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Demographic situation in Russia in
1994-2003.**

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Fertility. Abortion. Contraception. Demographic
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1 Introduction

1.1 Demographic Situation in Russia

It is a commonly known fact that Russian population is steadily decreasing since 1992. People generally blame reforms of 90s and devastation of the standard of living as a cause for demographic crises. However, data say that Russia became a country with low mortality and low fertility approximately in the 50s and 60s. On the figure you can see total cohort fertility - the mean number of birth per women of a particular year of birth (cohort). Graph show that for women born in the middle of 30s average number of children in cities reached 2.3 - critical level for simple reproduction of the population. In Russian historical context and its participation in the First and Second World Wars, famine at the beginning of 30s such rates cannot be considered as sufficient. After that decline of the population became inevitable event, immediately following urbanization. This was exactly what happening from 30s to 70s, when already in 50s more than 50 percent of the population lived in cities. In 70s urban population reached the level of 80s, but by inertia population was increasing because of higher percentage of the young group. After that during 20 years age structure of the population was approaching its steady state level, which was characterized by much older population and negative fertility. Best survey of pre-90s fertility behavior is given in Zakharov(2008).

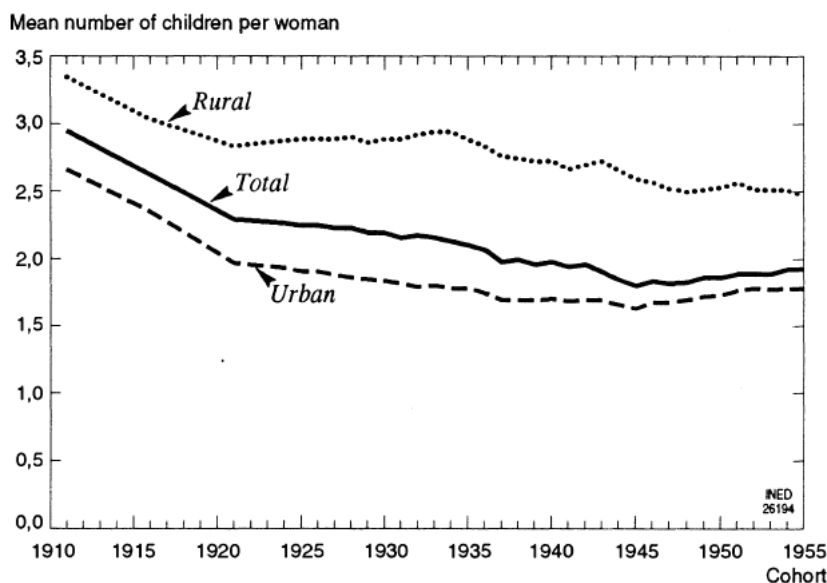


Figure 1: Mean Number of Children per Woman for each cohort from 1910-1950. Source: Avdeev and Monnier (1995).

In comparison with other developed countries, the low fertility rate of Russia is not extraordinary. Demographically, Russia is just a usual country, which moved to the new framework of family later, but much faster compare to Western Europe (in France and United Kingdom this process took more than one hundred years, while in Russia about fifty years (Vishnevsky, 2006). In 90s

Russia was supposed to finish its demographic transition from high fertility and mortality rates to low fertility and mortality rates.

2 Recent Demographic Trends in Russia and Empirical Research on Fertility in Russia

Unfortunately, before 90s there were no disaggregated data on fertility in Russia. And situation here is characterized by lack of micro-based datasets. The available sources are population micro-census, used by Kharkova and Andreev (2000) or data from the international project "Parents and children, men and women in family and society" (Zaharov e.a., 2007). However, the basic and most popular source of data "Russian Longitudinal Monitoring Survey", used as a source by Kohler and Kohler, 2001; Grogan, 2003; Roshina and Boykov, 2005; .

The major question that researchers tried to explain was severe decline in fertility from the beginning of 90s. Unfortunately, there is no convergence of opinions on that issue. These are hypothesis of described empiric pattern:

- First explanation is demographic: decline of fertility rate is a long-run trend and depression of 90s just accelerated transition to the new steady state that inevitably would have happened, however they might have been a little slower in normal economic conditions (Kharkova and Andreev, 2000).
- Convergence hypothesis (Philipov and Kohler, 2001) states that gap in fertility behavior between Russian and European households began to decrease after transition to the market economy, which is characterized by greater uncertainty. Because of that children were born later for a given family compare to Soviet model of fertility, and that synchronized move to market-economy model became a negative structural break in fertility. According to this hypothesis up-to conclusion of the transition to the new family model fertility would decrease, but in the long run it should return to higher level, which, however, would be still lower than pre-90s fertility.
- Heleniak (1995) represents deferring explanation hypothesis, which states that worse economic conditions destroyed social policy on support of large families. As a consequence, women stopped giving more than two births and observe a delay of fertility until the improvement in the standard of living.

3 Decision Making. Common Sense and Structural Methodology

3.1 Factors That Might Be Important for Revealing Preferences

How women make a decision to have a baby? We understand that this decision can be made emotionally. Traditionally people consider children as a gift of the God. We understand that baby may be planned or non-planned. We also

believe, that not just new births, but information about abortion, plan of women and their use of contraception are keys to motivation of women.

Usually structural models consider fertility as a rational process, where woman decides to have a baby. Compare to the standard state-space models fertility process has some peculiarities. For example, giving birth to the new child might depend on the experience of having first child or previous children. That facts might be revealed by answers to the question about medical problems with pregnancy, breastfeeding after birth.

Role of wealth and income might also be very uncertain, if preferences of a woman are consistent with having a lot of children, then improve in wealth might really affect her decision to have as many children, as she could afford. On the other hand, rich and educated women often prefer not to have a lot of children. Also there is an issue of simultaneity, when woman decides to choose career path because she doesn't want to have children. Partially such information might be revealed in the system of equation in the reduced form, or structural form gives good alternative.

One of the most important issue in decision making in fertility is when will woman give birth to particular number of children. Contraception strategy and even abortion may reflect decision only to postpone conceiving to more optimal time. On the other hand, when woman enters new conditions her thinking might change. So is it important to differentiate between situation when woman doesn't want to have a child now and situation when she wants to have a baby in the future?

4 Data Description

Russian Longitudinal Monitoring Survey was conducted from 1992 till 2009, however, panel data are available only from 1994 till 2006 years. And these data can be characterized by diminishing number of question devoted to fertility from year to year. Questions about contraception disappears from 2004. Many questions about breastfeeding are available only only from 1994 to 1998. Also, because of financial reasons surveys were not conducted in 1997 and 1999. However, I managed to reconstruct data about fertility using household datasets, which revealed year, month and day of birth for each respondent. At the same time reconstruction of contraception strategy and abortion was impossible and because for a researcher it is interesting to know all abortions after 12 months after contraception only 1995, 1996, 2001, 2002, 2003 year could be used.

Dataset is panel and contains 13490 observations and on the and for these observations during 1994-2005 period 631 births occurred. Variable birth was constructed in the following way: for given woman at period t variable birth is assigned value 1 if she had a new child after periods from 9 up to 21 months after survey. Value 1 means the result of the pregnancy not later than 12 months and new child after 9 months means that child should be conceived after the survey.

Dataset includes only women in the age between 16 and 35, although they become infertile often later, only very small number of them had children after that age.

The following characteristics were recorded in the dataset:

- Woman characteristic: age, education, number of children, employment status, income, being on maternity leave, alcohol and smoking preferences, life satisfaction, self-estimated health status.
- Characteristics of her husband (only for married women): age, employment status, income, alcohol and smoking preferences, life satisfaction, self-estimated health status.
- Characteristics of the household: size, status of the settlement, average living space per one member of the household, number of facilities in the apartment, other revenues of the household.

5 Dealing With Absorbing State

From numerical point of view absorbing state is very important as its existence provides with significant numerical benefits by using Hotz and Miller (1993) or Arcidiacono and Miller(2009) methodology. In the seminal paper Hotz and Miller considered fertility problem, however, where sterilization was just a type of contraception. Unfortunately, sterilization cannot be considered as a contraception strategy and it happens only in case of the medical necessity.

Another strategy to get an absorbing state was to use abortion. Namely, abortion leads to the sterility with some positive probability. In that case it might be possible to get absorbing state just from that data. However, there is no consensus on affect of abortion on sterility from the medical point of view. E.g. Stubblefield and others (1983) show that women after induced abortion had the same or higher fertility even after controlling for observables. On the other hand, it is hard to find that sterilization followed after abortion. Given that abortion in Russia is legal and women are operated in hospitals, we should consider percentage of bad outcomes of abortion as negligible in the framework of the survey.

6 Descriptive Statistics. Empirical Puzzles.

Tables 1 and 2 below show percentage of women that made abortion among those using contraception. Women were asked about using contraception in the last 30 days before the survey. Abortion is accepted positive if in the next survey women answer to the question " Did You make an abortion in the last 12 months" positively. It is clear that during all years abortions exceeded number of births at least by 50 percent and in 90s were much higher. However, there were different methods of contraception used by the population. Most popular were pills, condoms, interrupted sex and intrauterine device. It seems that most determined women should use intrauterine device, which is supposed to work for several years.

Table 1: **Percentage of Women, Who Had an Abortion, Among Those Using Contraception (%)**

	Year of Survey					Total
	1995	1996	2001	2002	2003	
Abortion	6.61	7.80	5.19	6.10	4.73	6.04
No Abortion	93.39	92.20	94.81	93.90	95.27	93.96
Total	100.00	100.00	100.00	100.00	100.00	100.00
Number of obs.	590	577	616	688	677	3,148

Table 2: **Percentage of Women, Who Conceived a Child, Among Those Using Contraception (%)**

	Year of Survey								Total
	1994	1995	1996	1998	2000	2001	2002	2003	
Didn't Conceive	97.39	96.70	96.38	96.00	95.55	95.35	96.17	94.32	95.95
Conceived	2.61	3.30	3.62	4.00	4.45	4.65	3.83	5.68	4.05
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Number of obs.	843	698	801	826	787	924	915	880	6,674

In tables 3 and 4 we can see abortions and births among women who used intrauterine device as a method of contraception. Although it expected that level of abortions and conceived children than level of general contraception behavior, which is might be irregular or less accurate. However, what is important is that number of abortions for years except 2000 is exceeding births by two or three times. This is quite unexpected in the sense that woman who use this type of contraception were supposed to be with the highest ratio of abortion to births.

Table 3: **Percentage of Women, Who Had an Abortion Among Those Who Used Intrauterine Device as a Contraception Method. (%)**

	Year of Survey					Total
	1995	1996	2001	2002	2003	
Abortion	3.34	4.05	1.20	4.07	2.46	3.07
No Abortion	96.66	95.95	98.80	95.93	97.54	96.93
Total	100.00	100.00	100.00	100.00	100.00	100.00
Number of obs.	299	296	250	244	244	1,335

Table 4: **Percentage of Women, Who Conceived a Child Among Those Who Used Intrauterine Device as a Contraception Method. (%)**

	Year of Survey								Total
	1994	1995	1996	1998	2000	2001	2002	2003	
Didn't Conceive	98.57	98.54	97.04	97.99	97.65	97.95	99.31	97.37	98.06
Conceived	1.43	1.46	2.96	2.01	2.35	2.05	0.69	2.63	1.94
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Number of Obs.	419	343	371	349	298	292	289	266	2,627

Table 5 and 6 below refers to abortion and rates of fertility for those not using contraception. Here not just abortion rate is very high, but it is also generally higher by at least 50 % (except 2003) than level of births. Given that table 5 and 6 refers to the group that contains a subgroup of those who planned to get pregnant, the rest should be doing abortions at a very high rate.

Table 5: **Percentage of Women, Who Had an Abortion, Among Those Not Using Contraception (%)**

	Year of Survey						Total
	1995	1996	2001	2002	2003		
Abortion	5.73	9.06	6.68	8.16	5.10	6.90	
No Abortion	94.27	90.94	93.32	91.84	94.90	93.10	
Total	100.00	100.00	100.00	100.00	100.00	100.00	
Number of Obs.	227	265	347	362	368	1,638	

Table 6: **Percentage of Women, Who Conceived a Child, Among Those Not Using Contraception (%)**

	Year of Survey								Total
	1994	1995	1996	1998	2000	2001	2002	2003	
Didn't Conceive	93.98	94.00	94.35	95.55	94.19	94.69	93.37	95.50	94.47
Conceived	6.02	6.00	5.65	4.45	5.81	5.31	6.63	4.50	5.53
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Number of Obs.	581	550	620	697	774	867	875	845	5,809

After observing irregularities of abortion and its unusually high level among those who didn't use contraception it is interesting to understand how many children were brought by those who didn't plan them. We can find very significant part of that group among those who didn't use contraception. Table 7 below shows exact numbers of conceived children classified by different reasons among those who didn't use contraception. First important result is that percentage of women who didn't contracept because they wanted to get pregnant is less than 37 % out total number of women not using contraception, and minimal estimation for unintended births is 33 % with 106 births for those who doesn't have husband or partner.

Table 7: **Fertility of Women That Do Not Use Contraception**

	Didn't Conceive	Conceive	Total
Wanted to Get Pregnant	446	117	563
Health Problems	316	14	330
Unable to Acquire a Means	66	3	69
Birth Control Means Are Too Expensive	70	5	75
Uncomfortable	282	31	313
Irregular Sexual Relations With a Husb. or Partn.	656	27	683
No Husband or Partner	3,096	106	3,202
Possibility of Abortion	194	8	202
Male Sterilization	83	0	83
I Don't Know	171	7	178
Refuse to Answer	79	3	82
No Answer	29	0	29
Total	5,488	321	5,809

Among those using contraception (picture 8) regularly we see that number of births is 211, which practically two times larger than 117 - number of births by women not using contraception because they wanted to get pregnant. In that group births that refer to intrauterine device are likely to be considered unintended, as this method has long-run usage period.

Table 8: **Fertility of Women That Use Contraception Regularly**

	Didn't Conceive	Conceive	Total
Withdrawal	411	30	441
Condom	1,105	55	1,160
Pills	819	36	855
Intrauterine Device	2,548	51	2,599
Others	917	39	956
Total	5,800	211	6,011

Finally, last portion of births comes from group that didn't use contraception regularly (table 9). That irregular behavior gave 54 births. Thus, it is important to notice that many of births are unintended and that level may reach up to 80 % of all births. Out of approximately 600 births only 117 refer to women that wanted to get pregnant. One of the reason could be that many women chose to conceive because they wanted to have a child, but postponed its birth using contraception, however, postpone by abortion is more expensive in terms of health and risks of sterility, so they preferred to conceive. Contraception and abortion are not the only sources of revealing preferences.

Table 9: **Fertility of Women That Use Contraception Irregularly**

	Didn't Conceive	Conceive	Total
Wanted to Get Pregnant	40	14	54
Health Problems	31	3	34
Unable to Acquire a Means	54	6	60
Birth Control Means Are Too Expensive	22	1	23
Uncomfortable	102	8	110
Irregular Sexual Relations With a Husb. or Partn.	135	8	143
No Husband or Partner	9	2	11
Possibility of Abortion	67	5	72
Male Sterilization	2	0	2
Others	52	7	85
Total	540	54	594

6.1 Question in the survey "Do You Want to Have a Baby?"

All women were asked this question. And it is very important as can be an indicator of the stability of preferences. Although to a large extension this question is very unclear and some women may understand it as "How many children will you have in ideal conditions?", others may think of it "How many children do you want to have in current conditions". Also answer depends on the social norms, like traditional answers in questionnaires about smoking and drinking. Women tend to say that they do want to have two children even if they don't want even a single one. But the truth is that we may actually verify that issues. For instance, if women tend to answer not seriously to that question, then we are likely to observe permanent use of contraception along with positive answer to this question. On the other hand, absence of contraception and positive answer to this question tells us that we may use it as a good indicator for having children.

However, if woman responds negatively, it is likely that she really doesn't want to have a baby. In the tables 10 and 11 we can see abortions and children conceived. Really ration of abortions was to children conceived fluctuated from 5-6 in 90s till 2.5 in 2002-2003. These numbers clearly reflect intentions of women even without control for other observables.

Table 10: **Percentage of Women, Who Had an Abortion, Among Those Who Doesn't Want to Have Another Child (%)**

	Year of Survey					Total
	1995	1996	2001	2002	2003	
Abortion	5.64	7.92	5.50	6.57	4.58	6.04
No Abortion	94.36	92.08	94.50	93.43	95.42	93.96
Total	100.00	100.00	100.00	100.00	100.00	100.00
Number of Obs.	532	568	556	590	584	2,848

Table 11: **Percentage of Women, Who Conceived a Child, Among Those Who Doesn't Want to Have Another Child (%)**

	Year of Survey								Total
	1994	1995	1996	1998	2000	2001	2002	2003	
Didn' Conceive	98.16	98.00	98.42	98.03	97.75	98.25	97.93	98.21	98.09
Conceived	1.84	2.00	1.58	1.97	2.25	1.75	2.07	1.79	1.91
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Number of Obs.	868	800	886	916	843	912	917	838	6,980

It is medically accepted that first abortion is basically the most dangerous one. And women clearly know that, also social norms in Russia are such that woman should have at least one child. Therefore ratio of abortion and those who conceived a child should be small.

Table 12: **Have You had an abortion in the last twelve months? by year of survey (%)**

	Year of Survey								Total
	1994	1995	1996	1998	2000	2001	2002	2003	
Yes	31.15	30.23	23.08	14.93	13.93	7.01	8.70	9.09	13.95
No	68.85	69.77	76.92	85.07	86.07	92.99	91.30	90.91	86.05
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Number of Obs.	61	43	65	67	122	157	138	121	774

To a large extent abortion is a method of contraception from the data, and it is hard to model the case when woman actually prefers abortion among several contraception method. Also small size of data doesn't permit multiple contraception/abortion choice for women. Even Hotz and Miller(1193) considered contraception in general without its specification. From that point of view persistency of contraception method is very important, if woman uses just one type of contraception, then it is fine for her to consider abortion as a method of contraception, on the other hand, if they tend to switch to different methods, then abortion is unlikely to be chosen as a method of contraception, and women behavior is closer to rational. Table 13 shows choice of current contraception (columns) by previous contraception (rows). Here it can be seen only for absence of contraception and IUD (Intrauterine Device) next year more than 70 percent of women continue to use the same strategy. For all other strategies of contraception 60 percent of women tend to switch, this is true for pills, condoms and interruption of sex (Withdrawal). Although this table is not corrected for pregnancies, their rate cannot be higher than 10 percent for condoms and pills, so switching rate still would be considerably high.

Table 13: **Persistency of Contraception (Current Contraception Listed by Contraception Year Before) (%)**

	No Contraception	Withdrawal	Condom	Pills	IUD	Others	Total
No Contraception	78.40	2.46	6.35	3.96	4.54	4.30	100.00
Withdrawal	19.66	40.60	12.82	6.84	9.40	10.68	100.00
Condom	20.96	6.32	45.92	7.70	8.17	10.94	100.00
Pills	23.81	2.90	10.97	40.99	11.39	9.94	100.00
IUD	13.35	1.21	3.85	3.77	72.10	5.73	100.00
Others	24.53	4.09	13.29	7.67	11.58	38.84	100.00
Total	46.96	4.22	11.21	7.65	20.72	9.24	100.00
Number of Obs.	2,916	262	696	475	1,287	574	6,210

7 Structural Models of Fertility and Contraception

Structural models for fertility was likely to be estimated first by Heckman and Willis (1976) and good survey about them is Arroyo and Zhang(1997). They are pretty standard and follow generally either Keane and Wolpin (2001) Emax backward induction methodology, by choosing number of children. Alternative is to permit them to choose contraception decision, which would lead to different outcomes with different probabilities, like in Hotz and Miller(1993). Using NLSY Walker(2003) offered structural model for unintended births, which were caused by underestimation of probabilities to get pregnant.

One of the direction of structural models is to estimate jointly labor supply of women and fertility decision Cho, Yoonyoung (2006). But in this current labor employment would follow Markov process, which would be affected by fertility decisions.

There are papers on contraception and abortion like Ananat and Hungerman (2008), but they are basically reduced form. I am not familiar of the papers that analyze abortion, contraception and fertility decision in a systematic structural form.

8 Sequential Decisions About Contraception and Abortions. Identification of Contraception. No Heterogeneity

In each period woman gets a utility u_t being a function of observables (number of children, education, age, income, apartment size) and unobservables (preferences for contraception and love to children). Let

$V_t(d_t, x_t) = \max_{d_t} E_t \left\{ \sum \beta^{s-t} u_s(d_s^*, x_s) | x_t, d_t \right\} + \epsilon_s(d_s)$ be the value function at each period, where each d_s^* is chosen to maximize $V_s(d_s, x_s)$. $\epsilon_s(d_s)$ is a random shock dependent on the action d_s .

Woman can take the following decisions (contracept, abortion), (contracept, no abortion), (no contraception, abortion), (no contraception, no abortion) for d_t , so $d_t = (c_t, a_t)$. If $c_t = 1$ woman contracepts, if $a_t = 1$, she decides to make an abortio if she will get pregnant. It is assumed that preferences for abortions do not depend on contraception itself. However, indirectly there is a link through third factor, like love to children that affects both. Let's call $v_1(x_t) + \epsilon_{1t}$ current lifetime utility of a woman, that will have a baby for the next period for sure, and $v_0(x_t) + \epsilon_{0t}$ lifetime utility of a woman that will not have a baby for sure and ϵ_{1t} and ϵ_{0t} have extreme value distribution. Let $p_{nc}(x_t)$ be the probability of a woman with a given observables to get pregnant, and $p_c(x_t)$ be the probability of a woman who uses contraception.

$$V_t(c_t = 0, x_t) = p_{nc}(x_t)Emax(v_0(x_t) - C_a + \epsilon_{0t}, v_1(x_t) + \epsilon_{1t}) + (1 - p_{nc})v_0(x_t) \quad (1)$$

$$V_t(c_t = 1, x_t) = p_c(x_t)Emax(v_0(x_t) - C_a + \epsilon_{0t}, v_1(x_t) + \epsilon_{1t}) + (1 - p_c)v_0(x_t) - C_c \quad (2)$$

where C_a is a disutility of abortion and C_c is a disutility of contraception. Notice that for extreme value distribution $Emax(v_0(x_t) - C_a + \epsilon_{0t}, v_1(x_t) + \epsilon_{1t}) = \gamma + \log(e^{v_0(x_t) - C_a} + e^{v_1(x_t)})$. Woman decides to contracept if $V_t(c_t = 0, x_t) < V_t(c_t = 1, x_t)$ or

$$p_{nc}(x_t)Emax(v_0(x_t) - C_a + \epsilon_{0t}, v_1(x_t) + \epsilon_{1t}) + (1 - p_{nc})v_0(x_t) \leq p_c(x_t)Emax(v_0(x_t) - C_a + \epsilon_{0t}, v_1(x_t) + \epsilon_{1t}) + (1 - p_c)v_0(x_t) - C_c$$

after some algebraic manipulation we get

$$v_0 - (\gamma + \log(e^{v_0(x_t) - C_a} + e^{v_1(x_t)})) \geq \frac{C_c}{p_{nc} - p_c} \quad (3)$$

after putting v_0 inside of logarithm we get

$$-(\gamma + \log(e^{-C_a} + e^{v_1(x_t) - v_0(x_t)})) \geq \frac{C_c}{p_{nc} - p_c} \quad (4)$$

which is equivalent to

$$e^{-C_a} + e^{v_1(x_t) - v_0(x_t)} \leq e^{-\gamma - \frac{C_c}{p_{nc} - p_c}} \quad (5)$$

Let's now look at the decision of abortion, woman makes abortion if $v_0(x_t) - C_a + \epsilon_{0t} > v_1(x_t) + \epsilon_{1t}$ and probability of abortion is

$$Pr_{ab} = \frac{e^{v_0(x_t) - C_a}}{e^{v_0(x_t) - C_a} + e^{v_1(x_t)}} = \frac{e^{-C_a}}{e^{v_1(x_t) - v_0(x_t)} + e^{-C_a}} \quad (6)$$

therefore

$$e^{v_1(x_t) - v_0(x_t)} = e^{-C_a} \left(\frac{1}{Pr_{ab}} - 1 \right) \quad (7)$$

after putting results of equation (7) into equation (5) we get

$$e^{-C_a} \leq Pr_{ab} e^{-\gamma - \frac{C_c}{p_{nc} - p_c}} \quad (8)$$

taking logarithm from both sides gives

$$C_c \leq (p_{nc}(x_t) - p_c(x_t))(\ln(Pr_{ab}) + C_a - \gamma) \quad (9)$$

so it means that for given x_t increase in probability of abortions should lead to increase in proportion of those who use contraception. Thus, we expect positive correlation between contraception and abortion from the theory. Also it should be noticed that ration of $\frac{p_{nc}(x_t)}{p_c(x_t)} = E_c$ is expected to be constant, so we can rewrite equation (9) as

$$C_c \leq f(x_t)(\ln(Pr_{ab}) + C_a - \gamma) \quad (10)$$

where $f(x_t)$ is proportional to the number of sexual contacts. So proportion of those using contraception should increase with the number of using contraception. But physiologically number of sexual contacts is proportional to number of pregnancies for a given method of contraception.

9 Directions For Future Research

I want to test rationality of behavior using observed data on contraception, births and abortions. Equation (9) and (10) permit to conduct these tests without referring to specifications of the utility functions (except distributional specifications).

Initially I planned just to estimate structural model of fertility behavior using contraception and abortion information.

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10 Appendix. Code for Contraception Part.

```
xtset idind year,yearly
```

```
sort idind year
```

```
gen curcont=1 if n39==5
replace curcont=2 if n39==6
replace curcont=3 if n39==7
replace curcont=4 if n39==8
replace curcont=5 if (n39<=15 & n39>8) | (n39>0 & n39<5)
replace curcont=0 if n38==2
```

```

gen prevcont=1.curcont

label define contraception 0 "No Contraception" 1 "Withdrawal" 2 "Condom" 3 "Pills" 4 "Int

label values curcont contraception
label values prevcont contraception

order idind year curcont prevcont

tab prevcont n6

tab prevcont n30

replace n30=2 if n28==2

*** Efficiency of careful contraception
tab prevcont n30 if n43==1 & n44<10 & n44~=8 & n44~=2

*** Does nonplanned pregnancy of rational woman lead to birth?
tab prevcont n6 if 1.n43==1 & 1.n44<10 & 1.n44~=8 & 1.n44~=2

*** Conflict between man and woman (woman wants to get pregnant, but contracepts). There i
tab n44 if n38==1

***
tab n6 year if 1.n38==2 & 1.n44==1

*** Women who contracepts but say that they want to have a baby
tab n47 year if n38==1

*** Women who contracepts but make abortion
tab n30 year if 1.n38==1, column

* Women who contracepted but gave a birth
tab birth year if n38==1, column

label variable n30 "Have You had an abortion in the last twelve months?"
label variable year "Year of Survey"
label define year 1994 "1994" 1995 "1995" 1996 "1996" 1998 "1998" 2000 "2000" 2001 "2001"
label values year year
label define birth 1 "Conceive" 0 "Didn't Conceive"
label values birth birth

label define reasons 1 "Wanted to Get Pregnant" 3 " Health Problems" 4 "Unable to Acquire
label values n44 reasons

latab n30 year if 1.n38==1, col dec(2)
latab birth year if n38==1, col dec(2)

```



```
latab n30 year if l.curcont==4, col dec(2)
latab birth year if curcont==4, col dec(2)
```

```
latab n30 year if l.n38==2, col dec(2)
latab birth year if n38==2, col dec(2)
```

```
latab n30 year if l.n47==0, col dec(2)
latab birth year if n47==0, col dec(2)
```

```
latab n44 birth if n43==1
latab n44 birth if n38==2
```

```
latab curcont birth if n43==2
```

```
latab prevcont curcont, row dec(2)
```