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Application of modified Laffer Curve in the Marriage Market using Exit Costs

Abstract

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The economics literature that deals with the exit costs of marriage has considered primarily the shift from mutual consent divorce to unilateral divorce and has not provided a larger, overall picture of the marriage market under various exit conditions. This paper proposes that a modified Laffer Curve macro model of marriage and divorce provides the best overall picture of the marriage market under various exit scenarios.

1. Introduction

This paper will explain the hypothesis that the stability of marriage is tied to the exit costs[1] of marriage, specifically that higher exit costs makes one more likely to marry and will result in bigger number of divorces, but a *very high* exit cost will result in fewer people marrying and fewer people divorcing. Extremely low exit costs result in less marriage *and* less divorce. The above hypothesis challenges standard contract theory which sees the effect of exit costs linearly. The contract theory states that low exit costs mean more marriage and more divorce where-as, high exit costs mean less marriage and less divorce. The hypothesis provides a general theory on exit costs and marriage.

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[1] Entry costs (like a dowry) while not practiced in the United States are also tied to exit costs, however in this paper I will focus on exit costs which is also tied to entry costs.

The economic and legal literature in the area of marriage typically focuses on a limited range of exit costs. For example, there is extensive literature when dealing with exit costs tied to unilateral divorce vs. mutual consent divorce (no fault vs. fault) using Coasian assumption and non Coasian assumptions within a contractual framework (Friedberg 1998; Peters 1986; Rasul 2006; Wolfers 2006). Coasian assumptions deal with the issue of how transaction costs affect bargaining which affects outcomes. However, using two exit points do not provide the reader with a general theory of how exit costs affect marriage and divorce rates. In this paper, I show that the modified Laffer Curve provides the framework to understand how different exit costs affect marriage and divorce rates.

This essay is organized as follows: Section 2 reviews the contractual view of marriage. Section 3 presents the research methodology, section 4 derives from the contractual view the modified Laffer Curve model of marriage. Section 5 are presented conclusions.

1.1. Theoretical Framework: Contractual Model of Marriage

According to the contract literature, there is a tradeoff between making promises and enforceability of those promises. If the courts always enforce promises, then one can rely more heavily on the value of the promises and plan well, resulting in higher quality promises. The tradeoff here is that it could lead to a reduction in the number of promises made if exit costs are high (i.e., if costs to breach are high). Further, these higher quality promises will naturally be more highly qualified. Hence, there is a tradeoff between the quality and quantity of promises made. The goal of the courts is to find the optimal level of enforcement (Goetz & Scott 1980). Under the case of reciprocal promises the optimal damage award is the expectation damages (get damages in full measure as if the contract was carried out which leaves the potential victim indifferent between performance and breach) (Goetz & Scott 1980, p. 1284). If damages are above expectation damages, then marriage is strengthened, but it is not optimal from an economic perspective. However, if damages are less than expectation damages then we have sub optimal outcomes. The courts could also enact punitive damages which again would change the bargaining position of the spouses.

Using the standard economic theory of contract and applying it to marriage, if divorce (exit) is easier then more people should be willing to enter into a marriage contract *ex ante* and we should see more marriage and more divorce. Similarly, if divorce (exit) is harder, then fewer people should be willing to enter into a marriage contract *ex ante* and we should see less marriage, less divorce and more marriage substitute arrangements like cohabitation which has lower exit costs.

Nevertheless, as Cohen points out, marriage is more than a typical commercial contract in two significant ways: "First, the entrance into a consecrated state spiritually joining two souls strikes a religious/psychological chord deep in the

human soul. Second, the offer of a lifetime commitment indicates a deep and abiding love and is valued as evidence that one is worthy of such love" (1998, p. 618). Although her definition of marriage is not substantially different than Cohen's, Morse believes that marriage is better compared to a partnership than a contract, namely, while a partnership can have a contract as its foundation, it is a "voluntary exchange of sorts, since each member of the partnership contributes something to the joint venture and receives something for his efforts" (2001, p. 65). Compared to a contract, a partnership is more open ended, the parties do not spell out every detail, there is a continuous decision-making process, risks are borne jointly, and finally, "partnerships are characterized by tacit, unstated knowledge, expectations, and responses" (Morse 2001, p. 66).

A long-term contract is desirable to protect the large investments required in a marriage. Furthermore, children are an important asset in a marriage that results in both costs and benefits that last a lifetime, which means a secure marriage contract is even more desirable when raising children. Marriage vows also contain an insurance contract aspect, the parties to the contract promising to stay together and fulfill their duties through thick and thin (Cohen 1998, p. 619). The opportunity cost of breach is different for men and women. Men and women lose value on the marriage market at different rates as they age differently and this results in divorced men remarrying at a faster rate than divorced women do.[2] Hence, this necessitates certain restraints against breach (Cohen 1998, p. 14).

When social pressures do not sufficiently protect marriage, legal and legislative efforts become more important. For example, couples might employ prenuptial contracts, which the courts take seriously within certain limits, that may specify spousal obligations during the marriage and the terms of a divorce (Cott 2000, p. 209).

There are also four basic legislative approaches to protect the marriage contract. "(1) unilateral divorce with no property settlement; (2) mutual consent divorce with mutually agreed property settlement; (3) indissoluble marriage; and (4) judge-determined divorce and property settlement"(Cohen 1998, p. 622).

The first is similar to a contract-at-will where the parties can exit whenever they desire and the spouse who has invested the most "loses out". The second uses specific performance as a remedy, but defining that performance is often difficult and impractical with respect to marriage. The third is problematic because a wronged spouse is not able to leave the marriage. Finally, the fourth, a judge-determined divorce and property settlement can have varied outcomes depending on whether one is living in a community property state or equitable distribution state.

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[2] Women put more upfront investment (beauty) and give up their job to take care of the children or take flexible jobs (lose their human capital). Men gain early from marriage as specialization in the household increases his human capital and this allows for opportunistic breach of the contract by the man.

However, looking at marriage purely as a contract is problematic (see also Ellman's critique which suggests that contracts are not how people in close relationships behave (2001), however, Bolin (1994) says that the contractual considerations underlies marriage and divorce thinking even when people like Ellman do not like to use the contractual approach). Furthermore, the contractual model of marriage does not comprehensively explain the marriage market but is a useful starting point for understanding marriage and divorce.

2. Research Methodology

The research methodology used in this paper is using the law and economics literature to modify the insufficient contractual view of marriage to obtain a clearer view of marriage and exit costs. The modified Laffer curve model of marriage is derived from the Laffer curve model on taxes and the contractual model on marriage.

3. The Modified Laffer Curve Model of Marriage

One of the weaknesses of the contractual model of marriage is that it sometimes fails to describe the real world. For example, John Humphrey Noyes started the Oneida community in 1847 in Oneida Creek, New York. The community ceased to exist on January 1, 1881. During this time, the Oneida community practiced "complex marriage" or as Noyes originally called it `free love' (Kephart & Zellner 1994, p. 74). In a way, all the men were married to all the women and vice versa. Sexual relations between men and women had complex regulations, for example one of the regulations required "male continence" (exceptions were when woman in menopause or when a child was desired).

This arrangement can be seen as a case of low (or more accurately zero) exit costs between individual people. The contractual model would suggest that in this community there would be high marriage and divorce rates, however we find that in reality there is no marriage[3] or divorce in this community. Couples entered and left their (sexual) relationships on a regular basis. Efforts were made to prevent the formation of any special relationships between two people (Kephart & Zellner 1994, p. 77). When the community closed down, many of the members entered into monogamous marriages, as they were part of the larger society which had higher exit costs (Kephart & Zellner 1994, p. 90).

Due to the weakness of the contractual model of marriage, the model of marriage and divorce I would like to propose is similar to the Laffer Curve on taxes.[4]

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[3] Marriage traditionally understood as between one man and one woman.

[4] The history of the Laffer Curve can be found in an article written by Arthur Laffer for the Heritage Foundation (2004).

The Laffer Curve posits that if the tax rate is 0%, then the government collects no revenue. Then, if the tax rate is 100%, the government collects no revenue as individuals would not be willing to work if they earned zero after tax wages. Therefore, if the government wants to maximize its revenue in the short run, there is an optimal tax rate, however the optimal tax rate is not the growth maximizing point. The growth maximizing point would in the long run provide higher tax revenue as the short run optimal tax rate would slow down economic growth and lower revenues in the long run. Changing tax rates changes the incentive for one to work, save, and invest and changes the incentive to evade taxes (Gwartney et al. 2015). Figure 1 shows the Laffer Curve on taxes. While Arthur Laffer did not extend his analysis beyond taxes, it is a useful analytical tool to use in other areas. Clark and Lee, for example, have used the Laffer Curve model to analyze whether greater search and rescue policies on Mt. McKinley affects the number of deaths on the mountain. They found that there was a higher number of total deaths on the mountain (1997).
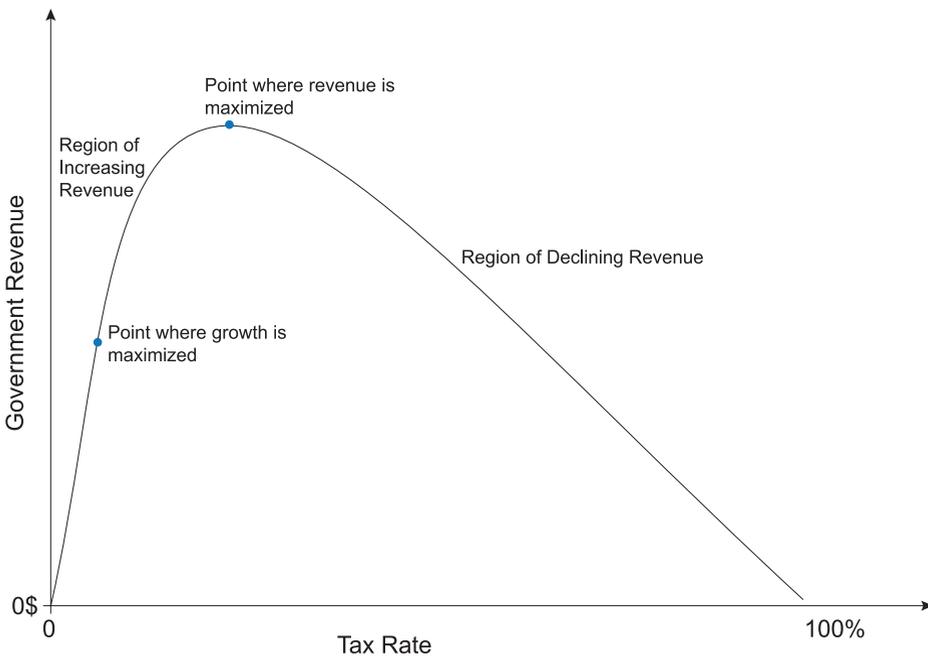
Figure 1. The Laffer Curve indicating the role of tax rates in the collection of government revenue. The growth maximizing point is not the same as the revenue maximizing point

Source: (Mitchell 2012).

When applying the Laffer Curve to marriage markets, a few important distinctions have to be noted. While the Laffer Curve on taxes is mainly focused on incentive effects, the marriage market has both incentive effects (changing exit costs changes

incentives to divorce or marry) and selection effects (changing exit costs changes the amount of time one spends in selecting a spouse, for e.g., people will be more or less selective when seeking a spouse if exiting a marriage is easier as it will depend on the value they place on marriage and its permanence). In the marriage market we need to distinguish between individuals who can be High Value Types or Low Value Types. High Value Types are those who value marriage for its permanence and are willing to make large investments in marriage. Low Value Types are those who see marriage as an outdated institution and are unwilling to make large investments in marriage. However, the distinction between Low Value Types and High Value Types is not of a binary nature, but rather is a continuous distribution.

Under the Laffer Curve model, when exit costs are exceptionally high, the Long Run Marriage Rate (LRMR) (see Figure 3) will be very low, but not zero (because High Value Types will want to get married regardless of the exit costs whereas Low Value Types will not desire to get married and will seek substitutes like cohabiting), and the Long Run Divorce Rate (LRDR) (see Figure 2) will be exceedingly low with married couples finding various alternatives, e.g. living apart, if they want to divorce but are unable. The age of first marriage will be higher for the High Value Types because there will be fewer potential mates interested in marrying, and hence this will increase search time in finding a high-quality mate. Many will opt out of marriage *ex ante* because it is next to impossible to exit *ex post*.
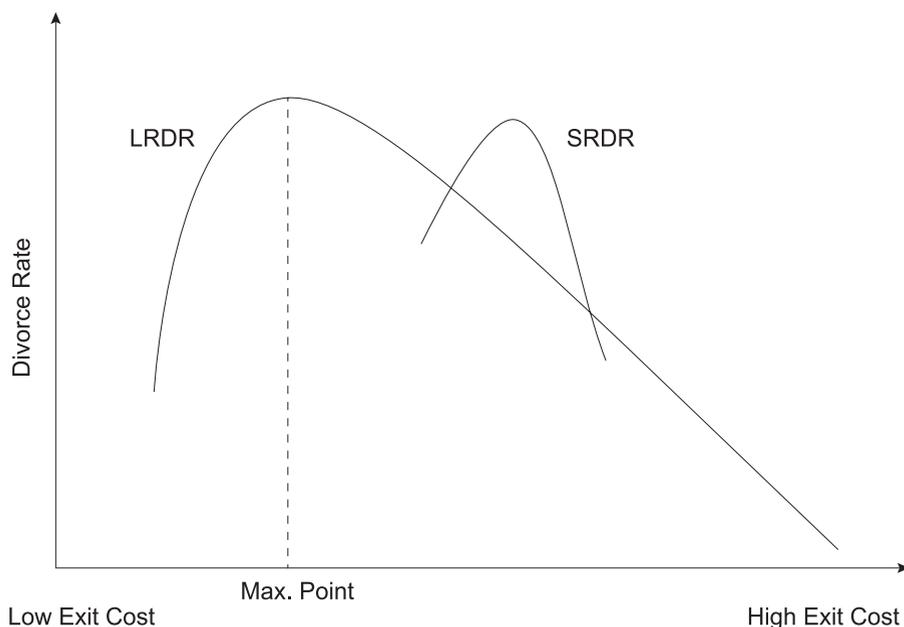
Figure 2. The Long Run Divorce Rate (LRDR) under different exit scenarios. The Short Run Divorce Rate (SRDR) under a single binary change in exit scenarios

On the other hand, if exit costs are minimal (i.e. the value of the institution of marriage is no different than marriage substitutes), the LRMR (see Figure 3) will be low due to the availability of marriage substitutes, e.g., cohabiting. The High Value Types will again want to get married but will have to spend their time *this time* searching not for a spouse who wants to marry, but one who might *stay* in the marriage (the Low Value Types might either cohabit or marry depending on whether the marginal benefit of marriage exceeds the marginal cost of marrying). The LRDR (see Figure 2) will also be low since only High Value Types will marry and seek to stay married and any Low Value Types that might marry will likely divorce.
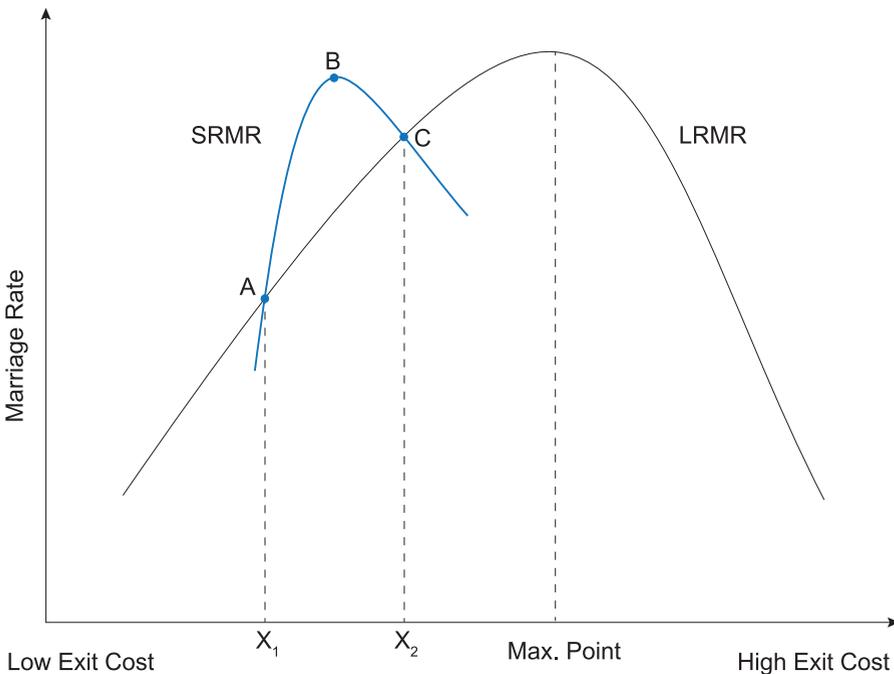
Figure 3. The Long Run Marriage Rate (LRMR) under different exit scenarios. The Short Run Marriage Rate (SRMR) under a single binary change in exit scenarios (X_1 to X_2)

The LRMR will be higher up to a certain point when exit costs are increasing. This is because "Middle Value Types" and some Low Value Types will start entering the marriage market, as the reliability of the promises will allow people to increase their beneficial reliance and prepare better, but the Low Value Types will also divorce more, hence increasing the divorce rate. Figures 2 and 3 also include a Short Run Divorce Rate (SRDR) curve and a Short Run Marriage Rate (SRMR) curve, respectively, which shows what occurs in the short run with a binary change in exit costs. For example, in Figure 3, if the exit cost is increased from X_1 to X_2 in the short run, the marriage rate will be higher, going from point A up to point B, before coming down to point C in the long run. This is because

people who delayed marriage or were long term cohabiters will enter marriage creating a temporary rise in the marriage rate above the LRMR. Wolfers work (2006) confirms these short run trend issues do exist for a switch from mutual consent to unilateral divorce. A different SRMR curve would exist if we choose two different exit points, e.g. if we go from X2 to the Max Point.

Additionally, the divorce rate vs. exit costs will also be a Laffer Curve shaped curve. The starting point of the long run curve at low exit costs will be higher than the end point of the curve at high exit costs (this again is due to the "selection effect" where, under high exit costs, only High Value Types will marry and divorce rate will be small). Moreover, under low exit costs both High Value Types and some Low Value Types will marry, resulting in a higher divorce rate.

Hence, unlike standard contract theory, increased reliability (increased exit costs) would actually increase the number of marriages, but only up to a certain point. Similarly, increased exit costs increase the number of divorces up to a certain point before declining. The shape of the two curves will be asymmetrical. However, where the maximum point occurs for the marriage rate curve and the divorce rate curve, the shape of the curves will likely depend on various religious/cultural/societal factors. The efficient exit point for a society would be the point where the difference between the marriage rate and divorce rate is maximized. Numerous studies suggest that stable marriages are good for society and that broken families have negative consequences for children in the area of school work, abuse, crime, drug abuse, wages, etc., and affect society negatively (Bramlett & Radel 2014; Fergusson, Horwood & Lynskey 1996; Harper & McLanahan 2004; McLanahan 1994; Waite & Gallagher 2000), hence it would be in societal interests to seek exit costs that achieve the efficient point.

We can derive the efficient exit point for society mathematically. Let $g(x) =$ long run divorce rate curve, $f(x) =$ long run marriage rate curve, and $d(x) = f(x) - g(x)$ with x being the exit cost. Solving for $d'(x) = 0$ (derivative with respective to x) will identify the value c_2 at which the critical point of $d(x)$ occurs. Further, recall when $d'(c_2) = 0$ and $d''(c_2) < 0$, point $d(c_2)$ will be the maximum i.e. the difference between the LRMR and LRDR will be maximized when exit cost is c_2. This point does not have to be located where the LRMR is at its peak (see Figure 4).
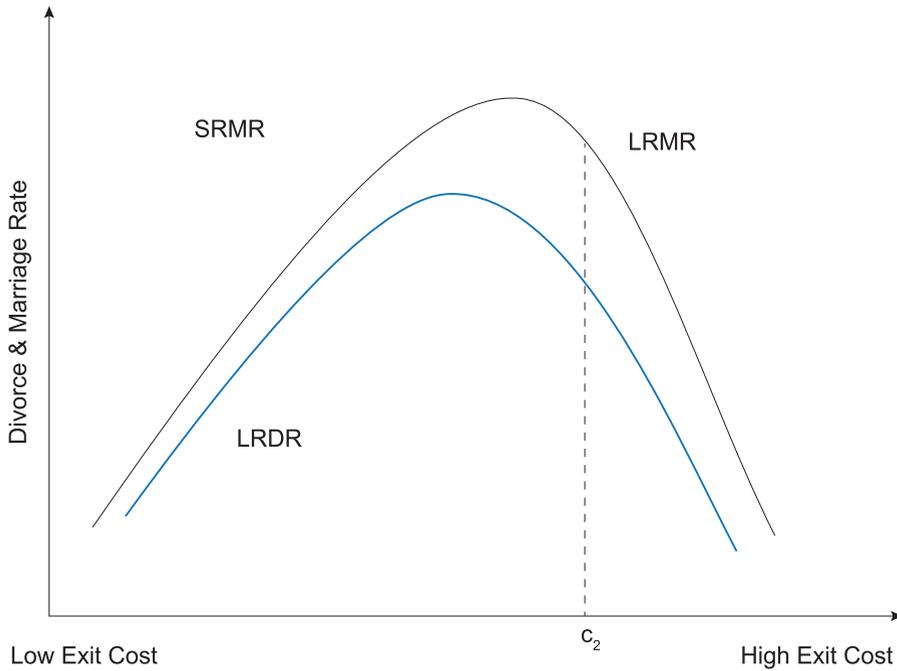
Figure 4. The Long Run Marriage Rate (LRMR) and the Long Run Divorce Rate (LRDR) and the location of the ideal point, where the difference between the LRMR and LRDR is maximized

4. Conclusions

In this paper, I claimed that the modified Laffer Curve applied to the marriage market works the best when discussing the whole spectrum of exit costs. While the initial evidence in the literature in support of the Laffer Curve model is mainly of a binary nature (fault to no fault), more data is needed under conditions of various exit cost scenarios across countries or states. The effect of the change in exit costs on the marriage rate and divorce rate would need to be traced over many years to look at short term and long term trends. Further work on how the age of first marriage is affected by changing exit costs and work on the nature of the population entering and exiting marriage (i.e. whether they are High Value Types or Low Value Types) would further enrich the literature.

For a policy maker, finding an ideal exit point might be a goal. Mutual consent and unilateral divorce laws are more likely on the left side of the Laffer Curve peak and not being able to divorce at all on the right side of the Laffer Curve peak, the ideal point would be to allow divorce under certain conditions. Ultimately, exit costs and the resulting stability or instability of marriage ultimately reflects societies' value of marriage.

5. Acknowledgements

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