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RECENT TRENDS IN ABORTION AND CONTRACEPTION IN 12 COUNTRIES

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Executive Summary

This report is an analysis of recent trends in abortion and contraception in 12 countries of Central Asia and eastern Europe where abortion had long been a major if not the principal method of birth control. All of these countries have experienced sharp declines in the number of children desired and in fertility rates. Despite increasing preferences for very small families, abortion rates in eight of these countries have recently declined accompanied by steady increases in the use of modern contraceptive methods. In the remaining four countries, two experienced little change in modern contraceptive prevalence and witnessed an increase in abortion while in the two other countries, the number of children desired is very low and unintentional pregnancies have increased.

The main sources of abortion are pregnancies resulting from contraceptive failure, mostly associated with the use of traditional methods (mainly withdrawal) and the pregnancies of women who are not using any contraception despite not wanting more children (the "unmet need for family planning" category). In two-thirds of the countries, contraceptive failures are the main

source of abortions while in the other third, women with an unmet need contribute most of the abortion. A cross-sectional analysis of 18 countries shows a very high negative correlation between abortion and the use of modern contraception and a moderately high positive correlation between abortion and the use of traditional methods.

In a series of simulation models, the implications for further reductions in abortion are estimated. For example, if the women currently using modern methods were joined by those currently using traditional methods, abortion rates on average could be reduced by 23 percent; if women classified with an unmet need were also to be added to this group, abortion rates could be reduced by as much as 55 percent.

The report also examines some of the main covariates of the use of modern contraception and abortion and also attitudes toward abortion. Multivariate analyses using the same variables are shown for all of the countries and highlight the importance of age, urban residence and education.

The main conclusions are that there is strong evidence that modern contraception is replacing abortion but that there will be continuing if not increasing pressure to avoid unintended pregnancy, which if it does occur, may frequently be subject to abortion.

1 Background

In the former Soviet Union, which includes most of the countries in this review, induced abortion had been the principal method of birth control. The reasons for this include the cost of importing modern contraceptives from the West, the poor quality of domestically produced contraceptives, the attitudes of the medical profession toward the oral contraceptive, and the availability of abortion services in the government health service. Combined with the reductions in the number of children desired and the high failure rates of traditional methods of contraception, the result was very high abortion rates. In most of these countries, following independence in 1991, abortion rates have declined although levels remain high in a few countries. The analysis reported here describes these trends in conjunction with the increase in reliance on modern contraception. The sources of data are mostly national sample surveys of women of reproductive age conducted by the Demographic and Health Surveys (ORCMACRO) and the Reproductive Health Surveys conducted in collaboration with the Centers for Disease Control.

2 Levels and Trends of Contraceptive Prevalence and Abortion Rates

The most recent estimates of abortion rates and contraceptive prevalence are shown in Figures A and B respectively. There is a wide range of abortion rates in these countries, ranging from rates of less than one abortion per woman in Turkey, Turkmenistan and Uzbekistan to total abortion rates of over three per woman in Azerbaijan, Georgia and Romania. The data on abortions for the United States (Finer and Henshaw, 2003) are included in some of these figures, simply to provide some perspective; it is very low by comparison

The measurement of abortion is a particularly difficult task because of its sensitivity and, in many countries, its legal status. Many different approaches to measurement have been

developed, each with its strengths and weaknesses (Rossier, 2003; Singh, Henshaw, and Berentsen, 2003). In this comparative analysis, we rely mostly on self-reported abortions derived from elaborate pregnancy histories collected in personal interviews. Since most of these countries have had decades of experience with legal and widely available abortion and, until recently, a lack of acceptable contraceptive alternatives, there is little stigma associated with the subject and the reporting appears reasonable. In some countries, the level of abortion estimated from the interview data is considerably higher than that reported by the Ministry of Health from registered data. The situation is further complicated by the increasing involvement of the private sector and mini-abortions that do not get included in official data, a problem that can lead to a mistaken view in some countries that abortion rates have declined rapidly.

The percentage of women in these countries currently using contraception is shown in Figure B both for all methods combined and for modern methods. The lowest proportions using modern methods are in Azerbaijan, Armenia and Georgia that all show among the highest abortion rates. The IUD is the most common modern method used in these countries while withdrawal is the most commonly used traditional method.

The association between the prevalence of modern contracepton and abortion is displayed in Figure C for 18 countries in Central Asia and eastern Europe, plus the United States. There is a very strong negative correlation (-.92) in the expected direction. When the prevalence of traditional methods is plotted with abortion rates across the 18 countries, however, the correlation becomes positive (+.55); the greater the use of such methods (with their higher failure rates), the higher the abortion rates (Figure D).

The recent trends in modern contraceptive prevalence (Figure F) show a rise in all countries except in Russia (Avdeev and Troitskaia, 1999; Avdeev, 2003) where the upward movement leveled off after 1996. Some of these increases are quite dramatic with prevalence rising 1-2 percentage points per year. There is some speculation that the plateau in Russia resulted from government concerns about low fertility that translated into the Health Ministry abandoning its sex education plans and widespread layoffs in the Moscow offices of contraceptive manufacturers. Evidently, this reaction has subsided and contraceptive sales have begun to increase again after 2000 (Zhurnal 2003; Bellaby, 2003).

The recent trends in abortion rates in these countries generally indicate a downward trajectory (Figure G). There are several exceptions to this picture of declining abortion rates that will be discussed below.

3 Trends in Fertility Rates and Number of Children Desired

To understand the prevalence of contraception and abortion, it is necessary to consider the number of births that couples are aiming for (Bongaarts and Westoff, 2000). The smaller this "fertility target", the more likely that couples will practice some form of birth control. The alternative would be high levels of unwanted births and unmet need for family planning. If couples are aiming for only one or two children over a period of say 20 years, the long exposure to the risk of an unwanted pregnancy presents a considerable challenge to fertility regulation.

The trends in actual fertility (Figure H) indicate dramatically the rapid emergence of the small-family norm in these 12 countries. In 7 of the 12 countries, the total fertility rate has declined from a range of 3 to 5 births per woman in 1950-55 to between 1 and 2 births in 1995-2000. In the other 5 countries, the decline has been from between 4 and 7 births to between 2 and 3. These dramatic declines are clear evidence that couples in these countries now prefer very few children. There is, of course, the possibility that the number of children preferred is greater than the observed fertility rates as a result of the postponement of births. Although it may be that couples may prefer more children than they are having, it is also true that actual fertility rates may exceed the levels that would exist if only wanted births occurred.

Direct measures of these preferences are only available from estimates derived mostly from recent single surveys. An indirect approach to assessing time trends in reproductive preferences is shown in Figure I where the mean ideal number of children is tabulated by the current age of women. The assumption is that the ideal number reported by women in their 40s compared with younger women reveals a time trend in the norm. There are problems with such a measure, including the likely rationalization of unwanted births as wanted, but it is the only measure available. The progressive declines in the ideal number at each younger age category is clearly evident; it is especially pronounced for Turkmenistan, Kyrgyzstan, and Uzbekistan. In Turkmenistan, the ideal number reported by women 45-49 is 4.6 children in contrast to 2.6 by women 15-19. All of the other countries show ideal numbers under three children, an average that reaches as low as 1.7 in Ukraine.

Thus, the evidence both from the recorded declines in total fertility rates and from the imputed declines in reproductive norms clearly indicates that fertility goals have become smaller and smaller in recent years. The implication is that the challenge to fertility control has become commensurately greater. As noted above, women in these countries who mostly want no more than two children are confronted with some 20 years of exposure to the risk of unwanted pregnancy.

In a similar analysis of the relation between abortion and contraceptive prevalence (involving some different countries), Marston and Cleland show for earlier periods that both abortion and contraception increased simultaneously if contraception was not able to satisfy the growing need for fertility control but the inverse relationship described in this report eventually set in.

4 Recent Individual Country Trends in Contraceptive Prevalence and Abortion

The joint recent trends in abortion and modern contraceptive prevalence are depicted for each country in Figures J1-J2. In Armenia, the use of modern contraception which is very low has increased only from 10 to 12 percent over five years while the decline of the abortion rate has also been moderate. In an earlier detailed examination of this relationship (Westoff, et.al. 2002), a recent postponement of marriage was also found to contribute to the reduction of abortion. In Kazakhstan (Agadjanian, 2002), Kyrgyzstan, Moldova and Uzbekistan, a stronger pattern emerges with modern contraceptive prevalence rising and abortion declining both by about 50 percent. A similar pattern appears in Russia where the use of the IUD and the pill increased by 74% between 1991 and 2001 while the abortion rate fell by 61%. A very recent development in reduced abortion availability has been reported (Myers, 2003) in which the Russian government

has excluded social indicators as bases for later abortions. Some of the motivation is attributed to concerns about loss of population, to the pressures of conservative lawmakers and to the growing influence of religious groups.

In Turkey, there has been a greater recent decline in the abortion rate than the increase in modern contraceptive practice might imply (Senlet, 2001). Romania shows the most dramatic increase in modern contraceptive prevalence, rising 2.5 times in ten years while the abortion rate dropped by a third.

There are three or four countries that do not show this pattern. In Georgia (Fig.J2), the abortion rate in 1999 was the same as it had been in 1994 (although in the interim it had increased and then decreased), while modern contraceptive use increased modestly reaching the current prevalence of only 12 percent. In effect, not much happened to either abortion or contraception over the five-year period. However, the proportion of pregnancies that were unintended increased from 58 percent in 1994 to 65 percent in 1999, a trend associated with a steady increase in contraceptive failure rates. This increase included both modern and traditional methods. Part of the explanation for the increase in failure rates for modern methods was the increasing use of condoms and a decrease in IUD use. One can also conjecture that the addition of new users might contribute to higher first-year failure rates. In summary, the increase in contraceptive failures offset the increase in the prevalence of modern methods.

Ukraine and Turkmenistan are exceptions to the widening gulf between abortion and modern contraceptive practice. In Ukraine, both types of fertility regulation increased slightly between 1994 and 1999. The prevalence of modern contraception in Ukraine is higher than in Georgia (31 percent compared with 12 percent) and the abortion rate is much lower (1.6 compared with 3.7). These two countries also differ significantly in the number of children women consider ideal. The range in Ukraine is only between 1 and 2 children while in Georgia it lies between an average of 2.5 and 3. Ukraine has the lowest ideal family size of all of these countries and therefore the smallest fertility target. Like Georgia, Ukrainian women also show steadily increasing contraceptive failure rates and unintended pregnancies (Figure K).

In Turkmenistan, 34 percent of women are using modern contraception, up slightly from 31 percent five years earlier. The abortion rate is comparatively low (0.85 per woman) but it showed an increase in the recent past. The main hypothesis to explain the rise in abortion is that Turkmenistan has experienced the sharpest “decline” in the ideal number of children of all of the countries (Figure I) from 4.6 for women 45-49 to 2.6 for women 15-19. Again, the fertility target has rapidly become smaller.

Ajerbaijan has experienced a significant increase in abortion in recent years, from a total abortion rate of 2.3 in 1994-96 to 3.2 in 1998-2001. But this seems to be a clear example of the absence of any effect of modern contraception that remained very low, 5 to 7 percent (by far the lowest prevalence among these 12 countries).

In summary, of the 12 countries, 8 show declines in abortion accompanied by increases in the prevalence of modern contraception; 1 shows an increase in abortion with little change in prevalence (Ajerbaijan); 2 show increases in abortion along with an increase in prevalence but

with a dramatic reduction in the ideal number of children (Turkmenistan) or an extremely low ideal number and increasing failure rates (Ukraine); and 1 features no net change in abortion rates but with increasing prevalence offset by increasing rates of contraceptive failure (Georgia).

5 A Model of Abortion

Pregnancies that can potentially lead to abortions are mainly either the result of contraceptive failure or pregnancies to women who did not use contraception but did not intend to become pregnant. The latter category is what is known as the unmet need for family planning. These are the two main sources of abortion though some are also by women who thought they were not exposed to the risk of pregnancy (for reasons of low fecundability or little sexual activity) and some from women who deliberately became pregnant but who experienced a change in circumstances.

In order to quantify the relative proportions of these components to the abortion rate, contraceptive failure rates, the prevalence of unmet need, low risk and intentional pregnancy along with their associated pregnancy and abortion rates have been estimated for the 12 countries. In each country, the detailed components are estimated from monthly calendar data collected in the interviews. The diagram illustrates the approach with data from the 2000 survey in Armenia.. The decomposition is evaluated by how closely the resulting abortion rate approximates the rate recorded in the country based on the pregnancy histories collected.

The total sample of women 15-14 in Armenia is first divided into women using contraception (402 per 1,000 women) and those not currently using any method (598). The users are then divided into those using a modern method (150) and those using a traditional method (252). The annual failure rates associated with these categories are .070 and .198 respectively, yielding 10 and 50 unintentional pregnancies. Armenian women aborted 69 percent of pregnancies that were the result of failure with a modern method (7 abortions) and 83 percent of traditional method failures (41 abortions). Together, these comprise 48 abortions associated with all contraceptive failure. It is clear that reliance on traditional methods contributes disproportionately to the abortion rate in Armenia.

Armenian women not using any contraception (598 per 1,000 women) are divided into those with an unmet need for family planning (88), those at low risk of pregnancy because of low fecundability or little exposure to the risk of pregnancy (142), women seeking pregnancy or intentionally pregnant (53) and women who have never had sex (315). The latter group, consisting mainly of young unmarried women, obviously contributes no pregnancies or abortions. The main source of abortions among women not using any contraception is the relatively small group (88) classified in the unmet need category[1]. Their recent pregnancy rate was estimated at .638 with 43 percent aborted, yielding 61 pregnancies and 24 abortions.

[1] Unmet need was defined differently in the DHS and CDC programs. The estimates for the CDC surveys included here are modeled after the DHS algorithm with women currently pregnant unintentionally included in the unmet need category. Those pregnant intentionally are grouped with the women seeking pregnancy.

The "low risk" category (with 142 per 1,000 women) had a pregnancy rate estimated at .020, with 44 percent aborting, yielding 6 abortions. The "seeking pregnancy" category (53) had a pregnancy rate of .662 and contributed 3 abortions.

The sum of these abortions from each category is 81 per 1,000 women which is the same rate calculated directly.

Estimates for all of these parameters for each country are shown in Table 5.1.

6 Components of Abortion in the Countries

As indicated in the model illustration for Armenia, most abortions in that country were the result of contraceptive failure, concentrated in the use of traditional methods. Of all abortions in that country, nearly two-thirds (48/81) were the result of contraceptive failure with most of these from traditional method use.. Among non-users, unmet need was the principal source of abortions contributing 30 percent of all abortions. The remaining 11 percent originated among other non-users. The distribution of these three categories is shown for the different countries in Figure L

The countries divide into two groups: eight countries where the main source of abortion is contraceptive failure, and four where the main source is unmet need. This difference is important programmatically. In the first group, the obvious need is to attract couples to methods with low failure rates; in the second category, the challenge is to provide family planning services. In both cases, there seems to be a potential demand to make available a greater diversity of modern methods to accommodate different preferences.

7 Potential Abortion Rates

The model permits the simulation of abortion rates under different assumptions about potential changes in the components[2]. Several simulations are presented.

Unmet Need Shifts to Modern Method Use

In this scenario, the assumption is that unmet need is reduced to zero as all women in this category adopt modern contraception. In effect, this is an increase in overall contraceptive prevalence with the further assumption that the move is to modern methods. The implications of such a change for the reduction of abortion rates are illustrated in Figure M for each country. For most of the countries, the implied reduction in abortion levels is around 25 percent. In Turkmenistan and Uzbekistan, the effect would be greater (a reduction of around half) because in both of these countries the major source of their relatively low abortion rates is unmet need with its high pregnancy rate.

[2] The assumption is made in all of these hypothetical changes that the failure rates and propensities to abort would be the same for the women who move into the status as the prevailing rates in that category. To illustrate: women who shift from unmet need to modern contraceptive use are assumed to practice their new method with the same efficacy as women already in that category.

Traditional Method Use Shifts to Modern Method Use

Since traditional methods have considerably higher failure rates than modern method use, there is a significant potential reduction of unwanted pregnancy and abortion in such a shift. The numerical implications are shown in Figure N. In this scenario, all of the other categories remain at the same level, including unmet need. The effect is equal to associating all current contraceptive use with the failure rate of the current users of modern methods in that country (reflecting both the mix of modern methods and their average failure rate) along with their propensity to have an abortion. The greatest effects are estimated for Azerbaijan, Armenia and Romania.

Both Unmet Need and Traditional Method Use Shift to Modern Method Use

The potential combined effect on the abortion rate if all women shifted from both the unmet need category and traditional method use is illustrated in Figure O. The estimates are fairly uniform, ranging from reductions of 47 and 48 percent for Kazakhstan and Ukraine to 63 percent for Armenia.

8 Effect of Contraceptive Discontinuation on Abortion

Pregnancies can be classified by the pattern of contraceptive use prior to the conception. As shown above, the major antecedents are nonuse of any method in the pregnancy interval and contraception used and failed. Contraception can also be discontinued either to become pregnant or for some other reason (including side effects, health concerns, partner's objections, etc.). The focus here is on this last category of method discontinuation – pregnancies following discontinuation for reasons other than wanting to become pregnant. The frequency of such pregnancies (Table 8.1) ranges from 6 percent in Armenia to 20 percent in Georgia. In all of the eight countries in Table XX, the majority of such pregnancies are aborted, though the magnitude of such abortions is far lower than the leading circumstance that is either general nonuse of contraception or method failure. In Georgia, 18 percent of all (recent) pregnancies were aborted following this kind of method discontinuation while twice as many pregnancies were aborted following simple nonuse. In a population where 64 percent of pregnancies are aborted, this represents 28 percent of all abortions which is the highest among the eight countries.

9 Receptivity to Abortion

In the countries where attitudes toward abortion and contraception were assessed, women were seen generally to be opposed to abortion and to prefer contraception. However, attitudes toward different methods of contraception were very mixed and far from enthusiastic. Moreover, knowledge of modern methods is quite limited in this part of the world. Even the pill is not known by a third of the women in half of the countries and ignorance of sterilization is widespread (Figure P). The IUD is the most commonly known, followed by the condom.[3] Surgical sterilization of women is the least known of these four methods (knowledge of male

[3] These data could be seriously out of date in a few of these countries in which the surveys were conducted in 1996 and 1997.

sterilization is much lower). The high prevalence of traditional methods of contraception in some of these countries and the dominance of the IUD seems understandable.

The reliance on abortion in many of these countries, which though declining is still high by international standards, is also undoubtedly related to knowledge of different contraceptive methods. Although women say they much prefer contraception to abortion, there is a strong inclination to regard abortion as a solution to an unwanted pregnancy. One indicator of the propensity to rely on abortion is the high proportion of women who say that women who become pregnant unintentionally should seek an abortion. In one set of countries (Azerbaijan, Georgia, Moldova and Romania) about two-thirds of the respondents say that women with an unwanted pregnancy should have an abortion rather than have the child or choose adoption (Figure Q). In four other countries, the question was put more directly and asked the woman whether she personally would have an abortion if she became unintentionally pregnant. In Armenia, nearly two-thirds said they would have an abortion and in Kazakhstan, Kyrgyzstan, and Turkmenistan, some 40 percent on average gave this response.

It seems clear that unless knowledge and availability of effective and acceptable contraceptive methods increase, abortion rates will remain significant in these countries.

10 Covariates of Abortion and Contraception

In the individual reports and in the summary document covering abortion and other reproductive topics (CDC and ORC Macro, 2003), there are standard tables that examine the associations of abortion and contraceptive practice with age, number of children, rural-urban residence, and education. In the current analysis, we add three dimensions to such analyses: 1) Do these variables relate to abortion and contraceptive behavior in the same way in all of the countries? 2) Are particular relationships independent of other covariates (for example, do residents of cities use abortion more than their rural counterparts even when education and number of children are taken into account simultaneously?) 3) What is the interaction between having an abortion and using contraception, again holding constant the other covariates? We also include similar multivariate analyses of the covariates of attitudes toward abortion in countries that included such questions in their surveys.

Abortion Experience

The odds ratios (logistic regression) of ever having had an abortion are shown in Table 10.1 for 12 countries. The pattern for age is very similar across countries and uniformly indicates the predictable increase with age (the older the woman the more exposure she has had to the likelihood of having an unintended pregnancy and abortion).

The association with the number of children a woman has is a more interesting variable than age. With age constant (as well as in the presence of the other covariates), the likelihood of having had an abortion is strongly associated with number of children in most of the countries. The interpretation here undoubtedly lies in the small number of children desired and the motivation to prevent the birth of an unwanted child.

It is indeed the case that women who live in cities are more likely to have experienced an abortion than those in rural areas. The only exception here is Armenia (the data for Russia are based on three cities so the comparison cannot be made), an anomaly that has been explored earlier (Westoff, et.al. 2002) which is due to a greater reliance on traditional methods in rural areas and therefore more unintended pregnancies and abortions. The reasons that abortion rates are higher in cities probably include the proximity of medical facilities, a greater desire for smaller families, and perhaps more secular attitudes toward the procedure.

The association of abortion with education is more varied across countries. In five of the countries, there is evidence of a positive correlation while in several other countries, less educated women seem more likely to seek abortions. Given the mix of results, it is impossible to generalize about any universal relation between abortion and education. This is in sharp contrast to the pattern observed (see below) between education and the use of modern contraception.

Abortion experience is clearly, consistently and strongly associated with whether the women have ever used modern contraception. In this measure, there is no information about whether that use preceded or followed abortion, or both, but only whether her history includes such use. Thus the basis for the observed strong association can include past experience with contraceptive failure, the adoption of a method after an abortion that did not include past use, or some combination of such circumstances. In general, one can infer reasonably that it reflects a motivation to control fertility.

Abortion Attitudes

In eight of the countries, a variety of attitudinal questions about abortion were included, though the wording of the questions was different in the CDC and DHS interviews. The responses to one question seem to be the most revealing. In CDC, the phrasing of the question was: "If a woman had an unwanted pregnancy what should she do?" Three possible responses were read to the respondent: 1.Have the baby and keep it; 2.Have the baby and give it up for adoption; 3. Have an abortion. In the DHS interview, the question was more direct and read: "Would you have an abortion if you unintentionally became pregnant sometime in the future?" with Yes, No and Don't Know responses coded.

The same covariates in the multivariate analysis of whether the woman ever had an abortion are included in a similar analysis of the attitudinal data discussed above, the propensity to have an abortion as indicated by whether a woman would have an abortion if confronted with an unwanted pregnancy. The main predictor of such a propensity is whether the woman has ever had an abortion (Table 10.2). In all nine countries, past experience with abortion relates strongly and universally to the option of abortion in the future. Women with abortion experience are two to six times more likely to choose an abortion under this circumstance than women who have never had an abortion. Experience with the use of a modern method also relates positively to the propensity to have an abortion in most of the countries.

Age does not appear important in determining this attitude but the number of children does correlate directly with propensity to abort, in most of the countries. Urban residence also shows

a relationship if five of the countries and education likewise correlates directly with this attitude in five countries.

Modern Contraceptive Practice

The age of women operates in the opposite direction for the use of modern contraception than it does for having had an abortion (Table 10.3). Despite the definition of the variable as "ever having used a modern method", the age pattern for contraception implies that younger women are more apt to be drawn to such practice. On the other hand, the number of children is directly correlated with modern method use as it is with abortion, no doubt for similar reasons. Women who have had an abortion are much more likely to have used (or to be using) modern contraception, an association seen above in the reverse case.

Both urban residence and amount of education are both directly associated with modern contraceptive experience. In both cases, the associations are strong and consistent across countries.

11 Conclusions

The main conclusion of this report is that there is an accumulating amount of international evidence that increasing modern contraceptive prevalence reduces abortion. With only a couple of exceptions, the countries under review here that experienced recent rises in the use of modern contraceptive methods also experienced significant declines in abortion. Despite these declines in abortion, all of these 12 countries showed dramatic reductions of fertility and the number of children desired during the 1990s which is another demonstration of the increasing role of modern contraception. In contrast, the prevalence of traditional rather than modern methods is associated with higher abortion rates.

The main sources of abortion are contraceptive failure and unmet need for family planning. Contraceptive failure accounts for most of the abortions in two-thirds of the countries and unmet need is the most important source in the other one-third. Most of the contraceptive failures result from the traditional methods. Discontinuation of contraceptive use for reasons other than failure or intention to become pregnant also contributes to abortion but in a more minor way.

Based on observed failure rates for the two types of methods and on pregnancy rates for the different types of nonuse and the observed abortion rates for each of these categories, a series of simulation models are developed to illustrate the potential further declines in abortion rates that could be expected if conditions changed. One simulation indicates that if all of the women currently classified with unmet need or using traditional methods were to join the women using modern methods, the abortion rate could be reduced by an average of 55 percent. Other simulations isolate the effects of traditional method use and unmet need separately.

Despite an overwhelming preference for contraception over abortion, about half to two-thirds of the women say that they would opt for an abortion if they became pregnant unintentionally. There remains, however, a considerable amount of ignorance about modern methods other than the IUD that is the most commonly used. Given the widespread continuing decline in the

number of children desired, there will be some upward pressure on abortion if the prevalence of modern contraception does not increase.

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Table 5.1 . Model parameters for women 15 – 44.

PARAMETER	Armenia 2000	Azerbaijan 2001	Georgia 1999	Kazakhstan 1999	Kyrgyzstan 1997	Moldova 1997	Romania 1999	Russia[1] 1999	Turkey[2] 1998	Turkmenistan 2000	Ukraine 2001	Uzbekistan 1996
Abortions												
Total abortion rate[3]	2.60	3.20	3.70	1.43	1.50	1.30	2.20	2.51	0.70	0.85	1.57	0.63
General abortion rate[3]	81	116	130	48	51	43	74	85	24	26	55	21
Users												
Percent using any method	40.1	32.4	24.8	49.0	43.1	54.4	48.2	60.1	66.6	39.8	53.5	39.7
Annual failure rate	.150	.283	.186	.063	.073	.088	.147	.118	.055	.030	.098	.023
Percent of failures aborted	80.7	74.2	90.3	83.3	71.3	56.9	69.3	63.7	36.1	43.9	61.7	66.7
Percent using modern method	15.0	7.0	12.2	39.4	35.6	37.4	23.4	44.4	40.2	34.5	31.2	36.8
Annual failure rate	.070	.122	.122	.036	.044	.038	.060	.077	.028	.021	.057	.020
Percent of failures aborted	68.6	75.9	89.4	86.3	69.5	61.6	72.3	68.4	38.1	50.0	62.7	66.7
Percent using traditional method	25.2	25.4	12.6	9.6	7.5	17.0	24.7	15.7	26.5	5.3	22.3	2.9
Annual failure rate	.198	.327	.248	.173	.210	.200	.222	.234	.095	.091	.148	.061
Percent of failures aborted	83.3	81.6	90.7	70.9	73.2	55.0	67.9	72.6	35.2	34.7	61.2	66.7
Nonusers												
Percent not using any method	59.8	67.6	75.2	51.0	56.9	45.6	51.8	39.9	33.4	60.2	46.5	60.3
Percent never had sex	31.5	36.2	33.1	21.8	22.5	18.8	18.3	8.5	NA	33.2	13.7	26.0
Annual pregnancy rate[4]	.369	.476	.421	.339	.478	.359	.330	.348	.381	.415	.312	.487
Percent aborted	32.7	30.7	49.1	24.6	17.3	16.4	22.9	33.2	8.0	18.4	26.7	9.2
Unmet Need												
Percent unmet need	10.3	7.9	15.9	7.6	7.6	6.4	7.3	9.9	12.3	6.9	11.1	10.1
Annual pregnancy rate	.638	.628	.649	.604	.675	.766	.596	.478	.651	.890	.305	.622
Percent of pregnancies aborted	43.2	60.0	67.6	33.2	45.0	24.2	40.1	63.6	10.0	25.0	52.8	20.0
Low Risk												
Percent low risk	12.5	14.1	16.8	13.5	12.0	13.7	19.1	15.9	7.9	11.4	17.1	8.4
Annual pregnancy rate	.020	.086	.082	.063	.140	.078	.042	.046	.039	.044	.061	.113
Percent of pregnancies aborted	43.8	57.7	76.7	28.8	23.6	27.0	34.0	28.6	28.2	24.5	27.3	20.7
Seeking Pregnancy[5]												
Percent seeking pregnancy	5.5	9.4	9.5	8.2	14.8	6.8	7.1	5.6	13.2	8.8	4.6	15.8
Annual pregnancy rate	.662	.747	.640	.697	.675	.542	.571	.624	.487	.891	.387	.622
Percent of pregnancies aborted	10.4	7.6	11.5	9.8	2.1	3.0	10.8	10.9	3.1	5.2	9.7	1.4

[1] Based on three Russian cities
[2] Estimates for Turkey based on currently married women.
[3] Based on the three years prior to the survey.
[4] For women who ever had sex.
[5] Includes women intentionally currently pregnant.

Table 8.1. Percent of total pregnancies[1] and percent of pregnancies aborted, by prior contraceptive use.

Use Before Pregnancy	**Armenia** Percent of Pregnancies:		**Azerbaijan** Percent of Pregnancies:		**Georgia** Percent of Pregnancies:		**Kazakhstan** Percent of Pregnancies:		**Moldova** Percent of Pregnancies:		**Romania** Percent of Pregnancies:		**Russian Cities** Percent of Pregnancies:		**Ukraine** Percent of Pregnancies:	
	Total	Aborted	Total	Aborted	Total	Aborted	Total	Aborted	Total	Aborted	Total	Aborted	Total	Aborted	Total	Aborted
Total	100	54.8	100	56.2	100	63.6	100	33.9	100	36.8	100	53.9	100	60.3	100	46.9
No method used	44.5	14.9	41.0	12.5	64.8	35.4	54.7	12.1	36.0	6.0	27.2	11.1	26.0	13.4	36.8	12.5
Method failed	42.6	34.2	39.8	34.4	10.2	9.5	20.9	14.0	35.6	24.4	46.3	33.7	43.0	33.7	38.1	26.1
Discontinued method:																
To get pregnant	6.8	0.2	9.3	1.1	5.5	1.1	12.0	0.6	20.4	1.2	14.7	1.3	14.7	1.8	15.6	1.4
Other reason	6.1	5.5	9.9	8.2	19.5	17.6	12.4	7.2	8.1	5.2	11.9	7.8	16.3	11.4	9.6	6.9

[1] Includes pregnancies terminated in the three years prior to the survey.

Table 10-1. Odds ratios of ever having had an abortion, for women 15 – 44 (who ever had sex).

	Armenia	Azerbaijan	Georgia	Kazakhstan	Kyrgyzstan	Moldova	Romania	Russia[1]	Turkey[2]	Turkmenistan	Ukraine	Uzbekistan
Age (single years)	1.08	1.04	1.07	1.09	1.13	1.08	1.04	1.08	1.07	1.09	1.08	1.10
Number of children	2.53	2.34	2.45	NS	0.86	1.41	1.51	1.97	1.08	NS	1.26	NS
Residence												
Rural	1.00	1.00	1.00	1.00	1.00	1.00	1.00	NA	1.00	1.00	1.00	1.00
Urban	NS	1.55	1.43	2.06	2.00	1.64	1.36	NA	1.22	2.25	1.36	2.28
Education												
Least	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
< Secondary	1.38	1.27	NS	NS	0.72	NS	1.23	NS	NS	NS	NS	NS
Secondary	1.36	1.43	1.44	0.78	NS	NS	1.25	NS	NS	3.00	NS	2.20
> Secondary	1.39	NS	NS	0.69	NS	NS	NS	0.68	NS	2.68	0.65	1.80
Used Modern Method												
Never	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ever	1.83	2.44	2.52	3.70	6.30	3.27	2.74	3.89	2.12	2.78	3.50	2.68
Number of Women	3882	5540	5765	3832	2716	4694	5890	6004	6151	4613	5046	2997
Chi Squared	1156	1565	1580	702	641	1009	689	1933	809	596	732	440
R Squared	.225	.206	.208	.132	.180	.155	.085	.234	.095	.115	.107	.149

[1] Based on three Russian cities
[2] Based on ever-married women

Table 10-2. Odds ratios of women preferring an abortion if they become pregnant unintentionally.

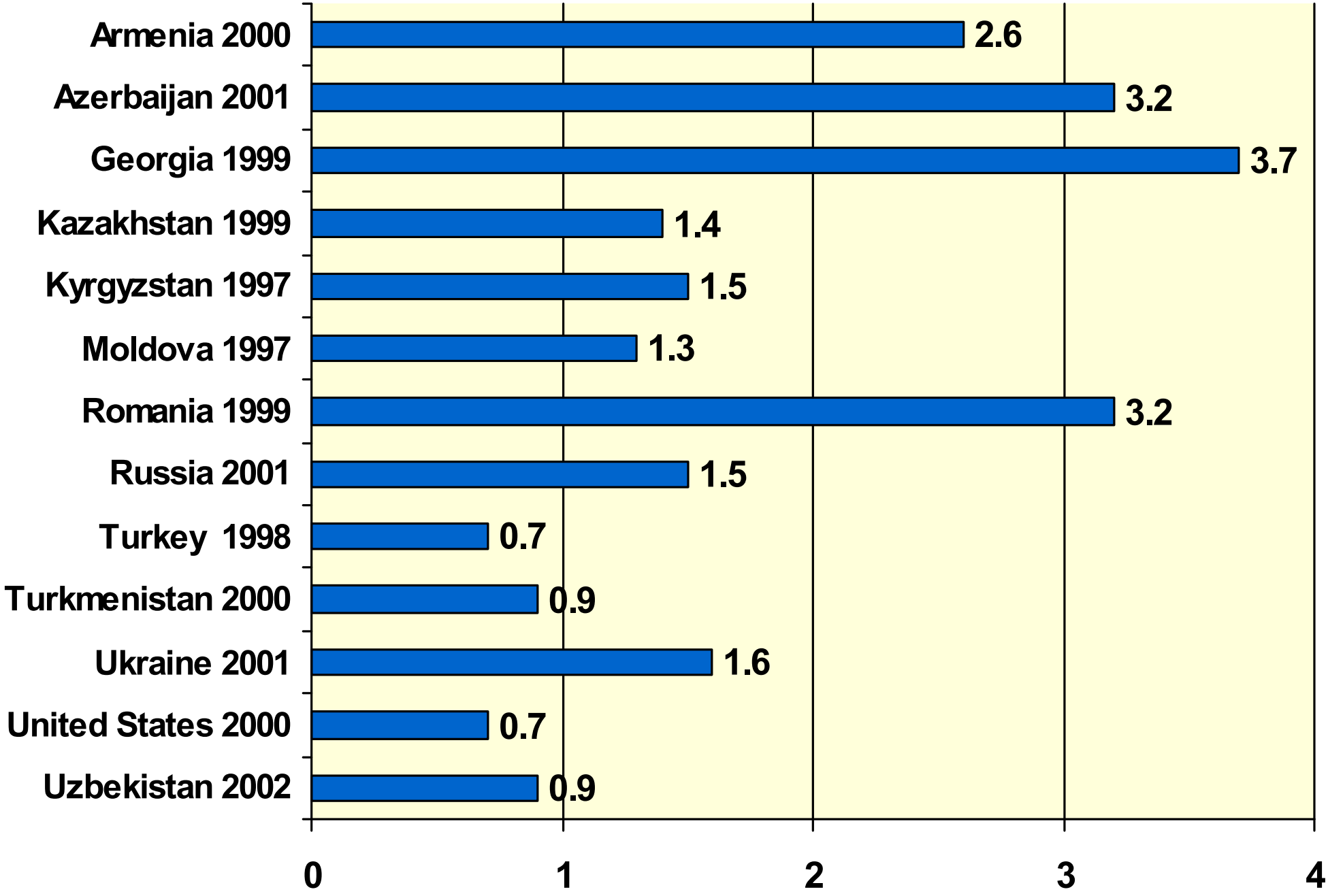
	Armenia	Azerbaijan	Georgia	Kazakhstan	Kyrgyzstan	Moldova	Romania
Age (single years)	NS	0.99	NS	1.03	NS	0.99	0.99
Number of children	1.51	1.16	1.11	NS	1.31	NS	1.16
Residence							
Rural	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Urban	0.73	NS	NS	1.60	1.44	1.61	1.39
Education							
Least	1.00	1.00	1.00	1.00	1.00	1.00	1.00
< Secondary	1.26	NS	1.41	NS	0.73	NS	NS
Secondary	1.75	1.25	1.32	NS	NS	1.30	1.19
> Secondary	1.42	1.47	NS	NS	NS	1.32	1.38
Used Modern Method							
Never	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ever	1.24	NS	NS	1.48	1.32	1.99	1.85
Ever Had Abortion							
No	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Yes	3.93	2.38	2.98	3.08	3.09	2.39	3.25
Number of Women	4017	7297	7598	3206	2877	5327	6275
Chi Squared	981	340	567	505	543	544	683
R Squared	.195	.042	.061	.114	.144	.077	.081

Table 10-3. Odds ratios of ever having used a modern method of contraception, for women 15-44 (who ever had sex).

	Armenia	Azerbaijan	Georgia	Kazakhstan	Kyrgyzstan	Moldova	Romania	Russia[1]	Turkey[2]	Ukraine	Uzbekistan
Age (single years)	0.97	0.98	0.97	0.97	0.98	0.97	0.94	0.97	1.02	0.97	NS
Number of children	1.43	1.43	1.30	1.52	1.92	1.73	1.53	2.37	1.26	NS	1.66
Residence											
Rural	1.00	1.00	1.00	1.00	1.00	1.00	1.00	NA	1.00	1.00	1.00
Urban	1.33	1.99	1.60	1.59	2.08	2.50	1.35	NA	1.40	2.17	1.40
Education											
Least	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
< Secondary	1.60	1.26	2.17	1.29	NS	1.33	2.48	2.91	2.73	NS	1.33
Secondary	2.10	2.01	3.04	1.44	1.69	2.18	4.16	5.24	5.02	1.54	1.72
> Secondary	2.95	3.25	5.44	2.31	2.23	3.17	12.63	9.34	9.83	2.53	1.93
Ever Had Abortion											
No	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Yes	1.93	2.51	2.69	3.48	5.27	3.13	2.62	3.57	2.07	3.46	2.50
Number of Women	3882	5540	5765	3832	2716	4694	5890	6004	6151	5046	2997
Chi Squared	310	726	704	365	664	784	429	1180	717	571	526
R Squared	.058	.105	.093	.095	.211	.137	.110	.201	.091	.095	.134

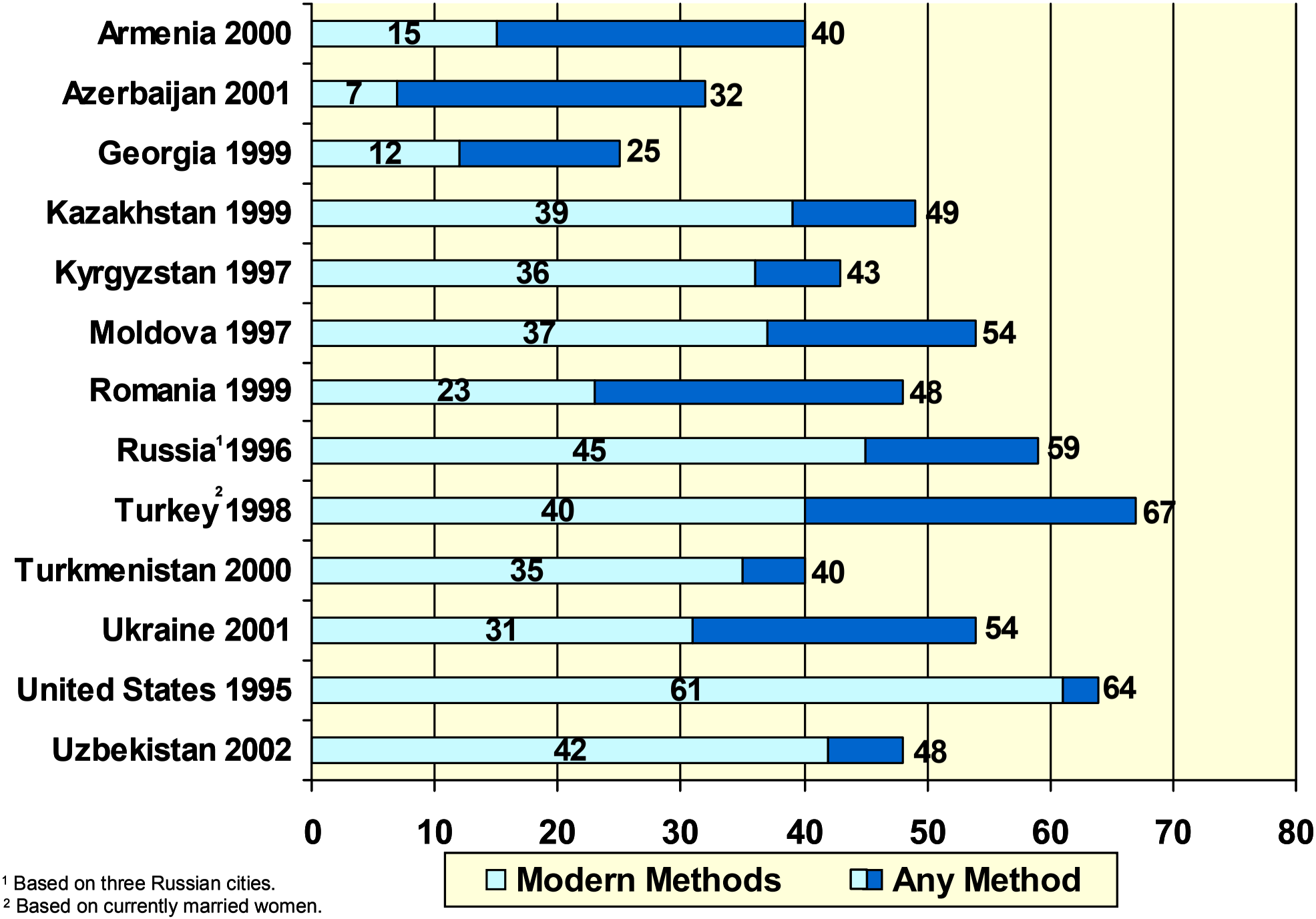
[1] Based on three Russian cities
[2] Based on ever-married women

Figure A. Total abortion rates per woman[1]



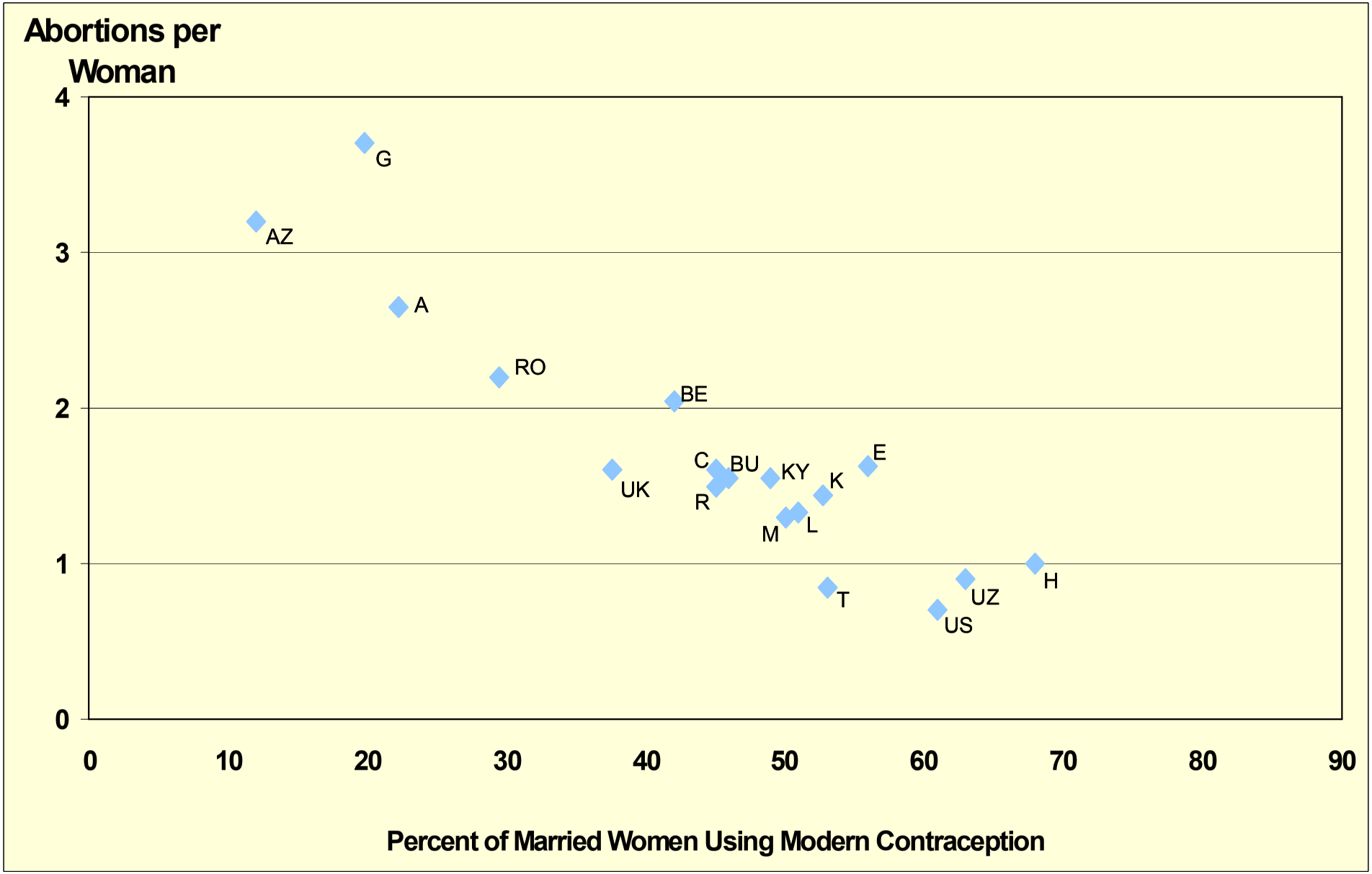
[1] Rates based on three years prior to the survey (in Russia and the Unites States for that year only) for women 15-44.

Figure B. Percent of all women (15-44) currently using contraception



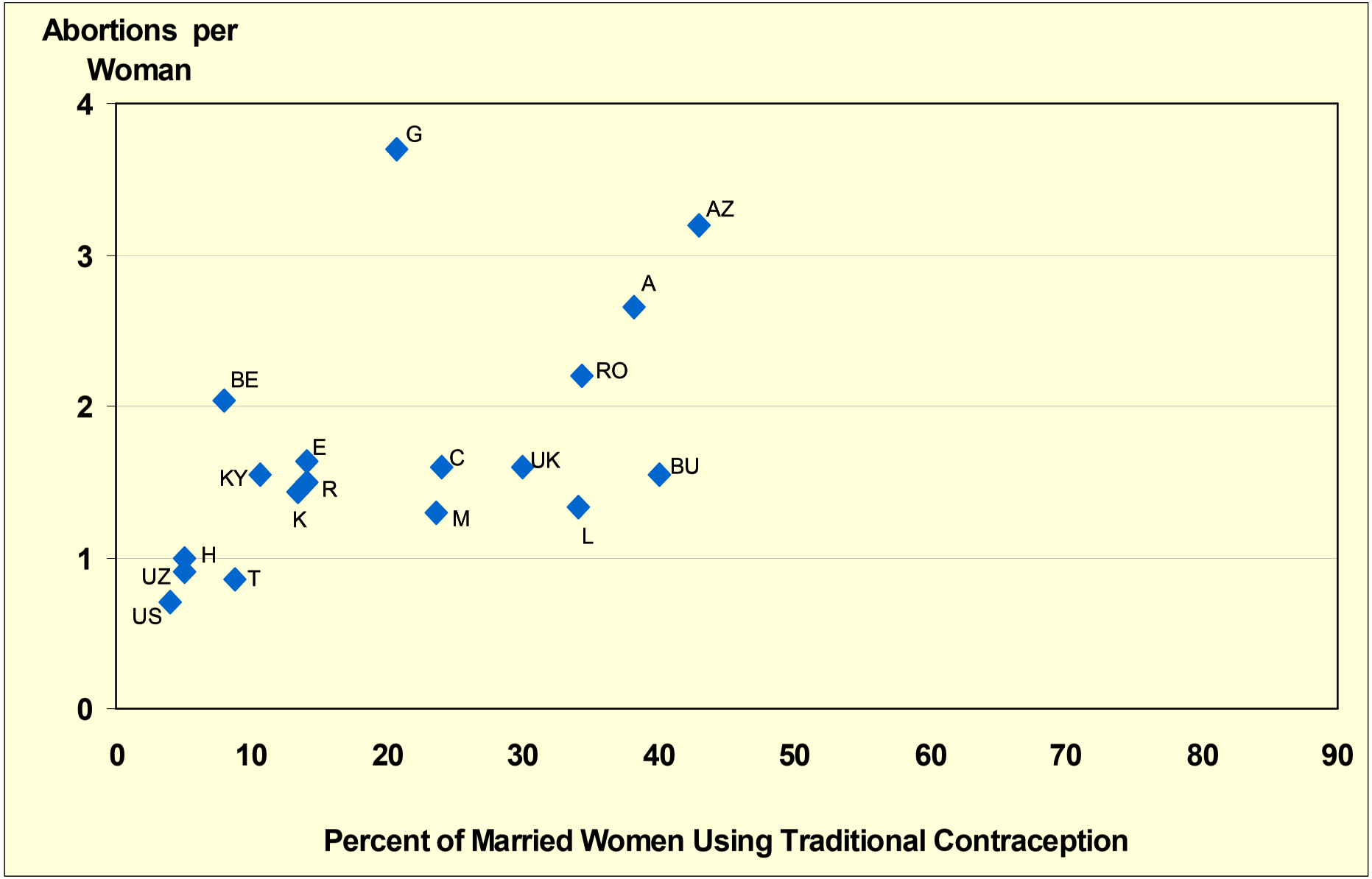
[1] Based on three Russian cities.
[2] Based on currently married women.

Figure C. The total abortion rate and the prevalence of modern contraceptive methods in 18 countries



r = -.92

Figure D. The total abortion rate and the prevalence of traditional contraceptive methods in 18 countries

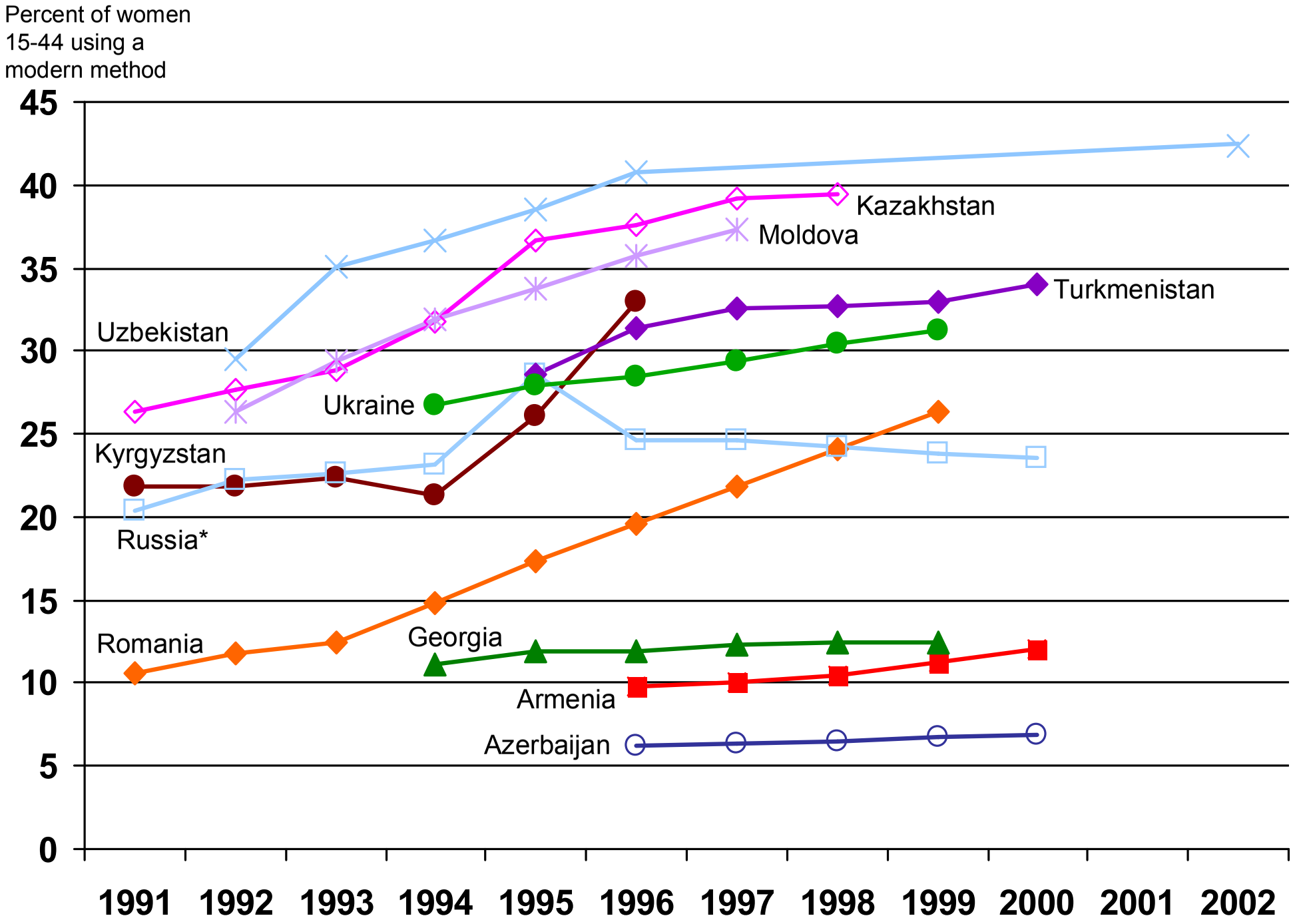


r = +.55

Figure E. Country code list

A	Armenia
AZ	Azerbaijan
BE	Belarus
BU	Bulgaria
C	Czechoslovakia
E	Estonia
G	Georgia
H	Hungary
K	Kazakhstan
KY	Kyrgyz Republic
L	Latvia
M	Moldova
RO	Romania
R	Russia
T	Turkmenistan
UK	Ukraine
US	United States
UZ	Uzbekistan

Figure F. Recent trends in the use of modern contraception



* Limited to IUD and the pill and based on women 15-49.

Figure G. Recent trends in abortion rates

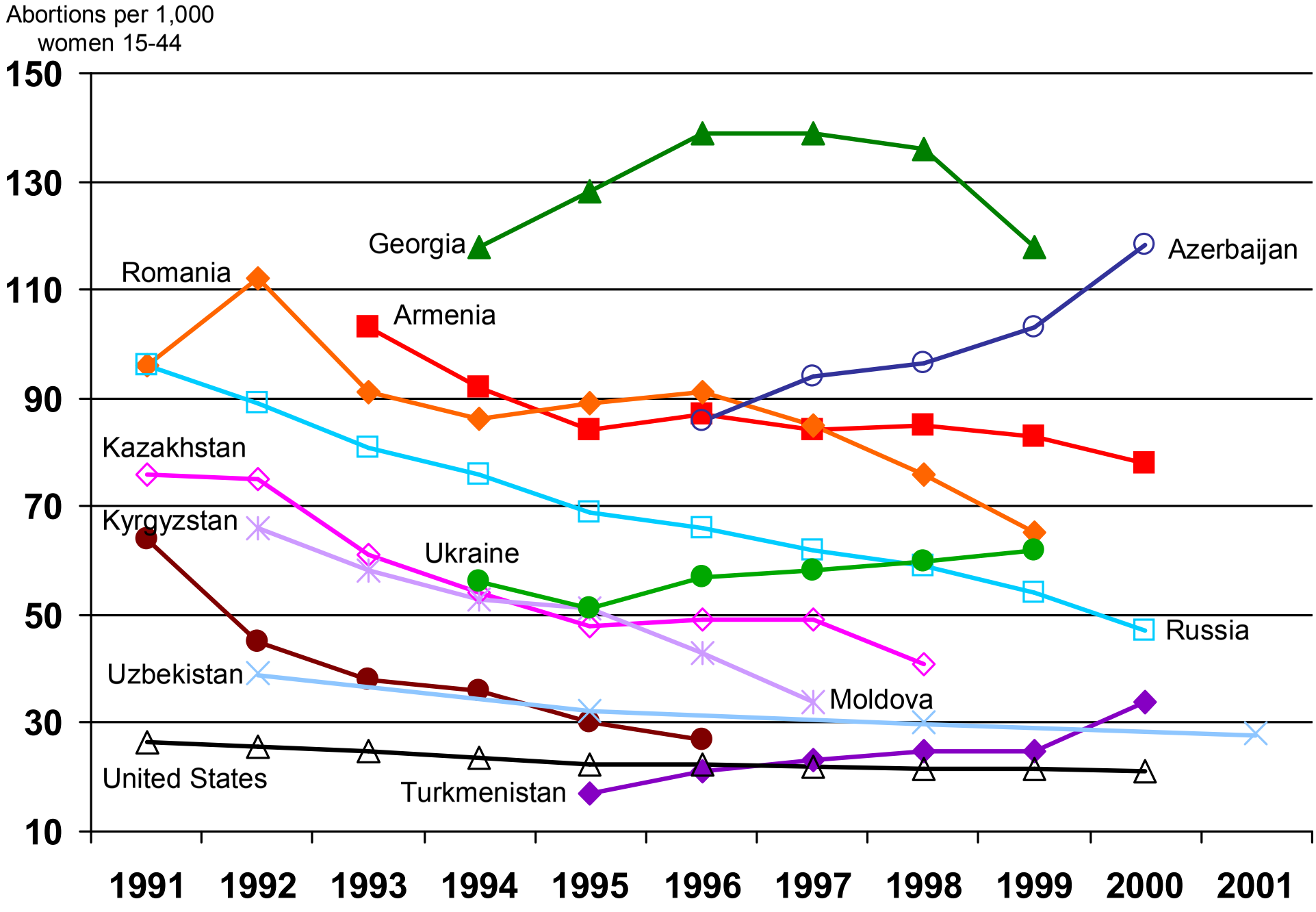


Figure H. Total fertility rates 1950 - 2000

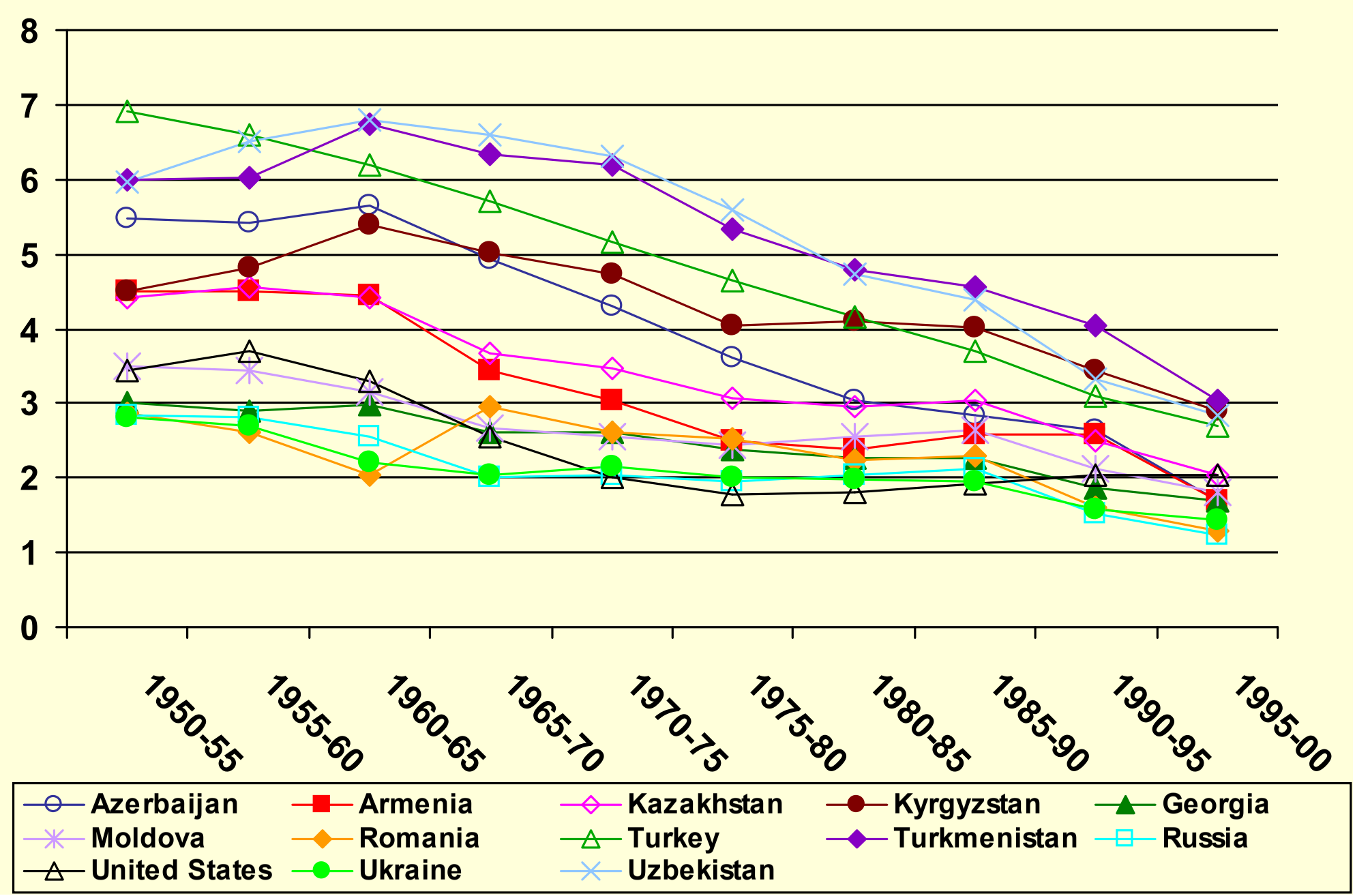
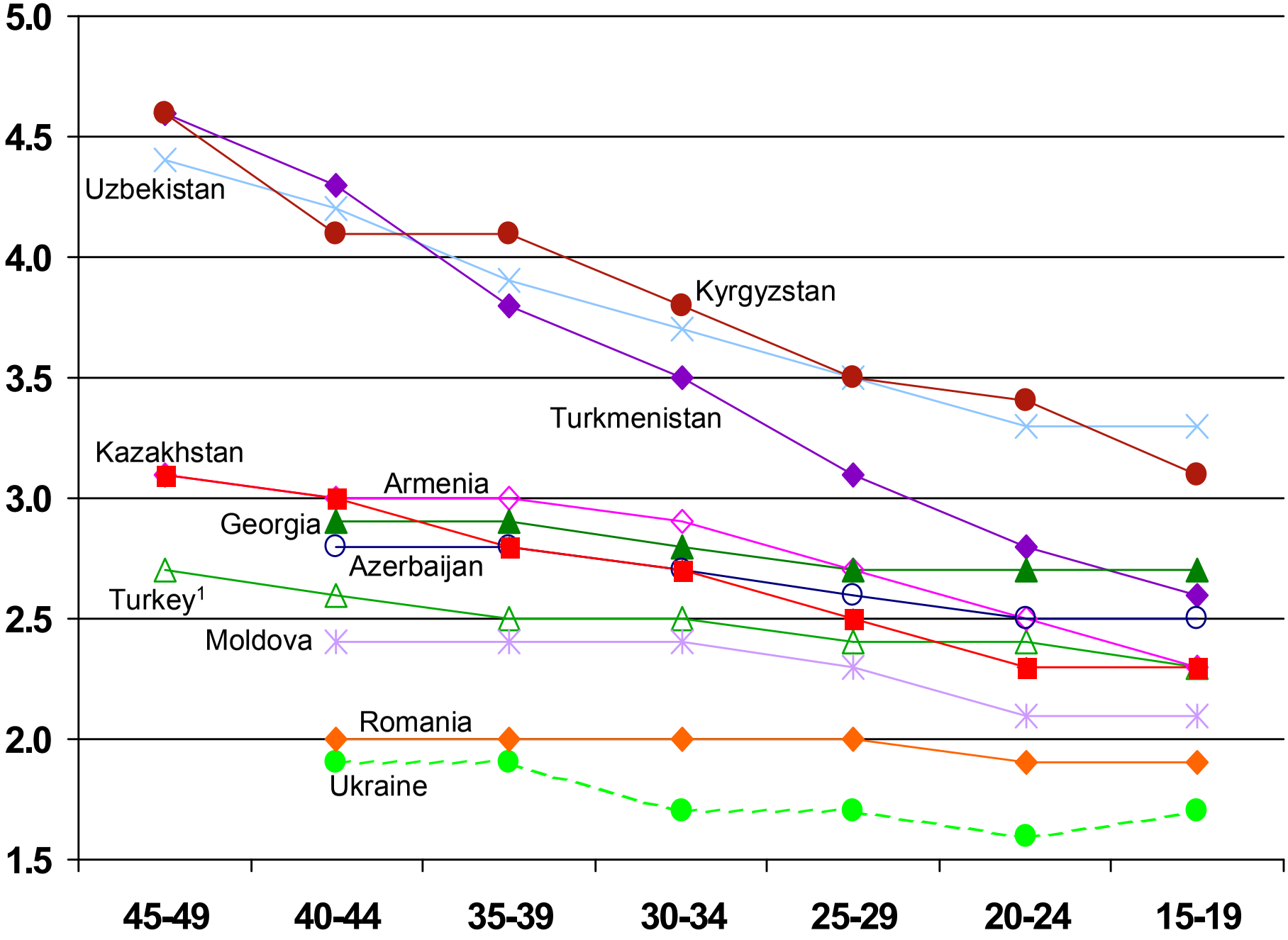


Figure I. Mean ideal number of children, by current age of women



[1] Based on currently married women.

Figure J1. Recent trends in modern contraceptive use and abortions for all women.

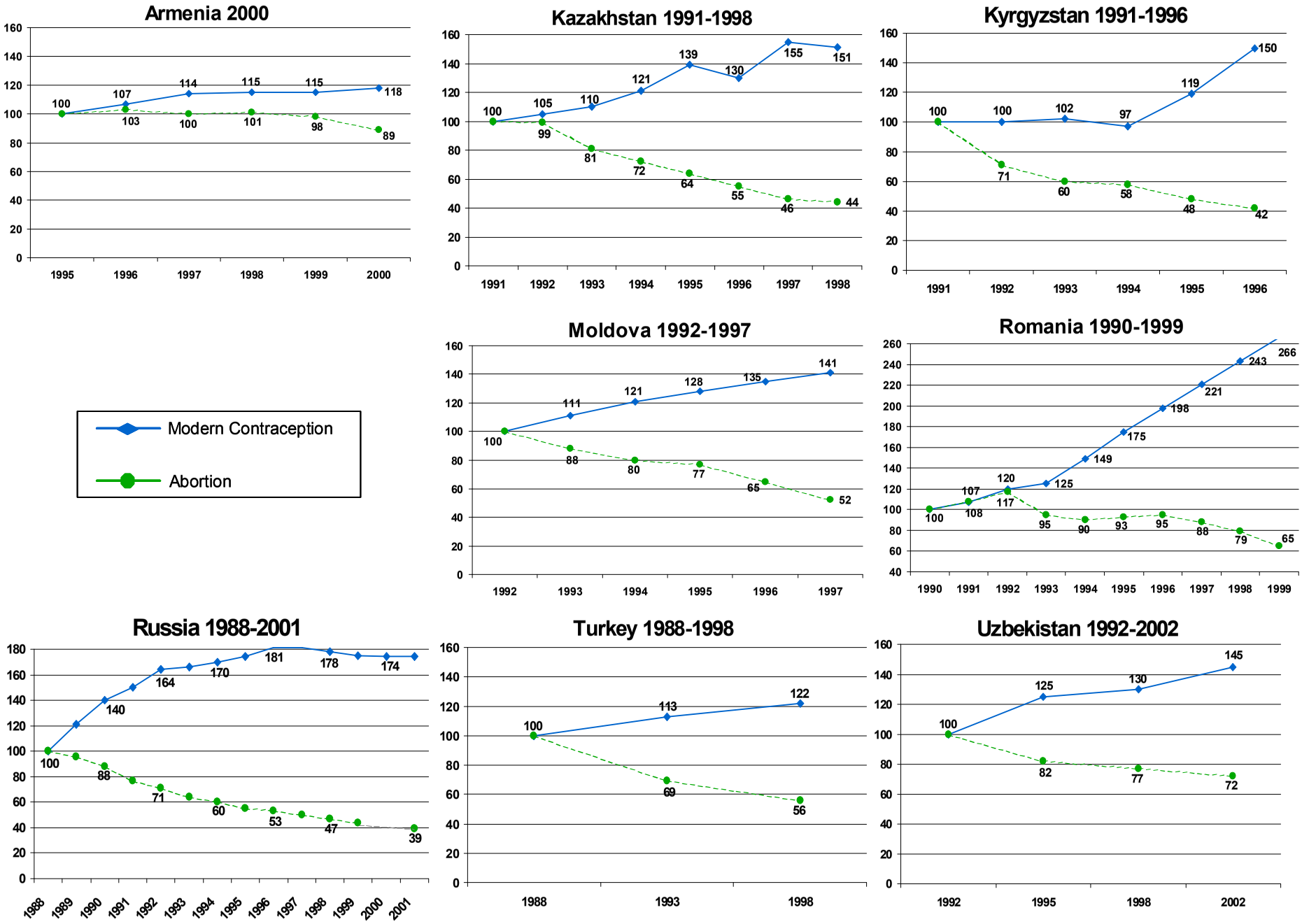


Figure J2. Recent trends in modern contraceptive use and abortion:

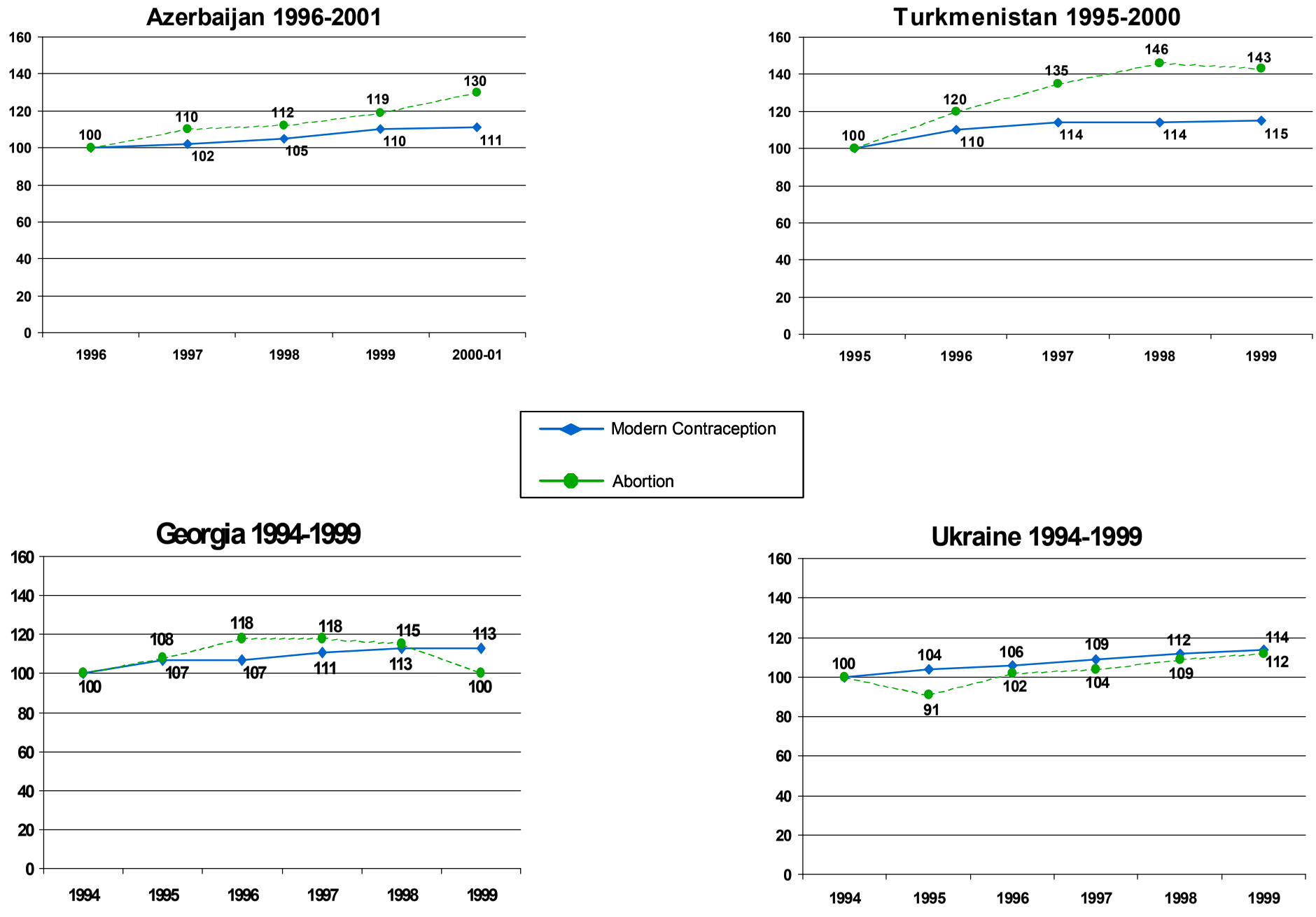
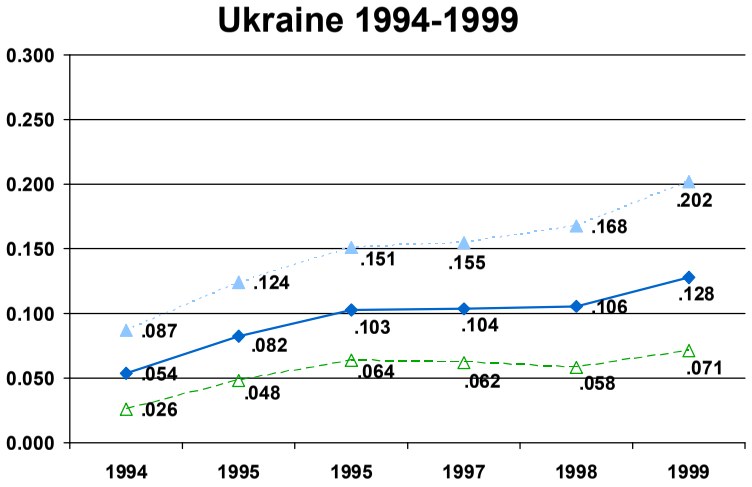
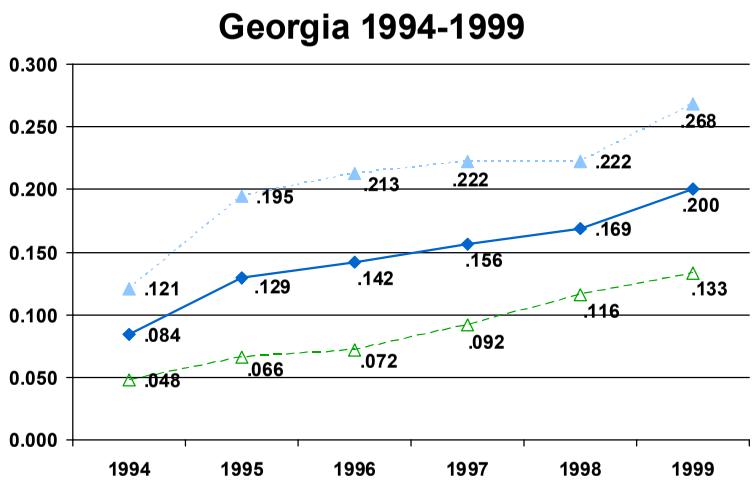
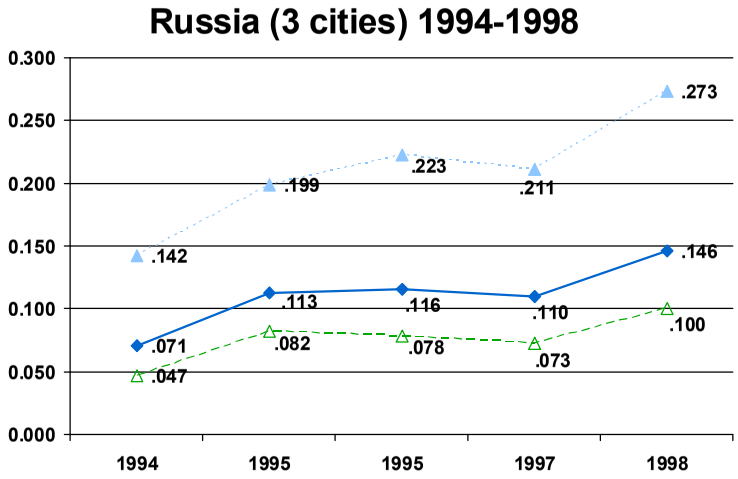
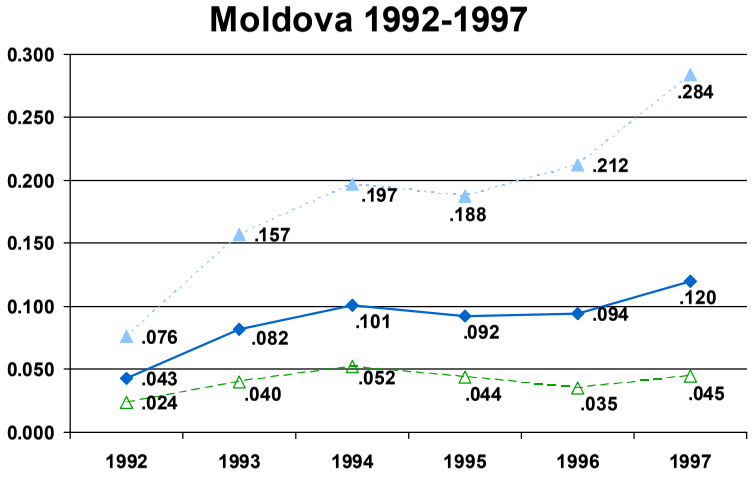


Figure K. Trends in contraceptive failure rates:









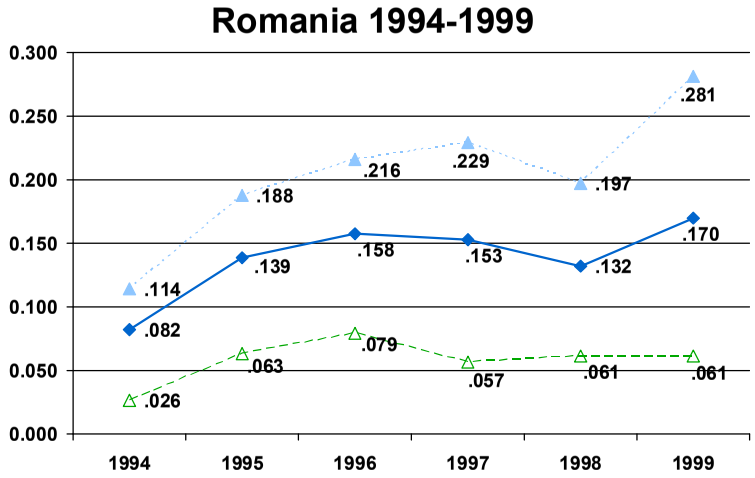


Illustration of the model
Armenia 2000

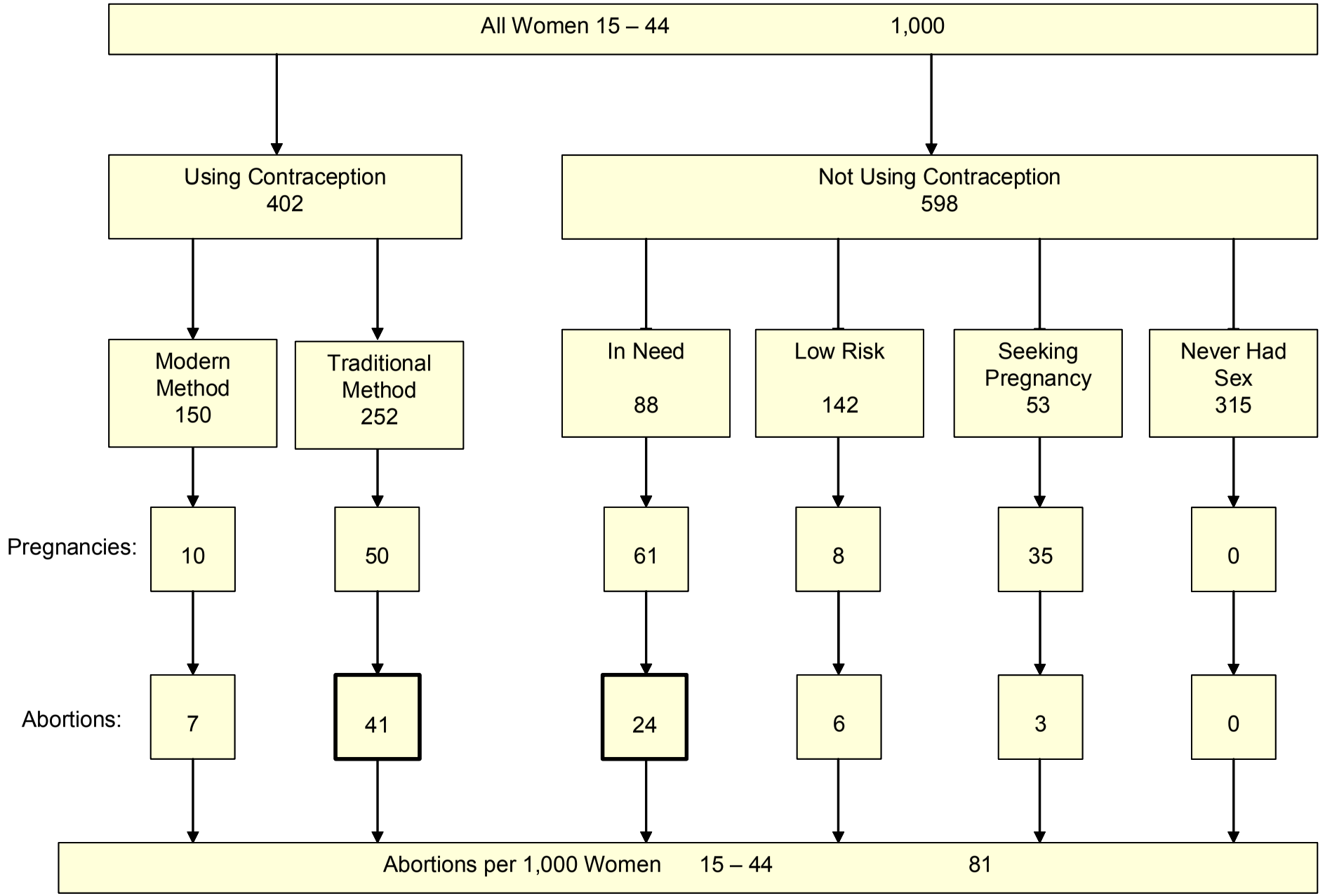


Figure L. Components of abortion (%)

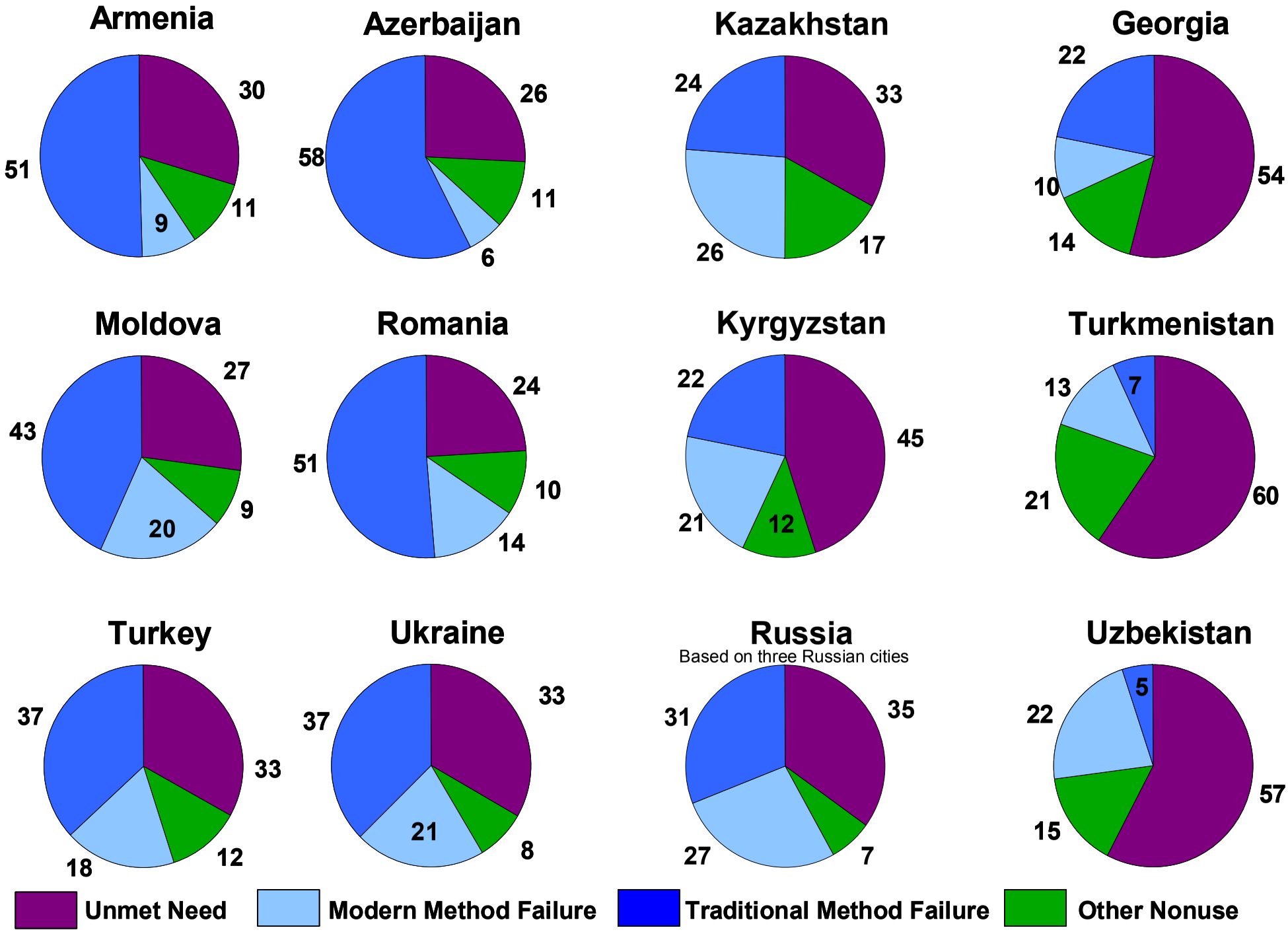


Figure M. Percent reductions in abortion rates if all unmet need shifted to modern methods

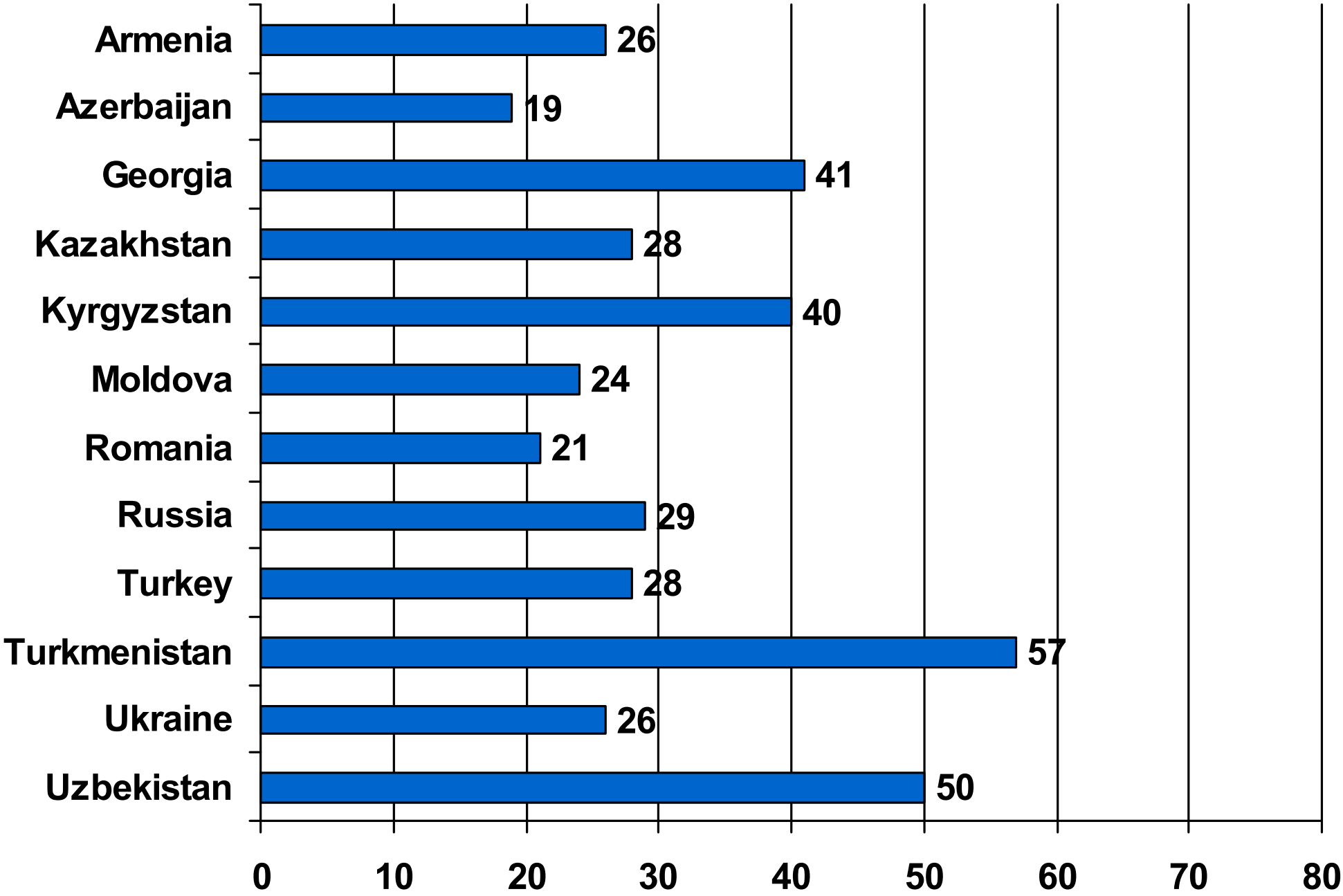


Figure N. Percent reductions in abortion rates if traditional method use shifted to modern methods

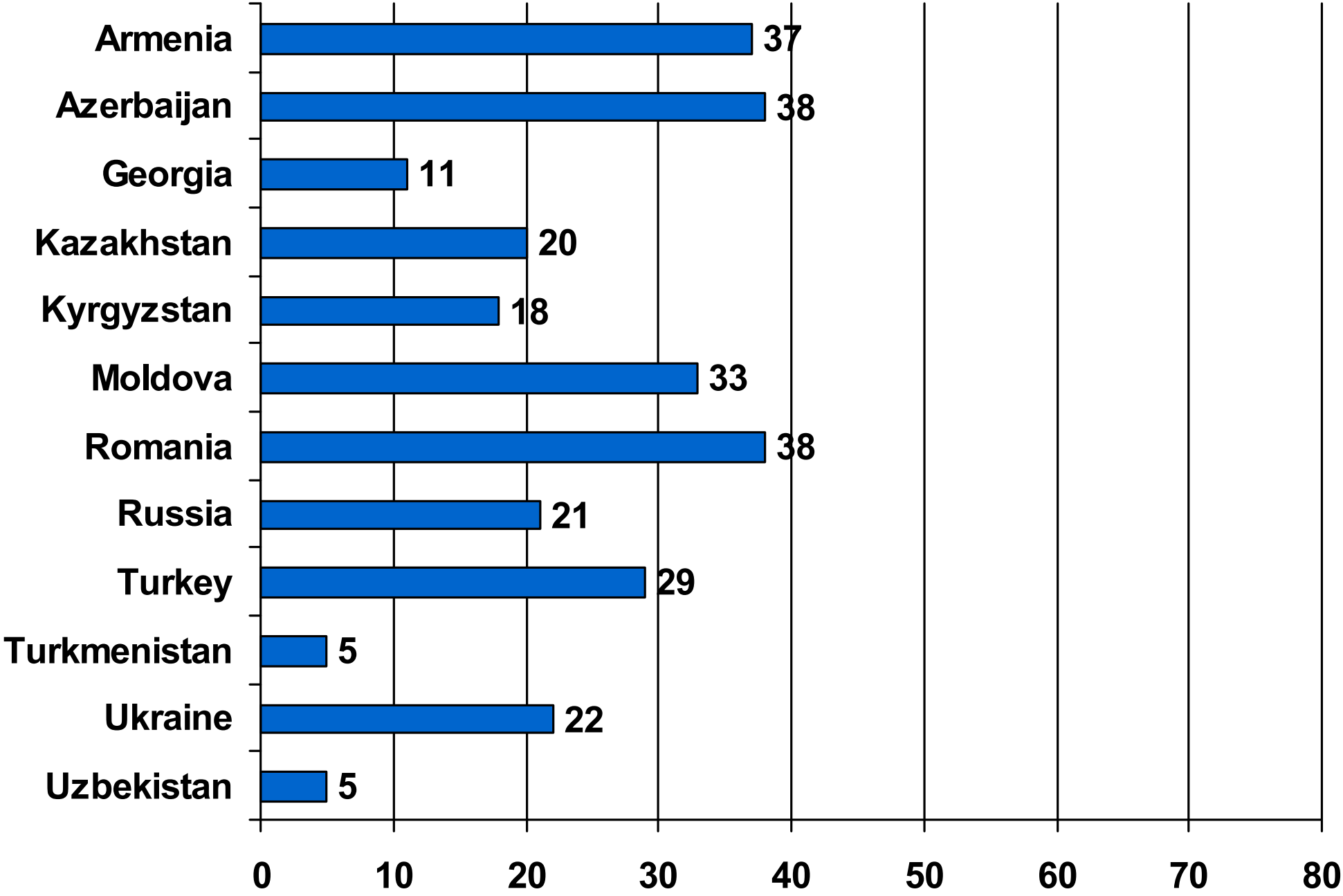


Figure O. Percent reductions in abortion rates if all unmet need and all traditional method use shifted to modern methods

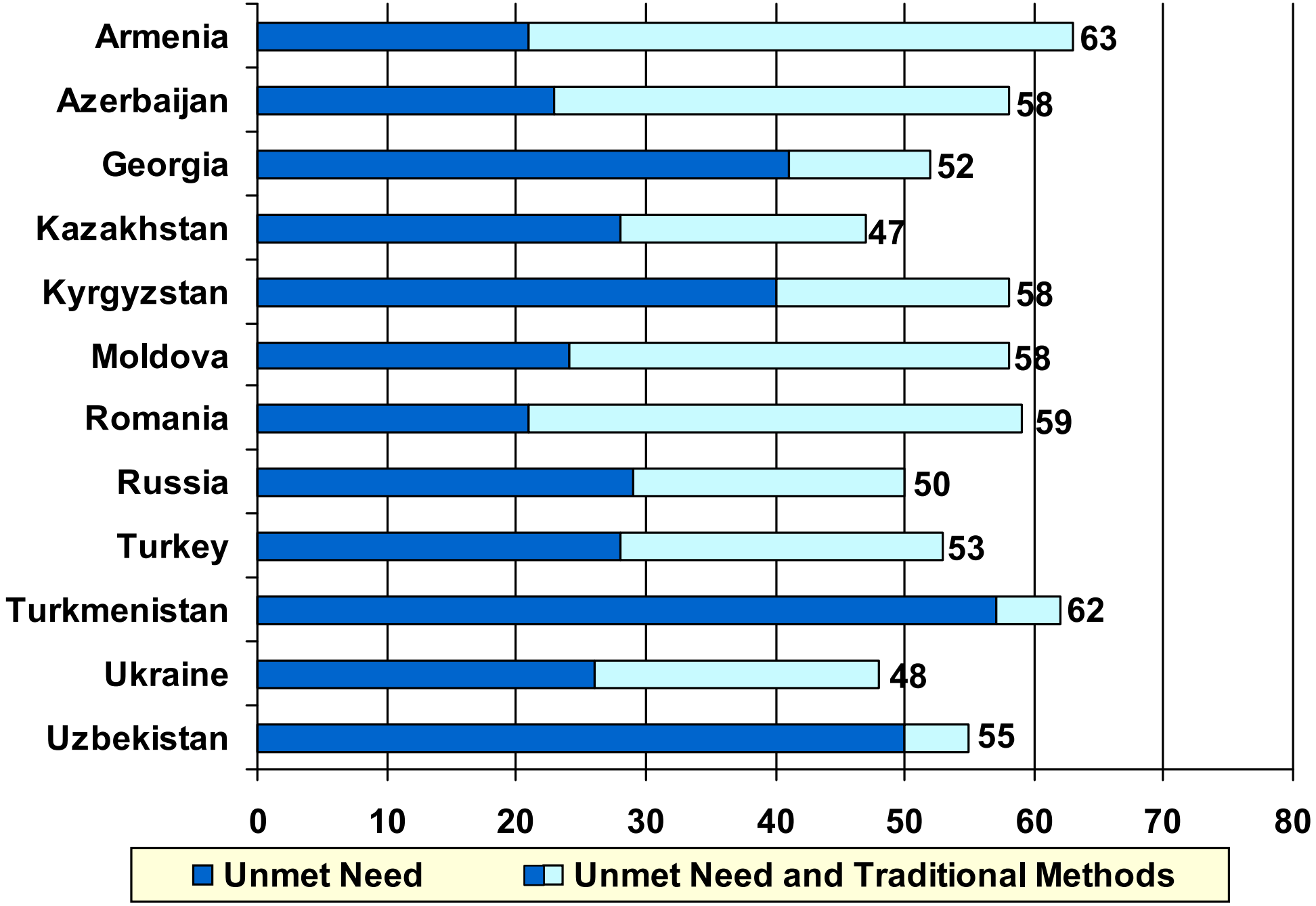
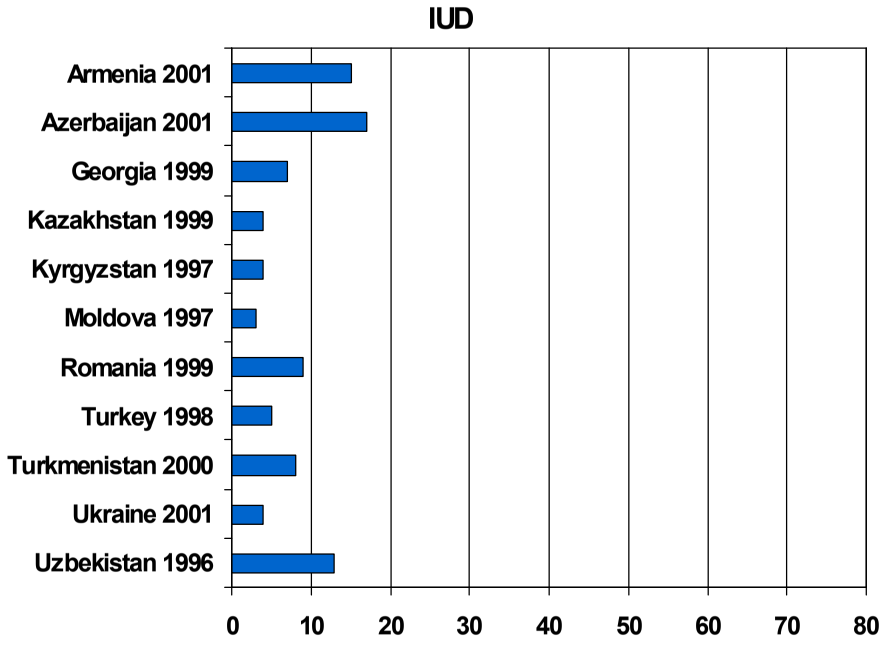
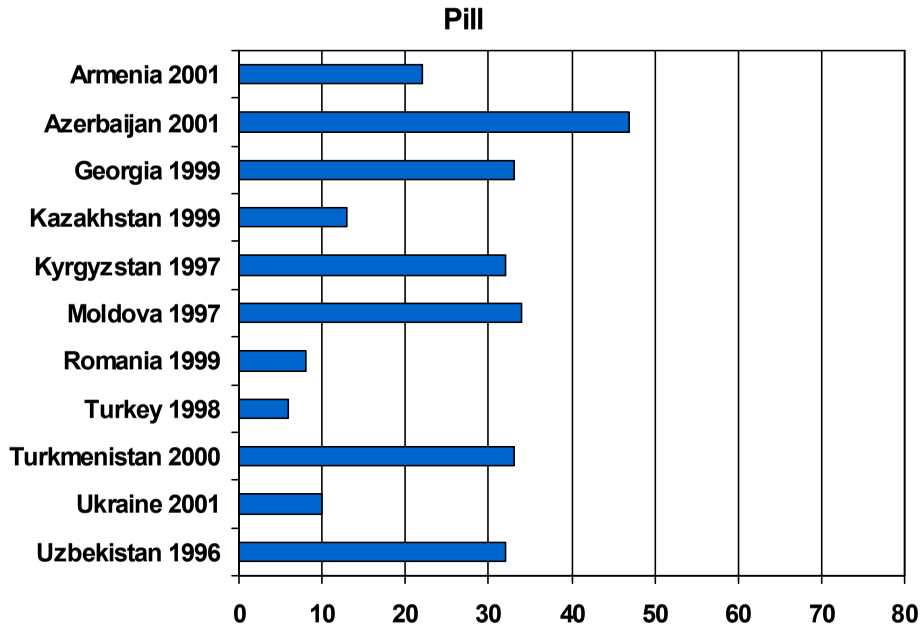
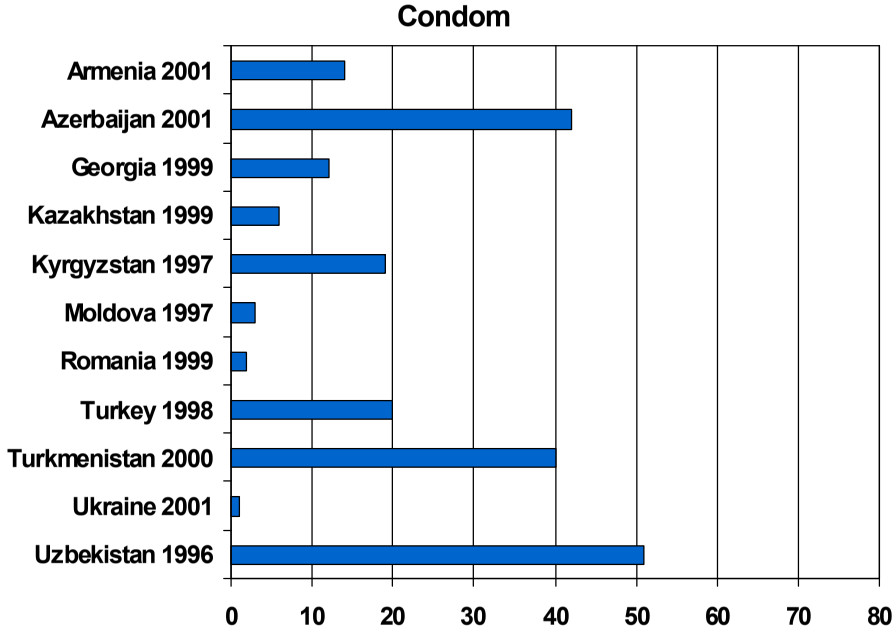


Figure P. Percentage of women who *never* heard of particular modern methods







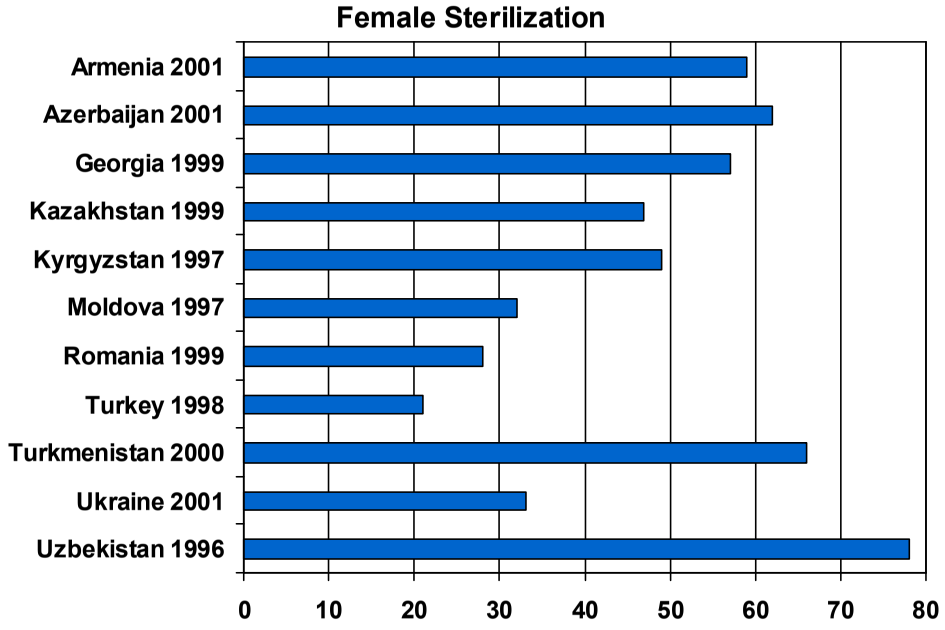
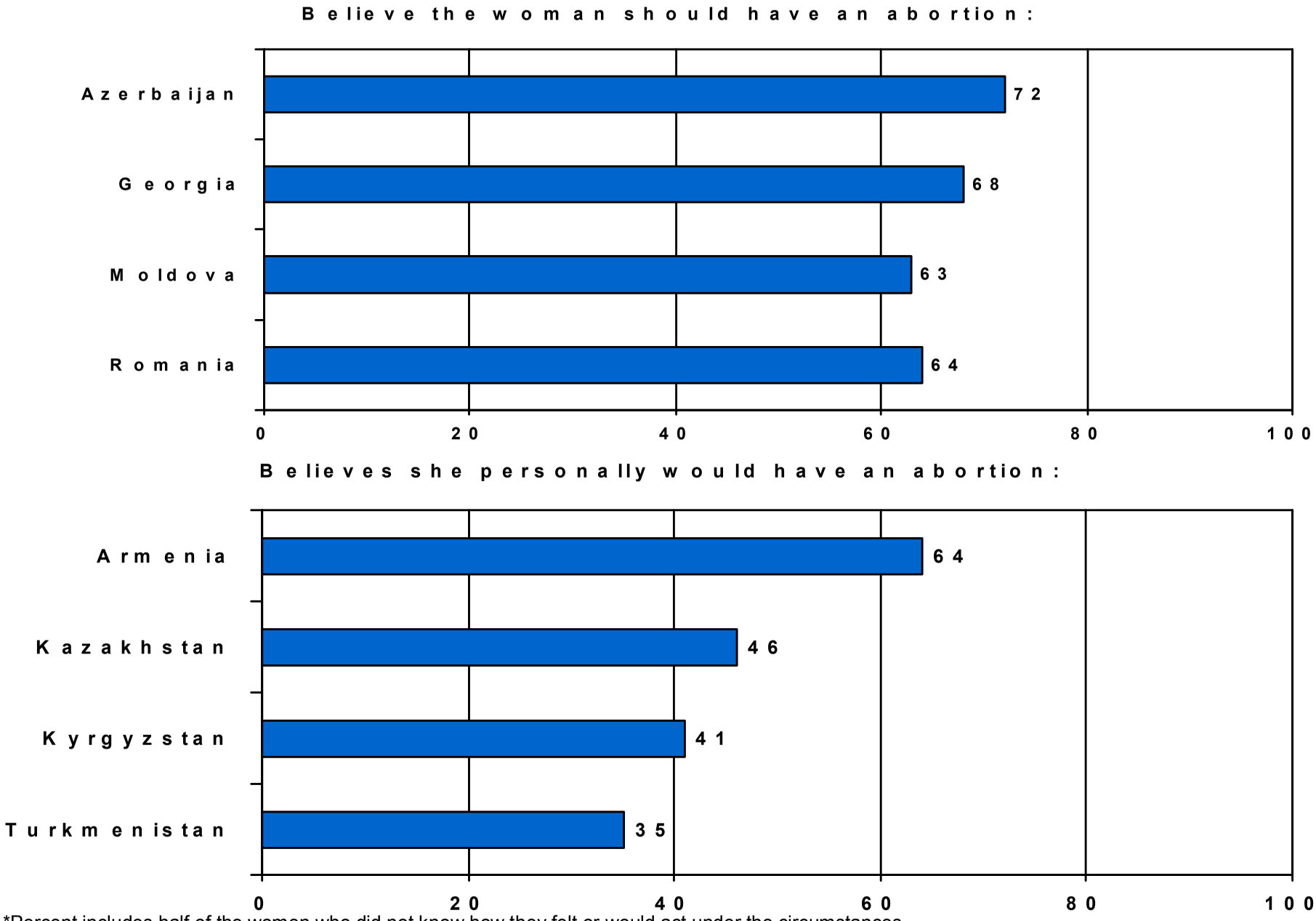


Figure Q. Percent who feel that a woman with an unwanted pregnancy should have an abortion or who would personally have an abortion*



*Percent includes half of the women who did not know how they felt or would act under the circumstances.