6.5b). As indicated in chapter 4, I chose to include the variables age squared and infant because of the non-linear relationship between timeliness and age of the child as well as the analytical relevance of the category infant.

[106] I also computed models 5 through 12 without the variables TPR and the child placement goal of adoption and reunification (the results are reported in annex in Table A.6.3c and Table A.6.5c). As discussed in section 6.4, their inclusion in the various models does not alter the interpretation of the DID estimator. My motivation for computing these additional models was that these covariates, besides being related to timeliness, can also be influenced by PBC; raising concerns of endogeneity (see also section 4.6).

Then, following the approach of Wulczyn, et al. (2009), I created a more complex model which includes time-varying interactions for three of the dichotomous covariates—black, infant and placement with kin (see Table 6.1).[107] I retained these time interactions since their inclusion improved the significance of the multivariate statistical models. Lastly, acknowledging both the hierarchical nature of my data—namely, that for each state, children are placed in care in agencies, within counties—as well as the need to control for unobserved variables, I repeated my analysis using a multilevel model (see *Table A.6.7*).

Model with time-invariant covariates

The results indicate that adding theoretically relevant time-invariant covariates, such as the age and race of children entering care as well as their placement setting[108] modifies the relationship between PBC and timeliness (Figure 6.5). Specifically, the gap in the percentage of timely exits between the target states and the counterfactual, while still positive, is less than half in the time-invariant covariate model compared to initial DID-only model (see Figure 6.4). Focusing on the average amount of time spent in care yields similar findings, with the difference between the PBC states and the counterfactual shrinking to half the size of the difference in the model without covariates.

Using the more detailed classification of timeliness, I find that for very timely exits the difference between the treatment states and the counterfactual remains positive, meaning that PBC states performed better than might have been expected based on the assumption of parallel trends. However, compared to the model which only included the DID estimator, the gap between the two was significantly smaller: around 2 percentage points (or 6 per cent) compared to 13 percentage points (or 38 per cent). For somewhat timely exits, the difference between the PBC states and the counterfactual actually increased, with the treatment states recording significantly more exits after twelve, but

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[107] The time-varying covariates were computed by multiplying the factor variable *year of entry* by the factor variable consisting of the interaction between the relevant covariate and the variable *state ID* classified here as states that employ and do not employ PBC.

[108] As with TPR and permanency goals, placement settings could also be endogenously related to the treatment and outcome considered since, as anticipated in section 1.7, changing the composition of children in various placement settings could be one of the ways for PBC states to achieve improved timeliness. I return to explore this relationship in greater detail in chapter 8.

within twenty-four months of entry compared to non-PBC states: 4 percentage points (or 21 per cent) versus 3 percentage points (or 13 per cent) in the DID-only model.

Figure 6.5. The average amount of time spent in care and the proportion of timely, very timely and somewhat timely exits for PBC states and non-PBC states: model with time-invariant covariates
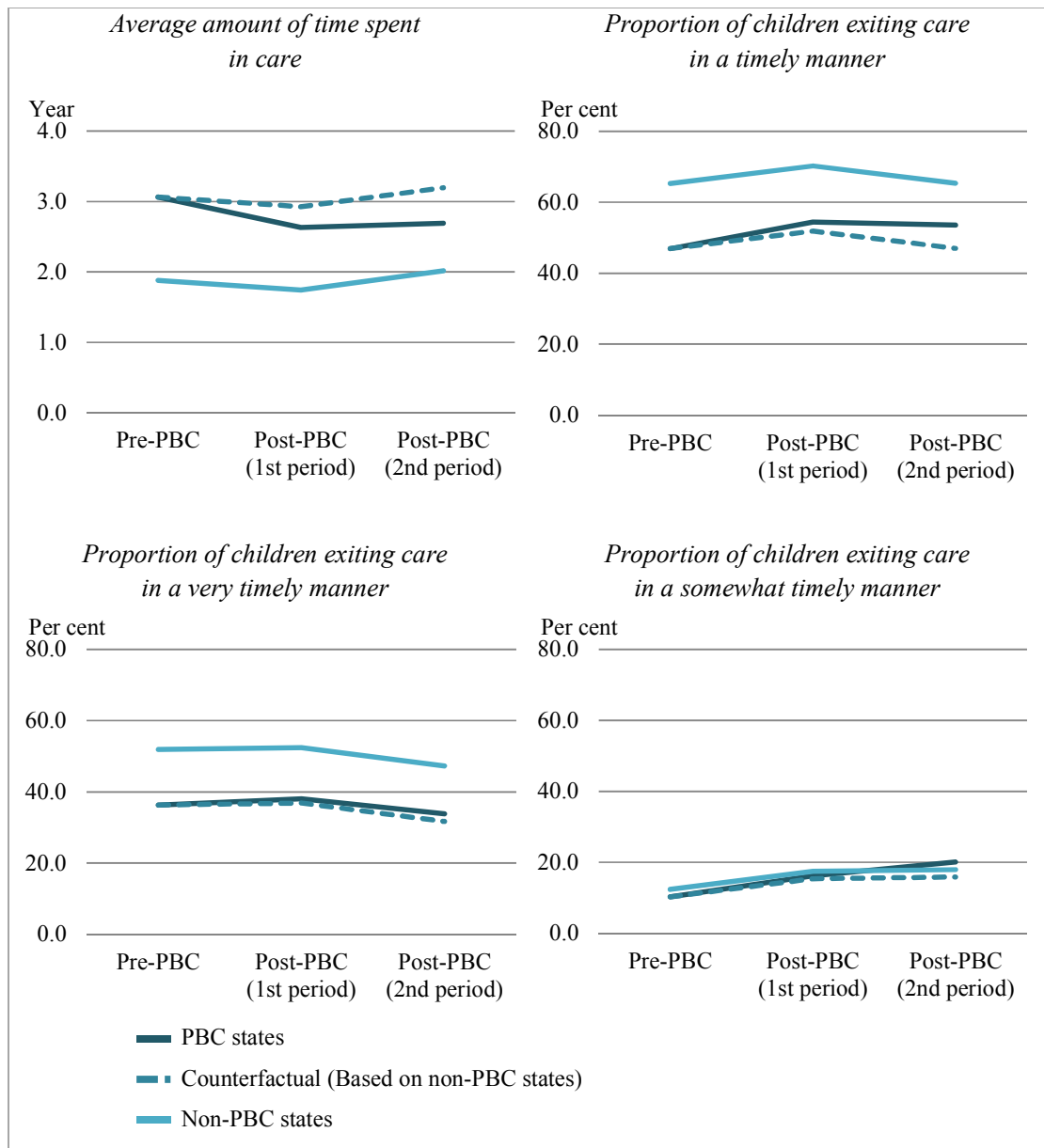
Note: See Figure 6.4. See also Table A.6.3 and Table A.6.4.

Figure 6.6. The average amount of time spent in care and the proportion of timely, very timely and somewhat timely exits for PBC states and non-PBC states: model with time-varying covariates
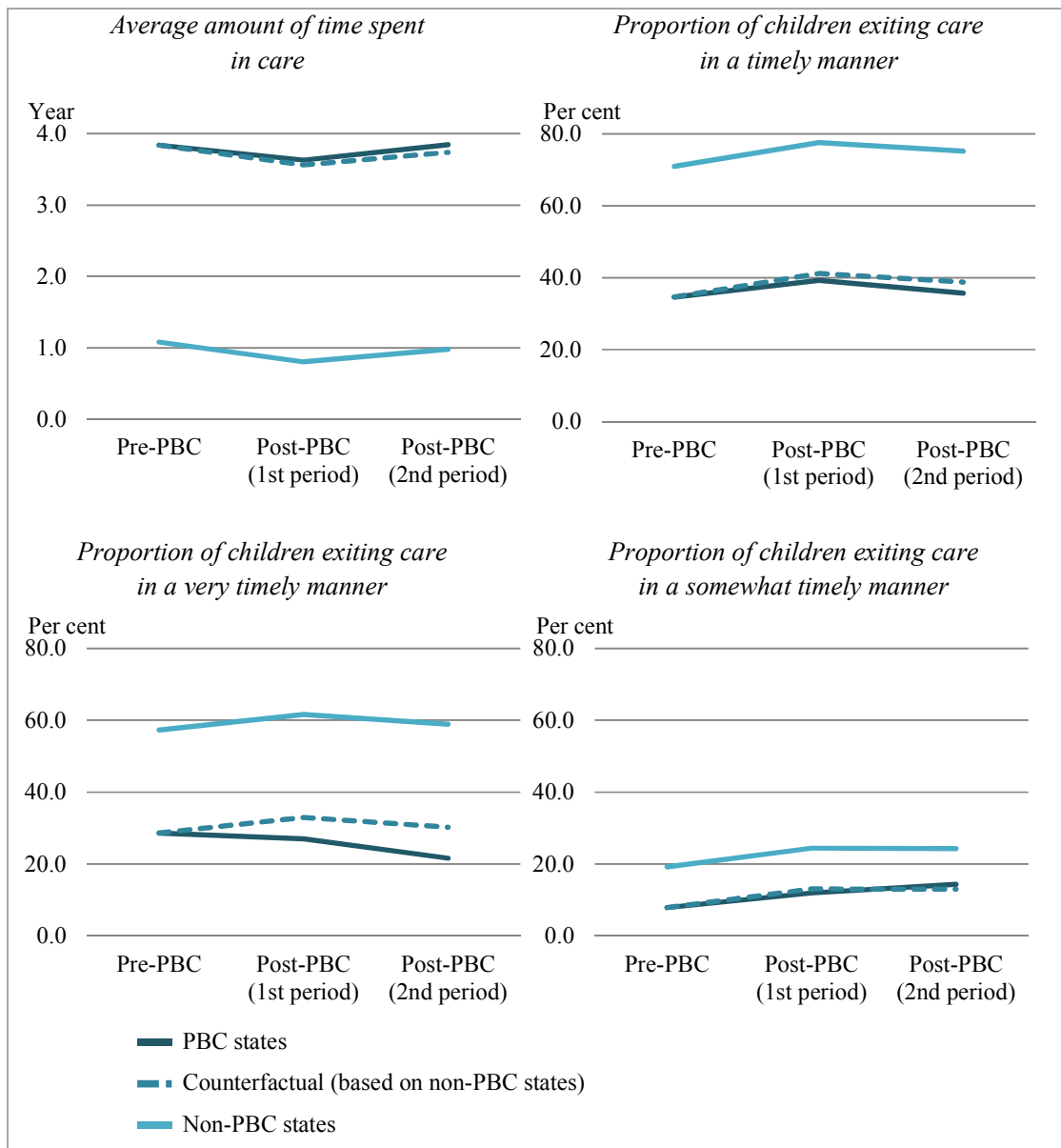
Note: See Figure 6.4. See also Table A.6.5 and Table A.6.6.

Model with time-varying covariates

For the model which includes interaction terms these differences are even more striking. Unlike in the time-invariant model, where the gap in the percentage of children who exited in a timely manner between the treatment states and the counterfactual was positive and statistically significant during the period 2005-2009, in the model with time-varying

covariates the percentage of children who exited care within twenty-four months of entry was slightly below the value of the counterfactual. The trend for the average amount of time spent in care closely mirrors this finding. This suggests that, after controlling for various theoretically relevant time-varying covariates, the states that employed PBC "performed" no better than the counterfactual based on the control states, meaning that the improvements in timeliness observed in the previous models are, at least in part, attributable to changes in the covariates and interactions included in the model.

For the more detailed classification of timeliness, I find that PBC states recorded significantly lower shares of very timely exits than would have been expected based on the counterfactual (see Figure 6.6). This stands in contrast to the DID-only and time-invariant models, where the two treatment states experienced an improvement in very timely exits from out-of-home care following the implementation of PBC compared to the two control states. Instead in the model with time-varying covariates, the percentage of very timely exit significantly declined in the PBC states, falling below the values recorded prior to the introduction of PBC. As of the period 2005-2009, the difference in the percentage of very timely exits for the treatment states compared to the counterfactual was negative rather than positive.

In contrast, even after controlling for time-varying covariates, the two PBC states recorded a slight increase in the proportion of somewhat timely exits, even compared to the counterfactual. During the first period following the introduction of PBC, the treatment states experienced a slightly lower share of exits of intermediate timeliness compared to the counterfactual. However, by the period 2005-2009, the percentage of somewhat timely exits in the treatment states was higher than what would have been expected based on the trend for the two control states.

Multilevel model

Having examined the relationship between the use of PBC and timeliness of exits for the treatment and control states, I conducted a Blinder-Oaxaca decomposition to quantify how much of the variability between the two groups of states could be attributed to the observed covariates. On the basis of this decomposition, I find that the time-invariant covariates included in the model "explained" about one-fourth of the difference in the timeliness of exits for states that employed PBC compared to the control states over the period 1996-

2009, while three-fourths of the difference remain "unexplained" by the covariates included in the model.

Given that much of the difference in the timeliness of permanency outcomes between the two groups of states remains unexplained, as well as the nested structure of the data, I decided to control for the unobserved time-invariant fixed-effects at the county level by using a multilevel model. Controlling for fixed-effects can reduce some of the bias on the DID estimator resulting from the omission of time-invariant variables which are correlated with both the treatment and the outcome—what is referred to as omitted variables bias (OVB). As indicated in chapters 3 and 4, multilevel models are useful to account for policy differences at the state and county level as well as secular trends that might affect the outcome.

I created two versions of the multilevel models: the first containing only the DID estimator (models 13 and 14) and the second the DID estimator as well as both the time-varying and invariant covariates (models 15 and 16).[109] The likelihood-ratio tests comparing the two fixed-effects models to original models were highly significant, suggesting that the use of a multilevel model is appropriate.

The results confirm that, after controlling for unobserved time-invariant covariates at the group level, the results are generally consistent with the ones obtained in the original models. For the DID-only fixed effects model, the average amount of time spent in care in PBC states declined significantly both in absolute terms and compared to the counterfactual. Likewise, the proportion of children exiting care in a timely manner was significantly higher than expected based on the assumption of parallel trends. However, compared to the original DID-only model (model 2), the gap in the proportion of timely exits between the treatment and control states was smaller, suggesting that unobserved omitted variables may have had a negative effect on the DID estimator. These findings are consistent with those for the mean amount of time spent in care. Specifically, I find that in the two PBC states the average duration in care declined significantly after the implementation of this programme management tool.

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[109] As above, my focus is the relationship between the outcome variable and the DID estimator, rather than the relationship of the dependent variable to the other covariates.

Figure 6.7. The average amount of time spent in care and the proportion of timely exits for PBC states and non-PBC states: fixed effect for the initial DID-only model and the model with time-varying covariates
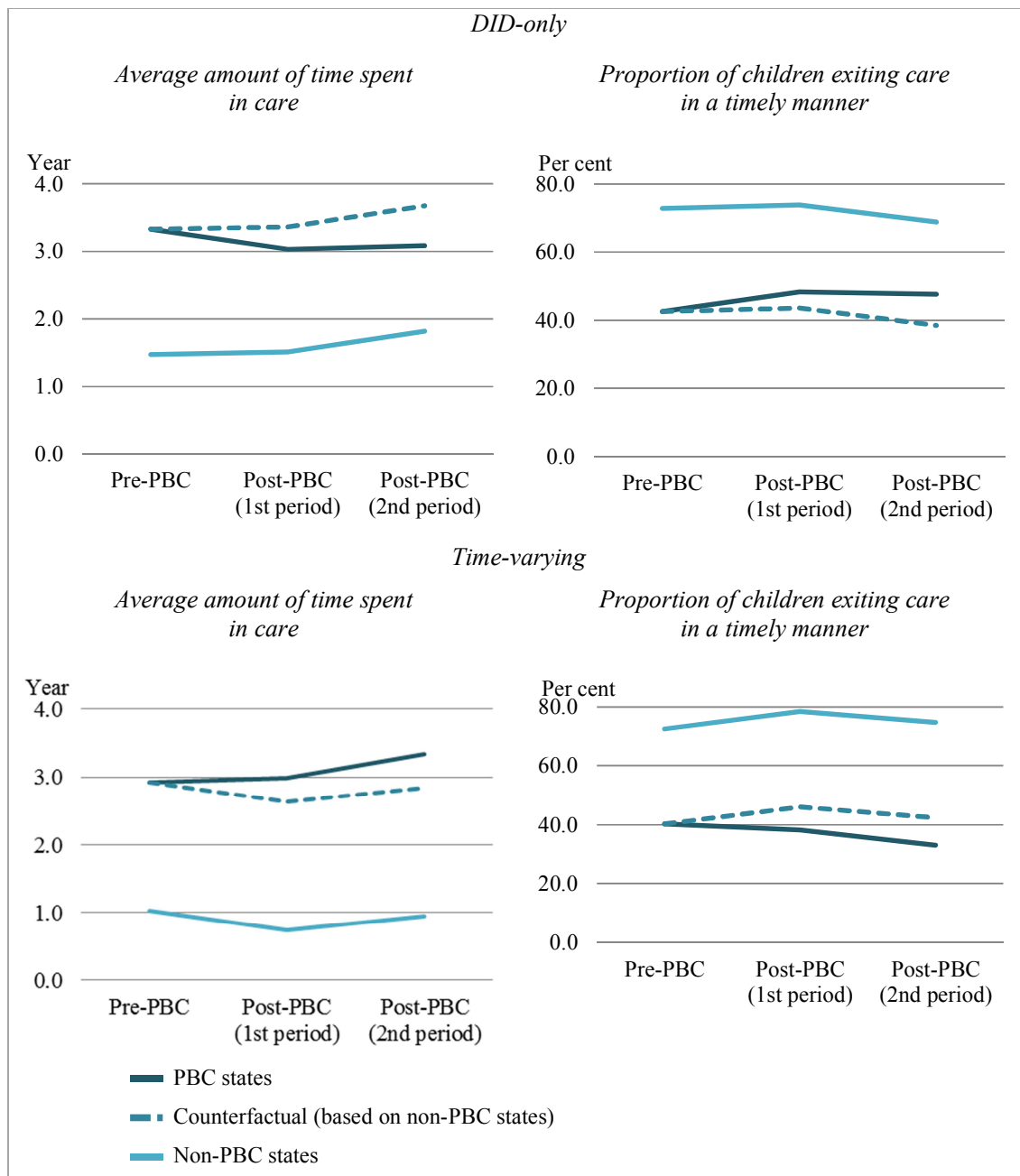
Note: See Figure 6.4. See also Table A.6.7.

In the more complex model which includes time-varying and invariant covariates, however, this relationship is reversed. Specifically, instead of the average amount of time spent in care declining in the two treatment states after the implementation of PBC, it slightly increased. Likewise, the percentage of children who exited care within twenty-

four months of entry declined and was smaller than in the counterfactual. Compared to the original time-varying model, in the time-varying model which controlled for fixed effects the difference was significantly larger.

6.4   Summary of the main findings and discussion

In this chapter I examined whether states that employed PBC experienced more timely exits compared to the control states. In order to do so, I followed two different approaches: one which simply compared trends for different groups of states and a second, which sought to control for basic differences in the child population as well as unobserved, time-invariant fixed effect at the county level.

The initial comparison reveals that states that employ PBC performed worse than the control states in terms of the proportion of timely exits from care and the average amount of time spent in care. However this approach has clear shortcomings since it does not control for differences in the initial levels of timeliness of exits.

Using a DID estimator provides greater insight into this relationship. I find that states that employed PBC experienced both an increase in very timely and somewhat timely exits compared to the counterfactual as well as a reduction in the average amount of time spent in care. In contrast, the control states witnessed a statistically significant decline in very timely exits from care and a small increase in the average amount of time in care. For somewhat timely exits, the non-PBC states also experienced a pronounced improvement in such exits, although to a lesser degree than the treatment states. This finding is consistent with a number of previous studies that have identified a positive relationship between PBC and the timeliness of permanency outcomes (Alpert, et al. 2011; Garstka, et al. 2012; Haslag, et al. 2012; Office of Program Policy Analysis and Government Accountability 2006; Shaver 2006; Vargo, et al. 2006).

However, once various covariates identified in the literature as being associated with timeliness of exits are included in the models, the relationship between PBC and timeliness of exits changes. Specifically, I find that states that employed PBC recorded lower shares of timely or very timely exits compared to the counterfactual, although the use of PBC remains associated with a positive and statistically significant change for somewhat timely exits in the second period following the implementation of PBC. Likewise after the inclusion of various covariates and relevant interactions, there is no significant difference between the average amount of time spent in care in the PBC states and the counterfactual based on the controls.

I also find that the relationship between the DID estimator and the outcome variable does not change as much when only time-invariant covariates are included in the model. The effect of including such variables is to reduce the "magnitude" of the relationship, but not change its overall interpretation. However, once time-varying covariates are included, the relationship between PBC and timeliness shifts from being positive to being negative.

Why are these findings important? And what do they mean? In my research, the "why" follows from what Taylor and Shaver (2010) have referred to as the need to establish "(w)hat are the observable, valid results of doing the work well". The authors, who openly recognize the difficulty of answering this question, nonetheless provide some "clues" as to how this might be done. Specifically, discussing the use of PBC, they observe that: "[v]alid here refers to demonstrating how the outcomes for children served through [PBC] contracts would be better than under the (counterfactual) pre-existing contracts", by among others, controlling for changes in various "extraneous factors" (Taylor and Shaver 2010 p. 303). In this chapter, I have sought to do this by employing a control group, including relevant time-varying and invariant covariates in the models and considering fixed effects. I acknowledge, however, that my analysis has a number of limitations. I briefly review seven of them below.

First, my research is constrained by a lack of detailed information on a number of factors known in the literature to be relevant for permanency outcomes, including organizational, managerial and clinical factors (Akin 2011; Garstka, et al. 2012; McBeath and Meezan 2009). As discussed in this chapter, I have sought to address this limitation by employing latent county-level variables in the multilevel models. Future research on the relationship between PBC and timeliness, however, might benefit from the inclusion of more detailed information on factors known to be associated with the amount of time children spend in care at the state, country or local level.

Second, as indicated in chapter 4, the counterfactual in my analysis is based on a series of states that did not employ PBC, and not a random sub-sample of children in the treatment states, "set aside" to test the effectiveness of PBC. As seen in section 5.5, however, there are a number of differences among the states considered besides PBC that may have contributed to the observed outcomes. These include differences in the type of administrative framework employed as well as in the use of subsidised guardianship waiver programmes. Further, the control states are likely to have adopted their own strategies to improve the timeliness of permanency outcomes, further confounding the interpretation of results.

Third, the DID assumption of parallel trends, which is central to this analysis, is violated when the treatment or control group change in different ways over time. I have sought to address this by clustering the standard errors at the state level (Bertrand, et. al 2003). However, as seen in chapter 5, other changes that are not accounted for with this approach might bias the interpretation of the ATE.

Fourth, as mentioned in previous chapters, the potentially endogenous nature of the relationship between the treatment and the outcome—namely that states that employ PBC are more likely to have lower levels of timeliness to start with compared to the non-PBC states—is not addressed in this analysis. This is something which could be considered in future research using more complex methods such as instrumental variable and time-lags for panels of states or counties.

Fifth, it is unlikely that the pre-PBC level of timeliness has no bearing on trends. Specifically, as mentioned in section 4.7, states which already record high levels of timeliness are likely to find it more difficult to further "improve" their performance compared to states where children spend prolonged amounts of time in care. I return to discuss some of these aspects briefly in chapter 10.

Sixth, even though the inclusion of variables such as TPR and various permanency goals does not alter the interpretation of the DID estimators in my analysis, their inclusion may, nonetheless, be problematic owing to their potentially endogenous relationship with PBC. Future research could address this issue by creating more complex models that treat various theoretically relevant variables as endogenous.

Seventh, interpreting the meaning of my findings is complicated by the fact that I am "bundling" together states which are characterized not only by very different out-of-home care populations and levels of timeliness of exits, but also have employed different models of PBC and with different policy objectives. For this reason, it makes sense to consider the two states that employed PBC separately. In chapter 7, I repeat this analysis, but differentiating between the two treatment states, namely Illinois and North Carolina.

In light of these limitations, my second question, "what do the findings mean?" is perhaps even more difficult to answer. However, while limited in scope, I believe that this chapter identifies a number of relevant findings. First, it highlights the difficulty of measuring the impact of a policy intervention such as PBC in the absence of an explicit monitoring framework. My efforts to control for observed differences across treatment and control groups are clearly necessary but not sufficient for exploring the relationships between PBC and timeliness. States that wish to introduce such programme management

tools, therefore, should establish *a priori* a monitoring system with well specified outcome measures, timelines and benchmarks, randomly assigning, where feasible, cases to the treatment and control groups as was done in the case of Wayne County, Michigan (see also chapter 10).

Second, my analysis confirm the importance of taking "each provider's population mix into account" (Lawler and Foster 2013). Specifically, Lawler and Foster argue that: "(w)hile there should be standard benchmarks, these targets must be adjusted to reflect the fact that not all providers serve the same mix of clients. Providers with the most challenging clients should not be penalized for doing the hardest job" (2013 p. 143). The findings in this chapter support this assertion. Specifically, they point to the need to take differences in the "client mix", i.e., the child population served, into account in assessing differences across states in their performance in expediting exits from care. Failing to do so may give an inaccurate sense of the differences across states in terms of the timeliness of permanency outcomes and may also confound the interpretation of trends over time. Controlling for such differences is particularly important in the context of the outcome measures CWOR and the CFSR; the two main tools used for monitoring state performance in relation to permanency, safety and child wellbeing (see also chapter 10).

Third, while the findings in this chapter need to be interpreted with caution, they may shed light on some of the "mechanisms" through which changes in the timeliness in permanency outcomes occur. Specifically, the fact that the positive relationship between PBC and timely exits from care—a relationship which had been identified in a number of previous studies (Garstka et al. 2012; Haslag, et al. 2012; Shaver 2006; Vargo, et al. 2006)—"disappears" once various theoretically relevant covariates and interactions are included, is, in my opinion, worthy of further exploration. In particular, it raises the possibility, as anticipated in chapter 3, that the use of PBC may be associated with changes in caseload profiles and placement settings, and that these, in turn, may be related to changes the timeliness of permanency outcomes. I address this aspect in more detail in chapter 8.

7 Differences in the timeliness of exits from care among states that employ different models of PBC

7.1 Differences between states that employ PBC: introduction and outline of the chapter

The analysis in chapter 6 indicated that, for some states, there may be a positive relationship between the use of PBC and the timeliness of exits. However, once time-varying covariates and interactions were included, this relationship shifted and was no longer positive. In this chapter I seek to better explore this relationship by focusing on differences in the timeliness of permanency outcomes between states that employed different models of PBC. This is important from a practice perspective since, as highlighted previously, states have adopted very different approaches in implementing PBC. Illinois uses a so-called caseload model, requiring child welfare agencies to move at least one-quarter of cases to permanency within twelve months. Agencies that are successful receive more funding per child, while agencies that fail to do so are penalised by receiving proportionally less funding per child served (Blackstone, et al. 2004; Taylor and Shaver 2010). States which have followed a similar approach include Missouri and Tennessee (Alpert and Meezan 2012; Planning and Learning Technologies, Inc. and The University of Kentucky 2009). Other states such as North Carolina or North Dakota, on the other hand, have employed pure pay-for-performance contracts, compensating child welfare agencies only if they achieve certain quantitative targets (Myslewicz 2008; Planning and Learning Technologies, Inc. and The University of Kentucky 2009).

Given these differences in policy approaches and objectives, I would expect the two states to follow different patterns in terms of the timeliness of exits (see also the second hypothesis in chapter 1). Specifically, I would expect North Carolina to experience a more pronounced increase in timely permanency outcomes following the introduction of PBC compared to Illinois, since child welfare agencies have more to "lose"— they are not paid at all—if they fail to achieve their stated objectives. However, because PBC in North Carolina is primarily used to promote adoptions (Myslewicz 2008), I expect most of the increase to be for somewhat timely exits, since relatively few adoptions occur within the first twelve months of a child's entry into out-of-home care (Akin 2011; Connell, et al. 2006; Wulczyn 2004).

The structure of this chapter mirrors that of the previous one, but focuses on differences between Illinois, North Carolina and the control states, instead of the difference between PBC and non-PBC states. First, I consider the difference between Illinois and North Carolina in terms of the average amount of time children spend in care as well as the proportion of timely exits from out-of-home care using the DID estimator. I then use the same multivariate statistical models outlined in chapter 6, but distinguishing between Illinois and North Carolina (see also Table 6.1). Lastly, I discuss and summarise the main conclusions of the chapter.

7.2 Differences among states that employ different models of PBC in the timeliness of exits from care

The average amount of time children spend in care

Based on the multi-year, multi-state entry cohorts created with the AFCARS dataset, I find that children in Illinois spent, on average, more time in out-of-home care than children in North Carolina. During the period 1996-2009, the mean stay in care was 3.6 years in Illinois compared to 2.2 years in North Carolina.

Figure 7.1. The average amount of time spent in care in Illinois and North Carolina
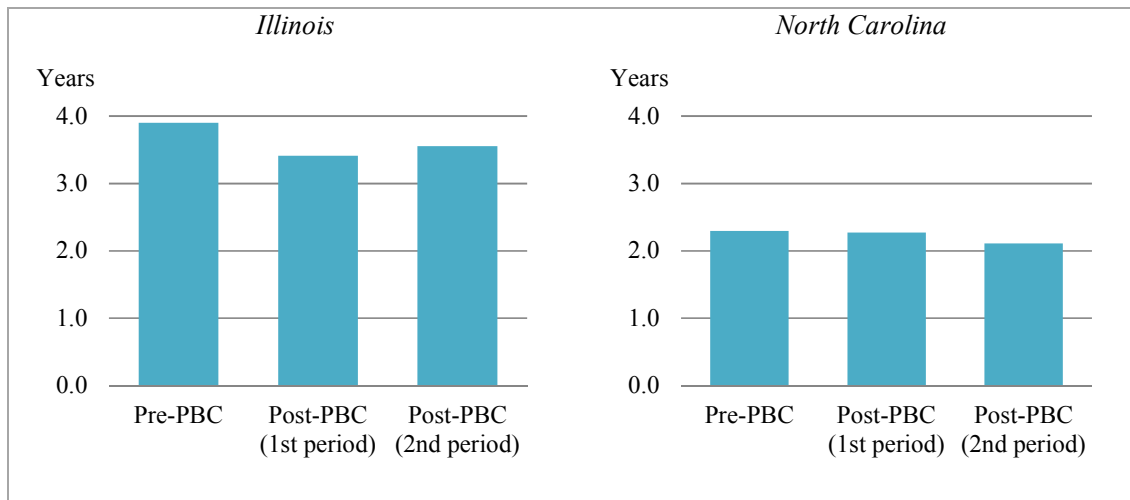
Note: See note to Table 5.1. The reported values refer to modelled averages. See also Table A.7.1.

While the gap in average amount of time spent in care between Illinois and North Carolina persisted after the implementation of PBC, the two states followed somewhat different trends during the timeframe considered. In Illinois, the average amount of time

children spent in care declined by half a year in the period immediately following the introduction of PBC, and then increased somewhat in the subsequent period. In contrast, North Carolina, which experienced almost no change in the mean amount of time children spent in care between the periods 1996-1998 and 1999-2004, witnessed a decline in the average duration in care during the period 2005-2009.

The proportion of timely exits

The comparison based on the proportion of timely exits confirms that Illinois and North Carolina are characterised by very different levels of timeliness. In Illinois, the percentage of children exiting care within twenty-four months of entry during the period 1996-2009 was significantly lower than in North Carolina—37 per cent versus 64 per cent. After the introduction of PBC, both states experienced an increase in the proportion of timely exits, although for Illinois this increase was nearly twice as fast as for North Carolina (see Figure 7.2).

Figure 7.2. The proportion of timely and untimely exits in Illinois and North Carolina
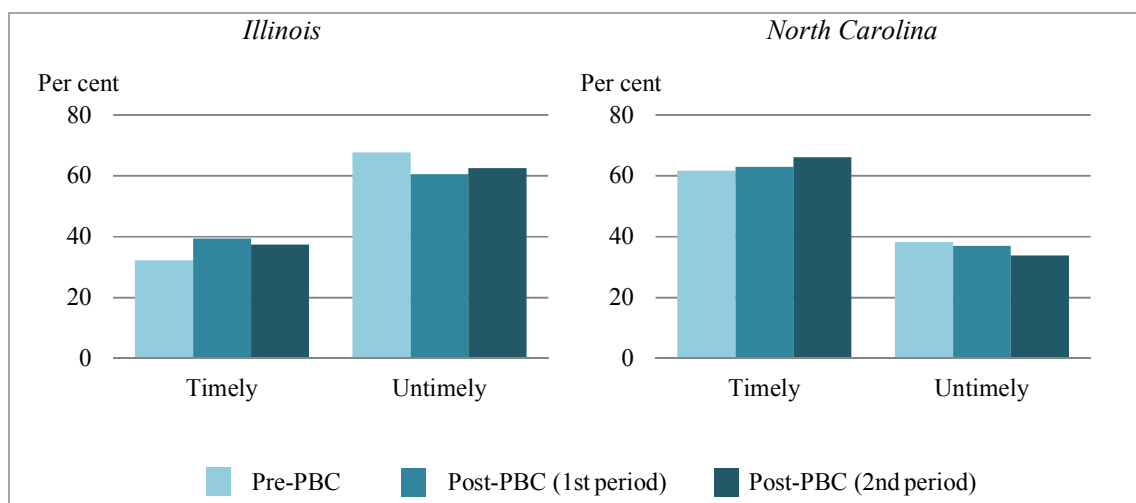
Note: The reported values refer to modelled proportions. See also Table A.7.1.

Focusing on the more detailed classification of timeliness, North Carolina recorded twice as many children exiting in a very timely manner compared to Illinois during the period 1996-2009. However, following the introduction of PBC, Illinois saw the percentage of children who exited care within twelve months of entry rise by around 4 percentage points, equal to a 17 per cent increase. Conversely, in North Carolina the

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percentage of children exiting care in a very timely manner declined by 10 percentage points, or by 20 per cent, between the period 1996-1998 and 2005-2009 (Figure 7.3).

Figure 7.3. The proportion of very timely, somewhat timely and untimely exits in Illinois and North Carolina
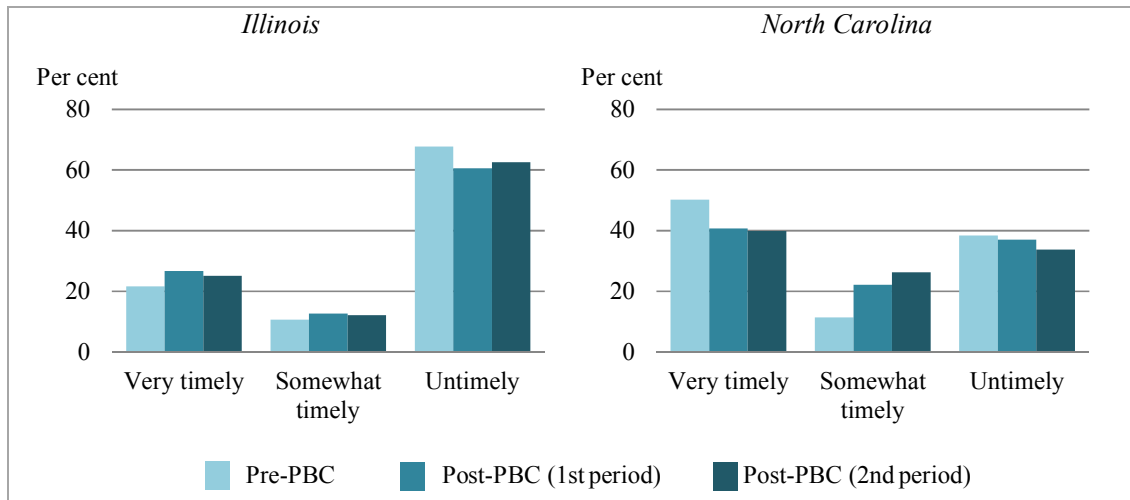
Note: See Figure 7.2.

While North Carolina experienced a decline in the proportion of exits within twelve months of entry, this decline was offset by a significant increase in the proportion of somewhat timely exits. Between the period 1996-1998 and the period 2005-2009, the proportion of children exiting after twelve months but within twenty-four months of entry rose by nearly 15 percentage points or 56 per cent. During the same period, Illinois registered much more modest gains in the proportion of somewhat timely exits: less than 2 percentage points equal to a 12 per cent increase compared to the period prior to the implementation of PBC.

Difference-in-difference estimator

As in the previous chapter, I am interested in comparing trends in the timeliness of exits in Illinois and North Carolina to those of the counterfactual based on the two control states. I used the same models[110] as those outlined in chapter 6, containing a DID estimator, expressed here as the interaction between the three groups of states—Illinois, North

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[110] These models have as dependent variables the amount of time children spend in care and timely, very timely, and somewhat timely exits from care, respectively.

Carolina and the control states—and the three time periods considered. Before running these models, I carried out a number of diagnostic tests (see also section 4.8).

Figure 7.4. The average amount of time spent in care and the proportion of timely, very timely and somewhat timely exits for Illinois and North Carolina: DID-only model
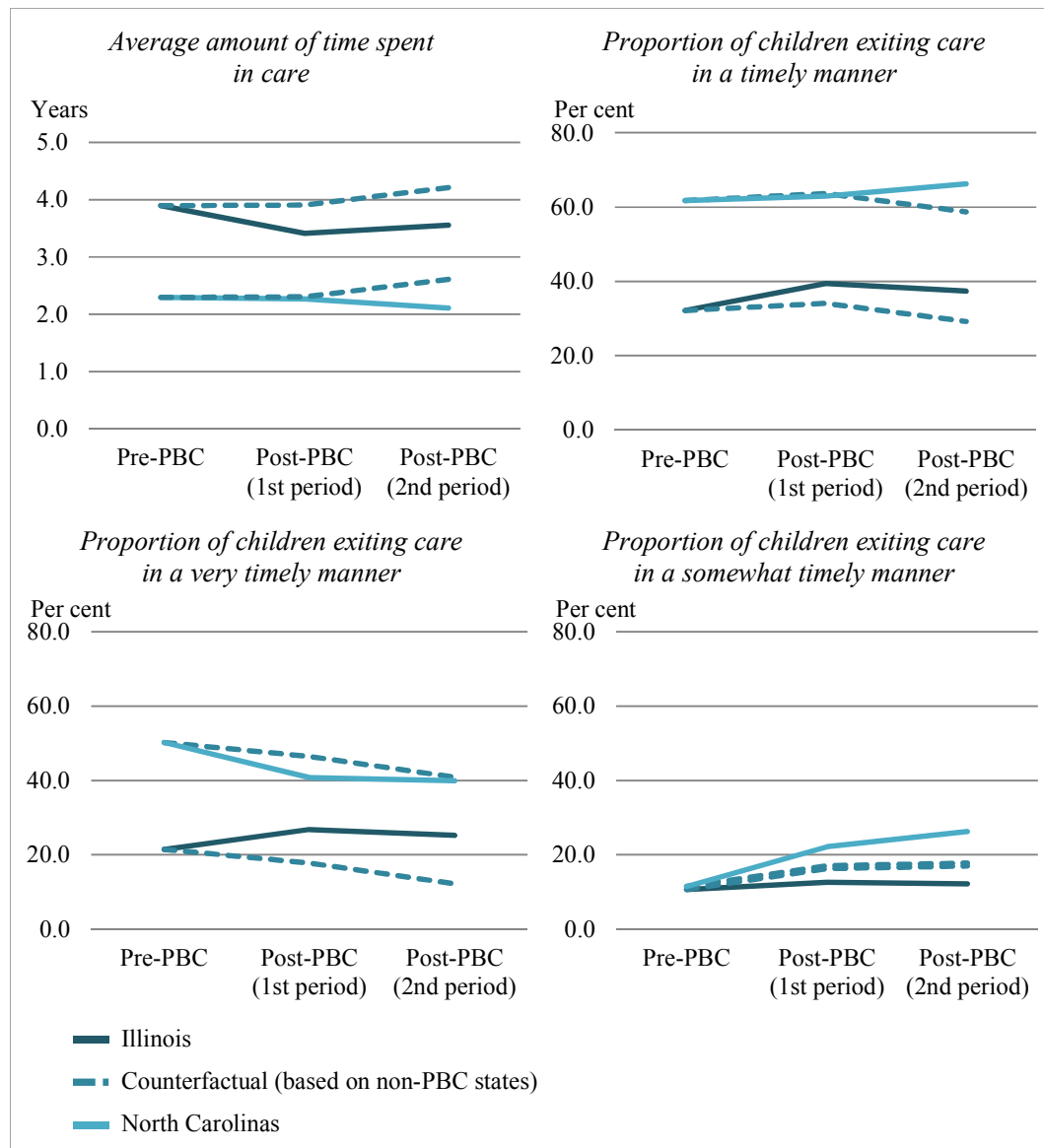
Note: The reported values refer to modelled averages and proportions and were computed based on all children entering care. See also Table A.7.1 and Table A.7.2.

I find that, based on the comparison with the counterfactual, children in both Illinois and North Carolina spent, on average, significantly less amount of time in care than would have been expected based on the assumption of parallel trends (see Figure 7.4). By the

period 2005-2009, the average amount of time children spent in care in both Illinois and North Carolina was, respectively, 16 per cent and 19 per cent less than expected based on counterfactual.

These findings are mirrored by those for the proportion of timely exits. The gap in the proportion of timely exits between Illinois and the counterfactual rose from 5 percentage points in the period 1999-2004 to over 8 percentage points in the period 2005-2009. North Carolina, also recorded a significantly larger share of exits within twenty-four months of entry than would have been expected based on the trend for non-PBC states: over 7 percentage points more by the period 2005-2009.

In terms of the more detailed classification of timeliness, I find that Illinois recorded a statistically significant increase in the proportion of very timely exits compared to the control states. In contrast, North Carolina witnessed a significant decline in the proportion of exits within twelve months of entry compared to the counterfactual between 1996-1998 and 1999-2004. By the period 2005-2009, however, the proportion of very timely exits in North Carolina had converged to the value of the counterfactual.

For somewhat timely exits, I find that the two states experienced opposite trends. North Carolina witnessed a significant increase in the proportion of exits occurring after twelve but within twenty-four months of entry compared to the counterfactual scenario. The percentage of somewhat timely exits in North Carolina doubled between the period 1996-1998 and the period 1999-2004, and increased by nearly another 20 per cent during the subsequent period. In contrast, Illinois recorded a significantly lower proportion of somewhat timely exits from care compared to the counterfactual. Even though the percentage of somewhat timely exits increased in Illinois following the introduction of PBC, this increase was significantly less than would have been expected based on the trend for the two control states.

7.3   The timeliness of exits controlling for various confounding factors

As in chapter 6, I created a number of models which included, in addition to the DID estimator, selected time-invariant covariates identified in the literature as being associated with the timeliness of exits (see Table 6.1). To these models, I then added time-varying interactions for three dichotomous variables—black, infant and placement with kin. Lastly, I computed two multilevel models using the more detailed classification of the state groups, the first focusing only on the DID estimator and the second including both time-varying and invariant covariates.

Figure 7.5. The average amount of time spent in care and the proportion of timely, very timely and somewhat timely exits for Illinois and North Carolina: model with time-invariant covariates
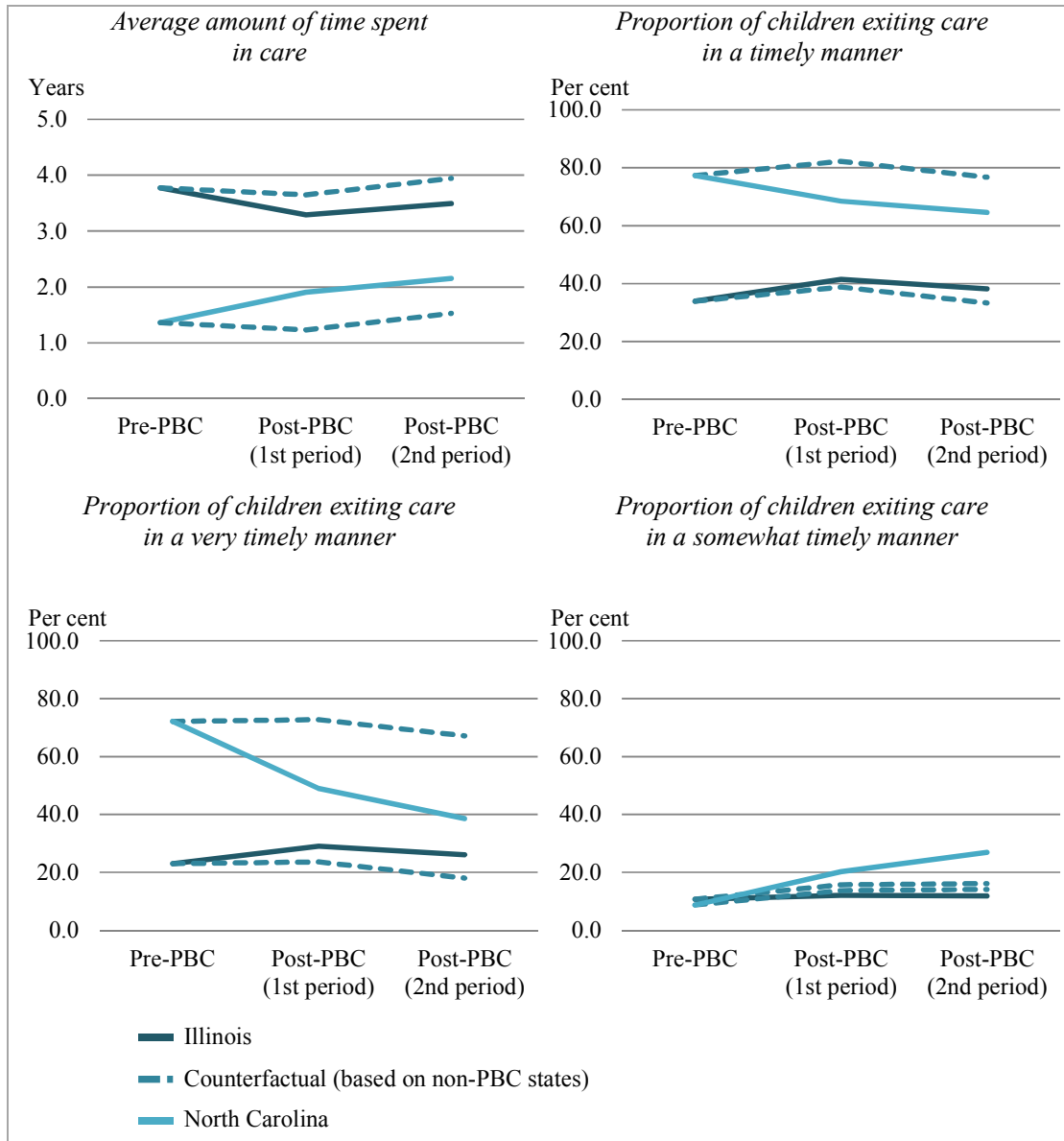
Note: See Figure 7.4. See also Table A.7.3 and Table A.7.4.

Model with time-invariant covariates

As in the previous chapter, my analysis confirms the importance of controlling for various covariates (see Figure 7.5). This is particularly true for North Carolina, where the relationship with the counterfactual is "reversed" once time-invariant covariates are included in the model. Specifically, the average amount of time spent by children in care

in the state increased, becoming significantly higher than expected based on the assumption of parallel trends. Likewise, the proportion of children exiting care in a timely manner declined, falling significantly below the counterfactual based on the controls. In contrast, in Illinois the average amount of time in care remained significantly lower than the counterfactual, while the proportion of exits within twenty-four months of entry remained significantly higher, albeit, in both cases, less than in the initial DID-only model.

In terms of the more detailed classification of timeliness, I find that in the model with time-invariant covariates, Illinois continued to record a significantly higher percentage of very timely exits compared to the counterfactual—nearly 8 percentage points or 31 per cent more—though significantly less than in the initial DID-only model. For North Carolina, on the other hand, the proportion of very timely exits compared to the counterfactual was significantly lower in the model with time-invariant covariates, suggesting a negative association between the use of PBC and timeliness of permanency outcomes once relevant variables were included.

For somewhat timely exits, Illinois continued to perform "worse" than expected based on the counterfactual, albeit slightly better than in the DID-only model. Conversely, for North Carolina the inclusion of time-invariant covariates resulted in an even higher percentage of children exiting care after twelve months but within twenty-four months of entry. Specifically, whereas in the initial DID-only model North Carolina recorded 32 per cent more somewhat timely exits than the counterfactual, in the model with time-invariant covariates this difference rose to 48 per cent more.

Model with time-varying covariates

Focusing on the models with time-varying covariates, I find that including such interactions significantly alters the relationship between the use of PBC and the timeliness of exits, particularly for Illinois. Specifically, the average amount of time children spent in care, instead of declining, slightly increased and was no longer significantly better than the counterfactual. Likewise, the percentage of children who exited care in a timely manner in Illinois shifted to being more than 4 percentage points below the counterfactual, compared to 5 percentage points above the counterfactual in the model with time-invariant covariates. In North Carolina, the inclusion of relevant interactions also has an impact on the timeliness of permanency outcomes. Specifically, children continued to spend, on average, a longer amount of time in care after the implementation of PBC compared to the period

1996-1998, and significantly more than the counterfactual. Likewise, the percentage of children exiting care within twenty-four months of entry remained significantly lower than expected as in the model with time-invariant covariates (see Figure 7.5 and Figure 7.6).

Figure 7.6. The average amount of time spent in care and the proportion of timely, very timely and somewhat timely exits for Illinois and North Carolina: model with time-varying covariates
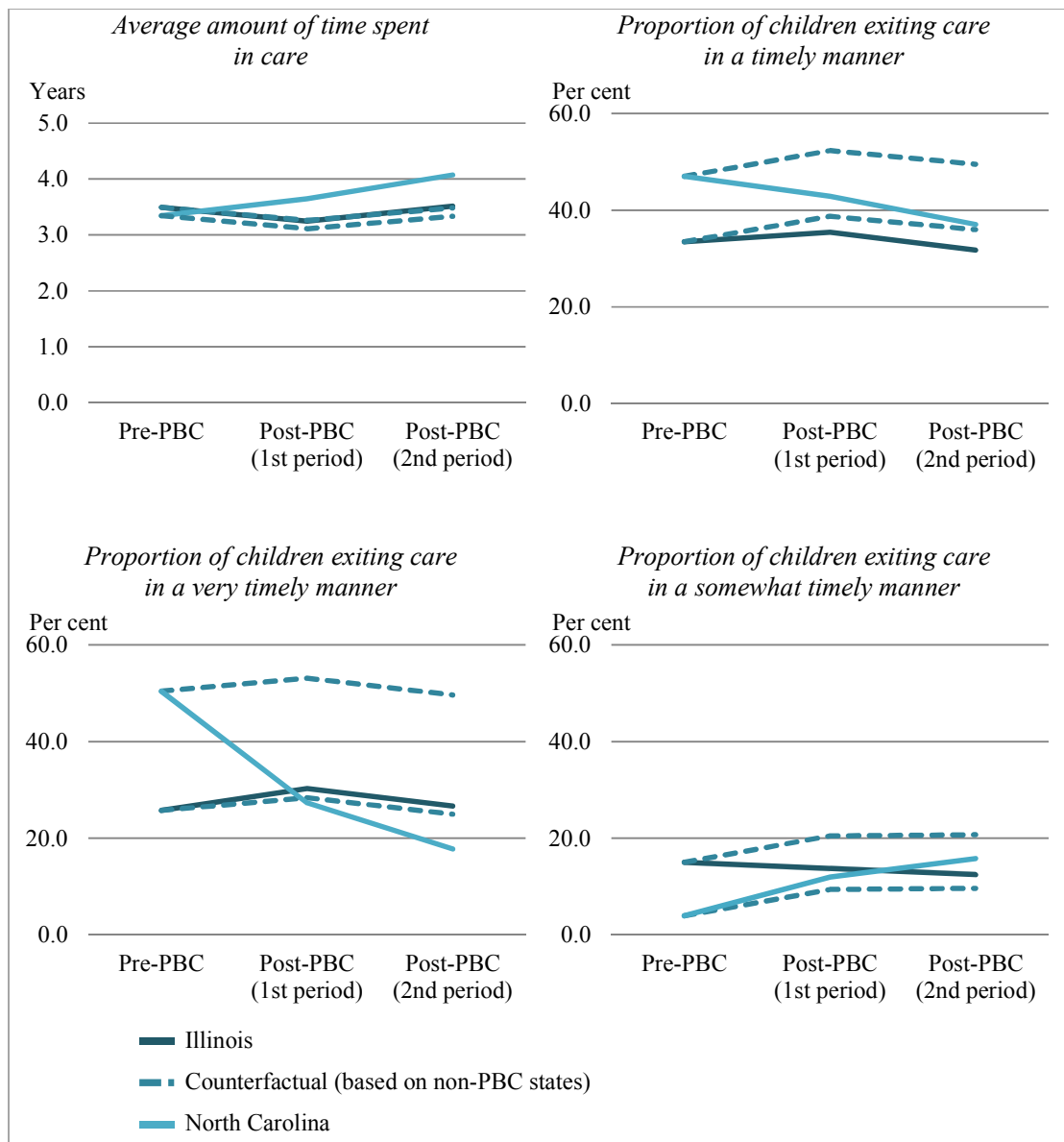
Note: See Figure 7.4. See also Table A.7.5 and Table A.7.6.

My analysis also suggests that the inclusion of time-varying covariates modifies the relationship between very timely exits and the use of PBC. For Illinois, while the

proportion of exits within twelve months of entry remained slightly higher than the counterfactual, the difference was much smaller than with either the DID-only or time-invariant model (Figure 7.6). For North Carolina, on the other hand, there was relatively little difference between the time-varying and invariant models, with the proportion of very timely exits from care remaining significantly lower than expected in both models.

Focusing on somewhat timely exits, I find that Illinois experienced a modest decline in the proportion of exits after twelve but within twenty-four months of entry in the model which includes time-varying covariates. Further, Illinois recorded nearly half as many somewhat timely exits as expected based on the trend for two states that did not employ PBC. In contrast, after controlling for various time-varying covariates, the proportion of somewhat timely exits in North Carolina quadrupled between the periods 1996-1998 and 2005-2009. Compared to the counterfactual, the percentage of somewhat timely exits in North Carolina was nearly 6 percentage points higher than expected.

Multilevel model

Using multilevel models,[111] I find that the results of the two models—one consisting only the DID estimator and the other containing time-varying and invariant covariates, in addition to the DID estimator—are consistent with those obtained in the original models. For the DID-only fixed effects model, both Illinois and North Carolina witnessed a modest reduction in the average amount of time children spent in care (see Figure 7.7). In both states, the average duration in care was significantly less than the trend based on the counterfactual. Likewise, both states experienced a significantly higher proportion of children exiting care within twenty-four months of entry compared to the trend based on the control states. However, once various time-varying and invariant covariates were included in the fixed-effects model, the relationship between the use of PBC and the timeliness of permanency outcomes changed. Again, this is consistent with the original models. Further, the levels of timeliness in the fixed effects models are somewhat lower than those in the original model, suggesting that unobserved, time-invariant variables at the county level may be negatively associated with the timeliness of exits in the two treatment states considered.

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[111] The likelihood-ratio tests comparing the fixed-effects models to original models were highly significant, suggesting, as in the previous chapter, that the use of multilevel models is appropriate.

Figure 7.7. The average amount of time spent in care and the proportion of timely exits for Illinois and North Carolina: fixed effect for the initial DID-only model and the model with time-varying covariates
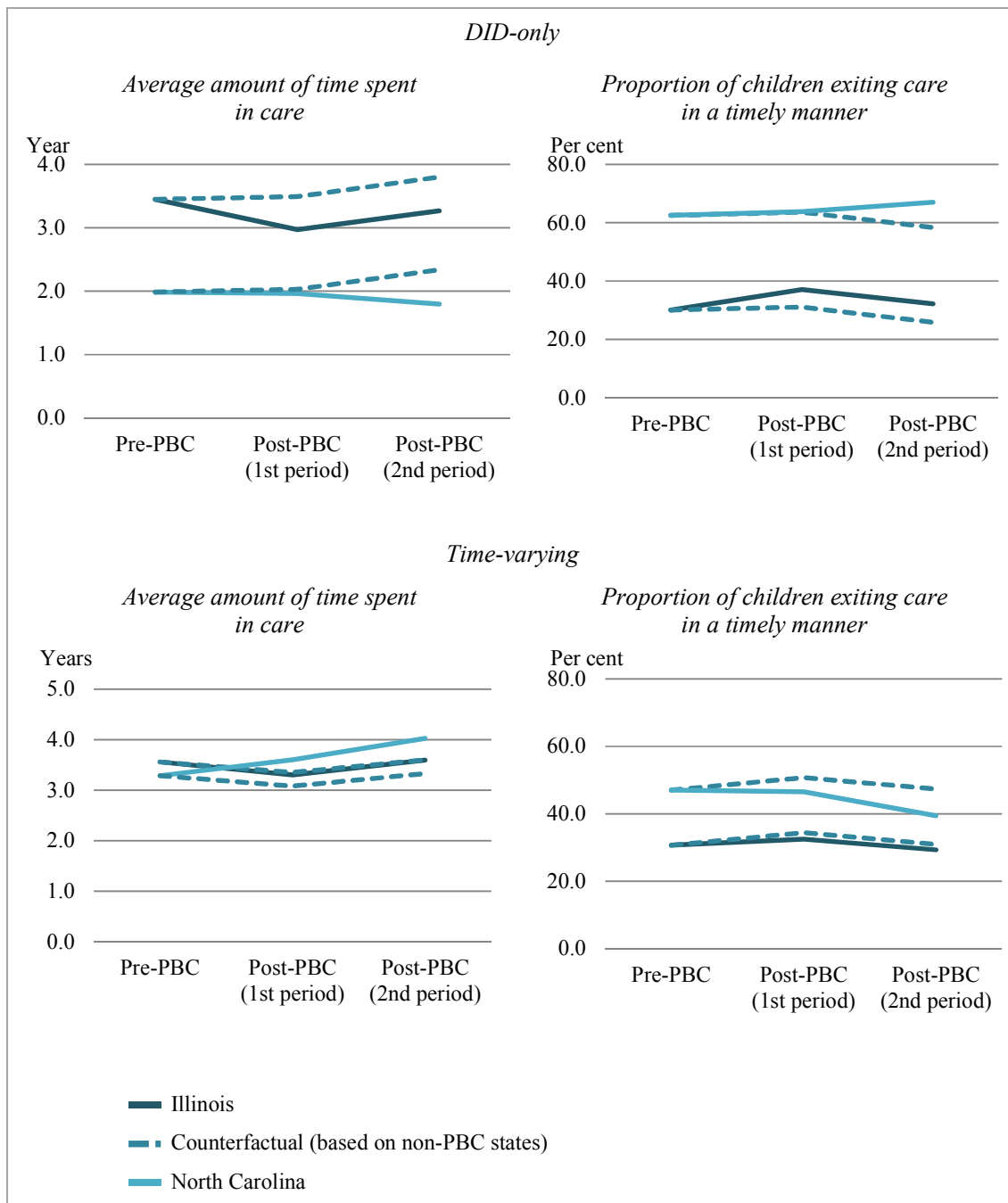
Note: See Figure 7.4. See also Table A.7.7.

7.4 Why did the proportion of somewhat timely exits increase in North Carolina?

The analysis above suggests that, while neither of the states that employed PBC recorded a significant improvement in the timeliness of exits compared to the non-PBC states during

the period 1996-2009, after controlling for caseload profiles and placement settings, North Carolina experienced an improvement in the proportion of somewhat timely exits. What factors might have contributed to this increase? Reports prepared by the North Carolina Department of Health and Human Services (2001, 2007) point to a number of possible explanations, including the increased emphasis given to promoting adoptions and guardianship for children who were unable to exit care in a very timely manner through reunification. To explore this relationship, I examined whether there had been changes in North Carolina's permanency outcomes for children exiting care in a very timely and somewhat timely manner during the period 1996-2009.

What emerges is that while, overall, the average annual number of adoptions and reunifications occurring within twenty-four months of entry remained relatively constant over the period considered, both adoptions and reunifications became more delayed. Specifically, between the period 1996-1998 and the period 2005-2009, the average annual number of children exiting care in a somewhat timely manner to adoption or reunification increased by nearly fourfold and by over twofold, respectively (Figure 7.8). At the same time, the average annual number of reunifications and adoptions occurring within twelve months of entry declined significantly.

Figure 7.8. Average annual number of children exiting care in North Carolina in a very timely and somewhat timely manner by type of permanency outcome
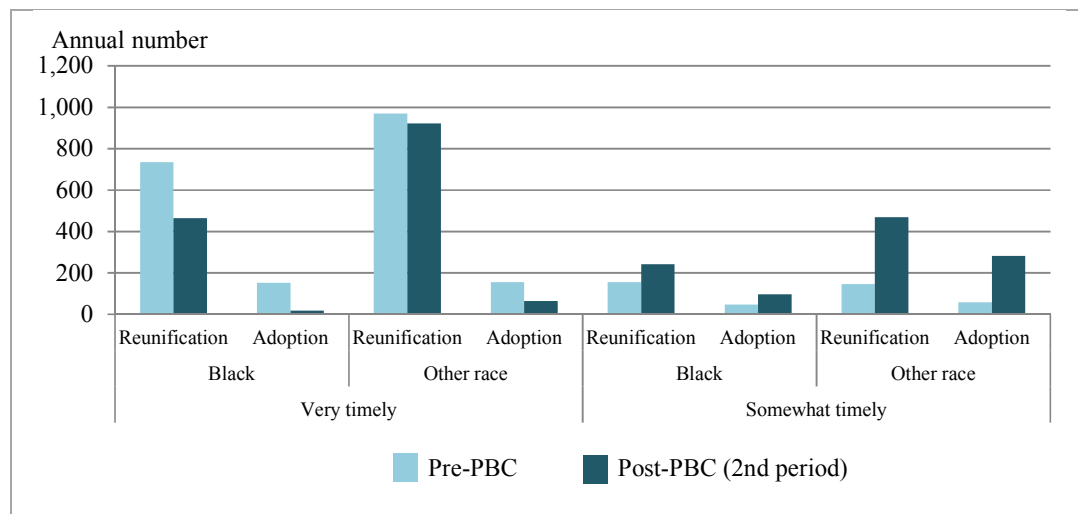
Note: See table A.7.8.

Strikingly, not all groups of children experienced the same increase for somewhat timely exits. Among African American children, the average annual number of children

exiting care in a somewhat timely manner to adoption or reunification increased significantly less than for children of other racial backgrounds. At the same time, the average annual number of African American children exiting to adoption or reunification in a very timely manner declined much more rapidly than for children of other races. As a result, while the use of PBC may have been associated with improved permanency outcomes for somewhat timely exits in North Carolina, not all groups of children appear to have benefitted from this change (see also chapter 8 for a more detailed discussion of the relationship between race and timeliness of exits).

7.5   Summary of the main finding and discussion

In this chapter I sought to explore whether states that employed different models of PBC experienced different outcomes in terms of the timeliness of exits. As in the previous chapter, I started by comparing various measures of timeliness across the two states. This comparison revealed that, while North Carolina recorded a larger proportion of timely exits compared to Illinois, the gap between the two states narrowed over time; a finding which is somewhat at odds with my second hypothesis according to which states that employed more stringent models of PBC would be expected to record more timely exits from care compared to states that use PBC merely as an incentive to promote better performance.

The comparison using the DID estimator suggests that both Illinois and North Carolina experienced a significant increase in the proportion of timely exits as well as a reduction in the average amount of time children spent in care compared to the counterfactual based on the control states. For Illinois, most of this change was due to an increase in the proportion of very timely exits, while for North Carolina it was primarily the result of higher shares of children exiting care in a somewhat timely manner. This finding is consistent with previous research that identified a positive relationship between the use of PBC and timeliness of exits (see also chapter 6). However, as anticipated in section 4.7, this result needs to be interpreted with caution. Specifically, there are a number of policy and contextual factors besides PBC that may confound the interpretation of these results. An example of such factors might be the subsidised guardianship waiver programme (see also section 5.5).

The chapter also confirms what had already emerged in chapter 6, namely that after controlling for various time-varying and invariant covariates, the relationship between PBC and timeliness is no longer positive, suggesting that the variables and interactions included in the models may be related to improvements in timeliness recorded by the two PBC

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states. Both Illinois and North Carolina recorded significantly lower proportions of timely exits compared to the counterfactual by the period 2005-2009. However, North Carolina witnessed a larger share of somewhat timely exits than expected based on the trend for states that did not employ PBC. Part of this increase occurred as a result of a shift from very timely to somewhat timely exits during the period considered. However, while these findings suggest a positive relationship, owing to limitations in the research design and data source employed in the study (see also chapter 4), I am unable to make inferences about the causal nexus between the use of PBC and improvements in somewhat timely exits for North Carolina. A preliminary analysis suggests that part of this gain may be associated with changes in the timeliness of various permanency outcomes (see also chapter 9).

It is notable that the findings in this chapter are at odds with those reported in the two rounds of CFSR. Specifically, in both rounds of the CFSR, Illinois scored below the national median in terms of both the percentage of children who were reunified with their families within twelve months as well as those who were adopted within twenty-four months of entry.[112] North Carolina, on the other hand, exceeded the federal standards for both adoption and reunification in the second round of CFSR, though not in the first (North Carolina Department of Health and Human Services, Division of Social Services 2007). In contrast, my analysis suggests that both Illinois and North Carolina witnessed a decline in the proportion of children exiting care both within twelve months, as well as within twenty four months of entry, once relevant variables and interactions were accounted for. How do my findings reconcile with those of the CFSR?

First, the two approaches measure different things. Besides focusing on a sub-set of permanency outcomes, CFSR composite measures mainly emphasise differences in levels—i.e., differences among states in the proportions of timely reunifications or adoptions—rather than trends over time, which could be obtained by indexing such levels to a common baseline or by using counterfactuals to control for ATE. While information on differences in levels can be interesting in-of-itself—for example, if one believes that children should stay in care as little as possible—I contend that decisions related to the introduction of new contract management tools, such as PBC, need to be informed by

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[112] New Jersey and Washington also performed below the national median for these two outcome measures in both rounds of the CFSRs.

additional measures that adjust for difference in levels, rather than merely state-level "raw" averages.

Second, the CFSR measures do not control for differences in the out-of-home care population served and how this population might have changed over time. As anticipated in earlier chapters, failing to do so is particularly problematic since it potentially confounds the interpretation of the impact of different programmes or practices. In this analysis, I have sought to address this issue by using more robust methods, which seek to control for some of these aspects (see also chapters 3 and 4). However, while controlling for differences in populations is essential, I acknowledge that "(i)t is not possible in social work research to control for all the variables that might have an impact on treatment outcomes" (Else, et al. 1992 p. 523).

In both Illinois and North Carolina, a number of factors besides the use of PBC may have had a positive impact on timeliness of exits from care. For example, Illinois provides a number of services and key practices that help children and their families achieve permanency in a timely manner, including engaging families in case planning and providing substance abuse services to family members (Department of Children and Family Services, State of Illinois 2009). Likewise, North Carolina has sought to improve the size and level of qualification of staff in its child welfare system, and has introduced a number of statutory and policy changes, such as more stringent timeframes for TPR (North Carolina Department of Health and Human Services, Division of Social Services 2001 p. 78). My analysis does not discuss how these or other types of services and practices, including domestic violence counseling, temporary childcare, or support with housing or transportation might have had a positive impact on the timeliness of permanency outcomes; an omission which might contribute to a more positive assessment of PBC than such programmes warrant.

At the same time, my analysis fails to control for a number of factors which have been identified as possibly hampering timely permanency outcomes, including the lack of communication and trust between stakeholders, as well as structural aspects such as shortages of qualified staff or large caseloads (Collins-Camargo, et al. 2013; McBeath and Meezan 2009; Raghavan 2010). My inability to control for such factors may be confounding the interpretation of the relationship between the use of PBC and the timeliness of exits. Evidence suggests that there may be a number of such factors in practice. Illinois, for instance, in spite of being awarded the 2000 Harvard Innovations in American Government Award for implementing PBC in its child welfare system, continues

to face a number of obstacles which contribute to delaying the timely achievement of permanency for children in care. These include:

> "court delays, staff turnover, placement instability related to behavior of children/lack of services/unwillingness of foster parents to commit to children, lack of efforts to achieve reunifications, inappropriate use of Subsidized Guardianship or Independence as long term foster care goals versus efforts to facilitate permanency and exiting children from the system, limited efforts to locate relative placement resources-particularly paternal relatives, staff unaware of what has happened on their cases (not reading files)" (Department of Children and Family Services, State of Illinois 2003 p. 21).

North Carolina also confronts a number of barriers to achieving permanency in a timely manner including challenges related to recruiting and retaining qualified social workers, lack of compliance with timelines for submission of custody orders, and inadequate coordination in the child welfare cases between the state and county level (North Carolina Department of Health and Human Services, Division of Social Services 2001).

Given the scarcity of information on the types of services provided, system-level factors, as well as other important aspects associated with the child's familial and social ecology, all results presented in this chapter must be interpreted with caution. Indeed, as in the previous chapter, this analysis underscores the challenges of monitoring the impact of a policy tool in the absence of an explicit monitoring framework. However, while "attributing total effect, either positive or negative, to treatment is problematic" (Else, et al. 1992 p. 523), the approach presented in this and the previous chapter—which relies on prospective cohorts, controls for some basic social and demographic characteristics of children in care, and uses a simple procedure to estimate the ATE—represents, in spite of its limitations (see also section 6.4), a contribution to identifying the necessary elements to better examine the relationship between PBC and the timeliness of exits from care. Furthermore, this approach could be adapted to monitor the timeliness of permanency outcomes in other contexts, including in national monitoring frameworks such as the CFSRs. I return to discuss some of these aspects in chapter 10.

This analysis also raises three distinct areas for future research. First, there is a need for more research on the relationship between the use of PBC and the timeliness of permanency outcomes. This research, ideally, should be conducted by using randomly

assigned treatments and controls. In addition, it should follow entry cohorts for a long enough period after the implementation of this programme management tool. A first step could be to use the method proposed in this chapter as well as in chapter 6, for other states that have employed PBC. The analysis could also be repeated using more or different controls. Second, given that in states that employ PBC some groups of children—particularly African American children—may not have recorded the same improvement in timeliness as their peers; this might be an area for additional research, possibly widening the focus to other groups of children and in different contexts. Third, while my analysis suggests that North Carolina may have performed better than Illinois or the control states in promoting somewhat timely exits from care, more research is needed on the relationship between the more stringent types of PBC and various measures of timeliness. It might be helpful, for instance, to repeat the analysis focusing on larger sample of PBC states, so that differences in PBC approaches can be better accounted for. In addition, it might be useful to develop a more detailed classification of the different PBC models, building on the analytical framework proposed by Testa (2001, 2008).

8   Factors associated with the timeliness of exits from out-of-home care in states that employ PBC

8.1   The timeliness of children exiting care versus the composition of those entering care: an outline of the chapter

In the previous chapters, I have shown that states that implemented PBC recorded significantly more timely exits from care compared to the counterfactual based on the two control states. However, once differences across states in various time-varying and invariant covariates were accounted for, the relationship between the timeliness of permanency outcomes and the DID estimator changed, meaning that much of the "improvement" in timeliness experienced by states that employed PBC during the period 1999-2009 is associated with changes in those factors.

In this chapter, I seek to better investigate some of these relationships by focusing on three of the main "mechanisms" through which changes in the timeliness in permanency outcomes are achieved. As seen in section 1.7, the first two relate to the amount of time various groups of children spend in care. The third relates to whether compositional changes in the out-of-home care population, including in the distribution of children in various placement settings, might be associated with changes in the overall timeliness of exits.

In this chapter I seek to explore some of these aspects by focusing on Illinois and North Carolina compared to the two control states. First, I examine whether there have been changes in the timeliness of exits for various groups of children entering out-of-home care as well as whether some groups of children have experienced more rapid improvements in the timeliness of exits compared to others. The reason for focusing on this, as anticipated in chapter 2, is that agencies whose compensation is tied to the achievement of specific permanency targets—such as those operating under PBC—would have an interest to reduce the amount of time various groups of children spend in care by either: (1) improving the timeliness of groups of children known in the literature to exit care more slowly such as infants, African American children or children placed with kin, or (2) shorting the stay in care of the so-called "marginal" cases, i.e., children that are more likely to meet performance targets (see also the third and fourth research hypothesis in chapter 1). I then consider whether compositional changes might be associated with improvements in the overall timeliness of exits. Again, the rationale for this stems from

the fact that child welfare agencies in states that employ PBC would have an interest to increase their chances of meeting performance targets by, for instance, moving children into placement settings that are known to be positively associated with timely permanency outcomes (see also chapter 3). Lastly, I examine whether there is evidence of various types of gaming, including "cherry picking" and discuss and summarise the main findings of the chapter. For reasons of analytical convenience, this chapter focuses only on the simplified classification of timeliness—timely versus untimely exits—rather than on the average amount of time children spend in care or the more detailed classification of timeliness, consisting of very timely, somewhat timely and untimely exits. Further, I decided to restrict my analysis to the three time-varying covariates included in the statistical models in chapters 6 and 7, namely the child's age, race and placement setting.

8.2 Changes in the timeliness of exits for different groups of children

The timeliness of exits for various groups of children

The three groups of states—Illinois, North Carolina and the two control states—have experienced different trends in the timeliness of exits for various groups. To better compare these trends, I computed the DID estimator for timely exits focusing on the three sets of child attributes indicated above. This comparison reveals a number of findings.

Focusing on the race of the child—defined here as the dichotomous variable "African American" and "other race" (see also section 4.6)—I find that the proportion of black children exiting care in a timely manner increased significantly in Illinois following the introduction of PBC, but changed little in North Carolina (Figure 8.1). However, while Illinois recorded a pronounced increase, this was not significantly different from the trend of the control states. In contrast, North Carolina experienced a marked increase in the percentage of children of other races exiting care within twenty-four months of entry, both in absolute terms and compared to the counterfactual.

For the age of children—defined as the dichotomous variable "infant" and "child over the age of one"—I find that the proportion of infants exiting care in a timely manner rose in both Illinois and North Carolina during the period 1996-2009, although this change was not significantly different from the counterfactual. Conversely, the proportion of children over one year of age exiting in a timely manner was significantly higher in both Illinois and North Carolina than expected based on the trend from the non-PBC states.

Figure 8.1. Proportion of timely exits in Illinois, North Carolina by race, age and placement setting
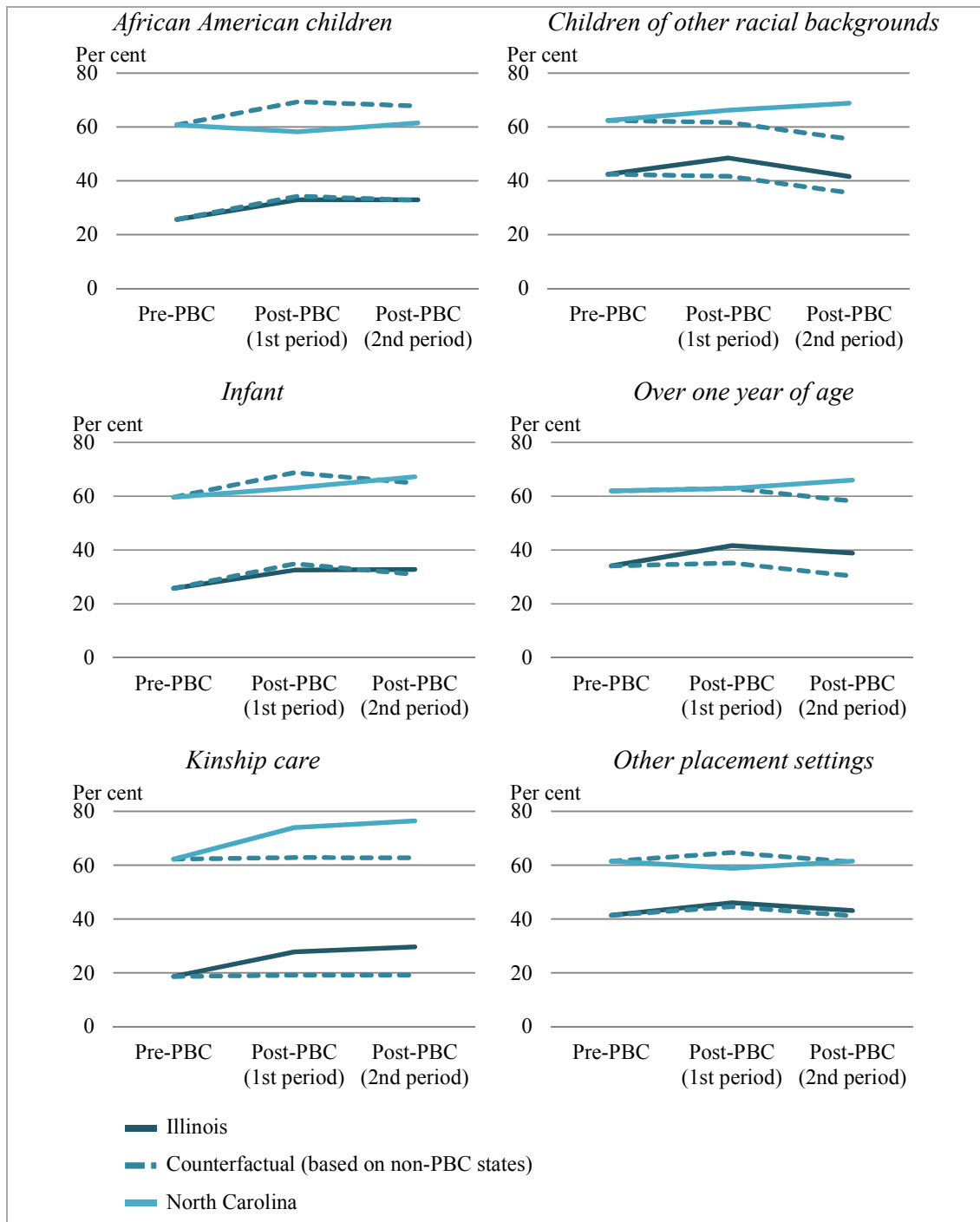
Note: The reported values refer to actual proportions.

Focusing on the timeliness of exits by placement setting—defined as the dichotomous variable "placed with kin" and "placed in other settings"—I find that in both Illinois and North Carolina the proportion of children placed in kinship care who achieved

permanency in a timely manner rose significantly following the introduction of PBC. In contrast, for the two control states the timeliness of exits among children placed with kin did not change over the time period considered. For children placed in other settings, both Illinois and North Carolina witnessed a relatively small change during the period 1996-2009, with values that were not significantly different from those expected based on the trend for the control states.

Disparity in timely exits

As the section above indicates, different groups of children have experienced different trends in terms of the timeliness of exits during the period considered. In particular, some groups which have been identified in the literature as being less likely to exit care in a timely manner, such as children placed with kin, recorded an improvement in the timeliness of exit during the period 1996-2009. In order to better understand the implications of these trends for the overall timeliness in the two PBC states, I created a measure which I refer to as "disproportionality in timely exits" or DTE (see also section 4.7).[113].

Based on this measure, I find that, for a number of child characteristics, there has been a convergence in DTE, meaning that the gap in timeliness between different groups of children has narrowed over time. For instance, DTE by race declined significantly in both Illinois and the states that did not employ PBC. In Illinois, where the difference between the proportion of black children and children of other racial backgrounds exiting care within twenty-four months of entry was nearly 18 percentage points during the pre-PBC period, this gap fell to less than 9 percentage points during the period 2005-2009 (Figure 8.2). Non-PBC states recorded an even more pronounced decline: from a "deficit" of 10 percentage points during the period 1996-1998 to a "surplus" of nearly 4 percentage points during the period 2005-2009, signifying that a larger share of African American children exited care in a timely manner than children of other racial backgrounds in the control states during the period 2005-2009. In North Carolina, however, DTE by race increased during the period considered, reaching levels nearly 80 per cent higher than those recorded prior to the implementation of PBC.

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[113] I define DTE as the difference in the proportion p of timely exits for selected sets of bivariate characteristics.

For the age of children entering care, Illinois recorded a modest reduction in the DTE for infants compared to older children, while North Carolina experienced almost no change during the period considered. On the other hand, the non-PBC states witnessed a significant decline in DTE by age owing both to improvements in the timeliness of exits for infants and the simultaneous decline in the timeliness of exits for older children. Because neither Illinois nor North Carolina experienced significant changes in DTE by age, I do not include this characteristic in the counterfactual scenarios discussed below.

Focusing on placement setting, I find that Illinois recorded a progressive reduction in the DTE for children placed with kin compared to children in other settings. By the period 2005-2009, DTE by placement setting in Illinois had narrowed by 9 percentage points, equal to a 40 per cent decline compared to the period prior to the implementation of PBC. In North Carolina, on the other hand, the DTE by placement setting switched from being negative—meaning that the proportion of children exiting in a timely manner among children placed with kin was smaller than the corresponding proportion for children placed

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in other settings—to being positive—meaning that a larger share of children placed with kin exited care within twenty-four months of entry compared to children in other settings.

Two counterfactual scenarios based on DTE

In order to quantify the impact of such changes on the overall timeliness of permanency outcomes, I created a first counterfactual scenario holding DTE for various groups constant to the level of the period 1996-1998 (the base value). I then created a second counterfactual scenario, where DTE for various groups was allowed to change over the time period considered, but following the trend of the non-PBC states.

What emerges is that changes in the timeliness of exits among African American children had a positive impact on the overall timeliness of exits in Illinois (Figure 8.3). Specifically, if levels of DTE by race had remained the same as those prior to the introduction of PBC, the share of timely exits in Illinois would have been 3 percentage points lower by the period 2005-2009. However, because the control states experienced an even greater convergence in DTE by race[114] compared to Illinois, the proportion of timely exits in Illinois would have been 5 percentage points higher by the period 2005-2009 had it followed the trend of the control states (second scenario). Conversely, for North Carolina changes in DTE by race had a negative impact on the overall timeliness of children exiting care. In North Carolina, the proportion of children exiting care within twenty-four months of entry would have been significantly higher if levels of DTE by race had followed the trends of the two alternative scenarios.

Focusing on DTE by placement setting, I find that both Illinois and North Carolina recorded significantly more timely exits from care than would have been expected based on either the first or the second scenario. In particular, owing to the convergence of DTE by placement settings, the proportion of children exiting care in a timely manner for Illinois was, respectively 4 and 2 percentage points higher than would have been expected had Illinois followed the trend based on the first or second scenario. For North Carolina, the corresponding difference was 4 and 10 percentage points, respectively. Consequently, convergence in DTE by placement setting contributed significantly to increasing the overall proportion of timely exits in both Illinois and North Carolina, both overall as well as compared to the counterfactual based on the two control states.

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[114] Part of this reduction was also due to the decline in the proportion of timely exits for children of other racial groups in the non-PBC states.

Figure 8.3. Two scenarios for DTE by race and placement setting
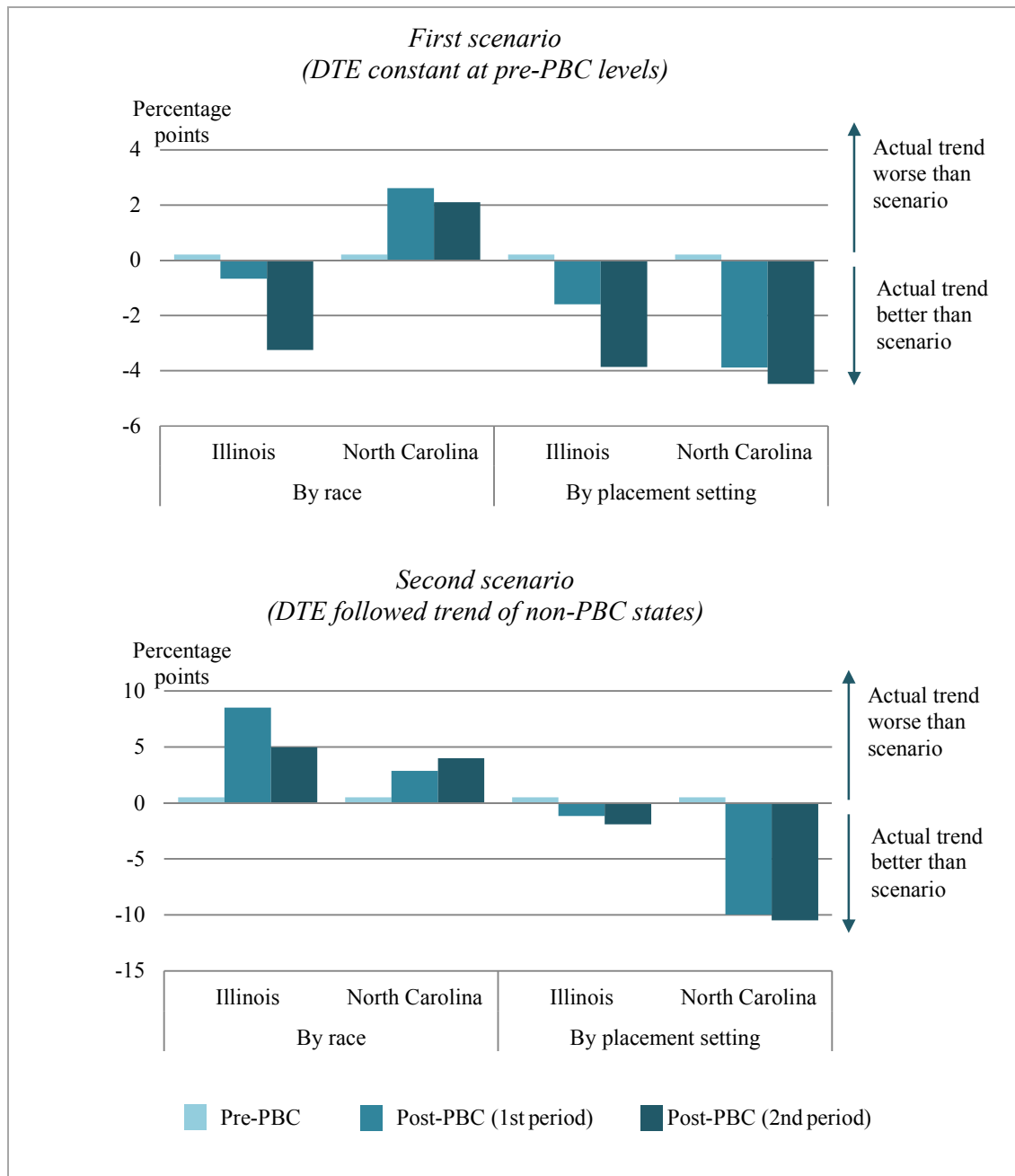
First scenario
(DTE constant at pre-PBC levels)

Second scenario
(DTE followed trend of non-PBC states)

Pre-PBC   Post-PBC (1st period)   Post-PBC (2nd period)

Note: Values above zero indicate that the state performed "worse" than might have been expected on the basis of one of the alternative scenarios, while values below zero signify that the state performed better than the scenario.

8.3   Changes in the composition of children entering care

Having established that changes in DTE contributed to some of the improvements in the timeliness of exits in states that employed PBC, I consider a second way in which the

overall timeliness of permanency outcomes might have been affected, namely by modifying the composition of those entering care, particularly their placement setting. In the sections below I focus on three distinct aspects: (1) whether the share of so-called "underperforming"[115] children entering care followed the trend of non-PBC states, (2) whether the proportion of so-called "underperforming" children converged with the share of "marginal" cases, and (3) the impact of such changes on the overall timeliness of exits.

The share of children entering care known to be slower in achieving permanency
As seen in chapter 5, both Illinois and North Carolina experienced significant changes in the proportion of various groups of children entering care known in the literature to exit care more slowly than their peers, including African American children, infants and children placed with kin. It is important, however, to assess whether these changes are significantly different from those of the counterfactual based on the control states.

Focusing on race, I find, as anticipated in chapter 5, that both Illinois and North Carolina experienced a significant decline in the share of black children entering care during the period 1996-2009. Further in both states, the decline was significantly more pronounced than expected based on the counterfactual: 14 per cent less for Illinois and 13 per cent less for North Carolina (Figure 8.4). This finding appears to support my fifth hypothesis, according to which PBC states would be expected to record a greater decline in the proportion of so-called "underperforming" children entering care compared to non-PBC states.

For the age of children entering care, I find that there was relatively little change in the share of infants entering care following the implementation of PBC in Illinois. In contrast, in North Carolina, the proportion of children entering care before the age of one increased, though not significantly more than the counterfactual.

In terms of placement settings, the share of children placed in kinship care rose significantly in both Illinois and North Carolina over the time period considered. However, compared to the counterfactual the increase was significantly smaller than expected. Again this appears to partially confirm my fifth hypothesis, according to which

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[115] I also refer to these groups as children who are less likely to meet performance targets or "underperforming" children. The use of the term "underperforming" is not intended as a negative judgement on these children, their families or their circumstances.

PBC states would be expected to record a smaller proportion of children placed in kinship settings compared to non-PBC states.

Figure 8.4. Proportion of so-called "underperforming" children entering care in Illinois and North Carolina
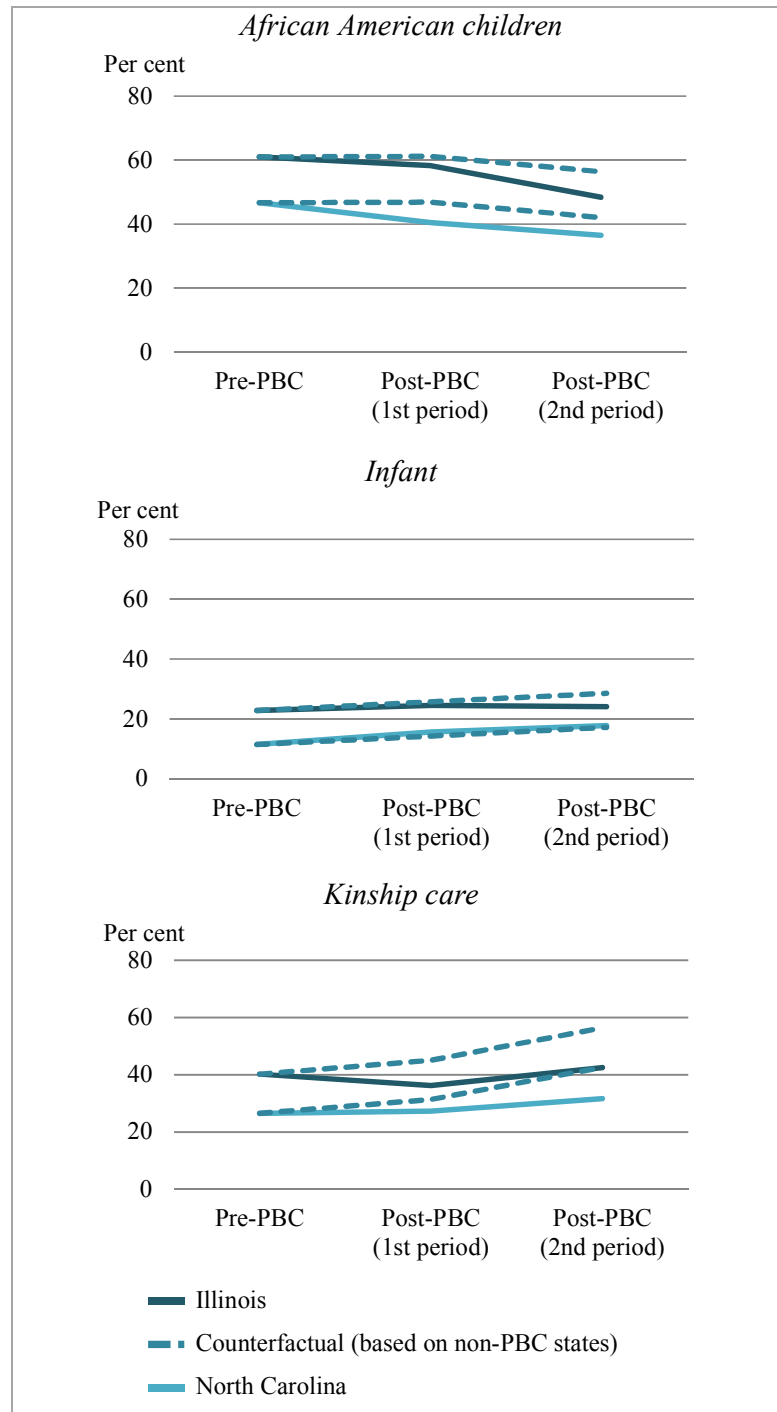
Note: The reported values refer to actual proportions.

Disparity at entry

In order to better quantify these changes, I created a measure which I refer to as "disparity at entry" or DAE (see section 4.7).[116] The measure seeks to capture whether the gap between the proportion of children known in the literature to exit care more slowly and the so-called "marginal" cases narrowed or widened over time.

Based on this measure, I find that DAE by race converged in Illinois following the introduction of PBC, meaning that the gap in the proportion of African American children entering care compared to children of other races narrowed over the period considered (see Figure 8.5). North Carolina also experienced a rapid decline in the proportion of black children entering care. However, unlike Illinois, North Carolina experienced a divergence in racial DAE, meaning that the gap in the proportion of children of other races entering care compared to African American children widened during the period 1996-2009; a result attributable to the fact that there were proportionally fewer black children entering care in the state to start (see also section 5.3).

Figure 8.5. DAE in Illinois, North Carolina and non-PBCstates by race, age and placement setting
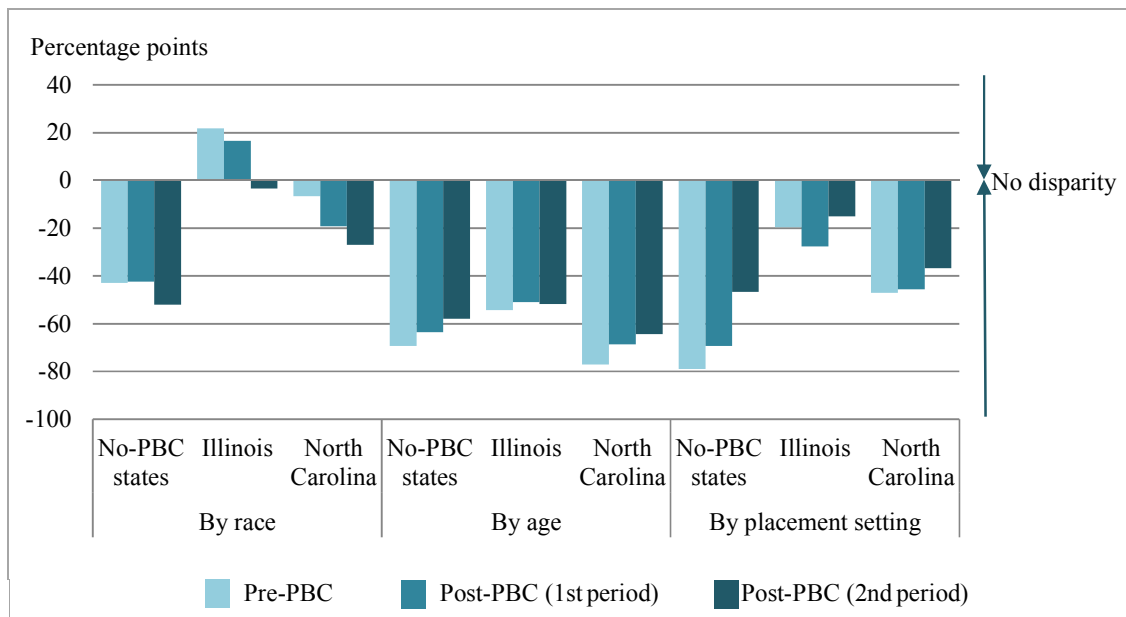
Note: See note for Figure 8.2.

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[116] DAE refers to the differences in the proportion of children entering care with certain bivariate sets of characteristics (see also section 4.7).

In terms of the age of children, both North Carolina and the control states recorded an increase in the proportion of infants entering care compared to children over one year of age. In North Carolina, DAE by age narrowed by around 13 percentage points between the periods 1996-1998 and 2005-2009, compared to around 11 percentage points in the control states. For Illinois there was almost no change in DAE by age during this period.

Focusing on DAE by placement setting, I find that for both Illinois and North Carolina the gap in the proportion of children placed with relatives compared to other settings declined (Figure 8.5). However, while DAE by placement setting narrowed in both Illinois and North Carolina, the change was significantly smaller than the one recorded by the control states.

Two counterfactual scenarios based on DAE

To assess the impact of these trends on the overall timeliness of exits, I created two additional counterfactual scenarios, which "mirror" those already presented in section 8.2. In the third scenario, I assumed that DAE for various characteristics did not change over the time period considered, using the values recorded during the period 1996-1998 as the baseline. I then created a fourth counterfactual scenario, where the DAE for different groups changed following the trend of the control states.

Focusing on race, the results indicate that, for both Illinois and North Carolina, the proportion of timely exits from care was significantly higher than if there had been no change in the DAE (the third scenario). In Illinois, the overall timeliness of exits would have been nearly 2 percentage points lower by the period 2004-2009 if DAE by race had remained the same as prior to the implementation of PBC. In other words, the reduction in the proportion of African American children entering care contributed to improving the timeliness of exits from care in Illinois during the period 1996-2009. A similar, though less pronounced, trend was also experienced by North Carolina. Compared to the fourth scenario, both Illinois and North Carolina recorded a larger proportion of timely exits than if they had followed the trend for racial DAE of the two control states.

The trends for DAE by placement setting are less straightforward to interpret. For the third scenario, Illinois and North Carolina experienced somewhat different trends. Illinois witnessed an improvement between the periods 1996-1998 and 1999-2004 in the overall timeliness of exits from care due to the decline in the proportion of children placed with relatives, while in North Carolina the change in DAE by setting had almost no impact

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on the overall proportion of timely exits from care. By the period 2005-2009, however, the share of children exiting care within twenty-four months of entry in North Carolina was significantly higher than if there had been no change in the DAE by setting, while the opposite was true for Illinois.

Figure 8.6. Two scenarios for DAE by race and placement setting
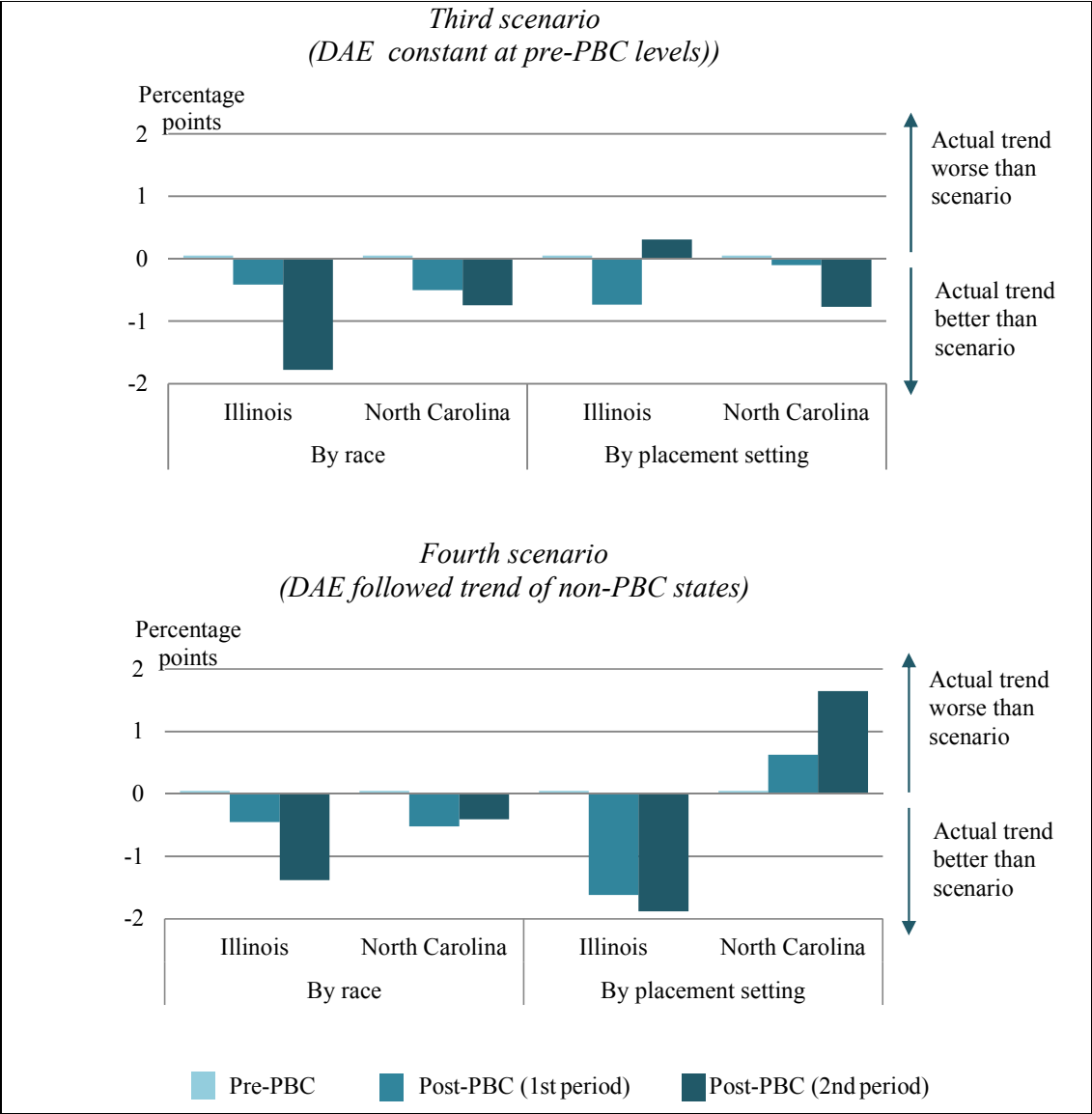
Note: Values above zero indicate that the state performed "worse" than might have been expected on the basis of one of the alternative scenarios, while values below zero signify that the state performed better than the scenario.

In relation to the fourth scenario, Illinois recorded a significantly higher share of timely exits from care than if DAE by setting had followed the trend of the control states,

while North Carolina fared worse. For North Carolina, this result may also be due to the fact that, during the period 1999-2009, exits from kinship care became, on average, more timely compared to those from other placement settings (see also section 8.2).

8.4 Additional factors that could have contributed to improvements in timeliness, including "cherry picking"

The sections above indicate that there were marked changes in the timeliness of children exiting care as well as the composition of children entering care in the states that employed PBC during the period 1996-2009. Changes in DTE and DAE by race and placement setting appear to be particularly noteworthy. Given that states that employ PBC have an incentive to reduce the amount of time children spend in care, is there evidence of "cherry picking"? What other factors, including secular trends, might have contributed to improvements in timeliness?

Because of limitations with the AFCARS dataset—for instance, the dataset does not contain information on the amount or type of services provided to out-of-home care children or their families; information that could be used to assess if "cherry picking" is taking place—I sought to explore these questions indirectly by focusing on: (1) the distribution by race and placement setting of children still in care twenty-four months after entry, (2) trends at the state level in racial disproportionality at entry, (3) trends at the state level in racial disproportionality for children who were substantiated or indicated for maltreatment, and (4) the geographical distribution of children entering care by race and placement setting at the county level.

The race and placement setting of children in care twenty-four months after entry

The composition of children still in care after twenty-four months provides an indirect measure of "cherry picking". Specifically, if "cherry picking" occurred, one might expect—after controlling for changes in the composition of children entering care with those characteristics—the share of "underperforming" cases still in care at twenty-four months to be significantly larger than the counterfactual based on the share of the so-called "marginal" cases (Figure 8.7).

Figure 8.7. Share of children still in care at twenty-four months in Illinois and North Carolina by race and placement setting compared to the counterfactual based on the so-called "marginal" cases
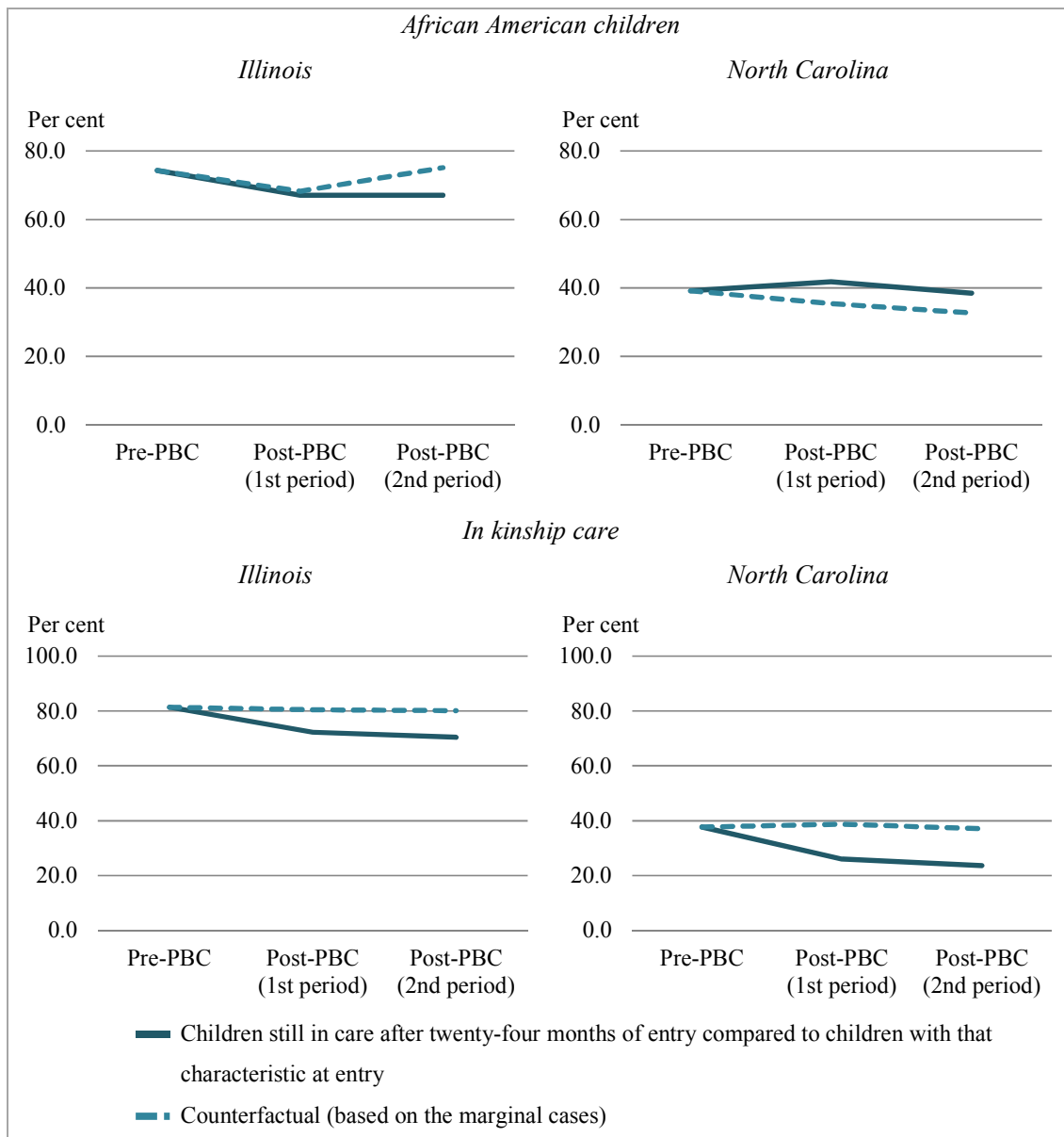
Note: The reported values refer to actual proportions.

Focusing on race, I find that in Illinois the share of African American children still in care twenty-four months after entry was significantly lower than in the pre-PBC period. Further, the share was significantly less than the counterfactuals based on the marginal cases, which in this case refers to children of other race. For North Carolina, the proportion of African American children still in care after twenty-four months of entry did not change significantly following the implementation of PBC. However, the share was

significantly higher than the counterfactual based on children of other race. While this finding should be taken with caution given the limitations of the data employed, it suggests that "cherry picking" may have taken place for non-black children in the state.

In terms of placement setting, both Illinois and North Carolina recorded a reduction in the share of children placed with kin still in care after twenty-four months (see also section 8.2 above). In both states, this share declined faster than the counterfactual based on children in other settings, confirming that for placement settings the timeliness of the "underperforming" group improved; the opposite of what might have been expected if "cherry picking" had occurred.

Racial disproportionality at entry

To better explore whether changes in the composition of children entering care by race might be due to secular trends, I computed an index of racial disproportionality at entry, or RDE, defined here as the proportion of African American children among all children entering care over the proportion of African American children in total child population (see also Shaw, et al. 2008; Summers 2015).

Using data from the U.S. Bureau of Census, compiled by the U.S. Department of Health and Human Services, Administration for Children and Families, Children's Bureau (2002, 2012c, 2012d), I find that the racial composition of children in the three groups of states did not change significantly in the periods following the implementation of PBC. In both Illinois and North Carolina, the proportion of African Americans in the total child population declined slightly between the periods 1996-1998 and 2005-2009 (see also section 5.5), while in the two control states it remained constant. In contrast, as indicated in chapter 5, the share of African Americans children entering out-of-home care during the same time period declined by 13 percentage points in Illinois, by 10 percentage points in North Carolina, and by nearly 5 percentage points in the states that did not employ PBC.

Comparing the two trends, I find that Illinois witnessed a somewhat more pronounced decline in RDE than would have been expected based on the trend for the control states (see Figure 8.8). Specifically, I find that in Illinois RDE declined from 3.3 times the level of the overall child population in the period 1996-1998 to 2.8 times the level in the period 2005-2009; nearly 5 per cent less compared to the counterfactual. Conversely, in North Carolina where the overrepresentation of black children entering care fell from 1.8 times to 1.5 times that of the overall child population, RDE remained

approximately 8 per cent higher than expected based on the trend for the two non-PBC states.

Figure 8.8. RDE in Illinois and North Carolina compared to the counterfactual based on the control states
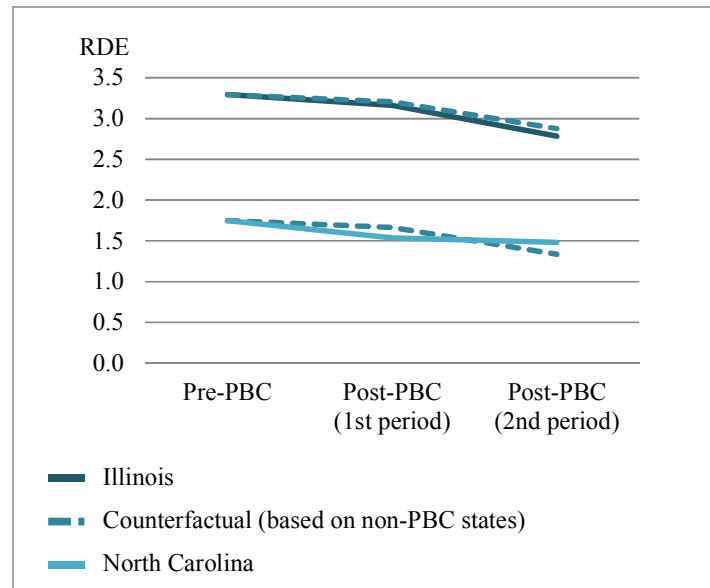
Note: The reported values refer to actual proportions.

While this comparison draws attention to the over-representation of African American children among those entering care, something already well-established in the literature, it does not suggest that "parking" took place.[117] Instead, the findings indicate that other trends, including secular ones (see also section 3.3), may have shaped the decline in the proportion of African American children entering out-of-home care in both Illinois and North Carolina.

RDE for children substantiated or indicated for maltreatment
Considering the RDE for children substantiated or indicated for maltreatment,[118] another comparison used to assess racial overrepresentation at placement, provides some additional

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[117] "Parking" occurs when contracting agencies deliberately attempt to reduce the number of children entering care with characteristics negatively associated with the desired outcomes. Given that states generally retain the authority to investigate maltreatment and, where necessary, place children in care, it is likely that individual contractors are unable to influence such decisions.

[118] According to the NCANDS (U.S. Department of Health and Human Services, Administration for Children

insight into whether gaming occurred in the two PBC states. According to the data compiled by the National Child Abuse and Neglect Data Systems (NCANDS), the proportion of black children among all children with one or more substantiated or indicated report of maltreatment declined in both states between the periods 1996-1998 and 2005-2009. In both Illinois and North Carolina, the share of African American children among all children with substantiated or indicated reports of maltreatment fell by nearly 7 percentage points between the two periods, compared to around 4 percentage points for the non-PBC states.

Focusing on the proportion African American among all children entering care because of maltreatment, I find that this share also declined significantly in all three groups of states. Illinois experienced the largest decline during this period (over 14 percentage points), followed by North Carolina (12 percentage points) and the control states (nearly 11 percentage points). In both Illinois and North Carolina, this decline was greater than expected based on the trend for the counterfactual (Figure 8.9).

Figure 8.9. RDE for children substantiated or indicated for maltreated in Illinois and North Carolina
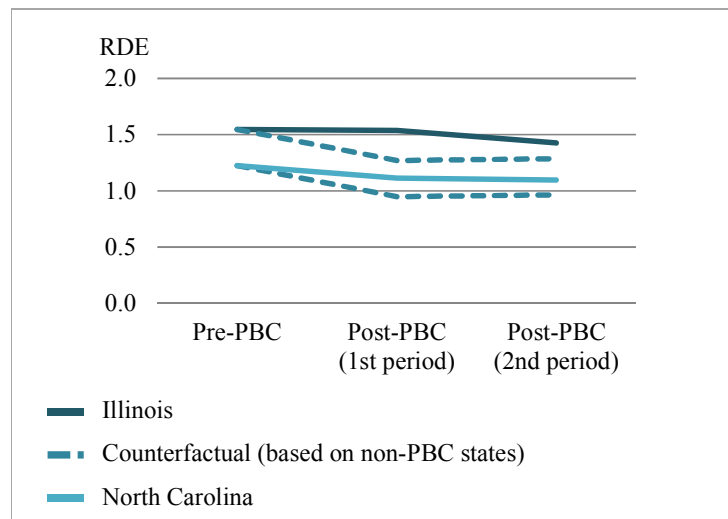
Note: The reported values refer to actual proportions.

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and Families 2012f p. 15) a substantiated maltreatment is "(a)n investigation disposition that concludes that the allegation of maltreatment or risk of maltreatment was supported or founded by State law or policy". An indicated maltreatment is an "investigation disposition that concludes that maltreatment could not be substantiated under State law or policy, but there was reason to suspect that at least one child may have been maltreated or was at-risk of maltreatment. This is applicable only to States that distinguish between substantiated and indicated dispositions."

I then computed the RDE for children substantiated or indicated for maltreated; defined here as the proportion of African American children among all children entering care because of maltreatment over the corresponding proportion in the total population. On the basis of this rate, I find that, while both Illinois and North Carolina recorded a decline in RDE for children substantiated or indicated maltreatment, this was less than expected based on the trend for the two states that did not employ PBC. Further, because in both Illinois and North Carolina, the RDE for maltreatment was significantly higher than for the control states, it is likely that in both states African American children remained over-represented among those placed in care because of maltreatment. Again, this finding is at odds with the "parking" hypothesis put forward in section 1.7.

The geographical distribution of children entering care

Focusing on changes in the geographical distribution of children entering care represents another way to explore whether gaming took place, since the literature shows that changes in DTE and DAE can also be brought about by shifts in the composition of out-of-home care population within districts or counties within a state (Wulczyn, et al. 2006b, 2007). The AFCARS dataset, for confidentiality reasons, does not provide detailed information at lower levels of geographical disaggregation. However, it is possible to look at changes in the composition of children entering care for larger administrative agglomerations such as counties or clusters of counties. Focusing on lower levels of geographical disaggregation is also interesting for states that employ PBC since it provides some insight into whether strategies to share risk were effective. Specifically, since risk reducing strategies work by randomly assigning children, regardless of their characteristics, to agencies across administrative boundaries, one would expect DAE by race to converge over time and across counties in states that have implemented such policy tools.

Instead my analysis suggests that DAE by race did not converge across the three groups of counties considered in Illinois—Cook County, Peoria County and other counties—or the two counties in North Carolina—Mecklenburg County and other counties. After the implementation of PBC, the proportion of black children entering care in Peoria County—which had a much lower proportion of African American entering care compared to Cook County to start with—declined much more significantly than in Cook County. However, because the number of children entering care in Cook County, regardless of race,

declined more rapidly than in the other counties considered, the overall RDE in the state converged as a result of this compositional effect. Likewise, in North Carolina, the proportion of African American children entering care diverged in Mecklenburg County following the implementation of PBC, while it narrowed significantly in the rest of the state. Mecklenburg County hosted a significantly higher proportion of black children among children placed in care to start with compared to the aggregate for other counties in North Carolina.

8.5 Summary of main findings and discussion

In chapters 6 and 7, I found that controlling for various time-varying and invariant covariates significantly modifies the interpretation of the relationship between the use of PBC and the overall timeliness of exits. Yet my analysis did not elaborate on how changes in some of those factors, particularly time-varying covariates, might relate to trends in the timeliness of permanency outcomes in states that had implemented PBC.

In this chapter, I sought to provide greater insight into some of these relationships by focusing on two main aspects. The first aspect I considered was the timeliness of exits from care for different groups of children. Reducing the amount of time various groups of children spend in care is probably the most straightforward way for states to improve their overall timeliness. Strategies to shorten the length of stay in out-of-home care for groups that are slower in exiting care as well as for marginal groups ("cherry picking") can be an effective means to achieve this goal. The second aspect I focused on was changes in the composition of those entering care. If fewer children with characteristics negatively associated with timely permanency outcomes entered care, one might expect the overall timeliness of exits to improve. I also sought to explore whether there was evidence that changes in either DTE or DAE might be a result of gaming or whether they might be associated with other factors, including secular trends. In the sections below, I briefly summarise and discuss the main findings in relation to each of these aspects.[119]

Changes in the timeliness of exits

My analysis indicates that the timeliness of exits for various groups of children changed in different ways. The proportion of African American children exiting care in a timely

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[119] In the sections below, I do not present the findings related to the age of the child since the analysis suggests that differences are small compared to the control states.

manner, for instance, increased significantly in Illinois but not in North Carolina. At the same time, both Illinois and North Carolina experienced a significant improvement in the timeliness of exits among children placed in kinship care both overall and compared to the counterfactual.

As a result of these changes, Illinois recorded a significant convergence in DTE both by race and placement setting, meaning that the gap in timeliness between groups of children known to be slower in achieving permanency narrowed following the implementation of PBC. This finding is consistent with a number of previous studies, which identified an improvement in the timeliness of permanency outcomes for groups of children perceived to be less likely to exit care in a timely manner—namely African American children and children placed in kinship care (U.S. Department of Health and Human Services, Administration for Children and Families, Children's Bureau 2013; Wulczyn, et al. 2007). It is also consistent with my third hypothesis (see section 1.7), according to which one of the mechanisms through which PBC states might reduce the average amount of time children spend in care is by improving the timeliness of exits for groups known to be slower in achieving permanency.

In contrast, in North Carolina, where DTE by race and placement setting was relatively small prior to the introduction of PBC, the gap in the timeliness of exits by race and placement setting widened in the periods following the implementation of this programme management tool, owing to a more pronounced improvement in the timeliness of exits for the so-called "marginal cases". Though not conclusive, the latter may be seen as a sign of "cherry picking" (see also my fourth hypothesis in section 1.7).

To assess the impact of these changes on the overall timeliness of permanency outcomes, I created two counterfactual scenarios. In the first, I held DTE constant at the level of the pre-PBC period, while in the second I allowed DTE to vary following the trend of the control states. Based on these scenarios, I found that reductions in DTE by placement setting contributed to a higher proportion of timely exits in both Illinois and North Carolina, both in absolute terms (first scenario) and compared to the counterfactual (second scenario). These findings are consistent with my third research hypothesis outlined in chapter 1; namely that PBC states would witness a convergence in DTE for various groups of children, and that this would contribute positively to the overall timeliness of exits in those states.

While these findings suggest that a convergence in DTE by placement setting in states that employed PBC resulted in more timely exits, they should not be interpreted

naïvely as a "consequence" of this type of performance management tool since many other factors and policies may have intervened to shape this outcome. An alternative explanation, for instance, could be that, as a result of the subsidised guardianship waiver demonstrations programme implemented in the two states during this period, a series of new permanency options became available for children who would have otherwise remained in long-term care. As indicated in chapter 5, Illinois and North Carolina are two of eleven states in the United States to have implemented such programmes, meaning that they can use title IV-E federal funds "to subsidize placements with relative and/or non-relative caregivers who served as the legal guardians of children who had previously been in foster care" (James Bell Associates 2013 p. 2). Children who were living in kinship care in both states, therefore, may have been able to more quickly exit care to guardianship (see also chapter 9). This point also appears to be supported by the study by Koh and Testa (2011).

The findings for race are even more complex to interpret. Illinois, where DTE by race narrowed as a result of the more pronounced improvement in the timeliness of exits for African American children compared to children of other races, experienced more timely exits overall than if DTE had remained constant at the level prior to the implementation of PBC (first scenario). In contrast, North Carolina experienced an opposite trend, owing to the fact that DTE by race became more skewed as a result of reductions in the amount of time children of other races spent in care that were unmatched by similar improvements in the timeliness of exits for African American children. Both Illinois and North Carolina fared worse than if they had followed the trend for DTE by race of the control states (second scenario). In the case of North Carolina, however, this difference is primarily due to the fact that the non-PBC states also experienced a reduction in the proportion of children of other races exiting care in a timely manner, while North Carolina did not.

The finding that Illinois witnessed a significant improvement in the timeliness of exits for African American children is noteworthy since addressing the "overrepresentation of African American children in substitute care who also spend on average a longer period of time in care than other child populations served" was identified as an important policy priority in Illinois (Department of Children and Family Services, State of Illinois 2003 p. 216). However, North Carolina also expressed commitment to reducing the DTE between African American children and other groups of children (North Carolina Department of Health and Human Services, Division of Social Services 2001). Yet,

because the timeliness of permanency outcomes changed little for black children entering care in the state between 1996 and 2009, while it improved significantly for children of other racial backgrounds, DTE by race widened in North Carolina.

Given that both states have implemented PBC and that both states have an interest in improving the timeliness of exits, why did DTE by race narrow in Illinois but not in North Carolina? One explanation could be that efforts to close the gap in permanency outcomes for some of Illinois' worst performing counties had a disproportionate effect on African Americans, who were significantly overrepresented in those counties.[120] The state— partially in response to its negative assessment in the 2003 CFSR and the subsequent development of a program improvement plan (PIP)—introduced a number of services targeted explicitly at Cook County.[121] These initiatives included the Foster Family Support Project, the Intensive Relative Search Project as well as the Female Addicts and their Children in Treatment Program. Other reforms included more timely approvals of permanency goals by the Cook County court system, greater efforts to expedite the movement of cases, as well as an outreach campaign to better inform foster families about the array of services available to them. While it is not possible to draw a causal nexus between the two, the fact that the state responded to "underperforming" counties by "selecting appropriate services and delivering them effectively" may have also been a consequence of PBC and its emphasis on "financial incentives and penalties" (McBeath and Meezan 2010 pp. 117-119).

An additional explanation could be the "cherry picking" hypothesis proposed by McBeath (2006 p. 359) according to which caseworkers respond to performance environments "by devoting greater attention to those cases that lead to positive performance", signifying that that they "provide more services to cases that are less difficult to serve". While I am unable to find direct evidence to support this hypothesis, it might explain why North Carolina witnessed an improvement in the timeliness of exits for children of other races, but not for black children. Further, it might provide the rationale

[120] While these programmes help explain the change in DTE by race in Illinois, they also raise a "red flag" for the interpretation of my findings. Specifically, they signal that the assumption of parallel trends may have been violated (see also section 4.7), potentially confounding the interpretation of results. I return to discuss the implications of this in chapter 10.

[121] Cook County not only had the lowest rates of timely permanency outcomes in the state but also was home to the overwhelming majority of African American children entering care in Illinois.

for the more pronounced increase in somewhat timely exits to adoption and guardianship recorded in North Carolina by children who were of other racial backgrounds compared to African American children (see sections 7.4 and 9.3).

Changes in the composition of children entering care

My analysis confirms that both Illinois and North Carolina experienced a significant decline in the proportion of African American children entering care and that this reduction was more pronounced than would have been expected based on the trend for the two control states. As a result of the marked decline in the proportion of African American children entering care, both Illinois and North Carolina recorded a significantly higher proportion of timely exits compared to the two counterfactual scenarios—in the first of these scenarios racial DAE was held constant at the level of the pre-PBC period, while in the second, DAE by race was allowed to vary following the trend of the two control states.

The decline in DAE by race is also consistent with the broader trend towards reducing racial disproportionality of African American children in the child welfare and protection system. For example, both Illinois and North Carolina implemented programmes aimed at reducing the over-representation of African American children entering care. Further, Illinois launched an initiative to reduce caseloads by discouraging the so-called "side-door placement" of children perceived to be at low risk,[122] many of whom were black, while North Carolina initiated a programme focused on preventive measures to keep low-risk children from entering the out-of-home care system (Department of Children and Family Services, State of Illinois 2003; North Carolina Department of Health and Human Services, Division of Social Services 2007).

For the placement settings the findings are less consistent. There appears to have been a shift towards placing more children with relatives. This trend is consistent with the preference accorded in the statutes of Illinois and North Carolina for placement with kin (see also chapter 5). Strikingly, while both Illinois and North Carolina witnessed an increase in the proportion of children placed in kinship care, this increase was less than might have been expected based on the trend for the two states that did not employ PBC. The smaller increase contributed positively to the overall timeliness of exits in Illinois, but had a negative impact on the timeliness of exits in North Carolina, where, following the

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[122] Side-door placements refer to requests for service by parent or other caregiver who has not been investigated for abuse or neglect.

introduction of PBC, children placed with relatives spent on average less time in care than children placed in other settings. The fact that the share of children placed with kin increased more rapidly in non-PBC states compared to the treatment states, while not conclusive in-of-itself, is also consistent with my fifth research hypothesis, according to which PBC states would be expected to experience a more rapid decline in the proportion of children placed in kinship care compared to the controls.

While these findings suggest that the use of PBC may have been associated with a number of important changes in the composition of children entering care in both Illinois and North Carolina, a number of other policy and practice considerations besides PBC may have contributed to shaping this outcome. Both states, for example, in spite of a growing emphasis on reducing the number of children in non-family settings in favour of less restrictive ones, including placements with relatives, have continued to face a number of barriers (see also section 5.5). One such barrier is the requirement that relatives pass a mandatory criminal background check in order to become licensed caregivers. Another barrier is in recruiting and retaining relatives interested "in becoming licensed to care for kin, as it is seen as burdensome and not necessary" (North Carolina Department of Health and Human Services, Division of Social Services 2007 p. 45).

Evidence of gaming behaviours, including "cherry picking"

As seen in chapter 1, "cherry picking" occurs when the so-called "marginal" cases exit care more rapidly as a result of additional services provided to children and their families, while "parking" takes place when groups known to be less likely to achieve certain performance benchmarks are deliberately diverted out of the out-of-home care system. Unfortunately, owing to data limitations, I was unable to test these hypotheses directly. For instance, it is difficult to determine whether "cherry picking" took place without direct evidence about the provision of additional services to different groups of children (McBeath 2006; McBeath and Meezan 2008, 2010).

I decided, therefore, to consider a number of indirect measures. I started by examining whether the composition of children still in care after twenty-four months of entry by race and placement setting had changed since the implementation of PBC. I then compared this rate with the corresponding one for the so-called "marginal" cases. My findings suggest that in Illinois (for race and placement setting) and in North Carolina (for placement setting), the share of so-called "underperforming" children still in care twenty-four months after entry was significantly less than the counterfactual based on "marginal"

cases; the opposite of what might have been expected if gaming had been taking place. An exception was for race in North Carolina where the proportion of African American children still in care after twenty-four months of entry was significantly higher than the counterfactual based on children of other race, suggesting that "cherry picking" may have occurred.

Next, I focused on the RDE, concluding that disproportionality by race decreased rapidly in both Illinois and North Carolina. However, since the non-PBC states also witnessed a marked decline in RDE, it is likely that the reduction in the two treatment states may have been associated with a broader trend to reduce the over-representation of African American children entering care, rather than a deliberate attempt to game the system. This point, which is consistent with earlier studies (Shaw 2010; Vericker, et al. 2007; Wulczyn, et al. 2006b, 2007), is further supported by the fact that the difference in RDE between states that employed PBC and the counterfactual based on the control states is quite small.

I then examined the relationship between the race of children indicated or substantiated for maltreatment in the overall child population compared to the race of children placed in care for maltreatment and concluded that it also did not support the hypothesis of "parking". Based on this comparison I found that, while in both PBC states racial disproportionality at entry for children indicated or substantiated for maltreatment declined, it remained significantly above the levels expected based on the trend for the control states. This suggests, in my opinion, that in both Illinois and North Carolina African American children continued to be over-represented among children placed in care because of maltreatment; the opposite of what might have been expected if states were trying deliberately to game the system by "deterring" certain groups of children from entering care.

Lastly, I examined changes in the number of children entering care in various counties in Illinois and North Carolina. This comparison suggests that disparity among counties changed less than expected, with the proportion of African American children entering care increasing in counties with larger shares of black children, and declining in counties with smaller overall shares of such children. While this finding indicates that some type of gaming may have occurred in the counties with lower proportions of African American children, it is not in-of-itself conclusive. Further, it points to the fact that strategies to share risks among child welfare agencies in states that employ PBC—i.e., to assign children randomly to ensure that agencies have comparable caseloads—appear not

to have been very effective, even though these results may be confounded by the lack of detailed information for lower levels of administrative disaggregation.

While I cannot exclude the existence of "parking" based on the evidence presented above, this type of practice does not appear to fit into the broader "narrative" of what occurred, especially in Illinois. Specifically rapid declines in caseloads in Illinois may have increased competition among child welfare agencies to accept all available cases (Avrushin 2013). Berlin (2007 p. 8) in discussing changes in permanency outcomes in Illinois noted that:

> "(f)rom the state's point of view, it is desirable to create a system that pits providers against one another. It is a primary tenet of capitalism that competition lowers cost and improves quality. But beyond that, the reduced number of children in the foster care system meant that the state could no longer promise each provider the same number of children for whom services were originally contracted. Some agencies felt they were treated unfairly when they found that even though they met all the required permanency goals in their contracts, they still lost funding or lost contracts in subsequent years".

While reducing unnecessary placements can be, in-of-itself, a worthy policy objective,[123] there is some circumstantial evidence that pressure not to accept new caseloads, may have contributed to making the out-of-home care population more difficult to serve. According to the report by the Illinois Department of Children and Family Services (2003 pp. 151-152), for instance:

> "stakeholders interviewed during the statewide assessment indicated that in recent years it has been significantly more difficult getting a case of suspected abuse/neglect accepted by the SCR,[124] even those reported by mandated reporters. As fewer cases are accepted by the SCR for investigation, the results are that the types of cases served are very high risk, the families have more complicated problems, and permanencies for children brought into care are more difficult to achieve in a timely manner".

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[123] In addition, states may have a vested interest to reduce intakes since, according to Taylor and Shaver (2010 p. 312) "performance contractors would cost the public sector more (as would be the case under the *per diem* case)" if the number of children entering care increased.

[124] The State Central Register (SCR) is a database containing a record for all substantiated cases of maltreatment in Illinois.

This assessment may also explain the reason why, in spite of declining caseloads, the timeliness of exits has not improved as much in Illinois as might have been expected based on the trend for the control states (see chapter 7). Theoretically, ensuring smaller caseloads is one of the ways for agencies to provide more high-quality services to children and families. However, if the overall "pool" of children who enter care becomes more difficult to serve, agencies may no longer have the adequate resources or expertise to address the higher needs of such clients (Berlin 2007 p. 4) (see also section 3.4)

9 The use of PBC and its relationship to permanency outcome for children exiting out-of-home care

9.1 PBC and its potential unintended consequences on permanency outcomes: overview of the chapter

One of the strongest critiques put forward against the use of PBC in child welfare is that it may have a distortionary effect on permanency outcomes. In particular, a small body of literature has raised concern that the use of such programme management tools may be associated with a lower likelihood of reunification with parents or other primary caregivers for children in-out-of-home care (McBeath and Meezan 2006, 2008, 2010). As indicated in chapter 2, one of the limitations of this literature is that it has primarily focused on one state—Michigan—and therefore the findings are difficult to generalise to other contexts.

In this chapter, I seek to garner additional evidence on the possible distortionary relationship between PBC and permanency outcomes. To do so, I first focus on differences in permanency outcomes between Illinois, North Carolina and the two non-PBC states. Then, I consider how such outcomes relate to changes in various theoretically relevant covariates, namely the age, race and placement setting of children in care. I also briefly describe how permanency goals have changed in states that employ PBC compared to the two control states and consider how permanency outcomes relate to these permanency goals. Lastly, I use multivariate analysis to explore whether the proportion of children exiting through various permanency outcomes changed following the introduction of PBC and whether, based on this analysis, the two treatment states experienced different trends in permanency outcomes compared to the set of control states.

It is important to underscore that this analysis focuses only on permanency outcomes within thirty-six months of entry. This choice stems from the fact that my multi-annual entry cohorts only follow children up to three years since their entry into care. For children who exited after this time, I do not have information of how they exited, meaning that they are right censored. Because of this I chose to "drop" all children who were still in care after thirty-six month of entry from this analysis, meaning that the number of cases is smaller in this chapter than in chapters 5 through 8. Further, because I decided to focus only on children whose permanency outcome was known, the characteristics of such children are likely to be different from those of the broader population of children entering

care examined in the previous chapters. I return to discuss the implications of some of these decisions in the conclusions of this chapter as well as in chapter 10.

9.2   Did reunifications decline as a proportion of all permanency outcomes compared to the non-PBC states?

In chapter 5, I ascertained that the composition of children exiting care through various outcomes had changed over time. Specifically, both Illinois and North Carolina experienced a decline in the proportion of children exiting to reunification within thirty-six months of entry. In addition, both states recorded an increase in the share of children exiting through guardianship, while North Carolina, but not Illinois, witnessed an increase in the proportion of adoptions. How do these trends compare to those of the non-PBC states?

Figure 9.1. Exits from care by type of permanency outcome for Illinois and North Carolina: DID-only model
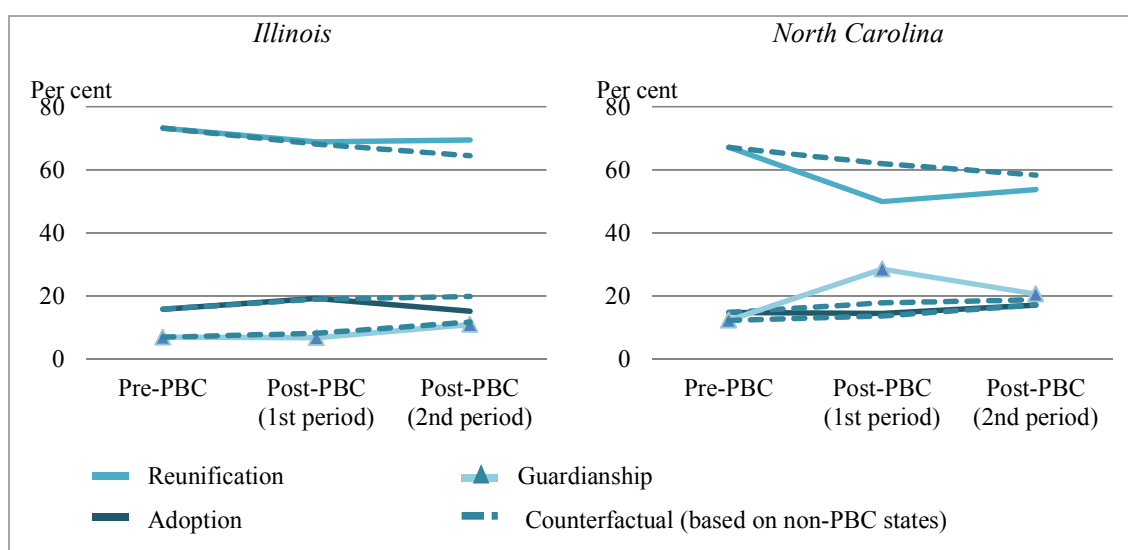
Note: See note to Table 5.1. The reported values refer to modelled proportions. See also Table A.9.1 and Table A.9.2.

Using a DID estimator,[125] I find that Illinois followed nearly the same trend as the control states in terms of the proportion of children who exited care to adoption or reunification during the first period following the implementation of PBC (Figure 9.1).

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[125] In section 9.5, I refer to these as the DID-only models. The dependent variables for these models are whether or not the child exited care to adoption, reunification or guardianship.

Between the periods 1999-2004 and 2005-2009, however, the proportion of children who exited care to adoption in Illinois declined significantly compared to the counterfactual, while the proportion of reunifications increased.

For North Carolina, the proportion of reunifications and, to a lesser extent, adoptions was significantly lower than might have been expected based on the trend for the two control states. Particularly noteworthy is the decline in the proportion of reunifications that took place following the introduction of PBC: 5 percentage points lower than the counterfactual. Strikingly, this decline appears to have been "counterbalanced" by a significant increase in the proportion of children who exited care to guardianship.

9.3 Changes in permanency outcomes for various groups of children

The above findings suggest that the introduction of PBC may have been accompanied by reductions in the share of reunifications for North Carolina, as well as a small decline in share of adoptions for both Illinois and North Carolina. Were these trends more pronounced for specific groups of children? In order to answer this question, I focus on permanency outcomes for selected characteristics, including the age, race and placement setting of children in care (see also section 4.6). Exploring this relationship is important since the literature has shown that some groups of children have a greater likelihood of exiting care through certain permanency outcomes compared to others (Akin 2011; Chipman, et al. 2002; Connell, et al. 2006; Potter and Klein-Rothschild 2002; Shaw 2010; Weil 1999).

Reunification

I find that Illinois recorded significantly higher proportions of reunifications for African American children compared to the counterfactual based on the two control states, while for non-African American children the trend in the proportion of reunifications closely mirrored that of the counterfactual (Figure 9.2). In contrast, in North Carolina the proportion of reunifications for both back children and children of other racial backgrounds was significantly lower than would have been expected based on the counterfactual in the period following the implementation of PBC (1999-2004). By the period 2005-2009, however, the trend was partially reversed, with North Carolina recording more exits to reunification among African American children that would have been expected. For non-black children, the gap with the counterfactual persisted, with the state experiencing nearly 15 per cent fewer reunifications than expected.

Figure 9.2. The DID estimator for reunifications for Illinois and North Carolina by race, age and placement setting
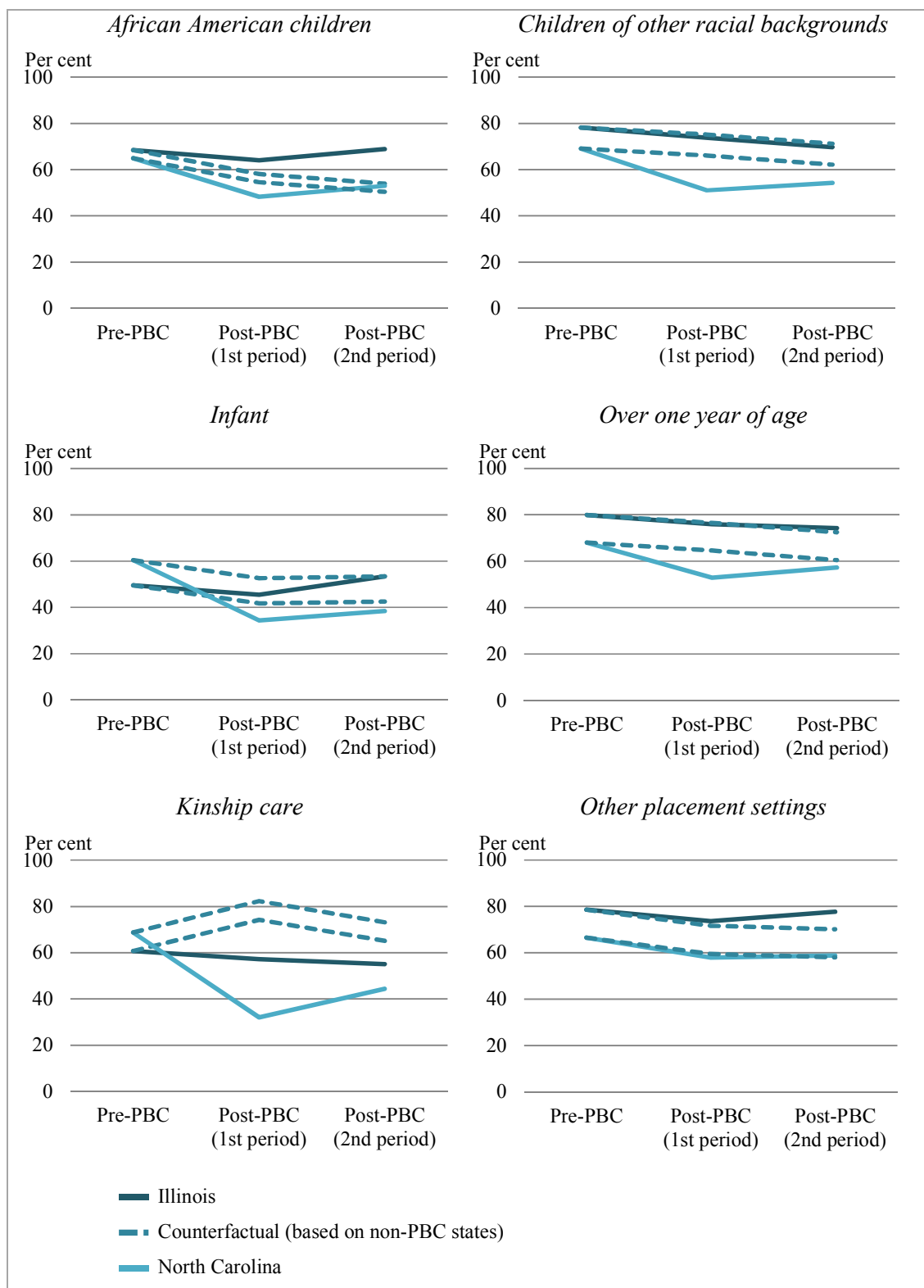
Note: The reported values refer to actual proportions.

Focusing on the age of children, the proportion of infants who achieved permanency to reunification in Illinois was higher in the period 2005-2009 than prior to the implementations of PBC. Further, the share was 11 percentage points higher than expected based on the trend for the two control states. For North Carolina, on the other hand, while there was a slight increase in the share of infants who were reunified during the period 2005-2009 compared to the period 1999-2004, this proportion remained approximately 15 percentage points lower than the counterfactual, signaling a possible distortionary relationship between PBC and reunification. For children over one year of age, the proportion of children who were reunified with their families declined in both Illinois and North Carolina. However, while in Illinois this trend largely paralleled that of the counterfactual, for North Carolina it was significantly lower.

In both North Carolina and Illinois, children placed in kinship care experienced a decline in the proportion of children exiting to reunification. This is important given that children placed with kin were already significantly less likely to reunify with their families compared to children in other settings prior to the implementation of PBC. Compared to the counterfactual, children placed with kin in both states performed considerably worse than expected in terms of the proportion reunified: 10 percentage points less in Illinois and nearly 29 percentage points less in North Carolina. For children placed in other settings, Illinois fared slightly better than what would have been expected based on the trend for the non-PBC states, while the trend for North Carolina closely paralleled that of the counterfactual.

Adoption

The proportion of children exiting care through adoption followed very different trends for children of different racial backgrounds. For African American children, the proportion of children exiting care to adoption within thirty-six months of entry declined significantly between the period 1999-2004 and 2005-2009 in both Illinois and North Carolina. Further, both treatment states recorded a significantly lower proportion of black children exiting through adoption than would have been expected based on the trend for states that did not employ PBC. In contrast, the proportion of children of other racial backgrounds who exited care to adoption rose and both Illinois and North Carolina recorded a higher proportion of children of other racial backgrounds exiting to adoption compared to the counterfactual (see Figure 9.3). The fact that states that employed PBC witnessed an

increase in the disparity of exits to adoption is noteworthy, since relatively little attention has been paid to whether PBC is negatively associated with adoption for some groups of children.

Figure 9.3. The DID estimator for adoptions for Illinois and North Carolina by race, age and placement setting

Note: The reported values refer to actual proportions.
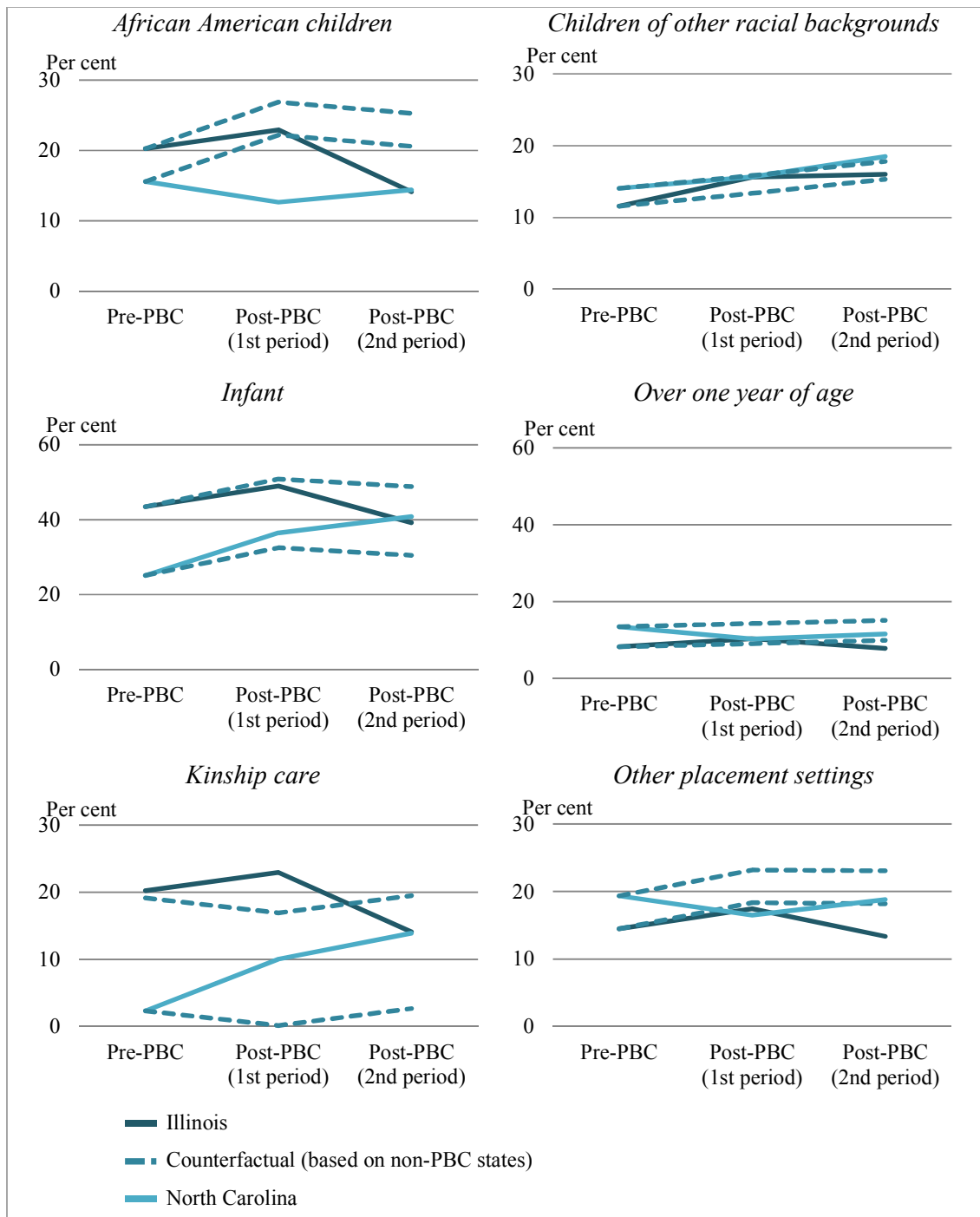
Focusing of the age of children, I find that both Illinois and North Carolina recorded a pronounced increased in the proportion of infants exiting care to adoption in the period immediately following the implementation of PBC. However, while for North Carolina this trend continued during the period 2005-2009, in Illinois much of that gain was eroded. Furthermore, while for North Carolina the proportion of children aged one year or less exiting to adoption was significantly higher than expected based on the trend for the two control states, for Illinois the trend was approximately 10 percentage points below the counterfactual.

In terms of placement settings, the analysis suggest that, while fewer children placed with kin exited care to reunification following the implementation of PBC, the proportion of children placed with relatives who achieved permanency through adoption increased significantly in both Illinois and North Carolina, although for Illinois this gain was only for the period 1999-2004. By the period 2005-2009, the proportion of children placed with kin who exited care to adoption in North Carolina was over 11 percentage points higher—or 80 per cent more—than expected based on the counterfactual. In Illinois, on the other hand, the proportion of children in kinship care who exited care to adoption shifted from being significantly above the counterfactual—around 10 percentage points—in the period 1999-2004, to being 5 percentage points below by the period 2005-2009, 38 per cent less than expected based on the trend for the states that did not employ PBC.

Guardianship

Patterns in the proportion of children exiting to guardianship were remarkably consistent for children with different characteristics. In North Carolina, for instance, the proportion of children exiting care to guardianship increased significantly during the period 1996-1998 and 1999-2004 regardless of the child's race. By the period 2005-2009, the proportion of both African American children and children of other racial backgrounds exiting to guardianship declined significantly in North Carolina, however, remaining slightly above the level of the counterfactual (Figure 9.4). Illinois also recorded a significant increase in the proportion of both black children and children of other racial backgrounds exiting care to guardianship during the period considered. However, this increase was less pronounced. Further, the proportion of children exiting to guardianship remained below the counterfactual, regardless of the race of the child.

Figure 9.4. The DID estimator for guardianship for Illinois and North Carolina by race, age and placement setting
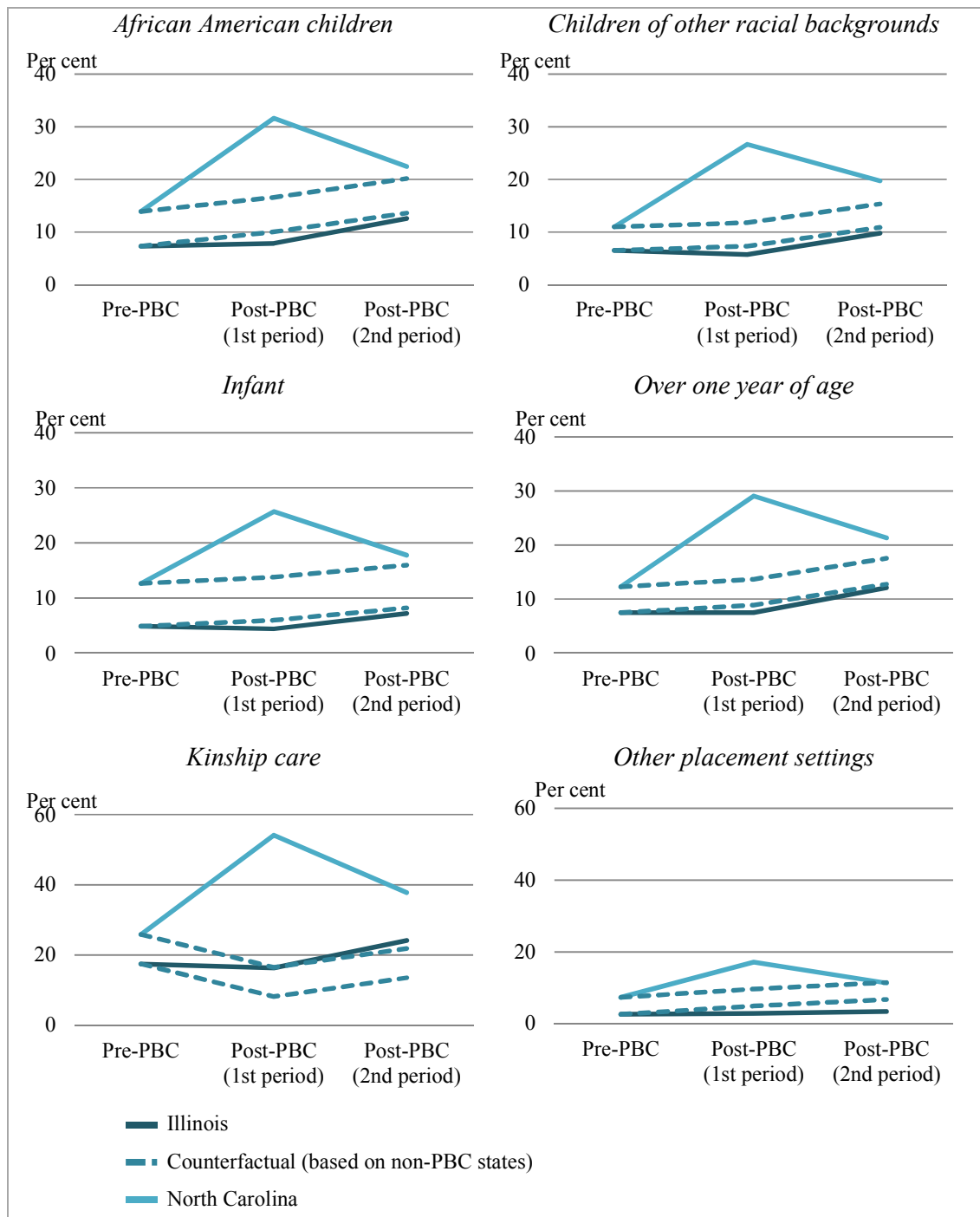
Note: The reported values refer to actual proportions.

The trends for exits to guardianship by age closely mirror those by race for both Illinois and North Carolina, with Illinois performing slightly worse than expected based on

the counterfactual for both infants and children aged over one year, and North Carolina performing significantly better for both groups of children.

While there are similarities in exits to guardianship controlling for children's race or age, I find some clear differences for placement settings. North Carolina recorded a significant increase in the proportion of children placed with kin exiting care to guardianship in the period following the implementation of PBC—over 28 percentage points, equal to a 52 per cent increase. During the period 2005-2009, however, some of this gain was lost. Illinois witnessed an almost opposite trend, with the share of children placed with kin exiting to guardianship first declining slightly and then increasing by nearly 8 percentage points during the period 2005-2009. In both states, the proportion of children placed in kinship care who exited to guardianship was significantly higher than the counterfactual: 11 percentage points more for Illinois and 16 percentage points more for North Carolina by the period 2005-2009. For children placed in other settings, on the other hand, the proportion of children exiting to guardianship changed little over the period 1996-2009. Further, in Illinois it was significantly lower than expected based on the trend for non-PBC states, while for North Carolina the trend paralleled that of the two control states.

9.4 Changes in permanency goals and in the proportion of children who achieved those goals

Examining how the proportion of permanency outcomes changed over time provides only limited understanding of the possible distortionary effect of PBC. Specifically, since child welfare agencies are required to make a permanency plan for every child in care, considering how permanency goals for children may have changed over time, as well as how many children achieved their permanency goal may offer better insight into the possibly distortionary impact of PBC on permanency outcomes. To do so, I first considered how permanency goals for children who exited care within thirty-six months of entry had changed over time in the three groups of states, focusing in particular on the permanency goals of reunification, adoption and guardianship. I then examined the proportion of children who had "achieved" their stated permanency goal. Lastly, I focused on how permanency goals had changed among children still in care thirty-six months after entry.

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Permanency goals for children who exited care within thirty-six months of entry

Among children who exited care within thirty-six months of entry, I find that the proportion of children with reunification as their permanency goal increased significantly in North Carolina, while declining slightly in both Illinois and the states that did not implement PBC (Figure 9.5). By the period 2005-2009, the percentage of children with reunification as their case plan in North Carolina was nearly 34 percentage points higher than expected based on the counterfactual; a finding which is consistent with the state's most recent self-assessment (North Carolina Department of Health and Human Services, Division of Social Services 2007). In contrast, in Illinois the share of children with reunification as their case plan in the period 2005-2009 was 6 percentage points lower than in the period prior to the introduction of PBC, as well as 4 percentage points lower than expected based on the counterfactual.

Figure 9.5. The DID estimator for the proportion of children with the permanency goal of reunification, adoption and guardianship
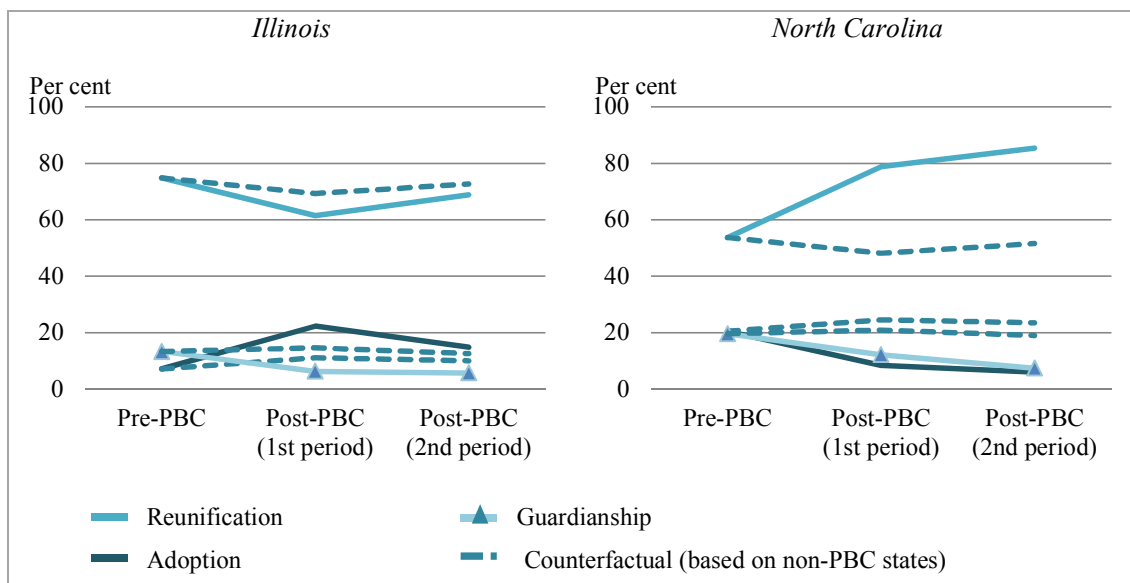
Note: The reported values refer to actual proportions.

The proportion of children with adoption as their case goal increased significantly in Illinois, more than doubling between the periods 1996-1998 and 2005-2009, while it declined significantly in North Carolina, falling, during the same time span, to nearly one-third of its initial value. Compared to the counterfactual, the share of children with adoption as their permanency goal was significantly higher in Illinois, but significantly lower in North Carolina.

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Lastly, I find that the proportion of children with guardianship as their case goal among children exiting care within thirty-six months of entry declined significantly in both PBC states during the time period considered. Further, in both Illinois and North Carolina the proportion of children with this case goal plan was significantly lower than the counterfactual based on the non-PBC states.

Children who achieved their permanency goal within thirty-six months of entry
Focusing on changes in the proportion of children who achieved various permanency goals over time, I find that for Illinois the proportion of children who achieved their case goal of reunification within thirty-six months of entry increased in the first period following the implementation of PBC, rising by almost 15 percentage points compared to the period 1996-1998. Even though this proportion declined in the subsequent period, it remained significantly higher than what would have been expected based on the DID assumption of parallel trends (see Figure 9.6). In contrast, in North Carolina the proportion of children who achieved the goal of reunification declined compared to the period prior to the implementation of this policy management tool, even though it was slightly higher than the counterfactual.

In relation to adoption, the proportion of children who achieved this case goal within thirty-six months of placement increased significantly in both PBC states. The increase was particularly significant for North Carolina, where the proportion of children who achieved the permanency goal of adoption more than doubled by the period 2005-2009 compared to the pre-PBC period. Further, in both sates the percentage of children who exited to the goal of adoption was significantly higher than the trend based on the counterfactual.

For guardianship, both Illinois and North Carolina recorded a significant increase in the share of children who achieved this permanency goal within thirty-six months of placement. Further, this increase was significantly higher than what would have been expected based on the trend for the two states that did not employ PBC.

While these trends suggest that the proportion of children achieving their permanency goal increased in both Illinois and North Carolina, caution needs to be exercised in interpreting these results, particularly for Illinois, given that the share of children for whom a case plan had not yet been established increased significantly during the time period considered.

Figure 9.6. The DID estimator for the proportion of children who achieved their permanency goal of reunification, adoption and guardianship
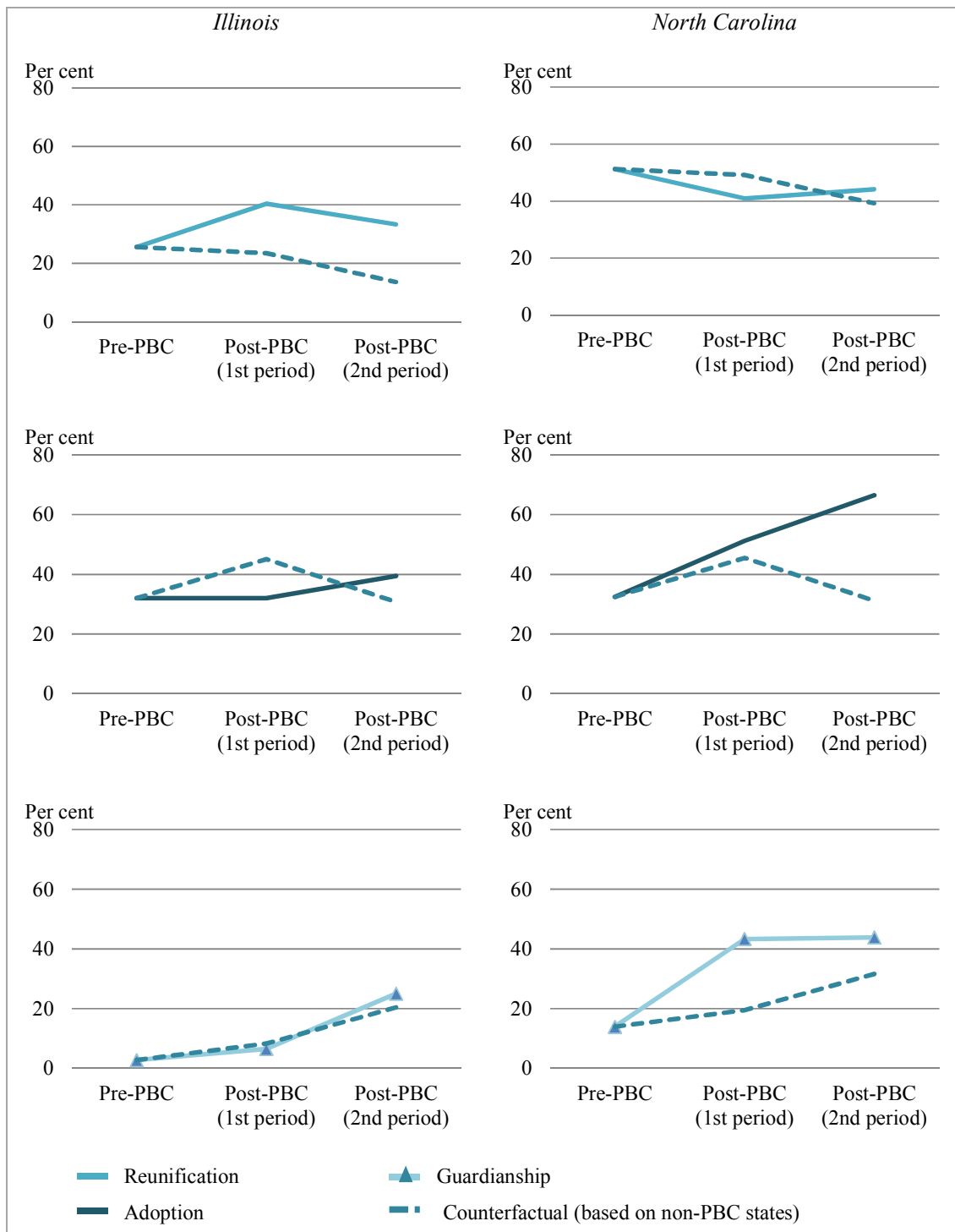
Note: The reported values refer to actual proportions.

Permanency goals for children still in care thirty-six months after entry

Focusing on the case plan of children still in care after thirty-six moths of entry provides additional insight into whether the findings presented above are confounded by the timeframe chosen for assessing trends in permanency outcomes. Specifically, given that my data are right censored, it is important to ascertain whether, following the implementation of PBC, there were significant changes in permanency goals for children still in care after thirty-six months. If gaming occurred, one might expect to find a significantly larger share of children with the case plan goal of adoption or guardianship post-PBC compared to the period preceding the introduction of this programme management tool. Instead, I find that the proportion of children with guardianship as their permanency goal among children still in care after thirty-six months declined in both Illinois and North Carolina. Further, in both states this share was significantly lower than the counterfactual based on the non-PBC states. For adoption, the findings are less consistent. The proportion of children with adoption as their case plan increased in Illinois and was significantly larger than the counterfactual. In contrast, in North Carolina the proportion of children with adoption as their permanency goal declined during the period considered and was significantly lower than the counterfactual based on the control states.

Figure 9.7. The DID estimator for the proportion of children with the permanency goal of reunification, adoption and guardianship among those still in care thirty-six months after entry
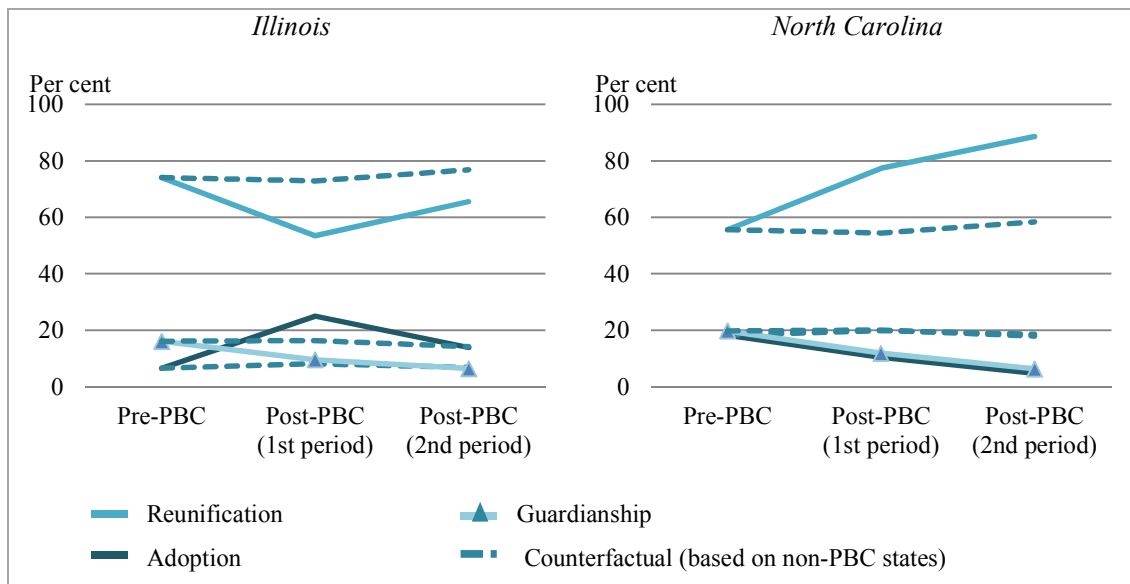
Note: The reported values refer to actual proportions.

9.5 Permanency outcomes controlling for various confounding factors: multivariate models

The above sections suggest that the use of PBC may be associated with distortionary effects on reunification for certain groups of children such as African American children or children placed in kinship care. There is also some evidence that permanency goals may have shifted in the states that employ PBC, particularly with reference to reunification and adoption. In order to control for these factors simultaneously, I created a series of multivariate statistical models, using logistic regression.[126] The dependent variable for these models measures whether or not the child exited care to a specific permanency outcome, namely: adoption, reunification and guardianship.

I then included the main covariates discussed in this chapter, including the child's age, race and placement setting as well as whether they had a case goal of adoption or reunification. As in chapters 6 and 7, I performed standard diagnostics and goodness of fit tests, including checking for outliers and multicollinearity among the covariates included in the models. Because of issues of collinearity with the DID estimator, I ultimately decided not to include time-varying covariates in the models. The models are summarised in Table 9.1.

Table 9.1. Schematic representation of the multivariate models

Covariates	Dependent variable	Statistical method
DID-only	Reunification (model 1)	Logistic regression
	Adoption (model 2)	Logistic regression
	Guardianship (model 3)	Logistic regression
DID and time-invariant	Reunification (model 4)	Logistic regression
	Adoption (model 5)	Logistic regression
	Guardianship (model 6)	Logistic regression

Note: See Table A.9.1- Table A.9.4 in annex.

The results indicate that there are few differences in the proportion of children who exited care to various permanency outcomes between the time-invariant models and the

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[126] I did not employ multinomial logistic regression or ordinal logistic regression because my models violated respectively, the IIA assumption and the parallel regression assumption. While I do not display the results of these models, the predicted probabilities for the DID estimators are consistent with those of the models employing logistic regression.

models which only contained the DID estimator (see section 9.2). As in the DID-only models, the percentage of children exiting to reunification in Illinois in the model with covariates changed little over the time period considered and was slightly higher than the counterfactual based on the trend of the two control states (Figure 9.8). Likewise, the share of children who exited care to adoption declined—and significantly more than the counterfactual—while the proportion of children who exited to guardianship moderately increased—though the trend was not significantly different from that of the counterfactual. For North Carolina, the main difference relates to the gap in the proportion of children exiting care to reunification and the counterfactual, which in the model with time-invariant covariates is even greater that in the DID-only model.

Figure 9.8. Exits from care by type of permanency outcome for Illinois and North Carolina: model with time-invariant covariates
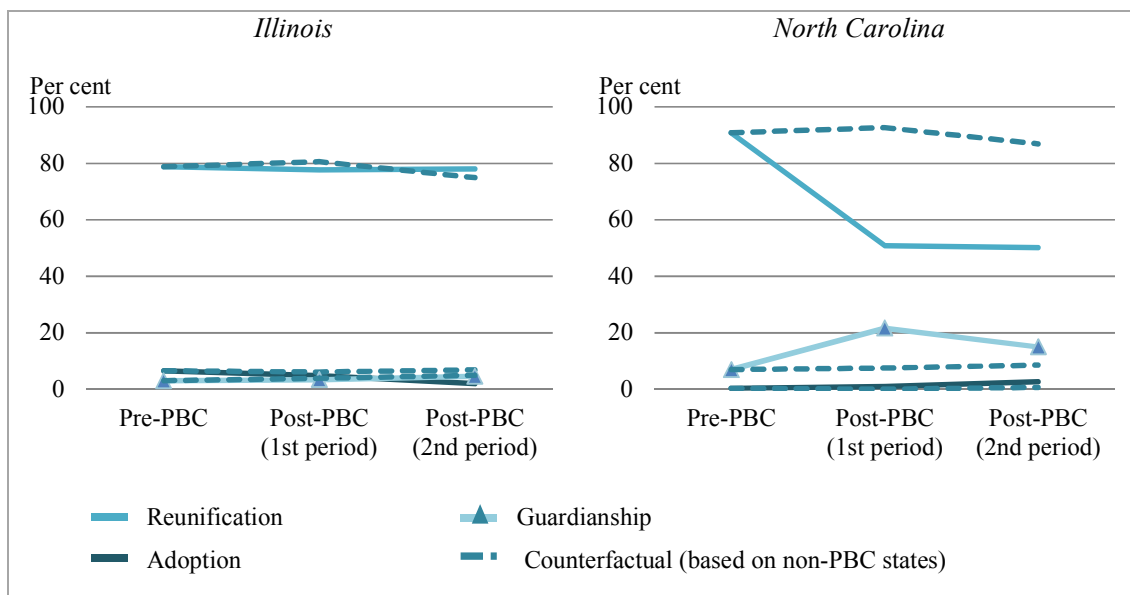
Note: The reported values refer to modelled proportions. See also Table A.9.3 and Table A.9.4.

9.6   Summary of the main findings and discussion

This chapter, which focused on permanency outcomes within thirty-six months of entry, identified a number of interesting findings. Below I briefly summarise and discuss some of the most important of them, focusing in particular on reunification, adoption and guardianship.

Reunification

My analysis confirms that, while reunification remained the most common permanency outcome in both Illinois and North Carolina, the share of children exiting to reunification declined in both states during the period 1996-2009. The decline was particularly noteworthy for North Carolina, where the proportion of children exiting to reunification fell by 13 percentage points over this period. Controlling for various time-invariant covariates, North Carolina appears to have recorded an even more significant decline in the proportion of children exiting to reunification both in absolute terms and compared to the counterfactual based on the non-PBC states. This result is consistent with the findings by McBeath and Meezan (2006, 2008, 2010), according to which the use of PBC may be accompanied by negative distortionary effects on reunification.

My analysis also suggests that, while in North Carolina nearly all groups, regardless of their age, race or placement setting, witnessed a decline in the proportion exiting to reunification within thirty-six months of entry, Illinois experienced a somewhat different trend. Specifically, for some groups of children, including African American children and infants, there appears to have been a significant increase in the proportion of children exiting care to reunification.

Given that both states implemented PBC, why did the two states experience somewhat different trends? Further, why did certain groups of children in Illinois record an increase in the proportion of reunifications within thirty-six months of entry? There are a number of possible explanations. First, Illinois modified its managed contract system to include "performance measures related to timely and frequent engagement of families with reunification goals in case planning and decision making" (Department of Children and Family Services, State of Illinois 2009 p 81). Second, the state significantly increased financial reimbursement to private sector providers for services to support reunifications. Third, Illinois introduced a number of initiatives in response to the PIP; many targeted explicitly at Cook County where the majority of African American children entering care in the state originate from (see also section 8.4). These initiatives, many of which were introduced after 2006, may partially account for the increase in the proportion of children—particularly black children—exiting to reunification that took place during the period 2005-2009.

While my findings suggest that the use of PBC may have been negatively associated with reunification in North Carolina, it is important to note that a number of other policy or contextual variables, besides PBC, may have contributed to this outcome. The lack of

communication with clients, for instance, may be an important factor. Responses from a survey with legal and judicial stakeholder in North Carolina suggest that, while the majority of those interviewed were satisfied with efforts by the state to promote reunification, there was nonetheless a concern that:

> "(m)any families don't really understand what their responsibilities are. Sometimes the social workers assume the families understand when they don't. Guidelines for reunification could be clearer" (North Carolina Department of Health and Human Services, Division of Social Services 2007 p. 47).

Focusing on the proportion of children who achieved the case goal of reunification within thirty-six months of entry, I find that both Illinois and North Carolina recorded a higher share compared to the counterfactual based on the non-PBC states.[127] This suggests that, while the proportion of reunifications may have declined overall in North Carolina, the share of children who achieved their stated case plan among those who had reunification as their permanency goal was not significantly lower than expected based on the assumption of parallel trends. Further, since an increasing share of children in North Carolina had reunification as their permanency goal—both among children who exited care within thirty-six months of entry and among children still in care after that threshold—it is possible that part of the decline in the overall share of reunifications that took place in North Carolina between 1996 and 2009 is be due to an effort to better align permanency case goals with the needs of children in care and their families, rather than a deliberate attempt to game the system by shifting to permanency outcomes other than reunification.

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[127] This finding is inconsistent with previous studies that have identified a negative association between PBC and reunification (McBeath and Meezan 2006, 2008, 2010) and needs to be interpreted with caution, especially in the case of Illinois. During the period considered, the share of children with no established case plan goal increased significantly in Illinois. It is possible therefore, that the higher proportion of children achieving the permanency goal of reunification in Illinois is a result of a type of "gaming" behaviour. Specifically, reunification may have been assigned as a case plan only to children more likely to meet their goal, while children who were less likely to achieve their case plan were "left" without a clear case goal. This argument does not apply to North Carolina, where the share of children with no clear case goal declined significantly over the time period considered.

Adoption

My analysis suggests that in both Illinois and North Carolina, the proportion of children exiting care to adoption was lower than expected based on the trend for the counterfactual. The overall share of children exiting to adoption did not increase significantly during the period considered, although it did rise in the first period following the introduction of PBC in Illinois and during the second period in North Carolina. Further, compared to the trend for non-PBC states, neither Illinois nor North Carolina recorded significantly higher shares of children exiting to adoption, implying that the use of PBC was not associated with improved adoption outcomes compared to the two states that did not employ this performance management tool. These findings appear to be at odds with the concern that the use of quantitative targets to promote permanency might lead to an overreliance on adoptions (Department of Children and Family Services, State of Illinois 2003; Mitchell, et al. 2005).

My analysis also suggests that different groups of children may have experienced different trends with regard to adoption. The share of African American children who exited to adoption, for instance, declined significantly in Illinois. Further, both Illinois and North Carolina recorded significantly lower proportions of adoptions of black children than what would have been expected based on the trend for the counterfactual. In contrast, the proportion of children of other races exiting to adoption increased in both states and was greater than expected based on the trend for the two states that did not employ PBC. I identified a somewhat similar finding for placement settings, with the proportion of children in kinship care exiting to adoption increasing, and those in other placement settings declining. The overall finding that neither Illinois nor North Carolina experienced an increase in the share of children exiting to adoption compared to the counterfactual is somewhat unexpected given the considerable resources dedicated by the two states to promoting adoption, as well as the fact that North Carolina uses PBC primarily for this purpose. It also stands in contrast with much of the literature, which has emphasised the positive relationship between the use of PBC and adoption (Berlin 2007; Blackstone, et al. 2004; Vargo et al. 2006; Zinn 2009).

There are a number of possible explanations for these findings. First, in this analysis I only focused on permanency outcomes within thirty-six months of entry. Yet previous research shows that most adoptions do not take place in the first years following placement (Akin 2011; Connell, et al. 2006; Wulczyn 2004). By choosing a relatively short timeframe, my analysis may be underrepresenting the number of adoptions which actually

took place in the two states.[128] This alternative explanation, however, is not supported by the finding that—at least for North Carolina—the share of children with adoption as their permanency goal declined among children still in care thirty-six months after entry.

Second, much of the literature that has emphasised the positive relationship between adoptions and PBC has focused on the stocks of adoptions, i.e., the number of adoptions taking place in a certain year, regardless of when the child entered care. State-wide assessments in both Illinois and North Carolina suggests that much of the increase in adoptions which occurred in those two states following the introduction of PBC resulted from efforts to expedite the adoption of children who were already in care; what is sometimes referred to as the "backlog" of adoption cases. Since my analysis focuses on entry cohorts, this effect might be less visible.

Third, because of the success in promoting adoptions of children already in the out-of-home care system, "the number of homes available for future adoptions may have declined" (Department of Children and Family Services, State of Illinois 2003 p. 148). While both Illinois and North Carolina have stepped-up their efforts to recruit potential adoptive parents through public service announcements and programmes such as the Corporate Partnership for Recruitment of Adoptive Families, the Casey Family program, the One Church One Child programme, the PALS book and NC KIDS, recruitment of adoptive parents remains a challenge in both states.

Fourth, if, as a result of efforts to divert lower risk children out of the formal care system, the overall population of children entering care became more difficult to serve (see also chapter 8), agencies may have found it more challenging to find adoptive families for such children, owing to their increased medical, behavioral and other needs. Further, since caregivers receive larger compensation—i.e., higher than standard out-of-home care rates—for caring for children with more intensive needs, caregivers of such children would also have a disincentive to adopt, since doing so might mean losing the additional funding (Berlin 2007; Berrick 1997; Geen 2000).

While it is troubling that fewer African American children exited to adoption compared to children of other racial backgrounds, there may be a number of factors which put this finding in a different light. One such factor could be that "(m)any relatives

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[128] In the U.S., the median length of stay in care from the date of latest removal from home to the date of discharge to adoption was 29.4 months (U.S. Department of Health and Human Services, Administration for Children and Families, Children's Bureau 2012d).

indicate a desire to assume long-term responsibility for the children in their care, but are uncomfortable with the legal processes involved in adoption" (Department of Children and Family Services, State of Illinois 2009 p. 74). The literature suggests that African American children are more likely to be placed with kin compared to children of other races; a difference, which in turn, might explain the lower proportion of adoptions for black children (Barth 1997, 2005; Berrick, et al. 1994; Grogan-Kaylor 2000). Another explanation could be that the "pool" of African American families available for adoption is smaller. Evidence from North Carolina suggests that this may be the case. Over the past years, the state has taken steps to address the shortage of black adoptive families through a targeted recruitment campaign aimed at attracting African American adoptive families. Identifying adoptive parents of the same racial background as the child is important since there is still a preference for same-with-same adoptions in the United States, in spite of the 1994 Multiethnic Placement Act (MEPA) which described this practice as discriminatory (see also chapter 3).[129]

While my analysis does not support the finding that PBC may have had a distortionary impact on reunification by shifting resources and priorities to services for adoption, there is a legitimate concern, owing to the rising numbers of adoptions and placements with guardians, about the increasing burden of what Barth (2009 p. 64) refers to as "post-permanency" services. Specifically, the amount of resources dedicated to promoting adoption has greatly increased compared to the federal budget dedicated to placements in out-of-home care (DeVooght, et al. 2008). The reasons for this shift are complex and go beyond the scope of this study. However, one of the main motivations appears to have been financial interest (Anyon 2011), since by discharging children from the formal care system states are "able to save significant sums on the dependency-related and public child welfare oversight costs" (Berlin 2007 p. 9). A second motivation might stem from a deep-seated ideological opposition in the United States for providing financial support to birth families and particularly minorities; what Geen (2004 p. 141) has described as "societal and policy concerns regarding the responsibility family members have to each other". The belief that subsidising birth families is "antithetical to mainstream American values" (Iglehart 1994 p. 108) may also explain the preference for dedicating more financial resources to support post-permanency funding for children in "new" families,

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[129] The MEPA made it illegal to base considerations relating to the choice of placement setting or adoption on race or ethnicity (see also section 3.5).

rather than supporting programmes to rehabilitate birth families and promote reunification (Roberts 2002).

While this strategy may be effective in promoting adoptions in the short run, serious concerns have emerged in both Illinois and North Carolina with regard to post-permanency services. These concerns may partially explain the marked decline in the proportion of children in both states with adoption as their stated permanency goal. The declining share of children with adoption as their case plan goal is otherwise counterintuitive, given what McBeath and Meezan (2009) have referred to as shift in the "hierarchy of permanency" away from reunification towards adoption and guardianship, resulting, at least in part, from the increased emphasis placed on achieving permanency in a timely manner in the United States.

Guardianship

The chapter indicates that both Illinois and North Carolina experienced a significant increase in the proportion of children exiting care to guardianship and that this change was shared across the various groups of children considered in the analysis. The increase was particularly pronounced for North Carolina where the proportion of children exiting to guardianship was significantly higher than what would have been expected based on the trend for the counterfactual. Inclusion of various time-invariant covariates did not significantly modify this relationship. This finding is also consistent with that of McBeath and Meezan (2010 p. i121) who also concluded that children were being pushed "quickly towards any permanency option that [met] performance milestones".

While there is a positive association between the use of PBC and increased exits to guardianship in the two states considered it is likely, as indicated in previous chapters, that many other factors besides the use of PBC may have contributed to this outcome. One such factor, already anticipated in chapter 5, is the title IV-E waiver demonstration programme, which allows states to use federal funding to extend subsidies to families for assuming guardianship of children who would have otherwise remained in out-of-home care. Through this programme, guardians—who can be related or unrelated to the child as well as licensed or unlicensed[130]—receive higher levels of compensation than what they would have been entitled to through TANF. In practice, this means that such states can

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[130] Both Illinois and North Carolina require unrelated guardians to be licensed caregivers.

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remove the financial disincentive many related caregivers face when children exit from the formal out-of-home care system (see also section 3.5).

Strikingly, assessments of these programmes differ somewhat from my results. An evaluation conducted by the Children and Family Research Center and Westat, Inc., for instance, suggests that in Illinois the programme to subsidise guardianship was very successful, increasing "overall permanency by 6.4 percentage points over what it would have been without the demonstration" (Department of Children and Family Services, State of Illinois 2009 pp. 140-141). In contrast, my analysis, based on multi-year prospective cohorts, indicates that, while the proportion of children existing to guardianship increased in the state, this trend was not significantly different from that of the counterfactual, suggesting that other factors related to the use of guardianship besides PBC may have intervened.

Conversely, I identify a significant increase in exits to guardianship in North Carolina, among children exiting care within thirty-six months of entry. Yet the state discontinued its demonstration waiver programme in 2008, citing a number of challenges, including in recruiting and retaining guardians. In reality the programme may have been a victim of its own success since counties appear to have:

"used significant portions of their capped allocations to pay the foster care maintenance expenses of non-IV-E eligible children in order to free up local funds for innovative child welfare programs; however, the use of flexible funds for foster care maintenance gradually eroded North Carolina's cumulative child welfare savings to the point that it had to terminate its waiver demonstration before the cost neutrality limit was exceeded and the State started losing money" (U.S. Department of Health and Human Services, Administration for Children and Families 2011c p. 32).

While it is not clear what the implications of this discontinuation will be, given that guardianship accounted for approximately one-fifth of all children who achieved permanency within three years of entry during the period 2005-2009, it is likely that this change will contribute to a significantly decline in the timeliness of exits from care in North Carolina.

10 Conclusions, limitations and implications for practice and further research

10.1 An overview of what this study sought to accomplish

Over the past twenty years, the use of PBC in child welfare services has become more widespread. More than half of all states in the United States are using PBC in some part of their child welfare system. Proponents of PBC often view it as a useful tool to "fix" what they perceive as an otherwise broken system. Critics tend to view PBC as disruptive to organizational capacity and, worse, potentially detrimental to the needs of those very clients the child welfare system is seeking to benefit, namely children and their families. While the use of PBC remains controversial in child welfare, relatively little is known about how effective such programme management tools have been in achieving their stated objectives. Furthermore, there is still a relatively limited evidence base on whether PBC is accompanied by various negative distortionary effects, particularly with regard to permanency outcomes

In this study, I have focused on the use of PBC in relation to the objective of reducing the amount of time children spend in care before achieving permanency. I chose to focus on timeliness because it is both a widely-shared policy objective in the United States and a relatively simple construct to measure compared to more complex concepts such as child wellbeing or safety. In choosing to focus on timeliness, I was aware that there is no consensus on whether reducing the amount of time children spend in care should be pursued in the first place, given that shorter amounts of time in care may be associated with higher permanency disruptions as well as unwarranted infringements of parental rights to family privacy and intimacy (Archard 1993; McDonald, et al. 2006; Wulczyn 2004).

To explore the relationship between PBC and timeliness of exits, I identified four states, two of which had implemented PBC—Illinois and North Carolina, and two of which had not—New Jersey and Washington. Using multi-year entry cohorts created with the AFCARS dataset, I then compared trends in the timeliness of exits and various factors related to timeliness over the period 1996-2009. I followed each cohort children for a maximum of three years from their time of entry into care.

In chapter 1, I indicated that at the time of undertaking this study I had two main aims: first, to contribute to developing a more methodologically sound evaluation of

differences in the timeliness of exits from care for states that employ PBC compared to non-PBC states; and second, to add to the evidence base on the relationship between PBC, timeliness and permanency outcomes. Having completed this study, my understanding of my contribution to existing knowledge has evolved.

With regard to my first objective, I believe to have made a contribution to addressing some of the methodological limitations[131] of previous research by using a set of outcome measures that I consider to be more "valid". Specifically, I employed multi-year, multi-state entry cohorts and examined a more complete spectrum of permanency outcomes. This represents a step forward compared to some of the previous research which, as seen in chapter 3, relied on exit cohorts or PIT estimates and focused on a limited set of permanency outcomes, notably reunification or adoption. I also sought to address some of the limitations of previously employed research designs by: (1) focusing on differences in the timeliness of permanency outcomes both before and after the enactment of PBC; (2) seeking to minimise the confounding effect of secular trends by using a control group, selected on the basis of a series of replicable criteria; and (3) controlling for differences among states in some of the factors known in the literature to be associated with the timeliness of exits from care.

Having completed this study, I have come to a better appreciation of the complexity of assessing the impact of a policy intervention such as PBC in the absence of a monitoring framework designed explicitly for that purpose. While I have realised that the research design, dataset and methods employed in this study allow me to draw only limited inferences on the relationship between PBC and the timeliness of permanency outcomes, I have acquired a better understanding of the main features that a monitoring framework designed to explore this type of relationship might require. I return to discuss some of these aspects in sections 10.4 and 10.6 below.

With regard to my second objective, I contend that this study makes a contribution to the existing knowledge-base on the relationship between PBC and timeliness by providing information on two states that implemented this programme management tool: Illinois and

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[131] As indicated in chapter 1 and 3, many of the existing studies: (1) were based on PIT estimates or exit cohorts; (2) did not consider timeliness in relation to all permanency outcomes; (3) only focused on the timeliness of permanency outcomes in one locality or point in time; and (4) did not take into consideration various confounding factors known to be associated with the timeliness of permanency outcomes, including the age and race of children entering care or their placement setting.

North Carolina. My findings indicate that, in these two states, PBC is positively associated with reductions in the average amount of time children spend in care, expressed in terms of various outcome measures. This relationship is discernible both in absolute terms and compared to a counterfactual based on a set of control states. With the dataset and methods employed, however, I am unable to determine whether these outcomes are the result of PBC alone or a combination of other factors, including secular trends, which I am not able to quantify or control for in my study as presently conceived. I discuss the implications for future research in section 10.6 below.

While my findings are insufficient to attribute a causal relationship between PBC and timeliness, they shed some light on some of the "mechanisms" through which changes in the timeliness of permanency outcomes are achieved. Specifically, I find that once a series of theoretically relevant covariates and interactions are included in my models, the positive relationship between PBC and timeliness "disappears", suggesting that the interpretation of my findings depends, in part, on the type of outcome measure employed. The fact that the adjusted averages, which take into account changes in the composition of the out-of-home care population served as well as the type of placement settings employed, fail to identify a positive relationship between PBC and the timeliness of permanency outcomes, raises the question of whether incentives structures for PBC should be realigned based on a series of more complex measures than the "raw" state-level averages currently in use. I return to discuss this aspect in section 10.4 below.

In this chapter, I review my main findings related to the four research questions outlined in chapter 1. I then provide an overview of the limitations of this study focusing on its research design, the choice of treatment and control groups, as well as the methods employed. Lastly, I present some implications for practice and theory, as well as areas for further research.

10.2 Summary of the main empirical findings

In this study I sought to address four interrelated research questions. Below I review my main empirical findings in relation to each of these questions, as well as some of the challenges that I encountered in the course of the analysis.

Do states that employ PBC record more timely exits from care compared to states that do not employ PBC?

The underlying hypothesis for this question, which I addressed in chapter 6, is that, based on the theory of social exchange, agencies operating under a regime that links compensation to the achievement of timely permanency outcomes would have a greater incentive to reduce the average amount of time children spend in care compared to agencies compensated through more traditional approaches such as the number of clients served or services provided.

Using the multi-year prospective cohorts created with the AFCARS dataset, I started by focusing on differences in the timeliness of permanency for PBC and non-PBC states. The initial comparison revealed that non-PBC states recorded more timely permanency outcomes, however, these findings were prejudiced by the fact that they did not control for initial differences in levels. Using a DID estimator, indicated that between 1996 and 2009, the two treatment states performed better than the counterfactual based on the control states in terms of a number of outcome measures. These findings are consistent with those of several previous studies (Alpert, et al. 2011; Garstka, et al. 2012; Haslag, et al. 2012; Shaver 2006; Vargo, et al. 2006).

While these findings are important, I argue that their validity is undermined by the fact that they do not account for differences across states in child populations served or in how those populations had changed over time. To address this limitation, I created a set of statistical models using the statistical software package Stata 13, which included both time-invariant and time-varying covariates identified in the literature as being predictive of the timeliness of exits from care. I also created a multilevel statistical model, which sought to control for time-invariant fixed effect. The results suggest that controlling for various covariates, especially time-varying ones, significantly changes the interpretation of the relationship between the use of PBC and the timeliness of permanency outcomes. In particular, this relationship shifts from being positive to being negative, suggesting that states that employed PBC did not record more timely exits from care compared to a set of control states once adjusted averages were considered. The fact that my results change once relevant covariates and interactions are included in the analysis is consistent with the findings of Meezan and McBeath (2003a), who also found that agencies which employed PBC did not record more timely permanency outcomes compared to the ono-PBC agencies, after controlling for various mediating and confounding factors.

However, as indicated in chapter 6, these findings need to be interpreted with caution owing to a number of limitations. These include: (1) the dearth of detailed information on a number of factors found to be associated with the timeliness of permanency outcomes; (2) the lack of random assignment for the controls; (3) concerns about violations of the assumption of parallel trends, which might confound the interpretation of the ATE; and (4) the potentially endogenous nature of the relationship between the treatment and the outcome as well as some of the theoretically relevant covariates included in the models, including TPR, placement setting and permanency outcome. I return to discuss these issues in section 10.3 below.

Do states that employ different models of PBC experience different outcomes in terms of the timeliness of exits?

In chapter 7, I sought to elaborate on the findings of chapter 6 by focusing not only on PBC and non-PBC states, but also distinguishing between the two treatment states, namely Illinois and North Carolina. My motivation for focusing on these two states separately was partially dictated by the fact they had followed somewhat different approaches to implementing PBC, with Illinois using a so-called caseload method and North Carolina a pure pay-for-performance model. Because the "costs" of failing to achieve permanency targets was higher for agencies in North Carolina, I expected the latter to experience more timely permanency outcomes, post-PBC, compared to Illinois. An additional motivation for considering the two states separately was that I wanted to ensure that the findings in chapter 6 were not simply the result of having "bundled" together the two treatment states.

My analysis, using the multi-year, multi-state entry cohorts, indicates that North Carolina recorded more timely exits from care compared to Illinois. Controlling for initial differences in levels, I found that both states experienced a significant reduction in the average amount of time children spent in care, as well as an increase in the proportion of timely exits over the time period considered. For Illinois, much of this change was due to an increase in the proportion of very timely exits, while North Carolina experienced a decline in the share of very timely exits which was counterbalanced by a significant increase in somewhat timely exits.

My analysis also confirms what had already emerged in chapter 6: namely that after controlling for various covariates found to be associated with the timeliness of exits, the overall relationship between the use of PBC and the timeliness of permanency outcomes

was no longer positive. The fact that the interpretation of the relationship between PBC and timeliness changes depending on the type of measure employed, with a positive relationship for the so-called "raw" averages but not for the adjusted averages, may also shed light on why, in the absence of an experimental design, interpreting trends for states that employ PBC remains so challenging and why different experts have researched such different conclusions on the relationship between PBC and the timeliness of exits (see also chapter 3).

While these results suggest that, on average, the use of PBC was not associated with improved timeliness of exits in the treatment states once theoretically relevant covariates and their interactions were included in the models, there was an exception: the proportion of children exiting care in a somewhat timely manner in North Carolina. However, while this finding appears to support the second hypothesis outlined in chapter 2, I am unable to draw causal inferences about the link between the use of PBC and improvements in somewhat timely permanency outcomes, owing to limitation with my research design as well as the lack of detailed information on other factors which might be associated with the timeliness of exits, including services to enable children to achieve permanency more quickly, as well as various structural or organisational factors (see also Garstka, et al. 2012; McBeath and Meezan 2009, 2010).

Is there evidence of various types of gaming, including "cherry picking" among states that employ PBC? What other mechanisms might influence the timeliness of exits in PBC states?

In chapters 6 and 7, I focused mainly on the relationship between the use of PBC and the timeliness of permanency outcomes both compared to the control states and for different models of PBC. In chapter 8, I sought to expand on this analysis, by exploring factors which might explain "why" Illinois, North Carolina and the two control states experienced different trends.

Recognising that the overall timeliness of exits is affected both by the amount of time different groups of children spend in care as well as by the relative size of those groups compared to each other, I first examined whether there had been changes in the two PBC states in the timeliness of various groups of children exiting care, focusing on their race, age and placement setting. I found that Illinois had recorded significant reductions in

the amount of time African American children spent in care, while both Illinois and North Carolina had registered higher shares of timely exits for children placed with kin.

Using a counterfactual scenario, I established that reductions in the amount of time black children and children placed with kin spent in care had contributed to improving the overall timeliness of exits in the two PBC states. While this finding is interesting, it does not mean that the use of PBC can explain these changes. Instead, I argue that other factors may have intervened. For example, the fact that Illinois introduced a number of services targeted explicitly at Cook County—the county that hosted the overwhelming majority of African American children in the state's out-of-home care system—was cited as a possible reason for the improved timeliness of permanency outcomes for black children in that state. I also identified the introduction of a subsidised guardianship waiver demonstrations for title IV-E as one of the factors which might account for the improved timeliness of exits among children placed in kinship care.

Focusing on the composition of children entering care, I found that the proportion of African American children entering care declined significantly in both Illinois and North Carolina compared to children of other racial backgrounds. As a result of this change, both states recorded a significantly higher proportion of timely exits compared to the scenario where no change in racial disparity at entry had occurred. I also found that the proportion of children placed in kinship care increased in both Illinois and North Carolina, however, this change was smaller than might have been expected based on the trend for the two non-PBC states.

One of the concerns expressed in the literature is that agencies operating under a regime of PBC would be under pressure to game the system in order to meet their required performance targets. Agencies that are unable to improve the timeliness of children exiting care through the provision of various services would have an incentive to modify the composition of children entering care. Given that my analysis had identified a significant decline in the proportion of African American children entering care as well as an improvement in the timelines of exits for selected "marginal" groups, I sought to explore whether these trends might be construed as a sign of gaming.

My evidence on the existence of "parking" is somewhat inconclusive. Both Illinois and North Carolina recorded a marked decline in racial disproportionality at entry following the introduction of PBC. For Illinois this decline was more pronounced than for the counterfactual. While these findings are noteworthy, they are not sufficient to claim a deliberate attempt to "game" the system, since the control states also experienced a striking

decline during the same period. Rather if "parking" did take place, it occurred within the context of a broader secular tend towards reducing over-representation of black children entering care.

Other indirect measures of gaming—namely, comparisons based on incidents of maltreatment and trends of racial disparity at entry for various localities—also do not support the hypothesis of deliberate attempts to screen out children who would have otherwise been less likely to exit care in a timely manner. Instead, there is some evidence that, especially for Illinois, efforts to reduce caseloads by diverting lower-risk children out of the formal care system, may have increased pressure on child welfare agencies to accept any client, even those hardest to serve, which in turn may have reduced agencies' ability to achieve their permanency targets in a timely manner.

Is the use of PBC accompanied by reductions in reunifications compared to other permanency outcomes?

In my final analytical chapter—chapter 9—I examined whether, as previously suggested by a number of studies, the use of PBC might be accompanied by distortionary effects on reunification. The underlying hypothesis I sought to explore was whether states that employed PBC might be more likely to pursue alternatives permanency outcomes, once timely reunification for a child had been ruled out.

My analysis reveals that the proportion of children exiting care to reunification within three years of entry declined in both Illinois and North Carolina. For North Carolina, this may be a sign of the possible distortionary effect of PBC on reunifications since the share of children exiting through this type of permanency outcome was significantly lower than what would have been expected based on the trend for non-PBC states. In contrast, in Illinois the decline was not significantly different from that of the counterfactual. Further, the share of African American children who exited care to reunification increased significantly in Illinois; a finding which may be linked both to the efforts undertaken to improve permanency in Cook County, as well as to reforms introduced after the first CFSR to realign performance targets so that they included goals related to reunification services.

In relation to adoption, I found that, against expectations, the share of children exiting to adoption in both Illinois and North Carolina was not significantly higher than the counterfactual based on the non-PBC states, even after controlling for various time-

invariant covariates. These results were unexpected since much of the previous literature had identified a positive relationship between the use of PBC and adoption (Berlin 2007; Blackstone, et al. 2004; Vargo et al. 2006; Zinn 2009). My analysis also reveals that the share of African American children who exited to adoption declined significantly in Illinois, while both Illinois and North Carolina experienced significantly lower proportions of black children exiting care to adoption than would have been expected based on the counterfactual. Children of other racial backgrounds did not experience the same trend over the time period considered. While this finding signals a potentially troubling racial bias related to the permanency outcome of adoption in the two treatment states, the preference voiced by many related, African American caregivers for guardianship, as well as difficulties in recruiting black adoptive parents may offer alternative explanations for this trend.

In relation to guardianship, my analysis suggests that both Illinois and North Carolina experienced a significant increase across nearly all groups of children considered. The use of subsidised guardianship waivers was identified as a possible reason for the higher shares of children exiting to guardianship in the two PBC states compared to the control states.

In addition to focusing on exits to various permanency outcomes, I also considered how case goals had changed over time and how the latter were related to changes in the shares of children exiting to reunification, adoption and guardianship. My analysis revealed that the proportion of children having reunification as their case plan goal had increased in both Illinois and North Carolina and that the share of children who had exited to reunification—among those with reunification as their case plan goal—had also increased. I also found that, unexpectedly, the share of children with adoption or guardianship as their permanency goal had declined between the period 1999-2004 and 2005-2009. While beyond the scope of my analysis, I attributed part of this decline to concerns about the costs of post-permanency in the two PBC states. The fact that North Carolina discontinued its subsidised guardianship waiver programme in 2008 might have important consequences for future trends in the timeliness of permanency in that state.

10.3 Limitations of the study

As discussed in previous chapters, this study has a number of limitations. In the section below, I briefly discuss some of the most salient ones , focusing on three major areas:

(1) problems with the outcome measures, (2) problems with the research design, and (3) limitations with methods employed.

Problems with outcome measures

Since the 1990s, the child welfare system in the United States has placed an increasing emphasis on evaluating outcomes. There is a perception that quantitative outcomes can measure progress in achieving child welfare goals and that these measures, by informing policy making, can lead to better practices and outcomes (Testa 2010a). Yet not enough attention has been paid to identifying valid outcome measures. As indicated in chapter 3, many of the studies that have focused on changes in the timeliness of permanency outcomes have used PIT estimates or exit cohorts, which give a biased representation of the amount of time children spend in care. Another limitation of the measures frequently used, particularly those in the CWOR and the CFSR, is that, while they employ prospective measures, they focus on a limited set of permanency outcomes, usually only reunification and adoption, overlooking the fact that other permanency options such as guardianship have become more widely used in recent years.

In this study, I have sought to address these limitations by using multi-year prospective cohorts as well by considering timeliness of exits in relation to the full spectrum of permanency outcomes. Nonetheless, there are a number of limitations related to the measures I employed to assess changes in the timeliness of exits over time. Probably the greatest limitation is that the entry cohorts I created using the AFCARS dataset only follow children for the first thirty-six months from the time of entry. This choice was primarily dictated by practical considerations, including difficulties in matching the CID for more than three consecutive, annual AFCARS data files at a time (see also section 4.4). For most of my analysis, this choice is not problematic since I mainly focus on whether or not children exited care in a timely manner; that is to say within twenty-four months of entering care. Whether a child exited care after two years or four years of entry, therefore, is irrelevant in the context of my study: it is still an untimely exit. The choice of timeframe however, does make a difference when considering permanency outcomes, since studies have shown that the timeliness of exits differs for children who exit to adoption, reunification and guardianship (Akin 2011; Connell, et al. 2006; Wulczyn 2004). The fact that my analysis focuses only on the first three years after entry into care, may over-represent the share of reunifications taking place compared to other permanency outcomes,

particularly adoptions. Furthermore, because of its limited timeframe, my analysis is likely to overestimate the timeliness of adoptions since, owing to the lower probability of a child being adopted in the first year of entry, children who exit care to reunification have a longer timespan to see their placements disrupt compared to children who are adopted.

Another important limitation is that my entry cohorts do not measure first entry, but rather whether a child entered care during a certain fiscal year, regardless of having been in care before. In that sense, my approach differs from the one used by Testa, et al. (2008), which seeks to follow a child's path through care. Instead, my approach aims primarily at exploring more macro-level trends, including changes in state-level averages. Again, while this approach may be appropriate given the aims of this study, it may not be suitable in other research contexts.

In addition to limitations related to the multi-state, multi-year entry cohorts, the measures I employed to assess the timeliness of exits are not well suited for measuring permanency, since they do not capture re-entries or permanency disruptions (see also the discussion below on the AFCARS dataset). While I made the rather simplistic choice to use exits from care as a proxy for permanency (see also chapters 1 and 4), approaches which emphasise length of stay in care are increasingly being criticised for failing to give an accurate portrayal of permanency, especially given the pressure to close cases quickly (Berlin 2007; Karatekin 2014). The fact that this study does not seek to address the issue of placement or permanency instability is a serious shortcoming given that such disruptions are known to have a negative impact on the wellbeing and safety of children in out-of-home care (see also section 10.6 below). While the outcome measures employed in this study do not capture re-entries, the linking procedure used to create the prospective cohorts, as well as the fact that the AFCARS dataset only stores the most recent record for children who re-enter care multiple times during the same fiscal year, may minimise some of the impact of short-term permanency disruptions, signifying that they are less prone to capture the type of gaming behaviour Raghavan (2010) anticipates—i.e., discharges of children from care followed by immediate re-admissions to "artificially" shorten spells in out-of-home care.

Challenges with the research design
As indicated in chapter 3 and 4, policy assessments require a robust research design. Generally RE or RCT are viewed as the most suited approaches for exploring such

relationships. Such designs, however, tend to be uncommon in research on children in out-of-home care for both ethical and practical reasons. Further, while RCTs are generally considered the most appropriate designs for establishing causal relationships, they too have limitations, including with regard to external validity, meaning that findings from RCTs are not easily generalised to other populations or contexts.

QEDs, which generally have lower levels of internal validity compared to RCTs, can in some cases be easier to make inferences from. However, QEDs to generate valid results need to fulfil a number of requirements including having a control and treatment group as well as information prior to and after the implementation of the policy being evaluated. As indicated in chapter 2, only a limited amount of the research on the timeliness of exits in the United States has included these features. Furthermore, relatively few studies have controlled for differences in the child populations served or how those populations changed over time.

In my study, I tried to address some of these limitations by identifying a treatment and control group, analysing changes in trends over a fourteen year period, which included a pre-PBC period and two post-PBC periods, and controlling for a number of covariates identified in the literature as being related to the timeliness of exits. In relation to each of these aspects, however, I made a series of decisions that warrant further scrutiny and discussion.

In relation to the choice of treatment and control, for instance, since no such groups had been randomly assigned a priori, I chose to base my comparisons on a set of states which had implemented PBC versus a set of states which had not. In order to minimise the differences between the treatment and control states, I used the PSBI/ND framework developed by Testa to try to "isolate" the possible effects of PBC from the broader differences related to a state's normative position with regard to the goal of promoting timely exits from care. I restricted my analysis to states which followed the BI approach, meaning that they had met or exceeded the provisions related to timeliness outlined in the ASFA. I also sought to match the states in terms of some broad social and demographic characteristics, including the proportion of children living in poverty. In spite of these efforts, this approach is clearly simplistic and falls short of the rigorous requirements of RCT. Other aspects which negatively affected my choice of treatment and controls relate to constrains imposed by the AFCARS dataset—both in terms of the number of states with long enough time series as well as issues related to matching the CID across annual AFCARS files.

In relation to the choice of timeframe, I decided to group the data into three multi-year periods. This choice was dictated both by analytical convenience as well as the need to minimise autocorrelation across the multi-year, multi-state entry cohorts. However, by doing so I lost some of the analytical richness of the data. Another concern I encountered was that the pre-PBC period was relatively short compared to the post-PBC period. To ensure that the periods were more comparable, I subdivided the post-PBC period into two periods. Even after doing so, however the length of the three periods remains uneven. Further, because states and counties within states implemented PBC at different points in time, I tried to exploit this feature in a type of QED, referred to as multiple baseline design. However, to ensure more comparable time-frames and minimise the effect of unobserved secular trends, I decided to create a random, without-replacement sample of children in the two control states, proportional to the size of those counties or states which had implemented PBC earlier—namely Cook County, Illinois and North Carolina—compared to the entire population of children entering care in Illinois and North Carolina. I "removed" this sample of children from the pre-PBC control group and "added" it to the first post-PBC period to ensure that the timeframes covered by the control and treatment states were comparable.

Lastly, while I sought to control for various covariates identified in the literature as being associated with the timeliness of exits, my analysis was constrained by the data source I selected, namely the AFCARS dataset. As indicated in chapter 4, this dataset contains administrative data for 66 data elements, including on the basic demographic and social characteristics of children in care, as well as on their placement and permanency characteristics. I chose this dataset because it covers all children in the formal care system in the United States, is available for a relatively long time series, and is comparable across states and over time. However, as anticipated in chapter 4, the dataset also has a number of limitations. These include issues with the reliability and validity of the data as well as being ill-suited for studying permanency disruptions and re-entries into care. Another limitation of the AFCARS dataset is that it contains limited or no information on the environment the child originates from, the type of services he or she receives while in care, the characteristics and qualifications of the caseworkers or administrators involved in each child's case, as well as a number of other policy or contextual variables which have been found in the literature to be related to the timeliness of exits. The limited scope of the AFCARS dataset, therefore, makes it difficult to draw conclusive inferences about the relationship between PBC and the timeliness of permanency outcome, since information on

many potentially confounding variables as well as how they changed over time is not available.

Limitations with the methods employed

I this study I relied exclusively on quantitative methods. I formulated a series of hypotheses related to my research questions based on the analytical and theoretical frameworks and constructs outlined in chapter 2 and sought to test those hypotheses through a series of statistical methods including logistic regression and multilevel logistic regression.

One statistical technique which I relied on heavily throughout the study is the DID estimator; a technique widely used to estimate the average effect of a policy intervention, or ATE. One of the central assumptions of DID is that the average outcome for the treatment and control groups follow parallel trends over time, meaning that the treatment states would have experienced the same trend as the control states in the absence of the policy intervention. In the case of my study, this assumption may be problematic, since trends in my controls states may have also been influenced by other policy or practice changes which I am not explicitly controlling for. While this may signify that my results are biased, there are a number of aspects which may mitigate this effect. The first is that my analysis has not only drawn attention to differences in trends between the treatment and control states based on the DID estimator but also, more directly, to findings related to changes in the timeliness of permanency outcomes for the PBC states themselves. Second, because I treated the control states as a "unit", I expect some of the variability due to an individual state's policy changes to average out across the group. Third, I clustered the standard errors at the state level to account for the unobserved variability between the treatment and control states (Bertrand, et al. 2003).

Another important assumption of the DID estimator is that observed and unobserved variables affect both the treatment and the control group in the same way. I sought to address this issue by including time-varying covariates for variables that I considered more theoretically relevant as well as by controlling for latent variables at the county level through the use of multilevel models. However, as indicated above, my study also suffers from a number of limitations due to the scope of the AFCARS dataset. Specifically, there are a number of differences between the treatment and control states that I am unable to account for, which may have confounded the interpretation of results. These differences

include the size and characteristics of the out-of-home care population served; the implementation of additional or alternative policies and practices to expedite permanency; and the type of administrative framework employed. Furthermore, the counterfactuals based on the two control states are likely to reflect the environmental and programmatic realities of those two states, rather than the "absence" of PBC.

The methods employed also do not address the potential endogeneity—or reverse causality—between the treatment and the outcome. Specifically, states with lower levels of timely exits are more likely to seek to implement strategies that are perceived to reduce the average amount of time children spend in care. Conversely, states that already record high aggregate level of timeliness may be unable to improve their performance further. This limitation could be addressed in future research by using more complex statistical methods including instrumental variable or time-lags for panels of states or counties. The methods employed could also seek to explore more systematically the potentially endogenous relationship between selected theoretically relevant covariates—namely, TPR, placement setting and permanency goals—and this type of programme management tool.

In this study, I chose not to use some of the more sophisticated statistical methods often used in QED to make inferences about the relationship between a policy intervention and a specific outcome, including PSM as well as SCM for comparative case studies. One of the requirements for these methods is that all variables related to the probability of treatment are included in the model (Wooldridge 2009). Various diagnostics tests conducted on the multivariate models discussed in chapters 6 and 7, as well as a Blinder-Oaxaca decomposition, undertaken to quantify how much of the variability between the treatment and control states could be attributed to the covariates included in the model, indicated the latter "explained" only a limited share of the difference in the timeliness of exits between the two groups. Given these limitations, I felt that I did not have sufficient information on the covariates to use these methods; a limitation that underlies the methods presented in this analysis as well.

Lastly, in this study I made the decision not to use qualitative or mixed research methods. Some of these techniques, especially in-depth interviews with key informants, might have been useful for approaching issues such as "cherry picking" or exploring whether the use of PBC is associated with additional distortionary effects on permanency outcomes, besides the ones captured through quantitative methods. Aspects which have been identified in the literature as being related to the achievement of performance targets in systems that use PBC and which could have been explored through qualitative or mixed

methods include the impact of PBC on staff motivation and morale, the degree to which relevant stakeholder were included in developing PBC benchmarks, as well as how well information on PBC goals and targets was shared with administrators and frontline workers (Collins-Camargo, et al. 2013; Department of Children and Family Services, State of Illinois 2003; Elder, et al. 2012; Garstka, et al. 2012; Lawrence-Webb, et al. 2006). I tried to address this limitation by supplementing my research with relevant findings from other studies which had used focus groups or in-depth interviews with various stakeholders. In doing so, I gave particular attention to the information collected by states themselves through their state-wide child welfare assessment exercises as well as qualitative research cited in various CFSR and PIP documents.

While I recognize that relying exclusively on quantitative methods is a limitation, at the same time, I believe that, given the emphasis PBC assigns to quantitative outcomes and targets, this approach is, nonetheless, well-suited for assessing whether states have achieved, or fallen short of, their own stated objectives. This is, in my opinion, the minimum requirements such programme management tools must satisfy in order to be considered effective. Likewise, I believe that the AFCARS, in spite of its limitations, is the most appropriate dataset for carrying out this type of research, since ultimately it is one of the main data sources against which state performance in child welfare is assessed in the United States.

10.4 Implications for practice

My study has identified a number of implications for practice. Some of these relate to the elements needed to better assess the impact of a programme management tool such as PBC. Others are more practical in nature and refer to changes that could be made to improve the administrative data currently collected in the United States on children in out-of-home care. The main implications are as follows:

First, payment structures related to PBC should take into account adjusted levels of timeliness in addition to "raw" state-level averages. Current practices generally do not consider differences among states in terms of levels of timeliness or the composition of caseloads. As a result, the evidence base on the relationship between the use of PBC and its stated outcomes is often difficult to interpret (see also section 10.6). States with lower initial levels of timeliness and more "difficult" caseloads often fall short of the expected performance standards, in spite of implementing programme management tools such as PBC. Yet it is clearly inappropriate to "penalise" such states for the more complex and

challenging needs of the clients they serve. Progress in such states, therefore, should be assessed not only taking into account initial levels of timeliness, but also how such levels, measured in terms of relevant outcomes, changed over time. In addition, changes in the composition of the out-of-home care population should be considered to ensure that improvements in outcome measures are not the result of "cherry picking" or "parking" alone.

While adjusted averages are clearly important for assessing progress for the so-called "underperforming" states, raw averages are still necessary for monitoring performance in states that already meet or exceed national standards for timeliness. Specifically, there should be a recognition that states where children already spend a limited amount of time in care are unlikely to be able to improve their performance further. PBC payment structures, therefore, should recognise that such states will likely record smaller gains in timeliness than the less performing ones.

Second, a more complex set of outcome measures aimed at measuring timeliness should be developed. While quantitative targets are necessary to promote accountability and ensure that federal and statewide resources are apportioned in an equitable manner, the design of such targets is not straightforward. As indicated in chapters 1 and 4, the U.S. government monitors timeliness in relation to a series of thresholds. Yet this approach is clearly inadequate to capture a conceptually and methodological complex construct such as permanency. For instance, timeliness might have a very different "meaning" if children re-enter care or are maltreated after being discharged. Exploring whether children who exit care in a timely manner are more likely to experience a permanency disruption, or be victimised or even killed compared to children who remain longer in care might also help inform policymakers about the effectiveness of programme management tools such as PBC in contributing to "good" decision-making about children's safety and wellbeing. This is particularly important from a policy perspective if pressure to fulfill aggregate, state-level performance targets is compelling child welfare practitioners to discharge children prematurely from the out-of-home care.

Third, on the basis of the two points raised above, I content that the CFSR and CWOR measures related to the timeliness of exits should be reviewed and expanded. These measures should, to the extent possible, focus on entry cohorts and consider the full spectrum of permanency outcomes. As the measures currently are formulated, they over-emphasise differences in levels, without paying enough attention to how these levels may have changed over time. Furthermore, the CFSR measures related to timeliness should be

redesigned to control for adjusted state averages, in addition to the "raw" state-level ones currently being employed. By failing to take into account differences in basic social and demographic characteristics of the out-of-home care populations, the CFSRs are literally comparing "apples and oranges". As this and other studies have shown, the client mix is closely associated with performance and, therefore, needs to be factored into the monitoring framework. Failing to do so may create an incentive to game the system in various ways including through "parking" and "cherry picking". It is important to underscore that controlling for differences in child population served does not imply that lower standards should be applied for some children in meeting the ASFA's goals of child safety, permanency or wellbeing. Instead it means that greater recognition should be given to efforts made by states to improve their performance, taking into account the diverse needs of the children and families they strive to serve and support. Other steps that should be undertaken to improve the CFSR and CWOR include developing composite measures of permanency disruptions that are more closely aligned with the measures aimed at assessing timeliness as well as measures that explicitly examine the relationship between the timeliness of permanency outcomes, child maltreatment and child fatalities.

Fourth, prior to introducing a new programme management tool, states should establish a monitoring system with well specified outcome measures and timelines. To the extent possible, this monitoring framework should build on the data elements collected in the AFCARS, using common concepts, definitions, and timeframes. In developing this system, states should seek, where appropriate from an ethical and practical perspective, to randomly assign treatment and control groups to the programme management initiative being piloted. Further, the timeframe for monitoring performance should be long enough for the effect of the initiative to be observed as well as to capture permanency disruptions and re-entries into care.

Fifth, a number of relatively simple, practical changes should be made to the AFCARS dataset. One such change could be to assign a unique identifier to every child who enters the out-of-home care system and ensure that this ID "follows" each child until the age of majority. This would make it easier to create the entry cohorts, even for children who moved across state-lines, as well as to monitor permanency disruptions and re-entries, even if they occurred years after a child had exited the care system. A second change could be to include a unique identifier for each child welfare agency. This would make it possible to more effectively compare agency performance over time within and across states. States could also be encouraged to link any additional databases they maintained,

containing information, for instance, on specific policy initiatives or practices, to the AFCARS dataset using the unique child and agency identifiers. Clearly, extreme care would have to be exercised to ensure the privacy and confidentiality of the children so identified. Researchers could be given access to the linked cohort files, with the same measures to protect children's identity as are currently employed in the AFCARS, while information on agencies could be aggregated at an appropriate level.

10.5   Implications for theory

Through this study I have used the theory of social exchange to frame my research hypotheses and explain why PBC states are expected to record more timely exits from care compared to states that do not utilise this programme management tool. As indicated in chapter 2, the theory of social exchange postulates that systems respond to financial incentives or penalties by "aligning" their performance to the collective goals and objectives identified by the system. Yet throughout this study I have raised a number of questions about how this theory might "work" in practice. Further, I have outlined some of the elements necessary for a more nuanced theoretical framework to explore how PBC might shape the timeliness of permanency outcomes. I briefly discuss four of these below:

First, any theoretical framework designed to help conceptualise how the implementation of a programme management tool such as PBC might contribute to expediting children's exits from care should explicitly recognise that a number of social, economic and political factors besides financial incentives influence a system's performance. Factors such as the size and composition of the out-of-home care caseloads, budgetary considerations and constraints, different attitudes towards various permanency outcomes, the availability of different placement settings, as well as secular trends such as changing attitudes towards racial disproportionality or placement with kin are illustrations of aspects that might contribute to shaping the timeliness of permanency outcomes, beyond the influence of PBC alone.

Second, the theoretical framework should recognise that systems are often affected by the so-called "principal-agent problem" (see also chapter 2). To the extent possible, such frameworks should seek to ensure that states and contractors share common objectives and goals. In addition, they should seek to address concerns related to gaming by ensuring that compensation structures take into account the client mix served and by encouraging relevant stakeholders to make decisions that emphasise children's safety and wellbeing rather than simply the maximisation of profits.

Third, the framework should recognise that decision making processes in the "real world" are likely to be affected by more complex considerations than mere rational interests. Evidence suggests that decisions regarding placement or permanency are often based on "legal mandates, scarcity of placements, available community services, and cost" (Berliner and Fine 2001 p. 11). In addition, normative stands such as the notion that "blood is thicker than water" (Weil 1999 p. 9) or that children are better off when placed with a relative rather than a stranger (Dubowitz 1994 p. 553) are known to influence the way in which different child protection systems approach the objective of promoting timeliness.

Fourth, the theoretical framework should seek to address the issue of "information asymmetry" by ensuring that knowledge of the programme management tool and its stated objectives is broadly disseminated. Caseworkers should be made aware of how PBC is implemented in their context, as well as how progress in achieving relevant targets is monitored and assessed. Furthermore, the child welfare system should be encouraged to share lessons learned on a periodic basis, and those should be used to inform changes to the programme objectives as well as outcome measures employed.

10.6   Areas for future research

This study underscores the need for more research on the relationship between PBC and timeliness of exits from care. Still too little is known not only about whether PBC is associated with improved permanency outcomes, but also on whether it is accompanied by various distortionary effects, including on permanency outcomes. This study has identified a number of important findings, including the possibility that compositional effects may explain some of the changes in the timeliness of exits recorded by states that employ PBC. The study has also established some potentially relevant relationships between the use of PBC, the timeliness of exits and permanency outcomes for various groups of children. However, as indicated above, the study also has a number of limitations, which could be explored and possibly addressed in future research. There are a number of areas, therefore, where additional research is needed. These are briefly summarized below.

First, the evidence base on the relationship between PBC and timeliness of permanency outcomes needs to be broadened in scope to include a wider set of states. A preliminary step could be to assess whether other states, besides Illinois and North Carolina, experienced similar trends, using a similar method to the one employed in this research. Further, this study could be repeated using a different pool of control states, to

ensure that the interpretation of the results is not prejudiced by their selection. The advantages and limitations of the more traditional approaches to case management, which tie compensation of agencies to the number of children served, also need to be more clearly documented.

Second, in this study I briefly compared the timeliness of exits for two states that employed different models. Though the results are consistent with my initial hypothesis, the analysis did not draw any definitive conclusions about the relationship between various approaches to promoting timely exits using PBC and the actual outcomes. Additional studies could seek to better explore these relationships by including larger samples of states and possibly developing a more detailed classification of state practices based on the analytical framework proposed by Testa (2001, 2008).

Third, more research is needed on whether PBC has different effects on different groups of children. My research raises the possibility that this may be the case for some groups, particularly for African American children. More studies are needed to explore whether these findings apply for other groups and are valid in other contexts. The questions is not simply whether programmes "work or not (i.e. that they are 'evidence-based' or not); rather, the question is whom they work for, why and in what contexts" (Axford and Morpeth 2013 p. 269).

Fourth, as indicated in the sections above, the entry cohorts used in this study have a number of limitations. One such limitation is that they only follow children for three years from the time of entry. Measures of timeliness that fail to incorporate "reasonable" enough timeframes to account for permanency failures, could engender, either purposefully or unintentionally, negative distortionary behaviours. Research that considers a longer time-span from the date of entry is needed so that the relationship between PBC and permanency outcomes that take longer to be achieved can be studied.

Fifth, it would be important to assess whether the use of PBC is accompanied by additional distortionary effects than the ones considered, including on placement instability, permanency disruptions and child maltreatment. Assessing this relationship based on more nuanced measures of permanency, which seek to better quantify permanency disruptions and even child fatalities, might provide greater insight into the effectiveness of PBC. Further, it might shed light on whether pressure to fulfill aggregate, state-level performance targets related to timeliness might lead to premature discharges from out-of-home care; potentially compromising the safety and wellbeing of the children this programme management tool is seeking to benefit.

Lastly, a more in-depth assessment of whether there is evidence of gaming, including "cherry picking", in states that employ PBC is needed to complement the very preliminary findings identified in this study. Preferably this research would include a qualitative component, such as in-depth interviews, to better explore the nature of any relevant finding, particularly with regards to the provision of services to children in out-of-home care and their families.

10.7 Conclusions

The results in my analysis suggest that the relationship between the use of PBC and the timeliness of exits is complex and difficult to interpret in the absence of more rigorous research designs, richer data sources and a larger sample of treatment and control states. My findings indicate that, for the two states considered, there may be a positive relationship between the use of PBC and the amount of time children spend in care both in absolute terms and compared to a counterfactual based on two control states. However, owing to limitations in the methods and research deign employed, I am unable to determine whether this outcome is the result of PBC alone or a combination of other factors, including secular trends. This study also suggests that the interpretation of the relationship between PBC and timeliness may depend on the type of outcome measure employed. Specifically, I find that once I adjust the outcome measures for a series of theoretically relevant covariates and interactions, the relationship between PBC and timeliness is no longer positive. This casts doubts on the "mechanisms" through which changes in the timeliness of permanency outcomes are achieved. From a policy perspective, therefore, taking into account base levels of timeliness as well as the type of out-of-home care population served is a worthy objective. This study also indicates that PBC may be accompanied by some distortionary effects on reunification, though this finding is not consistent across the two states considered. The evidence about the possible relationship between the use of PBC and various "gaming" behaviours such as "cherry picking" should also be explored further in future research.

One of the main contributions of this study is that it provides a relatively straightforward approach to measuring timeliness, by using perspective cohorts, considering the full spectrum of permanency outcomes and controlling for differences in out-of-home care populations served at the state and local level. Further, while, all findings in this study need to be approached with caution, taking into account the

limitations described above, they represent, in my opinion, a step towards being able to more critically assess the impact of a programme management tool such as PBC.

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Annexes Tables

Table A.1.1. Composite CFSR and CWOR measures related to

the timeliness of permanency

Composite measures	Timeliness threshold
Measure 4.1: Of all children reunified with their parents or caretakers at the time of discharge from foster care during the year, what percentage were reunified in less than 12 months from the time of entry into foster care?	12 months
Measure C1.1: Of all children discharged from foster care to reunification during the year who had been in care for eight days or longer, what percentage were reunified in less than 12 months from the date of the latest removal from home?	12 months
Measure C1.2: Of all children discharged from foster care to reunification during the year who had been in care for eight days or longer, what was the median length of stay (in months) from the date of the latest removal from home until the date of discharge to reunification?	..
Measure C1.3: Of all children who entered foster care for the first time in the 6-month period just prior to the year shown, and who remained in care for eight days or longer, what percentage were discharged from foster care to reunification in less than 12 months from the date of the latest removal from home?	12 months
Measure C1.4: Of all children discharged from foster care to reunification in the 12-month period prior to the year shown, what percentage re-entered care in less than 12 months from the date of discharge?	12 months
Measure 5.1a: Of all children discharged from care during the year to a finalized adoption, what percentage were discharged in less than 12 months from the date of the latest removal from home?	12 months
Measure C2.1: Of all children discharged from foster care to a finalized adoption during the year, what percentage were discharged in less than 24 months from the date of the latest removal from home?	24 months
Measure C2.2: Of all children discharged from foster care to a finalized adoption during the year, what was the median length of stay in care (in months) from the date of latest removal from home to the date of discharge to adoption?	..
Measure C2.3: Of all children in foster care on the first day of the year who were in care for 17 continuous months or longer, what percentage were discharged from foster care to a finalized adoption by the last day of the year?	12 months
Measure C2.4: Of all children in foster care on the first day of the year who were in foster care for 17 continuous months or longer, and who were not legally free for adoption prior to that day, what percentage became legally free for adoption during the first six months of the year?	Six months
Measure C2.5: Of all children who became legally free for adoption in the 12-month period prior to the year shown, what percentage were discharged from foster care to a finalized adoption in less than 12 months from the date of becoming legally free?	12 months

Table A.1.2. Summary of provisions contained in U.S. federal laws aimed at promoting timely exits from out-of-home care

Provision aimed at promoting timely exits from care	In:
Grounds for the fast-track provision [1]	
(a) Abandonment, torture, chronic abuse, and sexual abuse of the child	ASFA (1997)
(b) Voluntary manslaughter of a sibling of the child	
(c) Aiding or abetting in the murder or voluntary manslaughter of sibling of the child	
(d) Felony assault resulting in serious bodily injury to the child or sibling of the child	
(e) The parental rights to a sibling of the child were terminated involuntarily	
Time limits for the termination of parental rights	
In care fifteen of the previous twenty-two months	ASFA (1997)
Time limits for the review of cases	
At least once every six months	ASFA (1997)
Time limits for permanency hearings	
Within twelve months of the initial placement and every twelve months thereafter	ASFA (1997)
Concurrent permanency planning [2]	
For children whose permanency plan is reunification	ASFA (1997)
Adoption incentives	
Adoption assistance payments for children under age eighteen (for children meeting income eligibility requirements or with special needs)	ASFA (1997); APA (2003); FCSIAA (2008)
Adoption incentives for states that increase the number of adoptions above the level of 1996	ASFA (1997)

Notes:

[1] A series of exemptions from exercising reasonable efforts to preserve or reunite families.

[2] An additional, alternative permanency plan to be pursued concurrently, rather than sequentially for children whose primary permanency plan is reunification.

Table A.6.1. Marginal effects and predicted probabilities of DID for various measures of timeliness for PBC and non-PBC states: DID-only model

Covariates	Amount of time spent in care	Timely	Very timely	Somewhat timely
	(1)	(2)	(3)	(4)
Pre-PBC #Non-PBC state	1.591***	0.706***	0.593***	0.113***
	(0.0126)	(0.00248)	(0.00268)	(0.00173)
Pre-PBC #PBC state	3.415***	0.407***	0.298***	0.109***
	(0.0135)	(0.00266)	(0.00248)	(0.00169)
Post-PBC-1st period #Non-PBC state	1.600***	0.725***	0.556***	0.169***
	(0.00837)	(0.00162)	(0.00181)	(0.00136)
Post-PBC-1st period #PBC state	2.850***	0.508***	0.336***	0.172***
	(0.00865)	(0.00178)	(0.00168)	(0.00135)
Post-PBC-2nd period #Non-PBC state	1.906***	0.676***	0.500***	0.176***
	(0.0001)	(0.00202)	(0.00216)	(0.00164)
Post-PBC-2nd period #PBC state	2.750***	0.529***	0.331***	0.198***
	(0.0105)	(0.00219)	(0.00207)	(0.00175)
Observations	327,644	327,644	327,644	327,644

Notes: Standard errors are in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table A.6.2. Models for various measures of timeliness for PBC and non-PBC states: DID-only model

Covariates	Amount of time spent in care	Timely	Very timely	Somewhat timely
	(1)	(2)	(3)	(4)
Post-PBC-1st period	0.00887	0.0938***	-0.150***	0.466***
	(0.0151)	(0.0145)	(0.0133)	(0.0198)
Post-PBC-2nd period	0.316***	-0.143***	-0.377***	0.514***
	(0.0160)	(0.0151)	(0.0141)	(0.0206)
PBC state	1.824***	-1.253***	-1.234***	-0.0408*
	(0.0184)	(0.0163)	(0.0162)	(0.0245)
Post-PBC-1st period# PBC state	-0.574***	0.315***	0.324***	0.0665**
	(0.0219)	(0.0196)	(0.0193)	(0.0280)
Post-PBC-2nd period# PBC state	-0.980***	0.635***	0.531***	0.186***
	(0.0234)	(0.0207)	(0.0206)	(0.0291)
Constant	1.591***	0.876***	0.376***	-2.060***
	(0.0126)	(0.0120)	(0.0111)	(0.0172)
Observations	327,644	327,644	327,644	327,644
Pseudo-R squared	..	0.0387	0.0380	0.0070

Notes: Standard errors are in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table A.6.3. Marginal effects and predicted probabilities of DID for various measures of timeliness for PBC and non-PBC states: time-invariant model

	Amount of time spent in care	Timely	Very timely	Somewhat timely
Covariates	(5)	(6)	(7)	(8)
Pre-PBC #Non-PBC state	1.882***	0.653***	0.519***	0.123***
	(0.0121)	(0.00261)	(0.00255)	(0.00187)
Pre-PBC #PBC state	3.062***	0.469***	0.363***	0.102***
	(0.0130)	(0.00269)	(0.00260)	(0.00162)
Post-PBC-1st period #Non-PBC state	1.745***	0.703***	0.525***	0.174***
	(0.00804)	(0.00165)	(0.00170)	(0.00141)
Post-PBC-1st period #PBC state	2.634***	0.544***	0.381***	0.162***
	(0.00831)	(0.00172)	(0.00168)	(0.00130)
Post-PBC-2nd period #Non-PBC state	2.015***	0.654***	0.473***	0.179***
	(0.00952)	(0.00199)	(0.00198)	(0.00167)
Post-PBC-2nd period #PBC state	2.691***	0.536***	0.338***	0.201***
	(0.00998)	(0.00208)	(0.00194)	(0.00177)
Observations	327,644	327,644	327,644	327,644

Notes: Standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All other covariates are at their mean value.

Table A.6.3b. Marginal effects and predicted probabilities of DID for various

measures of timeliness for PBC and non-PBC states:

time-invariant model

Covariates	Timely	Very timely	Somewhat timely
	(6)	(7)	(8)
Pre-PBC #Non-PBC state	0.655***	0.520***	0.124***
	(0.0026)	(0.00255)	(0.00188)
Pre-PBC #PBC state	0.468***	0.362***	0.102***
	(0.0027)	(0.0026)	(0.00162)
Post-PBC-1st period #Non-PBC state	0.704***	0.525***	0.175***
	(0.00165)	(0.00171)	(0.00141)
Post-PBC-1st period #PBC state	0.543***	0.380***	0.162***
	(0.00172)	(0.00168)	(0.0013)
Post-PBC-2nd period #Non-PBC state	0.654***	0.473***	0.180***
	(0.00199)	(0.00198)	(0.00168)
Post-PBC-2nd period #PBC state	0.535***	0.338***	0.201***
	(0.00209)	(0.00195)	(0.00177)
Observations	327,644	327,644	327,644

Notes: Standard errors are in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$. All other covariates are at their mean value. Models with the variable age instead of age square and infant.

Table A.6.3c. Marginal effects and predicted probabilities of DID for various measures of timeliness for PBC and non-PBC states: time-invariant model

Covariates	Timely (6)	Very timely (7)	Somewhat timely (8)
Pre-PBC #Non-PBC state	0.658***	0.523***	0.125***
	(0.00265)	(0.00266)	(0.00189)
Pre-PBC #PBC state	0.463***	0.363***	0.0998***
	(0.00271)	(0.00264)	(0.00158)
Post-PBC-1st period #Non-PBC state	0.694***	0.510***	0.179***
	(0.00171)	(0.00176)	(0.00144)
Post-PBC-1st period #PBC state	0.549***	0.386***	0.161***
	(0.00175)	(0.00173)	(0.00130)
Post-PBC-2nd period #Non-PBC state	0.657***	0.477***	0.179***
	(0.00204)	(0.00207)	(0.00167)
Post-PBC-2nd period #PBC state	0.539***	0.343***	0.199***
	(0.00213)	(0.00201)	(0.00176)
Observations	327,644	327,644	327,644

Notes: Standard errors are in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$. All other covariates are at their mean value. Models without TPR and the permanency goal of adoption and reunification.

Table A.6.4. Models for various measures of timeliness for PBC and non-PBC states: time-invariant model

Covariates	Amount of time spent in care	Timely	Very timely	Somewhat timely
	(5)	(6)	(7)	(8)
Post-PBC-1st period	-0.136***	0.252***	0.0259*	0.413***
	(0.0142)	(0.0153)	(0.0147)	(0.0200)
Post-PBC-2nd period	0.134***	0.00209	-0.224***	0.448***
	(0.0152)	(0.0160)	(0.0155)	(0.0209)
PBC state	1.180***	-0.840***	-0.763***	-0.212***
	(0.0180)	(0.0177)	(0.0183)	(0.0254)
Post-PBC-1st period#PBC state	-0.292***	0.0798***	0.0630***	0.123***
	(0.0207)	(0.0207)	(0.0211)	(0.0283)
Post-PBC-2nd period#PBC state	-0.504***	0.292***	0.0983***	0.355***
	(0.0224)	(0.0221)	(0.0227)	(0.0298)
Sex	0.0575***	-0.0477***	-0.0562***	0.0137
	(0.00773)	(0.00770)	(0.00788)	(0.00959)
Age (squared)	-0.00210***	0.00205***	0.00196***	-0.000504***
	(4.71e-05)	(4.91e-05)	(4.75e-05)	(6.28e-05)
Infant	-0.00999	0.0346***	-0.186***	0.266***
	(0.0112)	(0.0108)	(0.0118)	(0.0129)
Black	0.417***	-0.360***	-0.300***	-0.104***
	(0.00848)	(0.00829)	(0.00863)	(0.0105)
Kinship care	0.658***	-0.527***	-0.793***	0.302***
	(0.00929)	(0.00885)	(0.00955)	(0.0109)
Hispanic	0.0875***	-0.0937***	-0.0274**	-0.106***
	(0.0138)	(0.0140)	(0.0139)	(0.0175)
Case goal (adoption)	-0.0761***	0.0986***	-0.349***	0.514***
	(0.0174)	(0.0166)	(0.0200)	(0.0199)
Case goal (reunification)	0.0514***	0.000261	-0.176***	0.281***
	(0.00984)	(0.00975)	(0.00981)	(0.0131)
Number settings	0.304***	-0.245***	-0.392***	0.226***
	(0.00504)	(0.00493)	(0.00515)	(0.00608)
TPR	1.200***	-1.180***	-1.667***	0.287***
	(0.0111)	(0.0105)	(0.0129)	(0.0125)
Constant	1.192***	1.236***	1.057***	-2.516***
	(0.0175)	(0.0180)	(0.0178)	(0.0243)
Observations	327,644	327,644	327,644	327,644
Pseudo-R squared	..	0.1084	0.1573	0.0272

Notes: Standard errors are in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table A.6.4b. Models for various measures of timeliness for PBC and non-PBC states: time-invariant model

Covariates	Timely	Very timely	Somewhat timely
	(6)	(7)	(8)
Post-PBC-1st period	0.250***	0.0242*	0.413***
	(0.0153)	(0.0146)	(0.0199)
Post-PBC-2nd period	-0.000798	-0.227***	0.449***
	(0.016)	(0.0155)	(0.0209)
PBC state	-0.851***	-0.768***	-0.220***
	(0.0177)	(0.0182)	(0.0254)
Post-PBC-1st period#PBC state	0.0831***	0.0644***	0.126***
	(0.0206)	(0.0211)	(0.0283)
Post-PBC-2nd period#PBC state	0.299***	0.105***	0.357***
	(0.022)	(0.0227)	(0.0298)
Sex	-0.0539***	-0.0597***	0.0108
	(0.00769)	(0.0079)	(0.0096)
Age	0.0254***	0.0343***	-0.0203***
	(0.00072)	(0.00071)	(0.00091)
Black	-0.358***	-0.304***	-0.0957***
	(0.00827)	(0.0086)	(0.0105)
Kinship care	-0.548***	-0.799***	0.285***
	(0.0088)	(0.0095)	(0.0108)
Hispanic	-0.0983***	-0.0295**	-0.108***
	(0.014)	(0.0139)	(0.0175)
Case goal (adoption)	0.0807***	-0.374***	0.522***
	(0.0166)	(0.0199)	(0.0198)
Case goal (reunification)	-0.0212**	-0.187***	0.272***
	(0.0097)	(0.0098)	(0.0131)
Number settings	-0.246***	-0.389***	0.220***
	(0.00491)	(0.0051)	(0.00607)
TPR	-1.186***	-1.684***	0.298***
	(0.0105)	(0.0129)	(0.0125)
Constant	1.265***	0.961***	-2.349***
	(0.018)	(0.0178)	(0.0241)
Observations	327,644	327,644	327,644
Pseudo-R squared	0.1067	0.1559	0.0264

Notes: Standard errors are in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$. Models with the variable age instead of age square and infant.

Table A.6.4c. Models for various measures of timeliness for PBC and non-PBC states: time-invariant model

	Timely	Very timely	Somewhat timely
Covariates	(6)	(7)	(8)
Post-PBC-1st period	0.172***	-0.0577***	0.423***
	(0.0149)	(0.014)	(0.0199)
Post-PBC-2nd period	-0.00639	-0.200***	0.423***
	(0.0156)	(0.0148)	(0.0208)
PBC state	-0.850***	-0.722***	-0.258***
	(0.0171)	(0.0173)	(0.0252)
Post-PBC-1st period#PBC state	0.194***	0.168***	0.135***
	(0.0201)	(0.0202)	(0.0282)
Post-PBC-2nd period#PBC state	0.328***	0.103***	0.391***
	(0.0214)	(0.0217)	(0.0296)
Sex	-0.0375***	-0.0433***	0.00964
	(0.00752)	(0.00758)	(0.00956)
Age (squared)	0.00302***	0.00329***	-0.00109***
	(4.72E-05)	(4.52E-05)	(6.09E-05)
Infant	-0.171***	-0.457***	0.343***
	(0.0103)	(0.011)	(0.0127)
Black	-0.368***	-0.309***	-0.113***
	(0.00803)	(0.00822)	(0.0104)
Kinship care	-0.474***	-0.708***	0.280***
	(0.00862)	(0.00925)	(0.0108)
Hispanic	-0.0466***	0.0289**	-0.131***
	(0.0136)	(0.0134)	(0.0175)
Number settings	-0.277***	-0.430***	0.242***
	(0.0048)	(0.00497)	(0.00604)
Constant	0.952***	0.531***	-2.144***
	(0.0146)	(0.0141)	(0.0202)
Observations	327,644	327,644	327,644
Pseudo-R squared	0.0748	0.1006	0.0209

Notes: Standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Models without TPR and the permanency goal of adoption and reunification.

Table A.6.5. Marginal effects and predicted probabilities of DID for various

measures of timeliness for PBC and non-PBC states:

time-varying model

Covariates	Amount of time spent in care	Timely	Very timely	Somewhat timely
	(9)	(10)	(11)	(12)
Pre-PBC #Non-PBC state	1.081***	0.710***	0.573***	0.192***
	(0.0125)	(0.00260)	(0.00282)	(0.00308)
Pre-PBC #PBC state	3.840***	0.346***	0.287***	0.0784***
	(0.0143)	(0.00307)	(0.00286)	(0.00136)
Post-PBC-1st period #Non-PBC state	0.802***	0.776***	0.616***	0.244***
	(0.00852)	(0.00150)	(0.00190)	(0.00221)
Post-PBC-1st period #PBC state	3.629***	0.393***	0.270***	0.119***
	(0.00925)	(0.00200)	(0.00168)	(0.00113)
Post-PBC-2nd period #Non-PBC state	0.979***	0.752***	0.589***	0.243***
	(0.0102)	(0.00186)	(0.00232)	(0.00255)
Post-PBC-2nd period #PBC state	3.848***	0.357***	0.216***	0.144***
	(0.0108)	(0.00216)	(0.00168)	(0.00154)
Observations	327,644	327,644	327,644	327,644

Notes: Standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All other covariates are at their mean value.

**Table A.6.5b. Predicted probabilities of DID for various measures of
timeliness for PBC and non-PBC states: time-varying model**

Covariates	Timely	Very timely	Somewhat timely
	(10)	(11)	(12)
Pre-PBC #Non-PBC state	0.714***	0.576***	0.197***
	(0.00254)	(0.00275)	(0.00305)
Pre-PBC #PBC state	0.341***	0.284***	0.0768***
	(0.00299)	(0.00281)	(0.00132)
Post-PBC-1st period #Non-PBC state	0.776***	0.613***	0.252***
	(0.00147)	(0.00186)	(0.00218)
Post-PBC-1st period #PBC state	0.391***	0.271***	0.117***
	(0.00197)	(0.00168)	(0.00107)
Post-PBC-2nd period #Non-PBC state	0.752***	0.585***	0.253***
	(0.00181)	(0.00225)	(0.00252)
Post-PBC-2nd period #PBC state	0.357***	0.218***	0.139***
	(0.00212)	(0.00168)	(0.00145)
Observations	327,644	327,644	327,644

Notes: Standard errors are in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$. All other covariates are at their mean value.

Table A.6.5c. Predicted probabilities of DID for various measures of timeliness for PBC and non-PBC states: time-varying model

Covariates	Timely	Very timely	Somewhat timely
	(10)	(11)	(12)
Pre-PBC #Non-PBC state	0.626***	0.495***	0.112***
	(0.00319)	(0.00305)	(0.00198)
Pre-PBC #PBC state	0.491***	0.385***	0.115***
	(0.00331)	(0.00322)	(0.00223)
Post-PBC-1st period #Non-PBC state	0.692***	0.519***	0.157***
	(0.00209)	(0.00218)	(0.00153)
Post-PBC-1st period #PBC state	0.551***	0.380***	0.183***
	(0.00209)	(0.00201)	(0.00176)
Post-PBC-2nd period #Non-PBC state	0.682***	0.516***	0.156***
	(0.00251)	(0.00269)	(0.0018)
Post-PBC-2nd period #PBC state	0.519***	0.316***	0.222***
	(0.00253)	(0.00225)	(0.0023)
Observations	327,644	327,644	327,644

Notes: Standard errors are in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$. All other covariates are at their mean value. Models without TPR and the permanency goal of adoption and reunification.

Table A.6.6. Models for various measures of timeliness for PBC and non-PBC states: time-varying model

Covariates	Amount of time spent in care	Timely	Very timely	Somewhat timely
	(9)	(10)	(11)	(12)
Post-PBC-1st period	-0.128***	0.289***	0.0275*	0.414***
	(0.0117)	(0.0157)	(0.0148)	(0.0200)
Post-PBC-2nd period	0.0939***	0.0743***	-0.178***	0.428***
	(0.0126)	(0.0166)	(0.0158)	(0.0211)
PBC state	2.759***	-2.158***	-1.643***	-1.186***
	(0.0221)	(0.0308)	(0.0281)	(0.0384)
Post-PBC-1st period#PBC state	0.0677***	-0.119***	-0.321***	0.177***
	(0.0240)	(0.0346)	(0.0312)	(0.0395)
Post-PBC-2nd period#PBC state	0.110***	-0.192***	-0.566***	0.428***
	(0.0258)	(0.0371)	(0.0336)	(0.0417)
Sex	0.0431***	-0.0450***	-0.0544***	0.0227**
	(0.00653)	(0.00890)	(0.00841)	(0.00993)
Age (squared)	-0.00288***	0.00344***	0.00272***	-0.000103
	(3.97e-05)	(5.73e-05)	(5.10e-05)	(6.47e-05)
Infant	-0.0951***	0.119***	-0.202***	0.466***
	(0.0125)	(0.0154)	(0.0156)	(0.0177)
Infant#PBC states #Pre-PBC	0.282***	-0.263***	-0.107**	-0.322***
	(0.0317)	(0.0441)	(0.0435)	(0.0486)
Infant#PBC states #Post-PBC-1st period	0.112***	0.00644	0.215***	-0.438***
	(0.0214)	(0.0285)	(0.0290)	(0.0303)
Infant#PBC states #Post-PBC-2nd period	0.0717***	0.0491	0.262***	-0.455***
	(0.0244)	(0.0329)	(0.0333)	(0.0335)
Black	0.0892***	-0.0120	-0.135***	0.229***
	(0.0102)	(0.0135)	(0.0127)	(0.0153)
Black#PBC states#Pre-PBC	0.233***	-0.361***	-0.203***	-0.331***
	(0.0248)	(0.0354)	(0.0325)	(0.0406)
Black#PBC states #Post-PBC-1st period	0.329***	-0.614***	-0.286***	-0.387***
	(0.0172)	(0.0236)	(0.0224)	(0.0257)
Black#PBC states #Post-PBC-2nd period	0.172***	-0.454***	-0.0870***	-0.425***
	(0.0200)	(0.0277)	(0.0262)	(0.0291)
Kinship care	0.821***	-0.798***	-1.098***	0.483***
	(0.0120)	(0.0144)	(0.0149)	(0.0167)
Kinship#PBC states #Pre-PBC	-0.276***	0.130***	-0.00121	0.164***
	(0.0269)	(0.0374)	(0.0362)	(0.0422)
Kinship#PBC states #Post-PBC-1st period	-1.187***	1.233***	1.120***	0.0512*
	(0.0192)	(0.0249)	(0.0249)	(0.0276)
Kinship#PBC states #Post-PBC-2nd period	-1.200***	1.295***	1.164***	0.00641
	(0.0212)	(0.0284)	(0.0278)	(0.0299)
Hispanic	0.0523***	-0.0858***	-0.0191	-0.0822***
	(0.0115)	(0.0156)	(0.0146)	(0.0180)
Case goal (adoption)	0.242***	-0.115***	-0.352***	0.298***
	(0.0152)	(0.0191)	(0.0212)	(0.0214)

Covariates	Amount of time spent in care	Timely	Very timely	Somewhat timely
	(9)	(10)	(11)	(12)
PBC states #Case goal (adoption)	-3.776***	3.024***	1.158***	2.550***
	(0.0185)	(0.0229)	(0.0290)	(0.0241)
Case goal (reunification)	0.268***	-0.239***	-0.354***	0.170***
	(0.00834)	(0.0118)	(0.0108)	(0.0135)
PBC states #Case goal (reunification)	-3.491***	3.926***	2.339***	1.697***
	(0.0109)	(0.0197)	(0.0137)	(0.0171)
Number settings	0.220***	-0.231***	-0.385***	0.275***
	(0.00429)	(0.00576)	(0.00553)	(0.00635)
TPR	1.248***	-1.369***	-1.579***	0.107***
	(0.0102)	(0.0127)	(0.0140)	(0.0145)
Constant	1.147***	1.273***	1.106***	-2.609***
	(0.0148)	(0.0202)	(0.0189)	(0.0251)
Observations	327,644	327,644	327,644	327,644
Pseudo-R squared	..	0.2949	0.2381	0.0928

Notes: Standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A.6.6b. Models for various measures of timeliness for PBC and non-PBC states: time-varying model

Covariates	Timely	Very timely	Somewhat timely
	(10)	(11)	(12)
Post-PBC-1st period	0.287***	0.0247*	0.417***
	(0.0156)	(0.0147)	(0.02)
Post-PBC-2nd period	0.0730***	-0.183***	0.439***
	(0.0165)	(0.0157)	(0.0211)
PBC state	-2.195***	-1.660***	-1.254***
	(0.03)	(0.0275)	(0.0373)
Post-PBC-1st period#PBC state	-0.0767**	-0.274***	0.153***
	(0.0336)	(0.0304)	(0.0384)
Post-PBC-2nd period#PBC state	-0.131***	-0.503***	0.386***
	(0.0359)	(0.0326)	(0.0404)
Sex	-0.0554***	-0.0602***	0.0192*
	(0.0089)	(0.00839)	(0.00992)
Age	0.0418***	0.0436***	-0.0148***
	(0.00083)3	(0.00076)	(0.00094)
Black	-0.0116	-0.142***	0.241***
	(0.0134)	(0.0127)	(0.0153)
Black#PBC states#Pre-PBC	-0.379***	-0.211***	-0.343***
	(0.0352)	(0.0323)	(0.0404)
Black#PBC states #Post-PBC-1st period	-0.603***	-0.276***	-0.408***
	(0.0235)	(0.0223)	(0.0256)
Black#PBC states #Post-PBC-2nd period	-0.439***	-0.0775***	-0.435***
	(0.0277)	(0.0262)	(0.0291)
Kinship care	-0.843***	-1.117***	0.460***
	(0.0144)	(0.0148)	(0.0166)
Kinship#PBC states #Pre-PBC	0.140***	0.00885	0.166***
	(0.0373)	(0.0361)	(0.0421)
Kinship#PBC states #Post-PBC-1st period	1.232***	1.125***	0.0578**
	(0.0249)	(0.0248)	(0.0276)
Kinship#PBC states #Post-PBC-2nd period	1.287***	1.169***	0.0106
	(0.0283)	(0.0278)	(0.0298)
Hispanic	-0.0924***	-0.0208	-0.0893***
	(0.0156)	(0.0146)	(0.018)
Case goal (adoption)	-0.144***	-0.381***	0.313***
	(0.019)	(0.0212)	(0.0213)
PBC states #Case goal (adoption)	3.020***	1.189***	2.477***
	(0.0222)	(0.0286)	(0.0235)
Case goal (reunification)	-0.278***	-0.371***	0.163***
	(0.0117)	(0.0108)	(0.0135)
PBC states #Case goal (reunification)	3.891***	2.328***	1.707***
	(0.0196)	(0.0137)	(0.0171)
Number settings	-0.236***	-0.385***	0.272***
	(0.00574)	(0.00551)	(0.0063)
TPR	-1.370***	-1.597***	0.141***

Covariates	Timely	Very timely	Somewhat timely
	(10)	(11)	(12)
	(0.0126)	(0.0139)	(0.0144)
Constant	1.339***	1.018***	-2.414***
	(0.0202)	(0.0188)	(0.0248)
Observations	327,644	327,644	327,644
Pseudo-R squared	0.2916	0.2381	0.0928

Notes: Standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Models with the variable age instead of age square and infant.

Table A.6.6c. Models for various measures of timeliness for PBC and non-PBC states: time-varying model

Covariates	Timely	Very timely	Somewhat timely
	(10)	(11)	(12)
Post-PBC-1st period	0.194***	-0.0414***	0.415***
	(0.015)	(0.0141)	(0.02)
Post-PBC-2nd period	0.0689***	-0.144***	0.409***
	(0.0158)	(0.0151)	(0.021)
PBC state	-0.605***	-0.516***	0.0321
	(0.0233)	(0.0234)	(0.0343)
Post-PBC-1st period#PBC state	-0.0371	-0.111***	0.158***
	(0.0267)	(0.0268)	(0.0378)
Post-PBC-2nd period#PBC state	-0.120***	-0.390***	0.414***
	(0.0286)	(0.0289)	(0.0398)
Sex	-0.0369***	-0.0428***	0.00922
	(0.00755)	(0.00761)	(0.00957)
Age (squared)	0.0030***	0.00326***	-0.00101***
	(4.75E-05)	(4.55E-05)	(6.12E-05)
Infant	-0.301***	-0.554***	0.427***
	(0.0143)	(0.0145)	(0.0172)
Infant#PBC states #Pre-PBC	0.0457	0.0269	-0.210***
	(0.033)	(0.0378)	(0.0453)
Infant#PBC states #Post-PBC-1st period	0.237***	0.185***	-0.137***
	(0.0227)	(0.0249)	(0.0276)
Infant#PBC states #Post-PBC-2nd period	0.337***	0.301***	-0.151***
	(0.0258)	(0.0284)	(0.0306)
Black	-0.0956***	-0.207***	0.224***
	(0.0127)	(0.012)	(0.0152)
Black#PBC states#Pre-PBC	-0.433***	-0.260***	-0.508***
	(0.0266)	(0.0281)	(0.0387)
Black#PBC states #Post-PBC-1st period	-0.545***	-0.285***	-0.579***
	(0.0194)	(0.0197)	(0.0244)
Black#PBC states #Post-PBC-2nd period	-0.382***	-0.0565**	-0.619***
	(0.0221)	(0.0229)	(0.0276)
Kinship care	-0.768***	-1.028***	0.451***
	(0.0138)	(0.0144)	(0.0166)
Kinship#PBC states #Pre-PBC	-0.0704**	-0.158***	-0.217***
	(0.0286)	(0.0326)	(0.0401)
Kinship#PBC states #Post-PBC-1st period	0.604***	0.695***	-0.261***
	(0.0209)	(0.0224)	(0.0261)
Kinship#PBC states #Post-PBC-2nd period	0.708***	0.797***	-0.241***
	(0.0231)	(0.0246)	(0.0281)
Hispanic	-0.0383***	0.0351***	-0.126***
	(0.0136)	(0.0135)	(0.0175)
Number settings	-0.274***	-0.428***	0.235***
	(0.00485)	(0.00501)	(0.0061)
Constant	0.928***	0.551***	-2.292***

	Timely	Very timely	Somewhat timely
Covariates	(10)	(11)	(12)
	(0.0152)	(0.0146)	(0.021)
Observations	327,644	327,644	327,644
Pseudo-R squared	0.0810	0.1056	0.0244

Notes: Standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Models without TPR and the permanency goal of adoption and reunification.

Table A.6.7. Marginal effects and predicted probabilities of DID for various

measures of timeliness for PBC and non-PBC states:

DID fixed-effects model and time-varying fixed-effects model

Covariates	Amount of time spent in care	Timely	Amount of time spent in care	Timely
	(13)	(14)	(15)	(16)
Pre-PBC #Non-PBC state	1.475***	0.728***	1.031***	0.726***
	(0.0123)	(0.0024)	(0.0122)	(0.0024)
Pre-PBC #PBC state	3.328***	0.425***	2.924***	0.403***
	(0.0133)	(0.0028)	(0.01331)	(0.0028)
Post-PBC-1st period #Non-PBC state	1.509***	0.739***	0.742***	0.784***
	(0.0082)	(0.00159)	(0.0082)	(0.0016)
Post-PBC-1st period #PBC state	3.032***	0.483***	2.989***	0.383***
	(0.0087)	(0.00187)	(0.00869)	(0.0019)
Post-PBC-2nd period #Non-PBC state	1.819***	0.688***	0.942***	0.747***
	(0.0098)	(0.002)	(0.0098)	(0.002)
Post-PBC-2nd period #PBC state	3.084***	0.477***	3.348***	0.330***
	(0.0107)	(0.00231)	(0.01069)	(0.0023)
Observations	327,644	327,644	327,644	327,644

Notes: Standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All other covariates are at their mean value.

Table A.7.1. Marginal effects and predicted probabilities of DID for various measures of timeliness for Illinois, North Carolina and non-PBC states: DID-only model

Covariates	Amount of time spent in care	Timely	Very timely	Somewhat timely
	(1)	(2)	(3)	(4)
Pre-PBC#Non-PBC state	1.584***	0.706***	0.593***	0.113***
	(0.0123)	(0.00248)	(0.00268)	(0.00173)
Pre-PBC#Illinois	3.896***	0.322***	0.215***	0.107***
	(0.0162)	(0.00300)	(0.00264)	(0.00198)
Pre-PBC#North Carolina	2.296***	0.617***	0.502***	0.115***
	(0.0234)	(0.00491)	(0.00505)	(0.00322)
Post-PBC-1st period#Non-PBC state	1.594***	0.725***	0.556***	0.169***
	(0.00822)	(0.00162)	(0.00181)	(0.00136)
Post-PBC-1st period#Illinois	3.412***	0.394***	0.268***	0.126***
	(0.0122)	(0.00242)	(0.00220)	(0.00165)
Post-PBC-1st period#North Carolina	2.270***	0.629***	0.408***	0.222***
	(0.0118)	(0.00247)	(0.00252)	(0.00213)
Post-PBC-2nd period#Non-PBC state	1.898***	0.676***	0.500***	0.176***
	(0.00983)	(0.00202)	(0.00216)	(0.00164)
Post-PBC-2nd period#Illinois	3.555***	0.374***	0.252***	0.122***
	(0.0159)	(0.00313)	(0.00281)	(0.00211)
Post-PBC-2nd period#North Carolina	2.109***	0.662***	0.399***	0.263***
	(0.0137)	(0.00283)	(0.00293)	(0.00264)
Observations	327,644	327,644	327,644	327,644

Notes: Standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A.7.2. Models for various measures of timeliness for Illinois, North Carolina and non-PBC states: DID-only model

Covariates	Amount of time spent in care	Timely	Very timely	Somewhat timely
	(1)	(2)	(3)	(4)
Post-PBC-1st period	0.00954	0.0938***	-0.150***	0.466***
	(0.0148)	(0.0145)	(0.0133)	(0.0198)
Post-PBC-2nd period	0.314***	-0.143***	-0.377***	0.514***
	(0.0157)	(0.0151)	(0.0141)	(0.0206)
Illinois	2.312***	-1.620***	-1.669***	-0.0644**
	(0.0203)	(0.0182)	(0.0192)	(0.0270)
North Carolina	0.712***	-0.401***	-0.369***	0.0159
	(0.0264)	(0.0240)	(0.0231)	(0.0361)
Post-PBC-1st period#Illinois	-0.494***	0.220***	0.437***	-0.276***
	(0.0249)	(0.0224)	(0.0234)	(0.0323)
Post-PBC-1st period#North Carolina	-0.0359	-0.0391	-0.231***	0.322***
	(0.0300)	(0.0275)	(0.0263)	(0.0394)
Post-PBC-2nd period#Illinois	-0.655***	0.371***	0.582***	-0.366***
	(0.0275)	(0.0244)	(0.0258)	(0.0353)
Post-PBC-2nd period#North Carolina	-0.501***	0.339***	-0.0405	0.499***
	(0.0313)	(0.0286)	(0.0275)	(0.0402)
Constant	1.584***	0.876***	0.376***	-2.060***
	(0.0123)	(0.0120)	(0.0111)	(0.0172)
Observations	327,644	327,644	327,644	327,644
Pseudo-R squared	..	0.0641	0.0505	0.0171

Notes: Standard errors are in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table A.7.3. Marginal effects and predicted probabilities of DID for various measures of timeliness for Illinois, North Carolina and non-PBC states: time-invariant model

	Amount of time spent in care	Timely	Very timely	Somewhat timely
Covariates	(5)	(6)	(7)	(8)
Pre-PBC#Non-PBC state	1.853***	0.656***	0.519***	0.127***
	(0.0117)	(0.00258)	(0.00251)	(0.00191)
Pre-PBC#Illinois	3.775***	0.339***	0.230***	0.107***
	(0.0154)	(0.00298)	(0.00263)	(0.00201)
Pre-PBC#North Carolina	1.360***	0.773***	0.721***	0.0873***
	(0.0229)	(0.00362)	(0.00375)	(0.00259)
Post-PBC-1st period#Non-PBC state	1.727***	0.705***	0.525***	0.177***
	(0.00781)	(0.00163)	(0.00168)	(0.00143)
Post-PBC-1st period#Illinois	3.293***	0.414***	0.290***	0.120***
	(0.0116)	(0.00240)	(0.00221)	(0.00161)
Post-PBC-1st period#North Carolina	1.902***	0.684***	0.489***	0.203***
	(0.0114)	(0.00221)	(0.00237)	(0.00206)
Post-PBC-2nd period#Non-PBC state	2.020***	0.651***	0.469***	0.180***
	(0.00925)	(0.00198)	(0.00195)	(0.00168)
Post-PBC-2nd period#Illinois	3.492***	0.382***	0.262***	0.119***
	(0.0151)	(0.00304)	(0.00273)	(0.00208)
Post-PBC-2nd period#North Carolina	2.151***	0.646***	0.386***	0.269***
	(0.0128)	(0.00271)	(0.00262)	(0.00267)
Observations	327,644	327,644	327,644	327,644

Notes: Standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All other covariates are at their mean value.

Table A.7.4. Models for various measures of timeliness for Illinois, North Carolina and non-PBC states: time-invariant model

Covariates	Amount of time spent in care	Timely	Very timely	Somewhat timely
	(5)	(6)	(7)	(8)
Post-PBC-1st period	-0.127***	0.255***	0.0307**	0.400***
	(0.0138)	(0.0155)	(0.0149)	(0.0200)
Post-PBC-2nd period	0.167***	-0.0276*	-0.248***	0.426***
	(0.0148)	(0.0162)	(0.0158)	(0.0209)
Illinois	1.922***	-1.482***	-1.536***	-0.188***
	(0.0195)	(0.0198)	(0.0212)	(0.0279)
North Carolina	-0.493***	0.655***	1.114***	-0.421***
	(0.0261)	(0.0270)	(0.0276)	(0.0378)
Post-PBC-1st period#Illinois	-0.356***	0.104***	0.332***	-0.273***
	(0.0233)	(0.0237)	(0.0253)	(0.0327)
Post-PBC-1st period#North Carolina	0.669***	-0.767***	-1.292***	0.595***
	(0.0284)	(0.0298)	(0.0301)	(0.0402)
Post-PBC-2nd period#Illinois	-0.450***	0.236***	0.445***	-0.311***
	(0.0257)	(0.0258)	(0.0278)	(0.0357)
Post-PBC-2nd period#North Carolina	0.623***	-0.681***	-1.528***	0.951***
	(0.0305)	(0.0318)	(0.0323)	(0.0420)
Sex	0.0523***	-0.0440***	-0.0528***	0.0152
	(0.00753)	(0.00790)	(0.00804)	(0.00964)
Age (squared)	-0.00173***	0.00174***	0.00174***	-0.000642***
	(4.59e-05)	(5.02e-05)	(4.84e-05)	(6.32e-05)
Infant	-0.0596***	0.0789***	-0.157***	0.280***
	(0.0109)	(0.0111)	(0.0120)	(0.0130)
Black	0.325***	-0.283***	-0.237***	-0.0675***
	(0.00828)	(0.00855)	(0.00882)	(0.0106)
Kinship care	0.597***	-0.490***	-0.776***	0.343***
	(0.00907)	(0.00912)	(0.00974)	(0.0110)
Hispanic	0.0700***	-0.0781***	0.000820	-0.117***
	(0.0134)	(0.0143)	(0.0141)	(0.0176)
Case goal (adoption)	0.0548***	-0.0339**	-0.517***	0.473***
	(0.0170)	(0.0172)	(0.0205)	(0.0200)
Case goal (reunification)	0.277***	-0.228***	-0.340***	0.140***
	(0.00982)	(0.0104)	(0.0104)	(0.0134)
Number settings	0.497***	-0.433***	-0.584***	0.202***
	(0.00522)	(0.00537)	(0.00568)	(0.00643)
TPR	1.277***	-1.299***	-1.791***	0.290***
	(0.0108)	(0.0108)	(0.0131)	(0.0126)
Constant	0.880***	1.561***	1.316***	-2.385***
	(0.0171)	(0.0187)	(0.0184)	(0.0244)
Observations	327,644	327,644	327,644	327,644
Pseudo-R squared		0.1429	0.1838	0.0369

Notes: Standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A.7.5. Marginal effects and predicted probabilities of DID for various measures of timeliness for Illinois, North Carolina and non-PBC states: time-varying model

Covariates	Amount of time spent in care	Timely	Very timely	Somewhat timely
	(9)	(10)	(11)	(12)
Pre-PBC#Non-PBC state	1.191***	0.724***	0.569***	0.175***
	(0.0126)	(0.00251)	(0.00286)	(0.00288)
Pre-PBC#Illinois	3.493***	0.335***	0.257***	0.150***
	(0.0195)	(0.00379)	(0.00368)	(0.00363)
Pre-PBC#North Carolina	3.345***	0.470***	0.504***	0.0393***
	(0.0279)	(0.00826)	(0.00677)	(0.00142)
Post-PBC-1st period#Non-PBC state	0.956***	0.777***	0.595***	0.229***
	(0.0086)	(0.00153)	(0.00190)	(0.00215)
Post-PBC-1st period#Illinois	3.244***	0.354***	0.303***	0.137***
	(0.0144)	(0.00288)	(0.00290)	(0.00239)
Post-PBC-1st period#North Carolina	3.65***	0.429***	0.273***	0.120***
	(0.0146)	(0.00350)	(0.00274)	(0.00182)
Post-PBC-2nd period#Non-PBC state	1.181***	0.749***	0.561***	0.232***
	(0.0105)	(0.00196)	(0.00240)	(0.00262)
Post-PBC-2nd period#Illinois	3.515***	0.317***	0.266***	0.124***
	(0.0187)	(0.00330)	(0.00353)	(0.00296)
Post-PBC-2nd period#North Carolina	4.074***	0.370***	0.178***	0.158***
	(0.017)	(0.00383)	(0.00238)	(0.00271)
Observations	327,644	327,644	327,644	327,644

Notes: Standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All other covariates are at their mean value.

Table A.7.6. Models for various measures of timeliness for Illinois, North Carolina and non-PBC states: time-varying model

Covariates	Amount of time spent in care	Timely	Very timely	Somewhat timely
	(9)	(10)	(11)	(12)
Post-PBC-1st period	-0.130***	0.290***	0.0430***	0.404***
	(0.0118)	(0.0158)	(0.0151)	(0.0200)
Post-PBC-2nd period	0.110***	0.0554***	-0.186***	0.414***
	(0.0127)	(0.0167)	(0.0160)	(0.0211)
Illinois	2.302***	-2.359***	-1.828***	-0.211***
	(0.0252)	(0.0346)	(0.0318)	(0.0406)
North Carolina	2.154***	-1.485***	-0.359***	-1.875***
	(0.0332)	(0.0548)	(0.0438)	(0.0597)
Post-PBC-1st period#Illinois	-0.0149	-0.242***	0.143***	-0.506***
	(0.0303)	(0.0416)	(0.0383)	(0.0483)
Post-PBC-1st period#North Carolina	0.540***	-0.624***	-1.524***	0.980***
	(0.0349)	(0.0590)	(0.0470)	(0.0603)
Post-PBC-2nd period#Illinois	0.0317	-0.303***	0.119***	-0.647***
	(0.0339)	(0.0462)	(0.0426)	(0.0549)
Post-PBC-2nd period#North Carolina	0.738***	-0.790***	-2.037***	1.334***
	(0.0369)	(0.0619)	(0.0498)	(0.0622)
Sex	0.0444***	-0.0432***	-0.0541***	0.0198**
	(0.00656)	(0.00903)	(0.00852)	(0.00991)
Age (squared)	-0.00236***	0.00321***	0.00235***	-0.000353***
	(4.00e-05)	(5.83e-05)	(5.16e-05)	(6.49e-05)
Infant	-0.0379***	0.0692***	-0.236***	0.431***
	(0.0126)	(0.0156)	(0.0160)	(0.0176)
Infant#Illinois#Pre-PBC	0.0434	0.129***	0.0328	-0.337***
	(0.0350)	(0.0466)	(0.0506)	(0.0520)
Infant#Illinois #Post-PBC-1st period	-0.0554**	0.320***	0.0657*	-0.173***
	(0.0264)	(0.0347)	(0.0374)	(0.0377)
Infant#Illinois #Post-PBC-2nd period	-0.0905***	0.319***	0.152***	-0.215***
	(0.0331)	(0.0437)	(0.0464)	(0.0478)
Infant#North Carolina#Pre-PBC	-0.0946	0.160	0.323***	-0.260***
	(0.0627)	(0.104)	(0.0835)	(0.0984)
Infant#North Carolina #Post-PBC-1st period	-0.0888***	0.265***	0.537***	-0.437***
	(0.0293)	(0.0420)	(0.0396)	(0.0402)
Infant#North Carolina #Post-PBC-2nd period	-0.0111	0.160***	0.446***	-0.436***
	(0.0318)	(0.0479)	(0.0446)	(0.0421)
Black	0.0952***	-0.0297**	-0.126***	0.209***
	(0.0103)	(0.0136)	(0.0130)	(0.0153)
Black#Illinois #Pre-PBC	0.416***	-0.364***	-0.213***	-0.588***
	(0.0294)	(0.0397)	(0.0389)	(0.0462)
Black#Illinois #Post-PBC-1st period	0.350***	-0.349***	-0.178***	-0.597***
	(0.0226)	(0.0303)	(0.0293)	(0.0346)
Black#Illinois #Post-PBC-2nd period	0.303***	-0.332***	-0.136***	-0.513***
	(0.0281)	(0.0375)	(0.0367)	(0.0440)

Covariates	Amount of time spent in care	Timely	Very timely	Somewhat timely
	(9)	(10)	(11)	(12)
Black#North Carolina #Pre-PBC	-0.0702*	0.0360	0.0120	-0.0717
	(0.0405)	(0.0678)	(0.0543)	(0.0688)
Black#North Carolina#Post-PBC-1st period	0.0550**	-0.309***	-0.165***	-0.143***
	(0.0222)	(0.0325)	(0.0293)	(0.0318)
Black#North Carolina#Post-PBC-2nd period	-0.0319	-0.326***	-0.0208	-0.276***
	(0.0254)	(0.0391)	(0.0344)	(0.0352)
Kinship care	0.831***	-0.808***	-1.141***	0.480***
	(0.0121)	(0.0146)	(0.0151)	(0.0167)
Kinship#Illinois	0.194***	-0.0682	-0.390***	-0.150***
	(0.0311)	(0.0415)	(0.0469)	(0.0471)
Kinship#North Carolina	-0.0769***	1.450***	0.881***	0.352***
	(0.0245)	(0.0737)	(0.0627)	(0.0734)
Kinship#Illinois #Post-PBC-1st period	-0.364***	0.354***	0.255***	0.288***
	(0.0293)	(0.0480)	(0.0539)	(0.0540)
Kinship#Illinois #Post-PBC-1st period	-1.122***	1.037***	1.481***	-0.388***
	(0.0457)	(0.0786)	(0.0671)	(0.0777)
Kinship#North Carolina #Post-PBC-2nd period	-2.190***	0.716***	0.538***	0.415***
	(0.0246)	(0.0526)	(0.0576)	(0.0600)
Kinship#North Carolina #Post-PBC-2nd period	-1.740***	0.813***	1.105***	-0.456***
	(0.0266)	(0.0812)	(0.0692)	(0.0784)
Hispanic	0.0474***	-0.0769***	0.00835	-0.115***
	(0.0116)	(0.0159)	(0.0149)	(0.0180)
Case goal (adoption)	0.249***	-0.0842***	-0.458***	0.312***
	(0.0152)	(0.0196)	(0.0216)	(0.0211)
PBC states#Case goal (adoption)	-2.051***	1.720***	0.608***	1.349***
	(0.0113)	(0.0156)	(0.0173)	(0.0149)
Case goal (reunification)	0.402***	-0.420***	-0.438***	0.0564***
	(0.00863)	(0.0122)	(0.0112)	(0.0138)
PBC states#Case goal (reunification)	-1.892***	2.980***	1.311***	0.873***
	(0.00684)	(0.0180)	(0.00906)	(0.0104)
Number settings	0.420***	-0.424***	-0.592***	0.252***
	(0.00457)	(0.00606)	(0.00596)	(0.00663)
TPR	1.318***	-1.417***	-1.725***	0.0903***
	(0.0102)	(0.0131)	(0.0143)	(0.0144)
Constant	0.859***	1.582***	1.354***	-2.455***
	(0.0151)	(0.0208)	(0.0195)	(0.0253)
Observations	327,644	327,644	327,644	327,644
Pseudo-R squared	..	0.3154	0.2560	0.0845

Notes: Standard errors are in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table A.7.7. Marginal effects and predicted probabilities of DID for various measures of timeliness for Illinois, North Carolina and non-PBC states: DID fixed-effects model and time-varying fixed-effects model

Covariates	Amount of time spent in care	Timely	Amount of time spent in care	Timely
	(13)	(14)	(15)	(16)
Pre-PBC#Non-PBC state	1.358***	0.716***	1.177***	0.751***
	(0.0126)	(0.00246)	(0.0126)	(0.00246)
Pre-PBC#Illinois	3.449***	0.300***	3.56***	0.307***
	(0.0173)	(0.00295)	(0.01729)	(0.00295)
Pre-PBC#North Carolina	1.988***	0.625***	3.289***	0.47***
	(0.0236)	(0.00488)	(0.02361)	(0.00488)
Post-PBC-1st period#Non-PBC state	1.401***	0.726***	0.97***	0.789***
	(0.0086)	(0.00163)	(0.0086)	(0.00163)
Post-PBC-1st period#Illinois	2.97***	0.371***	3.302***	0.325***
	(0.0136)	(0.00243)	(0.0136)	(0.00243)
Post-PBC-1st period#North Carolina	1.962***	0.638***	3.603***	0.466***
	(0.0125)	(0.00246)	(0.0125)	(0.00246)
Post-PBC-2nd period#Non-PBC state	1.711***	0.674***	1.218***	0.754***
	(0.0101)	(0.00204)	(0.0100)	(0.00204)
Post-PBC-2nd period#Illinois	3.268***	0.321***	3.599***	0.293***
	(0.0163)	(0.00305)	(0.0163)	(0.00305)
Post-PBC-2nd period#North Carolina	1.799***	0.671***	4.025***	0.395***
	(0.0142)	(0.0028)	(0.0142)	(0.00364)
Observations	327,644	327,644	327,644	327,644

Notes: Standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All other covariates are at their mean value.

Table A.7.8. Average annual number of children exiting care in North Carolina in a timely, very timely and somewhat timely manner by type of permanency outcome

	Race	Type of permanency outcome	Pre-PBC	Post-PBC (2nd period)
Timely exits	Total	Reunification	2,010	2,096
		Adoption	414	460
	Black	Reunification	892	705
		Adoption	200	114
	Other race	Reunification	1,118	1,391
		Adoption	214	346
Very timely exits	Total	Reunification	1,707	1,387
		Adoption	309	81
	Black	Reunification	736	464
		Adoption	153	17
	Other race	Reunification	971	923
		Adoption	156	64
Somewhat timely exits	Total	Reunification	303	709
		Adoption	105	379
	Black	Reunification	156	241
		Adoption	47	97
	Other race	Reunification	147	468
		Adoption	58	282

Table A.9.1. Predicted probabilities of DID for timeliness of adoption, reunification and guardianship for Illinois and North Carolina and non-PBC states: DID-only model

Covariates	Reunification (1)	Adoption (2)	Guardianship (3)
Pre-PBC#Non-PBC state	0.804***	0.0807***	0.0392***
	(0.00246)	(0.00169)	(0.00120)
Pre-PBC#Illinois	0.734***	0.159***	0.0692***
	(0.00481)	(0.00398)	(0.00276)
Pre-PBC#North Carolina	0.672***	0.148***	0.123***
	(0.00600)	(0.00453)	(0.00420)
Post-PBC-1st period#Non-PBC state	0.753***	0.112***	0.0524***
	(0.00178)	(0.00130)	(0.000920)
Post-PBC-1st period#Illinois	0.689***	0.193***	0.0679***
	(0.00341)	(0.00291)	(0.00185)
Post-PBC-1st period#North Carolina	0.500***	0.145***	0.286***
	(0.00308)	(0.00217)	(0.00278)
Post-PBC-2nd period#Non-PBC state	0.716***	0.121***	0.0874***
	(0.00231)	(0.00167)	(0.00145)
Post-PBC-2nd period#Illinois	0.694***	0.152***	0.110***
	(0.00449)	(0.00350)	(0.00304)
Post-PBC-2nd period#North Carolina	0.537***	0.171***	0.207***
	(0.00348)	(0.00262)	(0.00282)
Observations	213,193	213,193	213,193

Notes: Standard errors are in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table A.9.2. Models of DID for timeliness of adoption, reunification and guardianship for Illinois and North Carolina and non-PBC states: DID-only model

Covariates	Reunification (1)	Adoption (2)	Guardianship (3)
Post-PBC-1st period	-0.293***	0.359***	0.305***
	(0.0183)	(0.0263)	(0.0370)
Post-PBC-2nd period	-0.485***	0.455***	0.854***
	(0.0193)	(0.0277)	(0.0368)
Illinois	-0.398***	0.764***	0.602***
	(0.0292)	(0.0375)	(0.0535)
North Carolina	-0.696***	0.679***	1.238***
	(0.0314)	(0.0426)	(0.0503)
Post-PBC-1st period#Illinois	0.0755**	-0.120***	-0.326***
	(0.0346)	(0.0439)	(0.0637)
Post-PBC-1st period#North Carolina	-0.423***	-0.377***	0.740***
	(0.0350)	(0.0479)	(0.0554)
Post-PBC-2nd period#Illinois	0.289***	-0.505***	-0.349***
	(0.0378)	(0.0489)	(0.0645)
Post-PBC-2nd period#North Carolina	-0.0804**	-0.282***	-0.238***
	(0.0362)	(0.0491)	(0.0562)
Constant	1.411***	-2.433***	-3.200***
	(0.0156)	(0.0228)	(0.0320)
Observations	213,193	213,193	213,193
Pseudo-R squared	0.0352	0.0112	0.0864

Table A.9.3. Predicted probabilities of DID for timeliness of adoption, reunification and guardianship for Illinois and North Carolina and non-PBC states: time-invariant model

Covariates	Reunification (4)	Adoption (5)	Guardianship (6)
Pre-PBC#Non-PBC state	0.774***	0.00698***	0.0397***
	(0.00325)	(0.000359)	(0.00126)
Pre-PBC#Illinois	0.788***	0.0652***	0.0297***
	(0.00494)	(0.00348)	(0.00132)
Pre-PBC#North Carolina	0.908***	0.00313***	0.0691***
	(0.00308)	(0.000203)	(0.00299)
Post-PBC-1st period#Non-PBC state	0.792***	0.00322***	0.0482***
	(0.00201)	(0.000134)	(0.000903)
Post-PBC-1st period#Illinois	0.777***	0.0478***	0.0334***
	(0.00358)	(0.00206)	(0.00103)
Post-PBC-1st period#North Carolina	0.508***	0.0103***	0.216***
	(0.00391)	(0.000468)	(0.00301)
Post-PBC-2nd period#Non-PBC state	0.735***	0.00983***	0.0589***
	(0.00270)	(0.000418)	(0.00112)
Post-PBC-2nd period#Illinois	0.780***	0.0189***	0.0458***
	(0.00456)	(0.00137)	(0.00151)
Post-PBC-2nd period#North Carolina	0.502***	0.0267***	0.150***
	(0.00415)	(0.00120)	(0.00254)
Observations	213,193	213,193	213,193

Notes: Standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All other covariates are at their mean value.

Table A.9.4. Models of DID for timeliness of adoption, reunification and guardianship for Illinois and North Carolina and non-PBC states: time-invariant model

Covariates	Reunification (4)	Adoption (5)	Guardianship (6)
Post-PBC-1st period	0.106***	-0.777***	0.204***
	(0.0220)	(0.0487)	(0.0380)
Post-PBC-2nd period	-0.213***	0.345***	0.415***
	(0.0231)	(0.0535)	(0.0382)
Illinois	0.0836**	2.295***	-0.301***
	(0.0352)	(0.0749)	(0.0562)
North Carolina	1.062***	-0.806***	0.585***
	(0.0417)	(0.0718)	(0.0572)
Post-PBC-1st period#Illinois	-0.172***	0.447***	-0.0819
	(0.0417)	(0.0843)	(0.0660)
Post-PBC-1st period#North Carolina	-2.366***	1.980***	1.108***
	(0.0451)	(0.0807)	(0.0605)
Post-PBC-2nd period#Illinois	0.162***	-1.633***	0.0362
	(0.0452)	(0.105)	(0.0672)
Post-PBC-2nd period#North Carolina	-2.072***	1.821***	0.453***
	(0.0472)	(0.0909)	(0.0636)
Sex	-0.0163	-0.0363	-0.0165
	(0.0116)	(0.0253)	(0.0156)
Age (squared)	-0.00419***	-0.0115***	-0.00214***
	(6.82e-05)	(0.000239)	(9.40e-05)
Infant	-0.790***	0.814***	-0.226***
	(0.0171)	(0.0298)	(0.0237)
Black	0.0254**	-0.552***	0.112***
	(0.0127)	(0.0278)	(0.0168)
Kinship care	-1.111***	0.0193	1.574***
	(0.0138)	(0.0299)	(0.0163)
Hispanic	0.136***	-0.210***	-0.140***
	(0.0207)	(0.0461)	(0.0287)
Case goal (adoption)	-0.777***	2.165***	-1.407***
	(0.0302)	(0.0464)	(0.0517)
Case goal (reunification)	1.126***	0.0172	-1.149***
	(0.0143)	(0.0373)	(0.0183)
Number settings	-0.239***	0.0391**	0.128***
	(0.00808)	(0.0181)	(0.0112)
TPR	-2.681***	5.717***	-1.257***
	(0.0173)	(0.0371)	(0.0312)
Constant	1.860***	-5.010***	-2.247***
	(0.0263)	(0.0673)	(0.0399)
Observations	213,193	213,193	213,193
Pseudo-R squared	0.2854	0.7307	0.2094

Notes: Standard errors are in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.