Prevalence and Predictors of Union Dissolution and Union Formation among Biological Parents

of Young Children in Chile

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ABSTRACT

We examine the prevalence and predictors of union dissolution and union formation of children's biological parents in Chile. Using the Chilean Early Childhood Longitudinal Survey, we identify families who were intact or had a separated father. For both of these types of families, we ask: (1) what is the prevalence of father absence/presence among previously intact/separated parents of young children in Chile?; (2) which characteristics of families, parents, and children are predictors of union dissolution/formation with the biological father among these families?; (3) do these associations differ by geography, socioeconomic status, and gender of the child? We find evidence that preparedness for marriage (e.g., father's age) and marital investment (e.g., having a mortgage versus renting) reduce the risk of union dissolution and increase the probability of establishing stable unions. Some differences by geography and gender of the child are observed.

BACKGROUND

Changes in patterns of union formation, union dissolution, and fertility decisions have triggered substantial transformations in children's living arrangements around the world (Cherlin, 2017; Social Trends Institute, 2017). Two distinct but related phenomena are observed in a wide range of countries. On one hand, couples are more likely to have children outside marriage (Social Trends Institute, 2017). Because most unmarried parents break up within a few years after their child's birth (Bumpass & Lu, 2000; Bzostek, McLanahan, & Carlson, 2012), children in these families are likely to experience family instability, which most research finds associated with negative child outcomes (Wu, 1996; Wu & Thomson, 2001; Fomby & Cherlin, 2007). On the other hand, fathers are increasingly absent for at least some of their children's early lives (Social Trends Institute, 2017; Liu, Esteve & Trevino, 2017), with negative consequences for children's educational outcomes, socio-emotional adjustment, and adult mental health (McLanahan, Tach & Schneider, 2013).

Current research on children's living arrangements is limited in two ways. First, it is primarily focused on understanding father absence as a result of union dissolution, ignoring that single mothers may also establish stable unions with the child's biological father. Although there is literature on step-parents and child well-being (e.g. review from Coleman et. al. 2000), there is only limited research on household formation with the child's biological father after the child's birth, which suggests father entrance may influence child well-being differently than father separation (Lee & McLanahan, 2015). The number of children impacted by biological fathers entering the household is not negligible. In the US, 28% of couples in the Fragile Families studies who were not cohabiting or married when their child was born were doing so one year after the birth (Carlson, McLanahan & England, 2000). To the best of our knowledge, there are

3

no studies that have examined how predictors of union formation and union dissolution differ among biological parents.

A second limitation is that the vast majority of this literature is focused on Western countries, especially the United States (Amato & Gilbreth, 1999; McLanahan, Tach & Schneider, 2013; Social Trends Institute, 2017), with very little work on less affluent nations. Extant research is based on cross-sectional studies with very small samples (e.g., Scott, DeRose, Lippman, & Cook, 2013). While we can anticipate some similarities across contexts, differences in demographic trends, social and legal norms, and economic development may make prior research for developed countries less applicable to middle income economies. For instance, Cummings, Wilson, & Shamir (2003) find that Chilean children are more sensitive to marital discord that U.S. children. Furthermore, understanding children's living arrangements in contexts with a more recent rise to affluence is important to enhance our current knowledge of children's experiences worldwide.

We extend this literature by investigating the prevalence and predictors of union dissolution and union formation of children's biological parents in Chile. Recent demographic phenomena allow for a contrast between fathers entering and exiting the household. Divorce was legalized in 2004, implying increased social acceptance of fathers exiting the household. At the same time, dramatic increase in nonmarital births among young women resulted in many young children experiencing their fathers' movement into the household well after the child was born (Reynolds, Fernald, Deardorff & Behrman, 2018). With a longitudinal data set on children ages 0-5 years, we identify families who were intact or had a separated father. For both of these types of families, we ask: (1) what is the prevalence of father absence/presence among previously intact/separated parents of young children in Chile?; (2) which characteristics of families,

parents, and children are predictors of union dissolution/formation with the biological father among these families?; (3) do these associations differ by geography, socioeconomic status, and gender of the child?

THE CHILEAN CONTEXT

The Chilean family context has changed substantially over the past three decades. In Table 1 we present key indicators that illustrate these transformations. Chile is known as one the fastest-growing economies of Latin America, where unemployment and poverty rates resemble those observed in the developed world (e.g., the United States); income inequality, however, remains at high levels similar to many Latin American countries. Compared to children born in the 1990's, an era of relative economic stagnation, today's children are more likely to be born to unmarried women and less likely to be raised in a two-parent family. While the proportion of women who have ever been divorced has increased by almost 15%, the most significant change is observed in the percentage of births outside marriage, which increased more than 20 percentage points (45%) between the 1990s and the 2000s.

[Table 1]

THEORETICAL AND EMPIRICAL LITERATURE

We build on theoretical perspectives on divorce and dissolution of cohabiting unions to inform our model of potential predictors of union dissolution and formation among biological parents of young children in Chile. Sociological and economic theories of divorce were based on an examination of the advantages and disadvantages of staying married versus alternatives to that current marriage, and barriers to ending the relationship (Becker et al., 1977; Udry, 1981). South & Spitze (1986) operationalized this model with three categories that influence the likelihood of

union dissolution: preparation for marriage (personal characteristics), investment in marriage (shared responsibilities), and external market forces (environmental factors).

The first category poses that those who are better prepared for marriage are more likely to stay together than those who enter a legal partnership with less preparation. Some key predictors of preparedness include age and education at marriage. Individuals who marry at young ages are at higher risk of divorcing than those who marry at older ages. Some explanations for the negative association between age and the risk of divorce include maturity and the opportunity of doing a better search for those who delay marriage (Morgan and Rindfuss, 1985). This theory also predicts that higher levels of education for both husband and wife are associated with a lower risk of divorce.

The second category proposed by South & Spitze (1986) suggests that marital investment also plays a key role in the determination of divorce. Two key predictors of investment include the child characteristics and home ownership. In light of this model, those who have young children are less likely to divorce than those who have older children. The positive association between children's age and the risk of divorce is explained by the high cost of young children in terms of time, money, and effort (Becker, 1990; Cherlin, 1977; Friedman et al, 1994; Waite et al., 1985). However, the experience of caring for a child with a congenital disease may increase the risk of union dissolution (Joesch & Smith, 1997). This literature also finds first-born children associated with reduced odds of divorce (Lillard & Waite, 1993; Waite & Lillard, 1991). In terms of home ownership, couples who own homes will be less likely to divorce than those who are renting. However, there is also the possibility that weak marriages are less likely to invest in a home (Moore & Waite, 1981).

The third and final category proposed by South & Spize (1986) is related to economic and marriage market circumstances. Some examples of these factors include employment of both husband and wife, race, and metropolitan residence. It is theorized that wives who are employed are more likely to divorce than those who are unemployed because of the economic independence gained with own earnings (Cherlin, 1979; Mott & Moore, 1979). On the other hand, the association between husband's socioeconomic status and the risk of divorce is expected to be negative (Cherlin, 1979; Mott & Moore, 1979). While having a high socioeconomic status also increases attractiveness of husbands among other women, findings from prior research suggest this effect is likely offset by wife's desire to retain her husband. This model also predicts that those living in metropolitan areas may be more likely to divorce than those living in smaller areas. Some explanations for this potential association include that attitudes in urban areas may be more accepting of union disruption and that women may find better employment prospects and social services in these areas.

While this model can shed light on potential predictors of union dissolution among unmarried parents, cohabiting couples differ from married couples in factors that may influence the likelihood of union dissolution. Lawler & Yoon (1993) proposed two conditions under which cohabiting couples may be more likely to stay together: integrative bargaining and equal power. The first condition is described as the process where partners bring different strengths to a relationship and get the most of it through complementary trade-offs. This exchange may lead to more frequent agreements and may increase the couple's interest in staying in the relationship. An alternative perspective also proposed by Lawler & Yoon suggests that stability among cohabiting couples is achieved when partners have equal power in the relationship and mutual compromises promote frequent agreement. These authors pose that integrative bargaining may

bear high risks for cohabitators because, unlike the marriage contract, cohabitation does not protect partners against the risk of specialization. In that sense, the perspective that may better explain stability among unmarried couples is the presence of equal power. This perspective has been operationalized by various measures of income equality (see for example Brines & Joyner, 1999).

To the best of our knowledge, there is only one study that has examined factors associated with father absence in Chile and no study that has looked at the predictors of father presence among formerly single-mother families. This study uses the *Encuesta Longitudinal de Primera Infancia* (ELPI - Chilean Early Childhood Longitudinal Survey) to examine the characteristics of children living in families with and absent father in Chile. While the analyses are solely based on cross sectional descriptive statistics, the findings are consistent with some of the expected associations discussed above. First, low preparation for marriage seems associated with higher risk of union dissolution and, therefore, father absence. Children whose mothers are younger are more likely to experience father absence than those whose mothers are between 26 and 35 years old (Valenzuela & Wiegand, 2015). This study also shows that father absence is more frequent among children in the lower socioeconomic status, which is also consistent with South & Sptize (1986) predictions on the role of external economic factors on union disruption.

While informative, this study ignores that there are multiple factors that may be associated with father absence and that these associations may also vary across subgroups of the populations. Our conceptual framework suggest we may find differences by child's gender, child's birth order, father's socioeconomic status, and child's urban residence. The purpose of this study is to address gaps in the literature on predictors of father absence and father presence

in developing countries. We examine factors associated with these phenomena among young children in Chile.

METHODS

Data

We used data from the Chilean Early Childhood Longitudinal Survey (*Encuesta Longitudinal de Primera Infancia*—ELPI) 2010 and 2012 waves. The 2010 survey is a nationally representative database of 15,175 children born between January 1st 2006 and August 31st 2009. Families were revisited in 2012, but there was a 15% attrition rate. ELPI includes information on child, parent, and family characteristics.

Samples

Our study includes children whose families were surveyed in both 2010 and 2012 (N=12,898). In both samples we excluded families in which the mother was absent (N=384) the father was traveling (N=27) or the father was in prison (N=116) in either of the two survey years. In no instances was the father deceased. We also dropped families where the child never participated in the psychological portion of the survey due to the loss of a key variable, child age in months (N=6). After these exclusions, our final analytic sample for the analyses of union dissolution included 8,675 children who were living with both biological parents in 2010. Our final analytic sample for the analyses of union formation with the child's biological father included 3,690 children who were living in a single-mother family in 2010. Basic descriptive statistics for the sample of intact families in 2010 are presented in Table 3. These analyses indicate that, on average, families that experienced union dissolution in 2012 were more disadvantaged than those who stayed married throughout the period of analysis. For instance,

families who were separated or divorced in 2012 were more likely to receive cash welfare and live in a rental home than those who were still together in the same year. Fathers in families that were dissolved are also less likely to have a college degree than those who were married. These differences are statistically significant. Descriptive statistics for the sample of families where mothers who did not have a partner at baseline are presented in Table 4. These analyses suggest that those families who experience union formation between biological parents' are less likely to receive government benefits.

[Table 3]

[Table 4]

Measures

We use individual and family characteristics at baseline to predict union dissolution among in-tact families by 2012. We use an analogous approach for the analyses of union dissolution.

Following our literature review we include measures of the child's father's preparedness for marriage such as father's age and education (primary, secondary, some college and college degree)[1], work income, has signed work contract, an indicator for other children outside the home, and the engagement with child variable, the fraction of six activities (read books, tell stories, sing songs, go on outings, plays, convers or draw) done with the child. We only include *father variables* in the separation analysis because if the father was not living in the household in 2012, there was

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[1] Initially we forgot to include mother variables. We did not have time to add them to the tables before the deadline, but re-ran the models with the mother variables. There were little changes in the other covariates and mother variables were mostly insignificant, except mother's age was negatively associated with dissolution while mother's income was positively associated with them. Surprisingly, mother's age was also positively associated with union formation and vocabulary intelligence was also positively associated with union formation. Mother variables will be included in the final version of the paper.

much less data about the father. Most of the information comes from the household roster, and if the father was not living in the household, information is not collected.

Family variables include number of siblings and an indicator variable for at least one grandparent living in the household.

SES variables are monthly income, if the family receives the government subsidy *Subsidio Unico Familia*r (SUF) for low-income families, and an indicator variable for urban residence.

Time variables are child age in months and months between survey rounds, which is calculated from the difference in ages of the child in 2010 and 2012.

Child variables are child sex, child age in months, birth weight, and indicator variables for health and developmental difficulties, as reported by the main caregiver. These difficulties were respiratory illnesses, gastrointestinal illnesses, other physical illnesses (kidney, growth, visual, audio, skin) psychological challenges (learning disorder or delays, mental health, trauma, neurological) and if the child had ever been hospitalized or had surgery. We also include a measure of child development. This index is created from factor analyses of age-standardized scores. For children ages 24 months and older, this was generated using the cognitive, language, and motor subscales of the Tepsi evaluation of child development and for children younger than 24 months, this was generated using the personal-social, adaptive, motor, communicative, and cognitive, subscales of the Battelle test.

We include two additional variables in the separation analysis. Marital status (married) is also included as an indicator variable and separation risk is a predicted probability of separation determined by the portion of women separated in the same municipality as a function of mother's age.

Analytic Plan

We calculate the probability of separation or union using a *Logit* regression. We contrast different models using distinct combinations of covariates. First we examine family and SES covariates only, along with time variables. Then we include child covariates, and finally, father covariates and father engagement variables. We do three heterogeneity analyses: by child sex, by highest and lowest SES quintile, and by urban and rural. Some observations were missing child age in months (N=462 in 2010; N=991 in 2012), which also impacts the calculation of months between survey rounds. The survey only includes this variable when the child received the psychological testing. For children missing age in months for only one of the survey rounds, we calculate the other age in months using the average months between survey rounds for other children in their comuna (municipality). We also substitute this comuna average for months between survey rounds if age in months was missing. For other variables, we assign the mean value if the variable is continuous and the modal value if the variable is discrete.

PRELIMINARY RESULTS

Table 2 presents prevalence of union dissolution and union formation between biological mothers and biological fathers of young children. Though there are more children whom are experiencing union dissolution of their biological parents, given the parents cohabitating status in 2010, the probability of union formation is higher than union dissolution. We also find that children in rural areas experience fewer changes in their living arrangements.

[Table 2]

Table 5 presents predictors of union dissolution among families with children ages 0-5 years. These results support predicted relationships discussed in the literature review. First, we

12

find some evidence that preparedness for marriage (or cohabiting union) reduces the risk of

union dissolution. Specifically, father's age is negatively associated with the probability of

divorce or separation in 2012. We also find that families who make marital investments are less

likely to divorce than those who do not make these investments. For instance, compared to those

who rent, families that have a mortgaged home have a lower risk of union dissolution. Our

analyses also show that father engagement reduces the risk of separation. However, fathers who

have children outside the home face a relatively higher risk of separation than those who do not.

As expected, couples who were married are less likely to separate than those who are

cohabiting. Finally, families living in urban areas face a higher risk of parents' union

dissolution than those living in rural areas because women may find better employment

prospects and social services in urban settings than rural areas. We do not find an association

between child's characteristics and union dissolution. Table 5 also presents predictors of union

formation among families with children ages 0-5 years. We find that in families receiving cash

welfare benefits women are less likely to establish a partnership with the child's father than

women who do not receive public assistance. These analyses also show a negative association

between the child's age and the probability of union formation suggesting that older children are

less likely to live with both biological parents.

[Table 5]

Table 6 shows differences by geography, socioeconomic status, and gender of the child.

We find evidence that some key predictors of marital investment are not associated with the

probability of union dissolution in rural areas. For instance, the negative association between

having a mortgaged home and union dissolution is not statistically significant for families in

these areas. Our preliminary analyses also suggest that father's engagement is negative

associated with the risk of divorce among girls but this association does not exist among boys. In a future iteration of this study we will conduct separate analyses for married and cohabiting couples.

[Table 6]

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Table 1. The Chilean Context

Indicator		2013
Population (millions)		17.6
GDP per capita (2011 PPP $)		21,748
Unemployment rate (% of labor force)		5.9
Mean years of schooling		9.9
Poverty rate (% of population living below national poverty line)		14.4
Income Gini coefficient		47.3
	1990s	**2000s**
% of women who are married	49.4	44.9
% of women who are cohabiting	5.7	8.8
% of women who are separated or divorced	12.4	14.2
% of women with children who have not been married	10.8	14.0
% of women with children who are separated or divorced	16.8	18.4
Births outside marriage	48.9	71.1

Sources: Statistics for population, GDP per capita, unemployment rate, and mean years of schooling from UN Human Development Data (2013). Statistics for poverty rate and income Gini coefficient from World Bank (2013). Statistics of women's marital status are from ECLAC, Online database CEPALSTAT. Statistics of births outside marriage are from Instituto Nacional de Estadisticas.

Table 2: Prevalences of Union Dissolution & Union Formation Between Biological Mothers & Biological Fathers of Young Children

	Dissolution	Formation
Full Sample	9.5%	16.0%
Girls	9.7%	15.8%
Boys	9.3%	16.2%
Lowest quintile	9.0%	15.8%
Highest quintile	10.3%	16.6%
Rural	6.8%	13.7%
Urban	9.9%	16.2%

Source: ELPI 2010 & 2012

Table 3: Summary statistics for intact families in 2010

		No dissolution	Dissolution	differences in means	N	min	max
Child Variables	Male	0.501	0.489	0.503	8675	0	1
		(0.006)	(0.017)				
	Child development scores	-0.007	0.017	0.492	8165	-4	4
		(0.011)	(0.032)				
	Birth Weight (kg)	3.404	3.404	0.976	7971	2	5
		(0.005)	(0.018)				
	Ever hospitalized or had surgury	0.249	0.268	0.229	8675	0	1
		(0.005)	(0.015)				
	Gastrointenstinal problems	0.089	0.094	0.615	8675	0	1
		(0.003)	(0.010)				
	Respiratory problems	0.436	0.447	0.522	8675	0	1
		(0.006)	(0.017)				
	Other physical problems	0.140	0.162	0.083	8675	0	1
		(0.004)	(0.013)				
	Psychological problems	0.058	0.052	0.500	8675	0	1
		(0.003)	(0.008)				
Family Variables	Grandparent in household	0.209	0.330	0.000	8675	0	1
		(0.005)	(0.016)				
	Number of siblings	1.108	0.943	0.000	8675	0	8
		(0.011)	(0.035)				
SES Variables	Government Subsidy	0.282	0.348	0.000	8675	0	1
		(0.005)	(0.017)				
	Fully paid home	0.379	0.372	0.687	8653	0	1
		(0.005)	(0.017)				
	Mortgaged home	0.208	0.135	0.000	8653	0	1
		(0.005)	(0.012)				
	Rented or borrowed	0.412	0.493	0.000	8653	0	1
		(0.006)	(0.017)				
	Average monthly household income	549514	460464	0.017	8316	13000	50000000
		(11868.561)	(21433.664)				
	Urban	0.884	0.920	0.002	8675	0	1
		(0.004)	(0.009)				
Time Variables	Age in months in 2010	30.556	29.731	0.076	8571	7	58
		(0.144)	(0.444)				
	Months between survey rounds	25.971	26.148	0.005	8675	19	32
		(0.019)	(0.062)				

Table 3 Continues next page

Table 3 Continued

Father Variables	Father's age	33.921	30.750	0.000	8675	15	70
		(0.086)	(0.270)				
	Father's education primary or less	0.204	0.185	0.208	8565	0	1
		(0.005)	(0.014)				
	Father's education secondary completed	0.570	0.642	0.000	8565	0	1
		(0.006)	(0.017)				
	Father's education tertiary incomplete	0.079	0.085	0.566	8565	0	1
		(0.003)	(0.010)				
	Father's education teriary complete	0.146	0.088	0.000	8565	0	1
		(0.004)	(0.010)				
	Father had additional children outside the household	0.179	0.237	0.000	8675	0	1
		(0.004)	(0.015)				
	Father has work contract	0.663	0.609	0.002	8675	0	1
		(0.005)	(0.017)				
	Father's work income	310398	240036	0.000	8675	0	30000000
		(5698.070)	(9120.031)				
Father Engagement \	Converses or draws with child	0.496	0.440	0.002	8675	0	1
		(0.006)	(0.017)				
	Takes the child places	0.435	0.420	0.410	8675	0	1
		(0.006)	(0.017)				
	Tells the child stories	0.309	0.284	0.141	8675	0	1
		(0.005)	(0.016)				
	Plays with child	0.635	0.597	0.032	8675	0	1
		(0.005)	(0.017)				
	Reads the child books	0.311	0.248	0.000	8675	0	1
		(0.005)	(0.015)				
	Sings the child songs	0.446	0.377	0.000	8675	0	1
		(0.006)	(0.017)				
Couple Variables	Probability of being a single mother based on muncipal prevalances by mother's age	0.272	0.329	0.000	8675	0.16	0.82
		(0.001)	(0.005)				
	Married	0.549	0.296	0.000	8675	0	1
		(0.006)	(0.016)				
	N	7848	827				

Table 4: Summary statistics for single mother families in 2010

		No dissolution	Dissolution	t-test of differences in means	N	min	max
Child Variables	Male	0.517	0.524	0.779	3690	0	1
		(0.009)	(0.021)				
	Child development scores	0.004	0.047	0.321	3486	-4	3.986109
		(0.017)	(0.040)				
	Birth Weight (kg)	3.363	3.358	0.804	3399	2	5
		(0.008)	(0.019)				
	Ever hospitalized or had surgury	0.263	0.275	0.567	3690	0	1
		(0.008)	(0.018)				
	Gastrointenstinal problems	0.087	0.093	0.612	3690	0	1
		(0.005)	(0.012)				
	Respiratory problems	0.472	0.444	0.214	3690	0	1
		(0.009)	(0.020)				
	Other physical problems	0.152	0.146	0.701	3690	0	1
		(0.006)	(0.015)				
	Psychological problems	0.058	0.068	0.360	3690	0	1
		(0.004)	(0.010)				
Family Variables	Grandparent in household	0.725	0.671	0.008	3690	0	1
		(0.008)	(0.019)				
	Number of siblings	0.575	0.605	0.459	3690	0	7
		(0.016)	(0.037)				
SES Variables	Government Subsidy	0.359	0.293	0.002	3690	0	1
		(0.009)	(0.019)				
	Fully paid home	0.538	0.495	0.053	3685	0	1
		(0.009)	(0.021)				
	Mortgaged home	0.117	0.110	0.637	3685	0	1
		(0.006)	(0.013)				
	Rented or borrowed	0.345	0.395	0.019	3685	0	1
		(0.009)	(0.020)				
	Average monthly household income	437148.406	445978.719	0.762	3536	13000	12000000
		(11573.428)	(27544.070)				
	Urban	0.910	0.925	0.234	3690	0	1
		(0.005)	(0.011)				
Time Variables	Age in months in 2010	30.663	28.929	0.002	3646	7	58
		(0.228)	(0.524)				
	Months between survey rounds	26.062	26.056	0.939	3690	20	32
		(0.032)	(0.077)				
	N	3100	590				

Predictors of Union Dissolution   Predictors of Union Formation

		SES	Family	Child	SES+Family +Child	SES+ Family + Child + Couple + Father	All+Father Engagement	SES	Family	Child	SES + Family + Child
Time Variables	Age in months 2010	0	0	-0.000+	0	0	0	-0.002**	-0.002**	-0.002**	-0.002**
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
	months between rounds	0.005**	0.004*	0.005**	0.004**	0.004*	0.004*	-0.001	-0.001	-0.001	-0.001
		(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)
SES Variables	Government Subsidy	0.022**			0.024**	0.006	0.006	-0.040**			-0.042**
		(0.007)			(0.007)	(0.006)	(0.006)	(0.013)			(0.013)
	Fully paid home (base category rent)	-0.014*			-0.019**	-0.009	-0.009	-0.029*			-0.019
		(0.007)			(0.007)	(0.006)	(0.006)	(0.013)			(0.013)
	Mortgaged home (base category rent)	-0.046**			-0.042**	-0.019*	-0.019*	-0.034+			-0.027
		(0.009)			(0.009)	(0.009)	(0.009)	(0.021)			(0.021)
	Average monthly household income	-0.000+			-0.000*	0	0	0			0
		(0.000)			(0.000)	(0.000)	(0.000)	(0.000)			(0.000)
	Urban	0.044**			0.040**	0.031**	0.031**	0.023			0.021
		(0.011)			(0.011)	(0.010)	(0.010)	(0.023)			(0.023)
Family Variables	Grandparent lives in household		0.047**		0.047**	0.022**	0.022**		-0.041**		-0.037*
			(0.007)		(0.007)	(0.007)	(0.006)		(0.014)		(0.015)
	Number of siblings		-0.010**		-0.010**	0.006+	0.005		-0.002		0.002
			(0.003)		(0.003)	(0.003)	(0.003)		(0.007)		(0.007)
Child Variables	Male			-0.004	-0.005	-0.006	-0.007			0.006	0.006
				(0.006)	(0.006)	(0.006)	(0.006)			(0.012)	(0.012)
	Child development Index			0.002	0.002	0.003	0.003			0.007	0.005
				(0.003)	(0.003)	(0.003)	(0.003)			(0.006)	(0.006)
	Birth Weight			0.002	0.002	0.004	0.004			0.012	0.01
				(0.007)	(0.006)	(0.006)	(0.006)			(0.014)	(0.014)
	Ever hospitalized or had surgury			0.009	0.006	0.003	0.003			-0.003	-0.006
				(0.007)	(0.007)	(0.006)	(0.006)			(0.013)	(0.013)
	Gastrointenstinal problems			0.002	0.005	0.004	0.004			0.012	0.011
				(0.011)	(0.010)	(0.010)	(0.009)			(0.021)	(0.021)
	Respiratory problems			0.003	0.002	0.001	0.003			-0.017	-0.018
				(0.006)	(0.006)	(0.006)	(0.006)			(0.012)	(0.012)
	Other physical problems			0.015+	0.014+	0.011	0.012			-0.008	-0.006
				(0.009)	(0.008)	(0.008)	(0.008)			(0.017)	(0.017)
	Psychological problems			-0.012	-0.012	-0.011	-0.012			0.033	0.03
				(0.014)	(0.014)	(0.013)	(0.012)			(0.025)	(0.025)

Table 5 continues next page

Table 5 continued

						(1)	(2)				
Couple Variables	Probability of being a single mother based on muncipal prevalances by mother's age					0.057*	0.054+				
						(0.028)	(0.028)				
	Married					-0.053**	-0.051**				
						(0.006)	(0.006)				
Father Variables	Father's age					-0.003**	-0.003**				
						(0.001)	(0.001)				
	Father's education primary or less (base category tertiary complete)					-0.007	-0.009				
						(0.013)	(0.013)				
	Father's education secondary completed (base category tertiary complete)					0.004	0.003				
						(0.011)	(0.011)				
	Father's education tertiary incomplete (base category tertiary complete)					0.004	0.004				
						(0.014)	(0.013)				
	Father had additional children outside the household					0.031**	0.031**				
						(0.007)	(0.007)				
	Father has work contract					-0.011+	-0.011+				
						(0.006)	(0.006)				
	Father's work income					0	0				
						(0.000)	(0.000)				
Father Engagement Variables	Converses or draws with child						-0.005				
							(0.008)				
	Takes the child places						0.009				
							(0.007)				
	Tells the child stories						0.016*				
							(0.008)				
	Plays with child						-0.001				
							(0.008)				
	Reads the child books						-0.021**				
							(0.008)				
	Sings the child songs						-0.021**				
							(0.008)				
	N	8653	8675	8675	8653	8543	8543	3685	3690	3690	3685

Source, ELPI 2010 & 2012

Controling for age and time between rounds, the base probabilty of union dissolution is 9.5%

Controling for age and time between rounds, the base probabilty of union formation is 16.0%

		Predictors of Union Dissolution						Predictors of Union Formation					
		Girls	Boys	Low SES	High SES	Urban	Rural	Girls	Boys	Low SES	High SES	Urban	Rural
Time Variables	Age in months 2010	0	0	0	0	0	0	-0.002**	-0.001*	-0.001+	-0.002**	-0.002**	0
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
	months between rounds	0.006**	0.001	0.002	0.006*	0.003+	0.005+	0.006	-0.008+	-0.002	-0.001	-0.001	-0.007
		(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.005)	(0.005)	(0.005)	(0.005)	(0.003)	(0.013)
SES Variables	Government Subsidy	-0.004	0.015+	0.01	0.002	0.007	-0.003	-0.041*	-0.043*	-0.067**	-0.025	-0.045**	-0.038
		(0.008)	(0.009)	(0.010)	(0.008)	(0.007)	(0.010)	(0.019)	(0.018)	(0.023)	(0.017)	(0.014)	(0.038)
	Fully paid home (base category rent)	-0.008	-0.009	-0.005	-0.015+	-0.007	-0.012	-0.028	-0.008	-0.009	-0.024	-0.022	0.036
		(0.008)	(0.009)	(0.009)	(0.009)	(0.007)	(0.009)	(0.019)	(0.019)	(0.020)	(0.018)	(0.014)	(0.044)
	Mortgaged home (base category rent)	-0.016	-0.019	-0.014	-0.029+	-0.019*	-0.005	-0.048	-0.013	-0.034	-0.015	-0.040+	0.215**
		(0.012)	(0.012)	(0.010)	(0.016)	(0.009)	(0.019)	(0.030)	(0.029)	(0.029)	(0.031)	(0.021)	(0.078)
	Average monthly household income	0	0	0	0	0	0	0	0	0	0	0	0
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
	Urban	0.023+	0.040**	0.011	0.044**	0	0	0.029	0.012	-0.008	0.037	0	0
		(0.013)	(0.015)	(0.017)	(0.013)	(.)	(.)	(0.032)	(0.032)	(0.038)	(0.029)	(.)	(.)
Family Variables	Grandparent lives in household	0.025**	0.019*	0.021*	0.021*	0.015*	0.040**	-0.042*	-0.033	0.003	-0.056**	-0.044**	0.019
		(0.009)	(0.009)	(0.009)	(0.011)	(0.007)	(0.011)	(0.021)	(0.020)	(0.028)	(0.020)	(0.015)	(0.049)
	Number of siblings	0	0.010*	0.006	0.003	0.004	0.007	0.003	0.001	0	0.001	0	0.016
		(0.004)	(0.005)	(0.005)	(0.005)	(0.004)	(0.005)	(0.010)	(0.010)	(0.013)	(0.009)	(0.008)	(0.023)
Child Variables	Male	0	0	-0.005	-0.008	-0.006	-0.008	0	0	0.029	-0.009	0.005	0.032
		(.)	(.)	(0.008)	(0.008)	(0.006)	(0.009)	(.)	(.)	(0.018)	(0.017)	(0.013)	(0.038)
	Child development Index	0.004	0.002	0.005	0.002	0.004	-0.004	0.017+	-0.003	0.003	0.01	0.007	-0.012
		(0.004)	(0.004)	(0.004)	(0.004)	(0.003)	(0.005)	(0.009)	(0.008)	(0.009)	(0.009)	(0.007)	(0.020)
	Birth Weight	0.015+	-0.008	-0.002	0.01	0.004	0.007	0.005	-0.019	0.012	-0.02	-0.007	-0.008
		(0.008)	(0.008)	(0.008)	(0.008)	(0.006)	(0.010)	(0.018)	(0.018)	(0.020)	(0.018)	(0.014)	(0.039)
	Ever hospitalized or had surgury	0.001	0.004	-0.006	0.013	0.004	-0.001	0.036+	-0.015	0.007	0.015	0.013	-0.047
		(0.009)	(0.009)	(0.009)	(0.009)	(0.007)	(0.011)	(0.019)	(0.019)	(0.022)	(0.019)	(0.014)	(0.046)
	Gastrointenstinal problems	0.011	-0.004	0.001	0.009	0.005	0.001	0.017	0.01	0.028	-0.002	0.017	-0.029
		(0.013)	(0.013)	(0.013)	(0.014)	(0.010)	(0.019)	(0.030)	(0.029)	(0.029)	(0.031)	(0.022)	(0.085)
	Respiratory problems	0.012	-0.008	0.002	0.004	0.002	0.006	-0.019	-0.017	-0.036+	-0.009	-0.017	-0.005
		(0.008)	(0.008)	(0.008)	(0.008)	(0.006)	(0.009)	(0.017)	(0.017)	(0.018)	(0.017)	(0.013)	(0.039)
	Other physical problems	0.014	0.009	0.012	0.012	0.011	0.014	-0.02	0.005	0.001	-0.018	-0.003	-0.066
		(0.010)	(0.011)	(0.011)	(0.011)	(0.008)	(0.013)	(0.025)	(0.023)	(0.025)	(0.025)	(0.018)	(0.065)
	Psychological problems	0.003	-0.026	-0.015	-0.019	-0.01	-0.052	0.004	0.044	0.059+	0.01	0.025	0.119
		(0.016)	(0.018)	(0.018)	(0.019)	(0.013)	(0.035)	(0.039)	(0.032)	(0.035)	(0.035)	(0.026)	(0.078)

Table 6 Continues next page

Table 6 continued

Couple Variables	Probability of being a single mother based on muncipal prevalances by mother's age	0.061	0.04	0.058	0.054	0.044	0.069						
		(0.038)	(0.039)	(0.041)	(0.040)	(0.031)	(0.043)						
	Married	-0.055**	-0.046**	-0.038**	-0.062**	-0.051**	-0.031**						
		(0.008)	(0.009)	(0.009)	(0.009)	(0.007)	(0.010)						
Father Variables	Father's age	-0.002**	-0.003**	-0.003**	-0.002**	-0.003**	0						
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)						
	Father's education primary or less (base category tertiary complete)	0.003	-0.024	-0.013	-0.008	-0.007	-0.011						
		(0.018)	(0.017)	(0.018)	(0.028)	(0.013)	(0.024)						
	Father's education secondary completed (base category tertiary complete)	0.014	-0.009	0.003	0.006	0.001	0.008						
		(0.015)	(0.014)	(0.012)	(0.027)	(0.011)	(0.022)						
	Father's education tertiary incomplete (base category tertiary complete)	0.02	-0.011	0.005	-0.01	0.004	0.004						
		(0.019)	(0.018)	(0.015)	(0.033)	(0.014)	(0.033)						
	Father had additional children outside the household	0.023*	0.039**	0.027**	0.037**	0.031**	0.018+						
		(0.010)	(0.010)	(0.010)	(0.010)	(0.008)	(0.011)						
	Father has work contract	-0.017*	-0.001	0.001	-0.015	-0.01	-0.01						
		(0.008)	(0.008)	(0.009)	(0.009)	(0.006)	(0.010)						
	Father's work income	-0.000*	0	0	-0.000**	0	0						
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)						
Father Engagement Variables	Converses or draws with child	0.008	-0.018+	-0.018+	0.013	-0.011	0.037*						
		(0.011)	(0.011)	(0.010)	(0.011)	(0.008)	(0.015)						
	Takes the child places	0.014	0.004	0.016+	-0.003	0.006	0.018						
		(0.009)	(0.010)	(0.009)	(0.010)	(0.007)	(0.012)						
	Tells the child stories	0.027*	0.007	0.023*	0.009	0.016+	0.011						
		(0.011)	(0.012)	(0.011)	(0.013)	(0.009)	(0.015)						
	Plays with child	0.002	-0.006	0.008	-0.008	0.009	-0.058**						
		(0.011)	(0.011)	(0.011)	(0.011)	(0.008)	(0.015)						
	Reads the child books	-0.031**	-0.01	-0.023*	-0.02	-0.025**	0.011						
		(0.011)	(0.012)	(0.011)	(0.012)	(0.009)	(0.014)						
	Sings the child songs	-0.033**	-0.008	-0.011	-0.035**	-0.019*	-0.028+						
		(0.010)	(0.011)	(0.010)	(0.012)	(0.008)	(0.015)						
	N	4274	4269	4209	3992	7583	960	1775	1910	1614	1918	3363	322
	Probability of dissolution/formation controlling for time between rounds & age	9.700%	9.300%	9.000%	10.300%	9.900%	6.800%	15.800%	16.200%	15.700%	16.600%	16.200%	13.700%

Source, ELPI 2010 & 2012

Appendix Table 1: Means of covariates for children in and out of sample

		Out of sample	In Sample	P-value of t-test of difference in means
Time Variables	Age in months 2010	30.743	30.450	0.302
	Government Subsidy	0.276	0.306	0.002
	Fully paid home (base category rent)	0.373	0.424	0.000
SES Variables	Mortgaged home (base category rent)	0.162	0.176	0.090
		0.464	0.400	0.000
	Average monthly household income	609117	510455	0.000
	Urban	0.926	0.895	0.000
Family Variables	Grandparent lives in household	0.381	0.368	0.209
	Number of siblings	0.884	0.940	0.008
	Male	0.511	0.505	0.578
	Child development Index	0.007	-0.001	0.704
	Birth Weight	3.379	3.392	0.231
	Ever hospitalized or had surgury	0.256	0.255	0.920
Child Variables	Gastrointenstinal problems	0.088	0.089	0.895
	Respiratory problems	0.417	0.446	0.005
	Other physical problems	0.141	0.145	0.609
	Psychological problems	0.055	0.058	0.523
	N	2810	12365	