



**Socio-economic impact of
divorce and family breakdown
in the Netherlands**

Indicative analysis of socio-economic consequences

**On behalf of Marriage Week Foundation, the Netherlands
www.MarriageWeek.nl**

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Management Summary

The economic and social consequences of the growing phenomenon of marital dissolution might come at a large cost to Dutch society. This report tries to outline the nature of these costs and to provide some benchmark quantitative estimates of the same.

Marriage Week Foundation, the Netherlands has asked EconoVision to conduct a preliminary quantitative analysis of the consequences of divorce on individuals and the Dutch public finances. The purpose of this research is to identify the potential building blocks for making an informed case for the relevance, from an economic view point, of policies aimed at promoting sustainability of marriages.

Firstly, the report identifies significant trends in comparative OECD countries related to marriage, divorce and other factors in order to put the prevalence of marriage and divorce in the Netherlands into perspective. Secondly, based on a literature study suggestions are presented for a methodology to calculate the costs and some quantitative estimates of the costs associated with the increasing marital dissolution rates for individuals and society is presented.

The brief and preliminary nature of the report explains why a combination of secondary data sources has been utilized in order to estimate the cost arising from increasing marital dissolution and changes in the family structure. The nature of costs are divided into the following categories:

Categories of Private costs

1. Effects on individual and family income (par 5.1)
2. Effect on children outcomes and creating instability in family structures in the long run (par 5.2)
 - a) Poverty risk due to marital dissolution
 - b) Effects on educational attainment
 - c) Behaviour problems and child development effects
 - d) Effects on future family structure decision making
3. Effects on subjective well being (par 5.3)
4. Effects on health (par 5.4)

Categories of direct effects on Public Finances

5. Effects on fertility (par 5.5)
6. Welfare assistance payments (par 5.6)
7. Housing and legal services (par 5.7)

Comparison between OECD countries also bears out that marriage still remains the most important form of partnership. Hence, understanding how the institution of marriage evolves and how partnership structures change remains relevant. To what extent marriage is a more stable form of partnership than less traditional partnerships is, at this stage, an open question that needs to be further researched.

On the other hand, the picture that emerges from OECD-statistics is one of a steady and uniform decline of crude marriage rates in the OECD countries between 1970 and 2009 from an average of 8.1 down to 5.0. This represents a decrease of around 38% in the 39 year period. For the Netherlands, however, the decline in the crude marriage rate in the same period is from 9.5 to 4.4 (or a decrease of around 53% between 1970 and 2009), well above the OECD average.

These trends are corroborated, in the case of the Netherlands, by the movement of family structure related indicators as measured over the last 60 years:

- The total percentage of population divorced has increased steadily from around 0.7% in 1950 to around 6.9% in 2011, an increase of around 800%.
- The total percentage of marriages ending in divorce has increased from (well) below 8,7% in 1950 to 36.5% in 2011, an increase of around 330%.
- The divorce rate per 1,000 couples and per 1,000 inhabitants have increased by 204% and 216% between 1950 and 2010.
- The percentage of live births outside marriage have increased from around 1.5% in 1950 to around 41.8% in 2011, implying an increase of around 2,700%.
- More than 60% of all divorces involve children and among these 2/3rd of divorces involve two or more children.

The most important findings and conclusions drawn from the research and analysis are the following.

One of out every 15th person in the Netherlands is divorced and 2 of every 5 children born in the Netherlands are born outside of marriage. The sheer quantitative importance of the phenomenon of marital dissolution and changes in family structure imply the urgent need to understand the costs associated with it.

This report, by mainly drawing from findings of the effects of divorce from reliable academic literature and applying them to the Dutch context, finds that changing family structures might imply large costs for all three stakeholders – the individuals involved, their children and society at large.

The findings suggest that about 160,000 women might face risk of relative poverty due to marital disruption and might have potential income gains amounting to 2.4 billion euros in the event of remarriage. Divorce, which decreases family income by 15,000 euros annually, primarily affects the woman at the bottom 40% of the income distribution and puts her at risk of falling into relative poverty. There seems to be a robust link between marital dissolution and economic vulnerability for women.

The estimates also suggest potentially large effects on children. 100,000 minor aged children living in relative poverty are estimated to be from broken families.

Female-headed families with children are more than 5 times as likely to be poor as married couple families with children.

Growing up in single parent households might imply that there is reduction in upper secondary graduation rates, behavioural problems, propensity to indulge in high-risk behaviour and increased propensity to commit crime. Applying them to the Dutch scenario suggests that increased crime due to broken families might involve costs in the range of 900 million euros per annum and reduction in potential earnings due to lower education to the tune of 360-1,800 million euros per annum.

Divorce reduces:

- upper secondary completion rates by 6 to 13%;
- reduces years of schooling by around 0.2 – 1.0 year;
- will reduce total aggregate earnings of children from broken families by 360-1,800 million euros per annum.

Children from broken families are 3 times more likely to commit a crime as compared to children from intact families. Increased cost of crime is estimated to be around 900 million euros per annum.

As a result of divorce children are likely to engage in risky behaviour and display greater behavioural problems.

The estimated effect of behavioural problems on the employment and wage rates is as follows:

- reduces probability of being employed by 1% and 3% for women and men, respectively;
- reduces women's wages by 4%.

Divorce has effects on family formation behaviour and intergenerational welfare use as children who are born to marriages that dissolve are more likely to:

- form partnerships rather than marry;
- become parents at a young age;
- have their first child outside marriage;
- to be long term dependent on welfare.

This phenomenon is likely to create a vicious cycle of unstable family structures promoting further instability in the family structure. It also implies high long term costs.

The findings also suggest negative effects on health, happiness and well-being and, consequently, on the state of public finances. It is estimated that the amount of welfare payments targeted to single parent households amount to around 380 million euros annually along with the cost of legal services to the Treasury being to the tune of around 112 million euros per annum.

Socio-economic impact of divorce and of family breakdown in the Netherlands

In the Netherlands married people score 16 points higher on the well-being scale. Even after a period of 8 years after marital dissolution people do not reach the level of well-being as experienced 2-3 years before the event of divorce.

In terms of health effects divorced people are more likely to commit suicide, be absent from work, have the highest health risks in all categories, make more frequent use of public health services and have 53% greater chance to be hospitalized.

Total cost of absenteeism in the case of divorced people is around 438 million euros per annum.

Single parent households account for 26.7% of households on welfare whereas their share is just 6.7% of total households.

Housing benefits received by single parent households (resulting from marital dissolution) is approximately 100 million euros per annum.

Divorce might have a negative effect on fertility as it could affect a woman's fertility decisions. Such an effect might slow down population growth rates further, unbalancing the age pyramid structure in OECD-countries, putting increasing strains of welfare and pension systems.

These calculations only attribute the concerned cost arising from the category of divorced people. It cannot be said that the cost is solely due to the event of divorce or due to other individual characteristics (correlation versus causation), although most of our estimates are taken from studies which try establish a causal relation between marital dissolution and the various aforementioned categories of cost.

Given the inherent methodological shortcomings, this report can be considered as useful guide to introducing the nature of costs associated with marital dissolution and changing family structures and as a rough indication of the magnitude of costs involved with the aim of generating further research and studies which can act as a useful input for future policy making.

Rotterdam, 31 January 2013

www.EconoVision.nl

1 Introduction

On behalf of Marriage Week Foundation, the Netherlands, EconoVision has conducted research on the economic effects of divorce (or marriage breakdown) and changes in family structure in the Netherlands. The Foundation aims to uncover the societal impact of the ever-increasing phenomenon of relationship break-up. This report presents a preliminary overview of the main trends and effects of marital dissolution and changes in family structure in the Netherlands.

In its annual report 2011, the Foundation announced the publication, in 2013, of a report on the real costs for society of relationship break-ups. The report follows in the steps of comparable research that has been carried out in Switzerland, UK and the USA.

This report provides Marriage Week Foundation, the Netherlands, with an estimate of these costs on the basis of objective research. The aim of the assignment is to provide Marriage Week Foundation, the Netherlands, with data and key facts for reaching out effectively to the public during Marriage Week 2013 (February 2013) and alerting the concerned policy makers about the ever increasing importance of understanding this societal phenomenon.

1.1 *Guideline for the reader*

The report is structured as follows.

- The Management Summary (in English and in Dutch) provides an overview of the key trends and findings of this report in a concise manner.
- The Chapter 1 titled introduction underlines the objective and structure of the report.
- The Chapter 2 outlines the research question, the context of the assignment and an overview of the definition of the problem, the approach and its limitations.
- Chapter 3 and onwards contains the main findings of the assignment.
- Chapter 3 outlines the key trends in marital dissolution and family structure over the past 60 years in the Netherlands, in particular, and where relevant for the OECD countries in general. The aim of this chapter is to outline the quantitative importance of the phenomenon of divorce and changing family structures in the Netherlands.
- The chapter 4 outlines the main categories of cost affected by divorce and changing family structures that will be explored and a brief overview of the methodology employed.
- The chapter 5 provides an estimate of the cost of marital dissolution and changing family structures through comparable international estimates and applying these findings to the Dutch context.
- The chapter 6 presents in a schematic framework through the use of a table an overview of the key categories of costs and their quantitative estimates for the Netherlands. This along with the key trends provided in bullet form in chapter 4 provides a quick snapshot of the essence of the report.
- Chapter 7 concludes and provides the road map for future research.

2 Research question, definitions, approach and limitations

2.1 The research question

Marriage Week Foundation, the Netherlands, has requested an analysis of the societal effects of relationship break-up and in particular its economic consequences for the individual and the Dutch public finances.

2.2 Context

This research follows up and builds on the publication titled "Wedding vows create an obligation? So does divorce"; an opinion poll, conducted in January 2012, about the perceived importance of investing in sustainable relationships. The publication has resonated with the public at large and in political circles as well. The fundamental objective of this research is to establish the necessity and relevance of preventive policies in this regard, and to assess the level of public appreciation for such policies.

Marriage Week is a platform for citizens and groups who organize every year, in the week before Valentine's Day, activities in towns and villages in support of sustainable relationships. Marriage Week Netherlands is an initiative of personalities and organizations from sectors as diverse as culture, church, academia and the economy who are interested in supporting sustainable relationships in society.

Marriage Week Foundation, the Netherlands, offers a platform for organizations interested in raising public awareness of the importance of sustainable (marriage) relationships and in providing active support to this objective through local, regional and national activities.

2.3 How we view the assignment

Marriage Week Foundation, the Netherlands, wants to obtain a value-added result that lends itself well for effective communication. For this purpose, the Foundation has created a budgetary space for the conduct of research. In order to produce reliable and relevant results within the limits of this space, we have proposed an approach that focuses on an efficient and optimal use of existing information. Through subjecting this information to rigorous analysis, we have provided some new and interesting insights which can form the basis for guiding future research and policy analysis. It should be noted that in 2011-2012 the Marriage Week Foundation had commissioned an opinion poll on the same issue.

2.4 Overview of Approach

A growing body of evidence has established that there are social and economic costs associated with the event of marital dissolution. The growing importance of this phenomenon in the Netherlands, where nearly half of all marriages end in divorce has meant that the people at large now associate costs being associated with the event of marital dissolution.

A recent opinion poll shows that 42% of the Dutch citizens expect divorce to have financial consequences, 33% expect it to create negative emotions and sentiments and 23% believe it will have an impact on the well being of children. When asked about the specific financial consequences that may arise; 17% mention the problem of additional claims on the housing market, 28% the problem of additional claims on the social welfare funds, and subsidies and 5% on additional claims on health care. 43% (spontaneous, and even 60% on the basis of an inventory list) of the Dutch population perceives divorce to impose high costs on society According to this opinion poll, the effects of divorce are underestimated.¹

The above implies there is a need to carry out research and studies to be able to gauge the exact costs associated with the event of marital dissolution in the case of the Netherlands. Understanding the various costs that can arise and on whom they fall, as a result of divorce, is the first step towards devising appropriate policy to be able to deal with this phenomenon. This report is intended to be one such small step which seeks to provide some tentative estimates of the nature and magnitude of costs in the context of the Netherlands.

For the purpose of this report EconoVision defines the cost of family breakdown to society as the cost borne by the two individuals involved and by others due to the event of marital dissolution. These are assumed to include all additional effects compared to the counterfactual situation of the continuation of a healthy relationship. These costs include the impact on the income of the two individuals involved, on the children and on the public finances. In this research we included costs arising from both marital and non-marital divorce.

Several approaches such as sociological, medical, psychological and economic have been used in the academic literature to understand the costs associated with divorce. In this report we primarily focus on the economic costs on three stakeholders (the individuals involved, their children and Dutch society) due to increasing incidence of marital dissolution and change in family structures.

The report will identify some of the key spheres that are affected by the event of marital dissolution both in the public and private sphere.

¹ Source: Blauw (for Marriage Week Nederland) (2011) Belofte maakt schuld, opinieonderzoek over het belang van investeren in duurzame relaties.

The part on private effects will try and estimate the effects on indicators such as income, education of children, risk of poverty, health and well-being and behavioural effects, on both the individuals affected as well as their children.

The other aspect of the report will try and estimate the magnitude of effects on public finances due to the increasing incidence of marital dissolution in the country. The main effects that the report will try and quantify is the amount of welfare expenditure (on single parent households, welfare payments, public health, child care etc.) that can be attributed to the phenomenon of marital dissolution in the Netherlands.

Here it should be noted that the division into private costs and effects on public finance is purely schematic and intended for ease of understanding and exposition. There may be substantial overlap as private costs on individuals can affect public finances and vice-versa.

The report is intended to be a preliminary foray into understanding the economic costs associated with marital dissolution. Given its wide scope, scientific rigour at times had to be given up in the interest of brevity and resources. This said the report draws evidence mainly from peer-reviewed academic studies, which are of high scientific standards, and combines them with Dutch data to create what can be considered as indicative estimates of the costs of marital dissolution. It should be noted that the phenomenon of divorce is situated in a complex web of interwoven elements. Causal relations cannot easily be assumed. The important problem arises as often the people who divorce are also the ones who are more likely to have worse outcomes (for instance the people who are less educated are more likely to divorce and independent of this also more likely to have worse labour market outcomes). This implies that identifying the causal contribution of the event of divorce on the worse outcomes observed for single households becomes a tricky issues. This report hence in its calculations refers mainly to studies that have taken account of such problems.

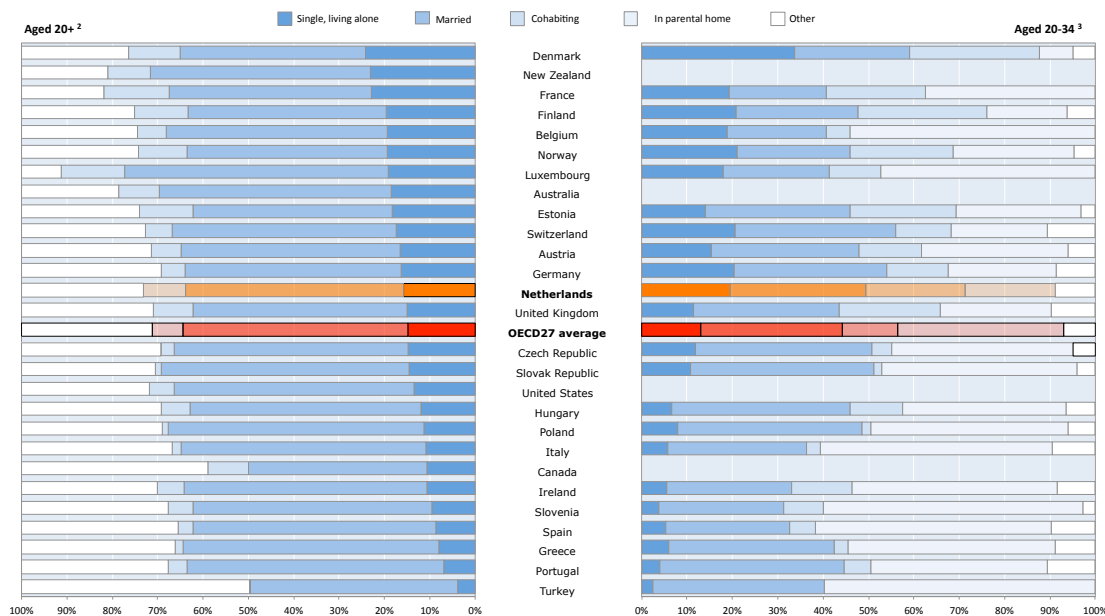
The estimates provided should hence be considered as rough indicator of the magnitude of costs borne. This report lays the foundation for future studies which concentrate on specific categories of costs to be able to provide more conclusive estimates. The nature and magnitude of costs found however seem to indicate that future research and policy might be important from the point view of the Netherlands.

3 The key trends and changes in marital dissolution and family structure in the Netherlands and OECD: An overview of the last 50 years

The section initially highlights the key changes in the family structure and the institution of marriage that has been occurring in the OECD countries in general and the Netherlands in particular. The purpose of presenting these facts is to underline the phenomenon of increasing disruption of the institution of marriage and to highlight the *importance and sheer magnitude* of the trend of increasing divorce rates and changing family structures in the Netherlands over the last 5 to 6 decades.

3.1 Family Structure and Changes in OECD and the Netherlands

The figure below shows the various forms of family structures in the OECD countries. The figure highlights the fact that marriage still remains the most important form of partnership and hence understanding how marriages evolve and how partnership structures change remains of utmost importance to the Western World in general and to the Netherlands in particular. For instance in the Netherlands in 2011, there were 3.3 million married couples, 820,000 unmarried couples and about 490,000 single parent households.²



"Single/living alone" includes sole-parents without partners; "Married" and "Cohabiting" include couples without a third adult present; "Other" includes adults living in households with three or more adults including multi-generational households.

1. 2000 for Estonia, Finland, Switzerland and the United States; 2001 for Austria, Denmark, Greece, Hungary, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain and the United Kingdom; 2002 for Ireland, Poland, Romania, Slovenia; 2006 for Australia, New Zealand and Canada; 2007 for Belgium, Bulgaria, France, Luxembourg and Turkey.

2. For New Zealand aged from 15 onwards.

3. For Belgium, France, Luxembourg and Turkey age 25 to 39.

Data missing for Chile, Iceland, Israel, Japan, Korea, Mexico and Sweden, and for Australia, Canada, New Zealand and the United States for those aged 20-34.

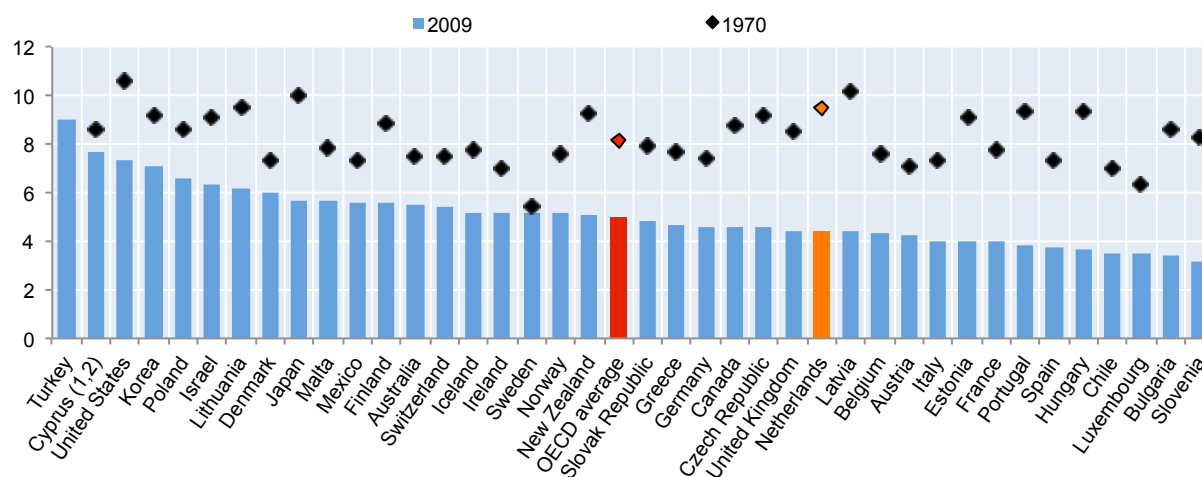
Source: Australia: 2006 Census of Population; Canada: 2006 Census of Population; New Zealand: 2006 Census; for European countries: 2000 Round of Censuses of Population and Housing, except for Belgium, France, Luxembourg and Turkey: EU LFS, 2007; and United States: 2000 Census.

Figure 1 - Marriage remains the most common form of partnership among couples, 2000-2007. Proportion of population for both males and females. (Source OECD 2011)

² Source: Sociaal Cultureel Planbureau (2010) *Wisseling van de wacht: generaties in Nederland*; Sociaal Cultureel Rapport 2010).

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This said it should be noted that there has been a uniform trend of decreasing crude marriage rates across the OECD countries. The figure 2 shows the decline in the crude marriage rates between 1970 and 2009. The OECD average has decreased from 8.1 to 5.0 or a decrease of around 38%³. In the same time period for the Netherlands, the crude marriage rates have decreased from 9.5 to 4.4 or a decrease of around 53% over the 39 year period.



Note: * Data refers to 2008 for Cyprus, Iceland and Turkey; 2007 for the United States, Japan, New Zealand, Korea, the United Kingdom, Australia, Ireland, Mexico, Canada and EU27; 2006 for Israel and Chile.

1 Footnote by Turkey: The information in this document with reference to "Cyprus" relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognizes the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of United Nations, Turkey shall preserve its position concerning the "Cyprus issue".

2 Footnote by all the European Union Member States of the OECD and the European Commission: The Republic of Cyprus is recognized by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

3 The data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Source: Eurostat (2011) and United Nations Statistical Division (2012).

Figure 2 - The decline in crude marriage rates between 1970 and 2009. (Source: OECD 2011)

The figure 3 shows the trends in percentage of population married, percentage of population divorced and percentage of population never married for the Netherlands over the period 1950 to 2011.

The figure shows that the proportion of population married increased from around 42% in 1950 to around 48% in 1980 before declining to around 41% in 2011.

³ Crude marriage rate is the number of marriages per 1,000 population.

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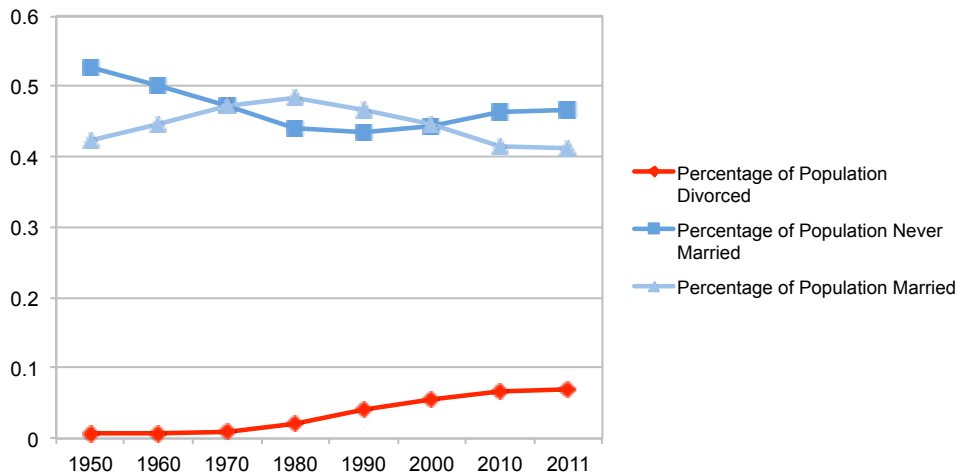


Figure 3 Family structure trends 1950 - 2011 in the Netherlands. (Source: CBS / Statistics Netherlands)

As can be seen from the graph, the total percentage of population divorced has increased steadily from around 0.7% in 1950 to 6.9% in 2011. Given the current population estimate, of around 16.7 million by the World Bank in 2011, implies a total of around 1.17 million people or 1 in every 15 people have faced the event of a divorce. Given that such large proportion of the population experiences marital dissolution, understanding the costs associated with it become of crucial importance for policy makers.

The figure 4 shows the trends with respect to marital dissolution in the Netherlands.

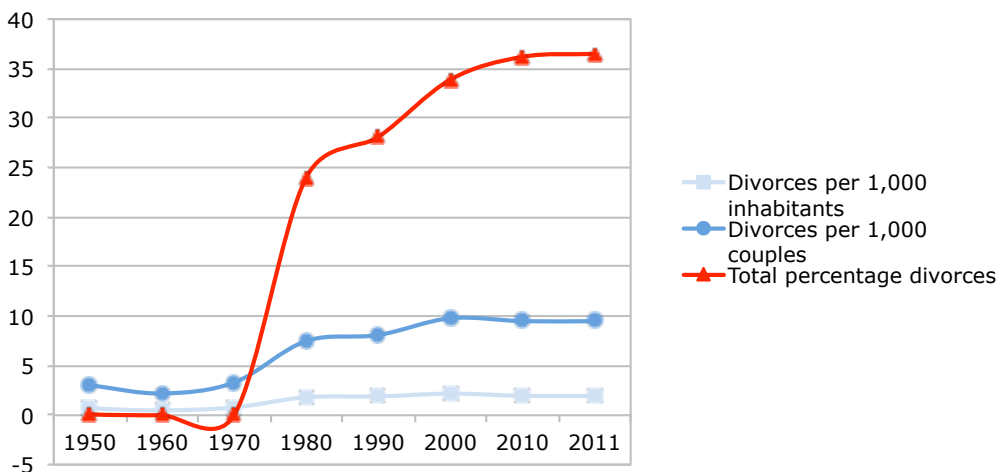
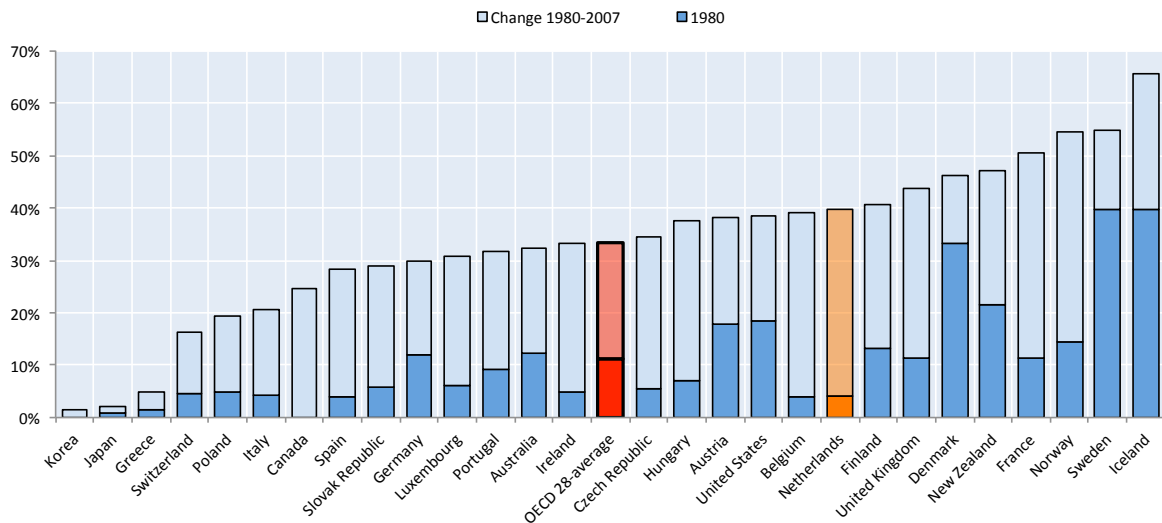


Figure 4 - Divorce trends in the Netherlands (Source: CBS / Statistics Netherlands)

The figure starkly highlights the increasing prevalence of divorce in the Netherlands. The total percentage of marriages ending in divorce has increased sharply from (well) below 8.7% in 1950, 24.0% in 1980 to 36.5% in 2011, an increase of around 330% in

61 years.⁴ The divorce rate per 1,000 couples and per 1,000 inhabitants have shot up extraordinarily by 204% and 216% in the 60 year period between 1950 and 2010. In terms of gross numbers, the numbers of divorces in the Netherlands have increased from around 5,600 per year (1955-1964) to 32,000 in 2009, an increase of nearly 500%.⁵

The increasing prevalence of co-habitation versus marriage has also important implications due to the differential dissolution rates experienced by the two groups. For instance in 2000-2002 the number of divorces among unmarried couples was twice as high as among married couples.⁶



1. 2006 for Iceland, Korea, Japan, New Zealand, Portugal, the United Kingdom and the United States; 2005 for Australia and Canada; 1999 for Mexico.
Data missing for Chile, Estonia, Israel, Mexico, Turkey and Slovenia.

Source: Eurostat (2010), Eurostat New Cronos Database, and national statistical offices.

Figure 5 - A sharp increase in the proportion of births outside marriage, 1980 and 2007 (Source: OECD 2011 Family Database)

The institution of marriage besides directly affecting the couple involved in it also has very important consequences on children who are part of the families affected. In this regard two trends are important to understand for the case of Netherlands. The first is the percentage of children born outside wedlock due to the decline in the institution of marriage and increasing marital dissolution. The figure 5 shows the change in trends for

⁴ On the basis of available CBS data, and using linear extrapolation, we estimated the 8.7% for 1950. However given the trend has been for divorces to increase at an increasing rate, the estimate at best should be considered an upper bound.

⁵ Source: Sociaal Cultureel planbureau (2010) Wisseling van de wacht: generaties in Nederland; Sociaal Cultureel Rapport 2010).

⁶ Source: Steenhof, L. en C. Harmsen (2002). Ex-samenwoners. In: Maandstatistiek van de Bevolking, jg. 50, nr. 3, p. 17-20.

the OECD countries between 1980 and 2007 and figure 6 shows the trend for the Netherlands between the period 1950 and 2011.

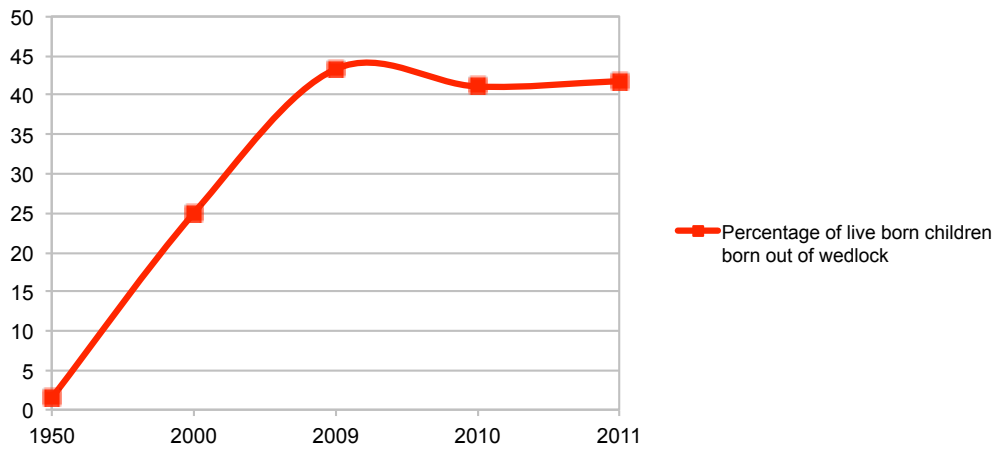


Figure 6 – Live born children born out of wedlock in the Netherlands (Source: CBS / Statistics Netherlands)

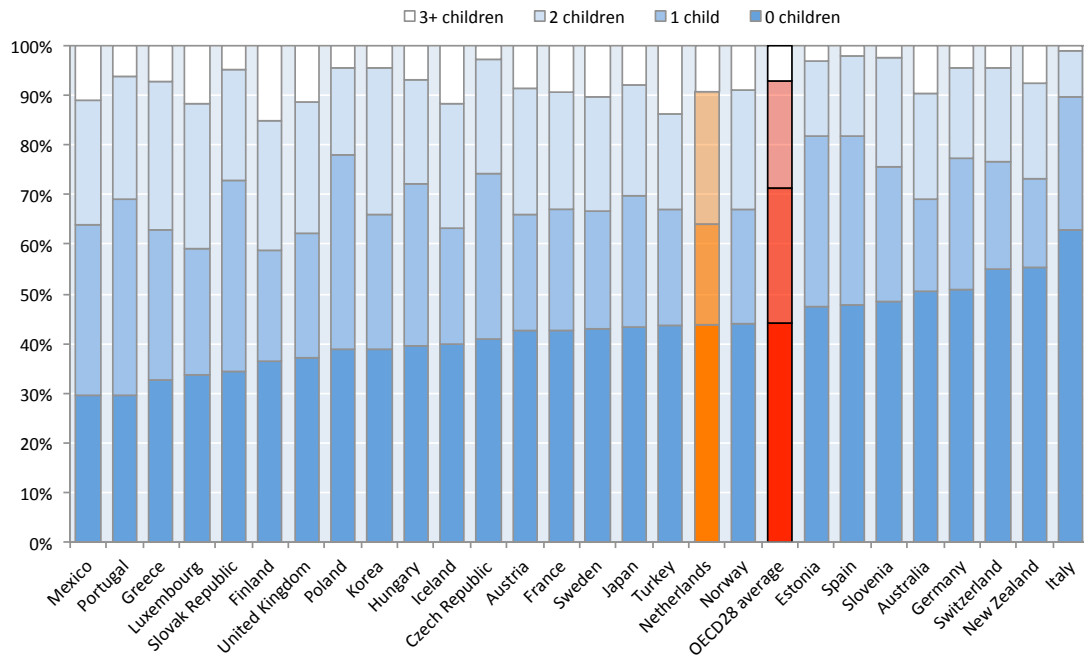
As figure 6 shows the proportion of births outside marriage have increased from about 10% in 1980 in the OECD to around 33% in 2007. Looking at the Netherlands we observe an ever sharper trend of increasing births outside wedlock, an increase from around 1.5% in 1950 to around 41.8% in 2011, implying an increase of around 2,700%.

The other channel through which children are affected due to changing family structure is the children who are born to married couples who later divorce. As we already noted in the beginning that around 36% of all marriages end in divorce, an important connected question is the proportion of these divorces that involve children.

The figure 7 shows the proportion of divorces involving children in the OECD countries for 2007.

As can be seen from the table more than 60% of all divorces involve children in the Netherlands and within these 2/3rd of divorces involve 2 or more children. So as the above two graphs make very clear, an increasing number of children are being affected by changing family structures either through being born out of marriage or due to been born to a marriage which results in divorce. If the family structure has any important role to play in determining child outcomes, understanding and measuring these effects becomes of paramount importance to the policy makers.

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1. 2006: France, Korea, Italy; 2005: Greece, Spain; 2003: Portugal; United Kingdom, Turkey.
Data missing for Belgium, Chile, Denmark, Israel, Ireland and the United States.

Source: UN Statistical Division, 2010.

Figure 7 - Proportion of divorces involving children, 2007. Number of children involved in divorces, as proportion of all divorces. (Source: OECD 2011)

To summarize, the data presented before indicates that significant changes have been occurring over the last 60 years with regard to the family structure in the Netherlands. The main salient features to reiterate are the following:

- *Crude marriage rates from 1970 to 2009 have decreased from 9.48 to 4.41 or a decrease of around 53%.*
- *The total percentage of population divorced has increased steadily from around 0.7% in 1950 to 6.9% in 2011.*
- *The total percentage of marriages ending in divorce has increased from (well) below 8.7% in 1950 to 36.5% in 2011, an increase of around 330%.*
- *The divorce rate per 1,000 couples and per 1,000 inhabitants have increased by 204% and 216% in the 60 year period between 1950 and 2010.*
- *The percentage of live births outside marriage have increased from around 1.5% in 1950 to around 41.8% in 2011, implying an increase of around 2,700%.*
- *More than 60% of all divorces involve children and within these 2/3rd of divorces involve 2 or more children.*

The next important challenge arises in understanding if there are any costs associated with the observed patterns of changes in family structure. In the following section we outline the methodology for calculating the costs, if any, associated with the increasing marital dissolution rates on individuals and society.

4 Methodology for calculating costs arising from increasing marital dissolution and changes in family structure

The brief and preliminary nature of the report implies that a combination of secondary data sources will be utilized to be able to estimate the cost arising from increasing marital dissolution and changes in the family structure. The nature of costs are divided into the following schematic structure outlined below based on categorization into private costs and effects on public finances. As mentioned before the division into private costs and effects on public finances is purely schematic and intended for ease of understanding and exposition. There may be substantially overlap as private costs on individuals can affect public finances and vice-versa.

Categories of Private costs

1. Effects on individual and family income (par 5.1)
2. Effect on children outcomes and creating instability in family structures in long run (par 5.2)
 - a) Poverty risk due to marital dissolution
 - b) Effects on educational attainment
 - c) Behaviour problems and child development effects
 - d) Effects on future family structure decision making
3. Effects on subjective well being (par 5.3)
4. Effects on health (par 5.4)

Categories of direct effects on Public Finances

5. Effects on fertility (par 5.5)
6. Welfare assistance payments (par 5.6)
7. Housing and legal services (par 5.7)

To estimate the various categories of cost outlined, initially a literature survey of existing international estimates of the cost imposed by the phenomenon of divorce and changing family structures is conducted. The emphasis is on using estimates from academic sources, which are published in peer-reviewed journals, and hence are valid and reliable. The estimates will be taken from other OECD countries, which as seen in the section before have experienced similar trends in family structures as in the Netherlands.

The approach of using estimates on the effects of marital dissolution from other countries, to be able to calculate the effect on the Netherlands, essentially involves the assumption that the findings from the other countries are applicable to the Dutch context. In this regard we have chosen to borrow estimates from countries which can be considered to be broadly similar to the Netherlands on various key indicators not directly related to family structures and marriage such as the level of education, life expectancy, gross domestic product per capita, infant mortality etc., as well as being

similar in terms of indicators of direct interest such as evolution of divorce rates, births outside wedlocks, partnership structure and choices. Thus we borrow estimates in the literature stemming from studies in the OECD countries. This aims to minimize problems associated with extrapolating results found in one context to another but however this is not to say that this problem is entirely taken care of.

These cost estimates will then be combined with data from the Netherlands on the magnitude of the problem (i.e. the proportion of adults and children affected from the data presented before) to have a gross estimate of the total cost borne by individuals and society.

The other strategy for calculating cost will involve using data from Statistics Netherlands (Centraal Bureau voor de Statistiek (CBS)) to outline certain key differences based on marital status on certain indicators of interest to society, namely, wellbeing, suicidal rates, sickness leave etc. These will then be monetized for indicators, for the ones possible, to be able to have a composite picture of the total cost imposed by increasing marital dissolution and changes in family structure. It is important to note at the outset that these calculations based on marital status only attribute the cost arising from the category of divorced people. It can not be said if this cost is solely due to the event of divorce or due to the event and other personal characteristics.

The report had to rely on the use of international comparable estimates and data at the Macro level from Statistics Netherlands (CBS) to arrive at the below presented cost estimates. The lack of availability of data at the micro level to EconoVision, and use of estimates from other countries implies that these estimates should be considered as an indicative figure of the cost of marital dissolution and further research based on micro level Dutch data would be essential for improving precision and reliability of the below provided estimates.

5 Estimating cost of increasing marital dissolution and changes in family structure

The first part of the section provides estimates of what have been termed as private costs based on the schematic division provided in the previous section. This is followed by some estimates on the category of public finances arising from divorce and change in family institutions.

Most studies on effects of divorce on individual and family income stem from the United States though now an increasing body of data has started to be collected in the case of other OECD countries. Given a lot of similarities in family structures and divorce rates across a broad range of OECD countries, the estimates provided below can be considered as an indicative estimate of costs being borne by individuals and society in the Netherlands too. This said there is need to carry out analysis of costs of divorce using micro data from the Netherlands to be able to have more precise understanding of the actual costs being faced by individuals and society.

PRIVATE CATEGORY OF COSTS

5.1 Effects on individual and family income

The direct costs on individuals whose marriages dissolve arise as a result of the effect of divorce on income. The studies have been primarily concerned with measuring how the event of divorce affects the income of the individuals affected and also tries to distinguish the effect based on the sex of the individual.

The early string of studies from the field of sociology in the United states suggest that the standard of living of women goes down significantly as a result of marital dissolution. The various studies estimate that the women's income decreases in the range of 27% to 70% in the event of divorce (Weitzman 1985, Peterson 1996 etc). On the other hand it has been found that men face no negative effect and in fact might have an increase in the standard of living. Looking at the reason why women bear a disproportionately large costs of divorce, Holden and Smock (1991) analysing the data and literature reach the conclusion that "Women's post dissolution economic hardship is due to multiple interrelated factors, often only superficially coupled with the marital dissolution event. In particular, the division of labour during marriage, lower wages paid to women both during and after marriage, and the lack of adequate post dissolution transfers to women imply that unless changes in women's work roles are mirrored by social policy initiatives and men's assumption of equal responsibility for children (both within and out of marriage), economic prospects for previously married women will remain poor. "

Bouman (2004) finds very similar effects of marital dissolution on the purchasing power of women and men in the context of the Netherlands. He compares the purchasing power one year before and after the divorce for the period 1990-1999. He finds that the purchasing power of the female partner on average drops by 23%, and of the male partner increases by around 7%. He also finds that a reference married group in the

same period in fact increases their purchasing power by 3%. He also finds, as expected, that drops in purchasing power are accentuated for women who have children as compared to women who do not have children.

The above mentioned studies present estimates based on pure correlations and hence can not be treated as causal effects of divorce on women's income. The above has been precisely the reason that these studies have been criticized in the economic literature as they deal with correlations and not causation. More intuitively, the reasoning being that, the women who are more likely to get divorced are also precisely the ones who are more likely to have poorer economic outcomes, due to the same characteristics affecting both (e.g., lower education). This implies we can not separate out the effects of divorce from those of personal characteristics on economic outcomes.

The economic literature however has tried to employ a variety of techniques to be able to overcome this. One of these has been the use of instrumental variables. It has been found that having a female firstborn child significantly increases the probability that a woman's first marriage breaks up. Recent work has exploited this exogenous variation to measure the effect of divorce on economic outcomes.

The work of Bedard and Deschênes (2004) using the sex of the first born child as an instrument finds little effect on average income of divorced women, however their focus is purely on the average effect and not on the distributional effect. Anant and Michaels (2008) using the same technique find that the event of divorce significantly increases the probability that a woman has very low or very high household income. The evidence suggests that some women through sources such as child support, welfare and increased labor supply after divorce are able to generate sufficient income whereas some of the women, especially the poorer ones, are unsuccessful in doing so. *Thus, although divorce has little effect on mean income, it nonetheless increases poverty and inequality.*

The study by Anant and Michaels (2008) also finds that the breakup of the first marriage increases the likelihood that a woman lives in a household with less than \$ 5000 of annual income from others increases from just over 5% for those whose first marriage is intact to nearly 50% for those whose first marriage breaks up

Similarly in a study by Page and Stevens (2004), a technique called fixed effects model, are employed to try and estimate the causal effect of divorce or marital dissolution on individual and family income. Their study estimates that in the year following a divorce, family income falls by 41% and family food consumption falls by 18%. Their study finds that these effects persist in the long run too. They find that even after a period of six years the family income of the average child whose parent remains unmarried is 45% lower than it would have been if the divorce had not occurred.

The study by Gupta, Manning and Smock (1999) constructs counterfactuals of how women's personal and family income would look if the divorced women were to remarry and if the married women were to divorce. They explicitly try and account for the problem that the same characteristics which affect the probability of being divorced also affect socioeconomic outcomes. They find that remarrying for divorced women would

have significant positive benefits on both family income and expected needs to income ratio. They estimate that the family income of divorced women who are single would increase from US\$17,840 to around US\$38,365 in case they were to remarry, and that of married women would decrease from US\$51,976 to US\$16,942 in case they were to divorce. Similarly the expected needs to income ratio would increase from 1.6 to 3.5 if divorced women was to remarry and would decrease from 3.9 to 1.6 if a married women was to divorce.⁷ The results of this study hence do seem to suggest that women are economically vulnerable outside of marriage or at least once a marriage ends.

Cost estimates

The above body of evidence seems to suggest a robust link between marital dissolution and economic vulnerability for women. The range of findings and improvements in statistical techniques imply that the estimates based on pure correlation might be over estimating the effects of marital dissolution on an average but as Anant and Michaels (2008) point out that when the effects are looked at by distribution of income, the correlation estimates might be a good estimate for income effects on the bottom quintiles of the women population.

From the data from Statistics Netherlands (CBS), the number of divorced women in 2011 were 654,244. Now conservatively assuming that the income of and need to income ratio are affected for only the women at the bottom two quintiles of the income distribution would mean that the size of the potential population that could be affected is around 160,000 women.

The needs to income ratio of around 1.5 implies poverty and hence conservatively using the estimates by Gupta, Manning and Smock (1999) would imply that about 160,000 women are at the risk of poverty due to the event of marital dissolution. Similarly using the US figures would imply that these women by remarrying would increase their family income by 15,000 euros. This would imply that all 160,000 women would gain around 2.4 billion euros annually.

- 1) Women at risk of poverty = 160,000
- 2) Potential gain in family income through remarriage = 2.4 billion euros annually.

5.2 Effect on children outcomes and creating instability in family structures in long run

The next important effect of divorces arises from the effect that divorce and changing family structure has on child outcomes.

Divorce and the event of being born out of marriage besides affecting children due to the effects it has on family income can also work through several other channels. The presence of both sex parents helps teach young children appropriate gendered behaviour. This implies that the absence of the father, especially at younger ages and for boys, affects development and child outcomes.

⁷ Note that needs to income ratio of around 1.5 implies poverty.

Parents are important providers of social capital in society. The economic and political literature has demonstrated the importance of social capital in economic outcomes.⁸ This implies absence of a parent as a role model can have negative effects on child development and behaviour. Moreover, exposure to the interactions of two parents (in a healthy relationship) helps children to develop interpersonal skills such as communication, cooperation, and conflict resolution. Children whose exposure to parental role modelling is more limited may lack the skills they need to function as healthy adults, and as a consequence, they may be less successful in school, at work, or in their own personal relationships.

The effects on children range from affecting:

- a) Poverty risks through reduction in family income
- b) education attainment
- c) behaviour problems and child development
- d) affecting future decisions as parents and members of society

It should be noted before going on to discuss the potential adverse consequences of divorce on children that the counterfactual which is being used to compare children living in separated families is children living in intact happy families. Thus it is not to say that dissolution of marriages which involve intense conflict between partners are not more desirable to continuation of such marriages for children.

a) Poverty risk due to marital dissolution

The effects of fall in income due to marital dissolution means that children born to single parents might be at a higher risk of poverty. There is growing evidence which suggests an association between marital dissolution and risk of poverty for children.

In the case of the United States it has been found that female-headed families with children are more than 5 times as likely to be poor as married-couple families with children—44.8% compared with 8.7% (Baugher & Lamison-White, 1996), and their average family income is about one third that of their married-couple counterparts, US\$15,400 compared with US\$44,600 (in 1989 dollars; Committee on Ways and Means, 1996).

In the case of the Netherlands, the proportion of working married families whose children face risk of poverty is as low as 1.8% and this rises to around 23% and 56% for single working and non working households, respectively. In 2010 it was estimated that 327,000 (9.7%) minor aged children live in relative poverty. Of these, an estimated 100,000 are from broken families.

b) Effects on educational attainment

A growing body of work finds that educational outcomes of children might be crucially dependent on the family structure (married-couple, single-parent, blended family etc)

⁸ Source: Durlauf, Steven N. & Fafchamps, Marcel, 2005.

in which they are raised. The studies find that children brought up in households which are not married are less likely to attend high school and college (Ginther and Pollock 2003). McLanhan (1985), Klein and Beller (1986) find that probability of dropping out of high school increases by 42% and 70%, for whites and blacks, respectively, in the event of marital dissolution of their parents.

In the case of Sweden, Johsson and Gähler (1997) find that children from non-married families face a disadvantage of about 1 year of schooling. The above mentioned studies often do not account for factors that may simultaneously affect family structure and children's educational outcomes and hence the above should be only considered as associations and not as causal effect of family structures on children's educational outcomes. In order to overcome this shortcoming several studies have tried to account for unobservables family factors that may affect effect both family structures and children's educational outcomes.

Here the evidence has been a bit mixed. Ermisch and Francesconi (2001), Case, Lin and McLanahan (2001), and Evenhouse and Reilly (2004) find that family structure has a significant effect on children's educational outcomes, while Björklund and Sundström (2002) find no significant effects on children's educational outcomes.

Steele, Rushton, and Kravdal (2009) in a study for Norway, controlling for unobservables family factors, look at the effects of marital dissolution on child educational outcomes. Norway where extensive welfare support for single households and poor families with children is available, we might expect that effects of marital dissolution to be much weaker. The authors however find that the experience of marital breakdown during childhood is associated with lower levels of education, and that the effect weakens with the child's age at disruption. More specifically they find that children whose parents experienced divorce are still 6 to 13 percentage points less likely to successfully make the transition from lower secondary and to complete upper secondary education. Similar effects have been found in the context of United States and other countries. Given the importance of education in determining future income and labour market outcomes, the negative consequences divorce has on educational attainment are an important component of cost to society.

In the case of the Netherlands too similar effects have been found of divorce on educational performance. It has been found that children from divorced families are more likely to quit school before obtaining their diplomas as compared to children from intact families.⁹

The recent work of Spruijt and Haverkort (2012) looking at a period over 2006-2011 estimates that around 1/5th of children attending primary schooling are from parents who have experienced marital dissolution.

⁹ Source: Sociaal Cultureel Planbureau (2010).

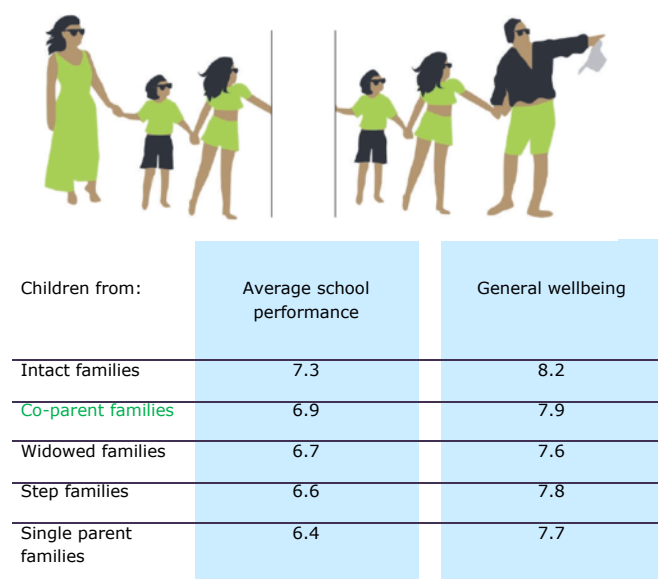


Figure 8 - Co-parents are doing fine. School performance and wellbeing of Dutch children (0=low, 10=high) (source: Spruijt 2012)

Cost estimates

Estimated effect on upper secondary graduation rates

The 2009 upper secondary graduation rate in the Netherlands was 39%. Using the estimates from the study of Steele, Rushton, and Kravdal suggests that marital dissolution reduces upper secondary graduation rates from 6 to 13%. Now assuming that one quarter of all school going children come from divorced families would imply that the upper secondary graduation rates decreases to around 38.4%. The effects of dropping out earlier have been well documented in the literature and some of the effects on not completing secondary schooling are:

- 1) A vicious cycle in which children of dropouts also obtain lower education (e.g., Bowles, 1972; McLanahan, 1985; Anger and Heineck, 2009)
- 2) Effects on long term unemployment (e.g., Rumberger and Lamb, 2003; OECD, 2008)
- 3) Effects on health (e.g., Groot and Maassen van den Brink, 2007)
- 4) Lack of social cohesion (e.g., Milligan et al., 2004; van der Steeg and Webbink, 2006)

In the above mentioned effects we refrain from imputing any monetary estimates and only hint at the likely adverse effects it could have.

c) Behaviour problems and child development effects

Understanding the effects of family structure on child behaviour and cognitive development is a crucial to understanding the costs and benefits associated with various family structures.

It has been found that children from divorced families are more likely to experience increased academic difficulties and higher levels of emotional, psychological, and behavioural problems (see, for example, Amato, 1994; Dawson, 1991; McLanahan, 1997). Similarly Single-parent families have been associated with delinquent behaviour (Dornbusch et al.,1985; Steinberg, 1987), use of drugs, alcohol and tobacco (Covey & Tam, 1990; Stern, Northman, & Van Slyck, 1984), lower self-esteem (Parish, 1991), dropping out of high school (Astone & Mc- Lanahan, 1991), younger age at leaving home (Goldscheider & Goldscheider, 1993), and early sexual activity (Thornton & Camburn, 1987; Wu, 1996). A Study by Allison and Furstenberg (1989) shows that marital dissolution has pervasive and long-lasting effects on behavioural problems and psychological distress.

Carlson and Corcoran (2001) study the effects of family structure on behavioural and cognitive outcomes. They use the Behaviour Problems Index (BPI) as the indicator to have an objective measure of child behaviour. Developed by Nicholas Zill and James Peterson, the BPI includes 28 measures of child adjustment and behaviour problems that children aged 4 and older may have exhibited in the past 3 months. They find that children from families who had two parents in the entire period studied have a score of 51.17 on the BPI as compared to 66.24 for children who lived always in single-parent families.¹⁰ Similarly they find that children who had two parents in the entire period studied have an aptitude score of 59.37 and 64.78 in Math and reading comprehension, as compared to 42.58 and 47.50 for children who lived always in single-parent families.

Adolescent High Risk Behaviour by Family Structure and School Grade

	7 th and 8 th Grade %		9 th -12 th Grade %	
	Single Parent N=1161	Two Parents N=2650	Single Parent N=2345	Two Parents N=5065
Smoked >1cigarette in past 30 days	21.4	15.6***	34.9	29.6***
Drank any alcohol in the past 12 months	33.5	25.9***	58.7	55.4**
Suicidal thoughts or attempts	11.4	10.8	15	12.8**
Any weapon related Violence	32.7	22.0***	33.7	23.3***
Ever had sexual Intercourse	23.8	11.2***	59	42.5***

Note: Chi-Square tests for difference among the two groups on the dichotomized risk behaviour.
*P<.05, **P<.01, ***P<.001

Figure 9 - The incidence of risk behaviour for 7-8th grade and 9-12th grade adolescents (Source: Blum et. al. 2000)

¹⁰ Note the scale of BPI is on 0-100 with a lower score indicating fewer behavioural problems.

In Figure 9 taken from the Blum et. al. (2000) shows the incidence of risk behaviour for 7-8th grade and 9-12th grade adolescents. It can be seen that the prevalence of risky behaviour in all categories such as smoking more than 1 cigarette in the past 30 days, drinking any alcohol in past 12 months, suicidal thoughts or attempts, any weapon-related violence or ever having sexual intercourse are all significantly higher for children from single-parent families.

The above mentioned study clearly indicate that marital dissolution can create behavioural problems and increase the probability of risky behaviour among children. The growing literature on importance of non-cognitive skills pioneered by Heckman and having its tradition in the work of Marxist economists such as Bowles and Gintis (1976); Edwards (1976) has demonstrated the importance of such skills in affecting labour market outcomes. It has been shown in the case of the United States that the same low dimensional vector of abilities that explain risky behaviour such as teenage pregnancy and marriage, smoking, marijuana use, and participation in illegal activities also explains schooling choices, wages, employment, work experience and choice of occupation.

The strong association seems to suggest that marital dissolution might have adverse effects on non-cognitive skills and hence making individuals more prone to both risky behaviour and poor labour market outcomes. The potential for childhood behaviour to impact an individual's outcomes in the labour market has also been examined in several studies (e.g., Farmer 1995, Fergusson and Horwood 1998, Gregg and Machin 2000, Feinstein 2000).

Le, Miller and Heath (2004) look at the effect of child behaviour problems on employment and wages. They find that males and females who have experienced a large number of childhood conduct disorder problems are 3% points and 1% point less likely to be employed, respectively. On the other hand they find childhood behaviour problems do not affect the earnings of males and they reduce the earnings of females by 4%.

The other important aspect of child behaviour that could be affected by experiencing marital dissolution of parents is the propensity for *criminal behaviour*.

A study by Van der Rakt (2011) finds that children of divorced parents are three times more likely to commit a criminal offence as compared to the children from intact families. The average probability to commit a crime for children from intact families is around 1%, which increases to 3% in the case of children from divorced families.

Exploring what reasons might be able to explain the positive association between divorce and increase in children's propensity to commit a criminal act, several plausible explanations have been put forth. These range from causes such as less adult supervision, decreased emotional stability of children, to single parents due to reduced income moving to poorer neighbourhoods where risk of criminal activity is greater for children. Thus as incidence of divorces increase and greater number of children are brought up in families that separate there is the likelihood that crime might increase in the country.

It is estimated that the cost of criminality in the Netherlands is around 31,649 million euros per annum (for the Netherlands, for 2007). This cost includes the cost of prevention, detection, detention, accompaniment and damage.¹¹

Cost estimates

Cost of loss of years of education:

The studies suggest children from divorced/unmarried families loose around 0.2 to 1.0 year of schooling. The study by Hartog et.al (1999) estimates that the rate of return to an additional year of schooling in the Netherlands to be equal to 6.4%.

The World Bank (2011) indicates that average per capital income is around 40,000 euros. Now loosing 0.2 to 1.0 year implies a reduction of around 512 - 2,560 euros per annum per capita. Now it is estimated that there are 725,000 children who's parents are divorced (Jeugd en Gezin 2008). This implies total reduction in future aggregate earnings per annum equal to 360-1,800 million euros per annum.

The Effect of behavioural problems:

- Reducing probability of being employed for men by 1%.
- Reducing probability of being employed for women by 3%.
- Reduction in women's wages by around 4%.
- Affect formation of non-cognitive skills which could reduce hourly wages by 20-40%.

Cost of Criminal Activity:

It is estimated that in the Netherlands there are 550,000 to 900,000 children who's parents are divorced.¹² This implies that on an average there are 725,000 children who's parents are divorced (Jeugd en Gezin 2008). This implies they make up 4.3% of the population.

Now the total cost of crime that can be attributed to this population is 4.3% of 31,649 million euros or 1,360 million euros. Now the normal propensity to commit crime is 1% whereas this increases to 3% in divorced children. This implies that if these children were not brought up in families that were broken up, the total cost of crime that would be committed by them would equal around 450 million euros or in other words the increased cost of crime arising due to marital dissolution is around 900 million euros per annum.

¹¹ Source: D.E.G. Moolenaar, Jaarlijkse kosten van criminaliteit.

¹² Source: Programmaministerie Jeugd en Gezin (2008) De kracht van het gezin, Nota gezinsbeleid 2008.

d) Effects on future family structure decision making

The effects of divorce also work through the channel of effecting future choices of children whose parents experience divorce. A study across 9 OECD countries suggests that the adult demographic behaviour of children who experienced parental divorce (compared with those who did not) are likely to differ.

The study by Goodman and Greaves (2010) estimates that children who are born to marriages that dissolve are more likely to form partnerships rather than marry. They are likely to become parents at a young age; they are more likely to opt for cohabitation over marriage; they are less likely to have their first child within marriage; and their own partnerships and marriages are in turn more likely to terminate.

A study by McLanahan, Garfinkel and Watson (1986) takes this question one step further and for the case of United States tries to answer the question of whether the rise of the phenomenon of mother only families has contributed to the rise of what they call the "Underclass". Their definition of an underclass is based on three criteria:

- Weak labour force participation of the mothers in the Mother only families.
- Persistence of weak labour force participation rate of the children/intergenerationally of these mother only families.
- Cultural isolation such as ghettoisation.

They find that 30% of mother only families are long term welfare dependent in the United States. They moreover find that children of mother only families are especially affected by family formation behaviour and intergenerational welfare use. They find girls from mother only families are more likely to marry early, and to have children early (both marital and pre-marital births), both factors positively correlated with the likelihood of becoming a single mother. Also these girls i.e. from mother only families were more likely to divorce and receive welfare than daughters from two parent families. They also find that mother only families are much more likely to be living in poor neighbourhoods. They find that in 20% poverty areas, 56% of families are those with mother only families and this rises to 75% for Blacks. They conclude with the finding that for the Black single-mother families there seems to be a real danger that an underclass is forming which could be caught in a vicious cycle of poverty due to family structure.

This implies that divorces by affecting future behaviour through decisions of partnership form and parenthood behaviour can result in societies getting caught in a vicious cycle of unstable family structures that can impose huge long term costs on society. The case of the United States should serve as sign to the Netherlands to identify social groups which might be especially susceptible to be caught in this vicious cycle.

Cost estimates

Imputing monetary costs to the above is not attempted here as any such estimates could contain a large margin of error. But qualitatively it is easy to see that the above makes it much more likely that future society will have family structures where single

parent households become more prevalent and bring along with its concomitant costs which have and will be discussed under the other headings.

5.3 Marital status and subjective well being

The effects marital dissolution can have on well-being are important to understand for successful functioning of societies. Here by well-being we refer to self-reported measures of happiness and satisfaction with life. Numerous studies (Booth and Amato 1991; Kalmijn and Monden 2006; Marks and Lambert 1998; Mastekaasa 1995; Simon 2002; Wheaton 1990; Williams and Umberson 2004) have found that marital dissolution has a negative effect on mental health and well-being.

In a cross-country study of 44 countries using the World Values Survey Kalmijn (2008) finds that on an average the married are 12% points higher in well-being than the divorced. He finds that there exist variation among countries with a high of 18 point difference (on a scale of 0-100) in Australia to a low of a 7 point difference in Lithuania, in well-being across married and divorced individuals.

More specifically in the case of the Netherlands, he finds that married individuals are 16% more likely to report themselves as being satisfied and happy with life as compared to the divorced.

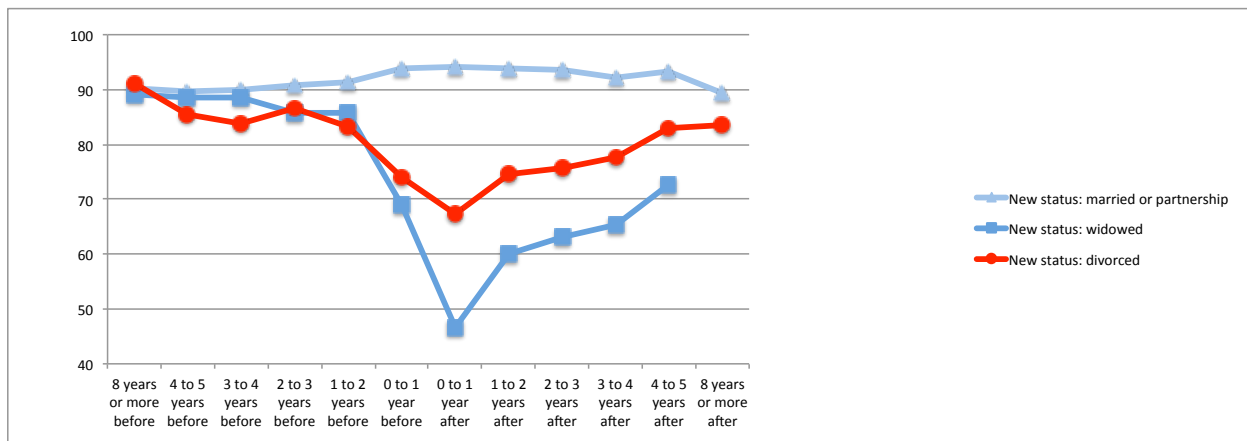


Figure 10 – Changes in well being that occur to the event of a new status: married or partnership, widowed, divorced. (Source: CBS / Statistics Netherlands)

In the figure 10 above is plotted the changes in well-being that occur due to the event of marital dissolution in the Netherlands. We see that well-being declines steeply 2 to 3 years before the divorce to reach an all time low 0-1 year after the event. We see that then well-being improves after the event of divorce but however even after 8 years is unable to reach the level of well-being that was experienced 2-3 years before the event of divorce.

This transitional graph suggests that the event of divorce can permanently¹³ reduce the level of well-being of individuals and is an important cost that should be taken account of while considering costs of marital dissolution.

Cost estimates

Given the subjective nature of the cost it is not possible to impute a monetary estimate to the value of well-being and happiness, though it can be safely assumed that they are essential inputs for a well functioning society.

5.4 Marital status and health

Another important aspect that marital status can affect is the health of individuals. There has been a growing body of literature which tries to measure the association between whether being married affects the health of individuals.

The study by Schoenborn (2004) for the United States finds that for the health indicators, considered in the study, namely, fair or poor health, limitations in activities, low back pain, headaches, serious psychological distress, smoking, or leisure-time physical inactivity, married adults are found to be healthier than adults in other marital status categories. Moreover these are found to be true for all three age-groups (18-44, 45-64 and 65 years and over) considered and regardless of the population subgroup i.e. age, sex, race, Hispanic origin, education, income, or nativity.

It is also found that single mothers report higher rates of depression and lower levels of psychological functioning than do other mothers (Kalil et al., 1998; McLanahan & Adams, 1987; McLoyd, 1990). The work of Fertig (2004) establishes a causal relation between low birth weight and parental divorce. As low birth weight is associated with health issues later on in life, this may impede children's later success.

Joung (1996) in an influential study looks at marital status and health in the Netherlands. The general pattern regarding health status that emerges for men is that the divorced had the highest risks, followed by the never-married and that the widowed had risks closest to married men. For women the general pattern was that the divorced had the highest risks, while widowed and never-married women alternately had risks closest to married women.

The first crucial indicator considered in their study is morbidity. The measures of morbidity used in the study were perceived general health, subjective health complaints, chronic conditions and work disability. The study finds that there are statistically significant morbidity differences by marital status, even after controlling for the kind of living arrangement¹⁴. In particular the divorced individuals still had higher morbidity rates than married people. The odds ratio for the divorced as compared to

¹³ Here note the time span of 8 years could be argued is a short term and not a permanent effect.

¹⁴ They also control for controlled for age, sex, education, degree of urbanization, religion and country of birth.

the married is always greater than 1. In the case of perceived general health the odds ratio is 1.54, for subjective health is 1.75 and for chronic complaints conditions is 1.16. The odds ratio as mentioned before have been calculated after controlling for age, sex, education, degree of urbanization, religion, country of birth and living arrangements and still predict a higher chance of being unhealthy, and depending on the indicator ranging from 16 to 75% higher.

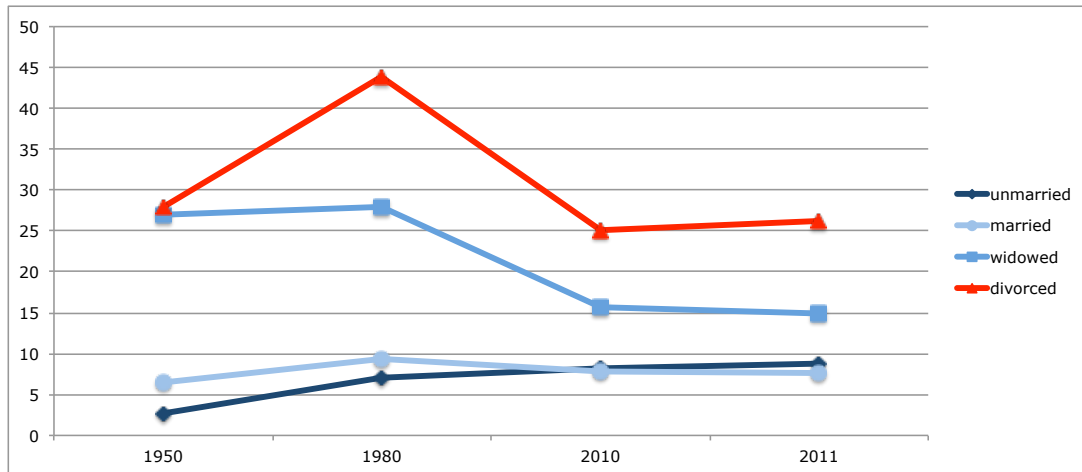


Figure 11 - Suicide rates per 100,000 of average population, by marital status. (Source: CBS / Statistics Netherlands)

The study also finds that there are differential rates of healthcare utilization depending on marital status even after controlling for confounding factors and health status. For instance the divorced are 53% more likely to be hospitalized than married people.

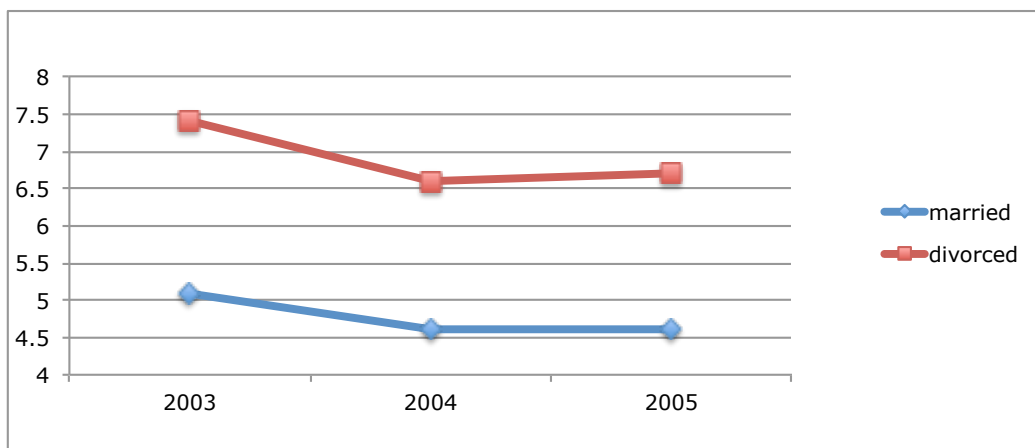


Figure 12 - Total sickness absence rate in percentage (Source: CBS / Statistics Netherlands)

The final two indicators of health we consider using data from Statistics Netherlands (CBS) is the suicide rate and total sickness absence by marital status. In figure 9 below is shown the suicide rates by marital status.

We see that the divorced are nearly three times more likely to commit suicide as compared to the married or unmarried.

In figure 12 is shown the total sickness absence rate for married and divorced people over the time period 2003 to 2005. We see that the divorced are 2 percentage points more likely to be absent from work due to sickness as compared to the married.

Cost Estimates

It is estimated that the cost of absenteeism is around 250 euros per day in the Netherlands.¹⁵ Now assuming that only in 50% of such cases does the loss occur as in the other cases someone else with equivalent capacity takes over. Now the total number of divorced people in the Netherlands are 1.17 million

Now additionally assume that only 60% of the divorced population is employed and that they works 250 days a year on average.

Now the normal absence rate is 4% implying a total absence cost of 877 million euros. This increases to 1,320 million euros in case of divorced individuals (absence rate of 6%). This implies an additional cost of 438 million euros in absenteeism arising due to divorced people. Here it should be noted that this is purely an estimate of the cost of absenteeism arising from the category of divorced people and is not to say that this cost is due to the event of divorce.

The data presented clearly suggests worse health outcomes and greater use of public health services by divorced as compared to non-married and married individuals. However due to data limitations further research is required to be able to attribute a monetary cost of marital dissolution arising through the channel of health.

DIRECT COSTS ON THE PUBLIC EXCHEQUER

5.5 Effects on fertility

The first component we highlight is the effect of divorce on the woman's fertility decision. Slowing growth rates of population and increase in the share of ageing population implies how fertility decisions of the young are affected by divorce needs to be taken into account while estimating the costs of divorce.

The phenomenon of already ageing population in most of the EU-27 countries could be compounded by the further decreases in fertility due to marital dissolution and changing family formation behaviour of children from broken families. The effects of the ageing population in Japan's productive capacity have been discussed extensively and primarily work through (Horlacher and MacKellar 2003):

- Reduction in rates of saving and capital accumulation.
- Shrinking the labour force (though it may increase its stock of human capital).
- Population ageing may slow the growth in total factor productivity.

¹⁵ Source: Bureau Sociale Zekerheid.

The above channels will have a negative effect on the growth possibilities of the economy. The above combined with increasing life expectancy will mean an ever growing burden on pensions and public health systems.

Lesthaeghe and Moors 1994, Thomson et al. forthcoming find that divorce does indeed have a negative effect on fertility. More precise estimates on how marital dissolution affects fertility in the Netherlands is necessary to have a proper estimate of costs of divorce to individuals and society in the Netherlands.

Cost estimates

Given lack of data on exact reduction in fertility due to marital dissolution it is hard to calculate what would be the resultant effect on the age pyramid structure and consequently on public finances through the channel of welfare and health spending increases. Similarly quantitative estimating the effect on savings behaviour, productivity and labour force is beyond the scope of this report.

5.6 *Welfare assistance payments*

The studies using instrumental variables as mentioned before have found that women are able to compensate for their loss of family income either through increasing labour supply or due to welfare assistance programs. Single mothers with young children are often an important segment of the population that receive welfare payments and as Knoef (2012) notes they are a difficult group to encourage to leave welfare for work.

In this regard it is interesting to have an estimate of cost borne by the taxpayer due to welfare assistance to single parent families. We below provide some benchmark figure using the Statistics Netherlands (CBS) data for the year 2009.

The CBS data shows 330,000 people aged 15 to 65 were on welfare. The break up of recipients on basis of marital status is single people (37%), single parent households (26%) and married with children living at home (18%). It is interesting to note that these groups account for every four out of five people on welfare programs. Given that the single parent households make up only 6.7% of total households in the country but receive 26% of welfare indicates the burden imposed by single parent households on the welfare assistance programs.¹⁶ The average size of monthly payment to single parent families with one or more children is on average 1500 euros.

Now it is easily to calculate the total amount of welfare payments received by single parent families is equivalent to about 1,500 million euros per annum. Now making an assumption that 25% of the single parent families arise due to marital dissolution, the welfare payment given to single parent families arising due the event of marital dissolution can be estimated at around 390 million euros.

¹⁶ Source: RIVM (2012).

Calculation:

- Persons (15-65 years) receiving welfare in 2009 = 330,000 Households
- Share of single parent households 26% or 85,800 households
- Assumption: share directly related to divorce = 25%
- Average payment government per year 18,000 euros
- Costs per year $= (85,800 * 18,000) / 4 = 390$ million euros
- Note that are not yet included costs such as rent subsidies and other benefits that the government makes available to people with low income

Here it important to note the qualification that these calculations only attribute the cost arising from the category of single parent households. It can not be said if the cost is solely due to the event of divorce or due to the event and other personal characteristics.

5.7 *Housing and legal services*

Statistics Netherlands (CBS) estimates that housing benefit expenditure (huursubsidie) by the state in 2009 were around 2 billion euros. Out of these 21% of recipients are single parent households (source Statistics Netherlands (CBS)). Again assuming as before that 25% of these single parent households are as a result of marital dissolution implies total housing benefit expenditure received by single parent households is approximately 100 million euros.

It has been estimated that the government spends around 3,500 euros on legal assistance for divorce cases involving couples without children and around 5,000 euros for couple involving children. Now as noted earlier in 2009, around 32,000 instances of divorce occurred implying a total cost of legal services to the taxpayer amounting to around 112 million euros. It should be noted that this is a conservative estimate, as it does not take account of costs arising from other procedures such as custody of the children or the rights and alimony.

As for the welfare assistance payments it is important to note the qualification that these calculations only attribute the cost arising from the category of single parent households. It can not be said if the cost is solely due to the event of divorce or due to the event and other personal characteristics.

6 Socio-economic impact of divorce and family breakdown

CATEGORY OF COST	EFFECT FROM LITERATURE REVIEW	MAIN SOURCE	ESTIMATED COST FOR THE NETHERLANDS	Comments
Income effects on women	<p>1. Affects the divorced woman at the bottom 40% of the income distribution and puts them at poverty risk.</p> <p>2. Decreases family income by 15,000 euros.</p>	Anant and Michaels (2008); Gupta, Manning and Smock (1999); Page and Stevens (2004); Statistics Netherlands (CBS)	<p>1. 160,000 women will face poverty risk.</p> <p>2. Potential loss of aggregate annual family income is 2.4 billion euros.</p>	These estimates are based on causal studies and imputation using Dutch population figures.
Poverty risk for children due to marital dissolution	Female-headed families with children are more than 5 times as likely to be poor as married couple families with children.	Baughter and Lamison-White (1996); Statistics Netherlands (CBS)	100,000 of minors living in relative poverty are from broken families	This fact however does not imply that the children are living in poverty purely due to marital dissolution.
Educational Attainment	<p>1. Reduces upper secondary completion rates by 6 to 13%.</p> <p>2. Reduces year of Schooling by around 0.2-1 year</p>	Steele, Rushton, and Kravdal (2009); Jonsson and Gahler; Hartog et al. (1999); Statistics Netherlands (CBS)	<p>1. Reduces upper secondary completion rate from 39 to 38.4%.</p> <p>2. Reduces total aggregate earnings of children from broken families by 360-1,800 million euros annually.</p>	The estimates on lost earnings are based on the coefficients of years of schooling on Mincer wage education and combining with information on average per capita incomes
Cost of Crime	Children from broken families are 3 times more likely to commit a crime as compared to children from intact families	Van der Rakt (2011); Statistics Netherlands (CBS)	Increased cost of crime is 900 million euros annually. (Based on 2007 cost of crime.)	This is however not to say that the increased propensity to commit crime is due to solely living in broken families

CATEGORY OF COST	EFFECT FROM LITERATURE REVIEW	MAIN SOURCE	ESTIMATED COST FOR THE NETHERLANDS	Comments
Behavioural Problems	Likely to engage in risky behaviour such and display greater behavioural problems.	Carlson and Corcoran (2001); McLanahan (1997); Blum et al. (2000); Le, Miller and Heath (2004)	<ol style="list-style-type: none"> 1. Reduces probability of being employed by 1% and 3% for women and men, respectively. 2. Reduces women's wages by 4%. 	This is the estimated effect of behavioural problems on the employment and wage
Effects on family formation behaviour and intergenerational welfare use	<p>Children who are born to marriages that dissolve are more likely to:</p> <ol style="list-style-type: none"> 1. form partnerships rather than marry; 2. become parents at a young age; 3. opt for cohabitation over marriage; 4. have their first child outside marriage; 5. terminate own partnerships and marriages; 6. be long term dependent on welfare also intergenerationally. 	Goodman and Greaves (2010); McLanahan, Garfinkel and Watson (1986)	Likely to create a vicious cycle of unstable family structures creating further unstable family structure.	This phenomenon could imply high long term costs but monetization is beyond the scope of this report.
Effects on happiness and well-being	Negative effects on health and well-being. Married are 12 points more likely to be happier than divorced people.	Booth and Amato (1991); Kalmijn (2008); CBS Netherlands	Netherlands married people score 16 points higher on the well-being scale. Even after period of 8 years people do not reach the level of well-being experienced 2-3 years before the event of divorce.	These are subjective measures and difficult to quantify.

CATEGORY OF COST	EFFECT FROM LITERATURE REVIEW	MAIN SOURCE	ESTIMATED COST FOR THE NETHERLANDS	Comments
Health Effects	<p>Divorced more likely to:</p> <ol style="list-style-type: none"> 1. Commit Suicides 2. Be absent from work. 3. Highest health risks in all categories. 	<p>Joung (1996); Schoenborn (2004); McLanahan & Adams (1987); Statistics Netherlands (CBS)</p>	<ol style="list-style-type: none"> 1. Total cost of absenteeism due to divorced people is around 438 million euros annually. 2. Higher use of public health services – 53% greater chance to be hospitalized. 	<p>These calculations only attribute the cost arising from the category of divorced people. It can not be said if the cost is solely due to the event of divorce or due to the event and other personal characteristics.</p>
Welfare Assistance Programs	<p>These are based on Statistics Netherlands (CBS) and are only estimates based on population characteristics.</p>	<p>Statistics Netherlands (CBS)</p>	<ol style="list-style-type: none"> 1. Single parent households account for 26.7% of households on welfare whereas their share is just 6.7% of total households. 2. Welfare payments arising from marital dissolution 390 million euros annually. 	<p>These calculations only attribute the cost arising from the category of single parent households. It can not be said if the cost is solely due to the event of divorce or due to the event and other personal characteristics.</p>
Legal Services	<p>-</p>	<p>Statistics Netherlands (CBS)</p>	<p>112 million euros.</p>	<p>These calculations only attribute the cost arising from the category of divorced people. It can not be said if the cost is solely due to the event of divorce or due to the event and other personal characteristics.</p>

7 Conclusions

7.1 Overview

One of out every 15th person in the Netherlands is divorced and 2 of every 5 children born in the Netherlands are born outside of marriage. The sheer quantitative importance of the phenomenon of marital dissolution and changes in family structure imply the urgent need to understand the costs associated with it.

This report by mainly drawing from findings of the effects of divorce from reliable academic literature and applying them to the Dutch context finds that changing family structures might imply large costs on all three stakeholders – the individuals involved, their children and society at large.

The findings suggest that about 160,000 women face risk of relative poverty due to marital disruption and might have potential income gains amounting to 2.4 billion euros in event of remarriage. The estimates also suggest potentially large effects on children. 100,000 minor aged children living in poverty are estimated to be from broken families. Growing up in single parent households might imply that there is reduction in upper secondary graduation rates, behavioural problems, propensity to indulge in high risk behaviour and increased propensity to commit crime. Applying them to the Dutch scenario suggests that increased crime due to broken families might involve costs in the range of 900 million euros per annum and reduction in potential earnings due to lower education to the tune of 360-1,800 million euros per annum.

More important is the general finding in the literature that children from broken families are more likely to form partnerships rather than marry, become parents at a young age, opt for cohabitation over marriage, to have their first child outside marriage, that their own partnerships and marriages to terminate and to be long term dependent on welfare also intergenerationally. The above seems to suggest that a likely vicious cycle of unstable family structures promoting further unstable family structure might be in the process and could imply considerable costs in the long run.

The findings also suggest negative effects on health, happiness and well-being and on state of public finances. It is estimated that the amount of welfare payments targeted to single parent households amount to around 380 million euros annually along with cost of legal services to the public exchequer being to the tune of around 112 million euros per annum.

The above numbers should be taken to be indicative of the associated costs and are meant to drive home the point, to relevant stakeholders and policy makers, that better understanding of the costs of marital dissolution and changes in family structure is a key task for the future for ensuring continuous socio-economic development of nation states.

The study and estimates have been based on using findings from academic studies and extrapolating these costs to the Dutch context. The shortcomings of extrapolating findings from one context to the other comes with its many associated pitfalls. Each

country and society may be unique and what is true in one context might not be in the other. This said the report has tried to use studies from countries which could be in several ways considered broadly similar in their state of development. The other key point to be noted is that the estimates of costs provided here can be considered as at the intersection of costs arising from the event of marital dissolution itself and observed differences in people based on marital status. The first is what can be considered as the true cost of marital dissolution, whereas the second category of cost could or could not be solely due to the event of marital disruption. Given these shortcomings, this report can be considered as useful guide to introducing the nature of costs associated with marital dissolution and changing family structures and as a rough indication of the magnitude of costs involved with the aim of generating further research and studies which can act as a useful input for future policy making.

7.2 *Future research agenda*

The research agenda for the future is divided into the broad imperatives and then presents some specific research ideas. The broad imperatives involve 4 components:

- Using micro based Dutch data to avoid having to deal with the problem of extrapolating results.
- Explicit attention needs to be paid to the issue of causation versus correlation. As mentioned before observing differences in outcome based on marital status does not imply that marital status is a cause of the economic outcomes but in fact both marital status and observed outcomes could be the outcome of underlying individual characteristics. Good policy making and understanding the true nature of costs requires a crucial distinction between the two.
- Given the above, future research which is intended as a tool for policy input would highly benefit from narrowing its scope. We have outlined the various categories of costs that might be associated with marital dissolution and changing family structures. Understanding the exact nature and magnitude would involve studying each category as an independent research project to be able to maintain scientific rigour and creating credible estimates.
- The research should also seek to understand potential avenues to be able to either reduce the ever increasing phenomenon of marital dissolution or other policy tools to minimize its impact on stakeholders.

Some specific research ideas would involve:

- Understanding family formation behaviour of children of broken families in the Dutch context should be carried out using Dutch data. Understanding how societies work and how momentum of social phenomenon is built requires understanding decision making behaviour at the individual level to be able to ensure society does not get trapped in vicious cycle of unstable family structures.

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- Estimating women who are at poverty risk due to marital dissolution and designing adequate mechanisms to buffer such shocks is crucial for short-term policy making.
- Estimating effect on educational attainment of children and on non-cognitive skills due to being brought up in broken families in the context of the Netherlands.

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