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ON MARRIAGE AND MIGRATION

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Abstract. Marriage, migration and related phenomena such as marital stability, fertility and investment in human capital may be better explained by studying marriage and migration *jointly*. We thus proceed in this paper to explore the role of migration in obtaining joint labour-market and marriage-market equilibrium. This facilitates identification of several novel and testable hypotheses.

Résumé. Mariage et migration

C'est en étudiant *conjointement* le mariage et la migration que l'on peut expliquer le mieux ces deux phénomènes et d'autres qui leur sont liés, tels la stabilité matrimoniale, la fécondité et l'investissement en capital humain. L'auteur adopte cette démarche pour étudier le rôle de la migration dans la détermination d'un équilibre simultané du marché du travail et du marché matrimonial. Ceci facilite la formulation de plusieurs hypothèses originales qui peuvent être testées.

1. Introduction

Migration may be conceptualized as an action that agents take to find a match in any market where geographical proximity impinges upon the productivity of the match. Two markets in which many agents participate are the labour market and the marriage market. These two markets interact in an important way because migration that facilitates

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a match in the labour market will also influence the prospects available and the outcome obtained in the marriage market and vice versa. In some ways the issue is similar to the choice of which consumer good to buy when each good contains a particular fixed combination of attributes. The consumer must consider the cost of the good in relation to his valuation of each of the attributes contained in the package. Likewise, individuals who contemplate migration need to compare the cost of moving with the value of the potential outcome in both of the relevant markets. The joint nature of the equilibrium may be particularly striking for young adults who are completing their schooling and leaving their parents' homes. Labour migration at this age is high as individuals make their initial job or career choices. Usually, at the same stage in their life cycles they are also making decisions about first marriages [see Grundy and Fox (1985)]. A second important connection exists between marriage, labour-market opportunities, and migration because individuals often live as part of a family unit. Thus a family migration will affect the potential matches in the labour market and the marriage market for *all* family members, particularly when the family remains intact. A migration decision that maximizes family utility will often conflict with an individual member's maximizing decision. If the individual is not compensated, this situation can lead to the breakup of the family.

Despite these apparent linkages, most research on migration has focused on the *individual's* decision and how that decision relates to labour-market opportunities [see, however, Mincer (1978) and Stark (1978) for exceptions]. A few researchers have begun to examine the distribution of gains and losses due to migration for married men and women [see Sandell (1977) and Maxwell and Shapiro (1983)], but they, too, have ignored the more complicated interactions. Similarly, research on marriage and divorce tends to ignore migration as a causal factor or as a consequence, e.g., of divorce, although the correlation between state migration rates and state divorce rates in the United States has been noted.

It is our view, however, that marriage, migration and related phenomena such as marital stability, fertility and investment in human capital may be better explained by studying marriage and migration *jointly*. We thus proceed in this paper to explore the role of migration in obtaining joint labour-market and marriage-market equilibrium. This facilitates identification of several novel and testable hypotheses.

2. Sex-specific labour-market and marriage-market incentives

Assume that the nature of the demand for labour and the supply response which involves migration are sex-selective. For example, large expansion in urban construction activity draws a disproportionately large number of males from the village sector. Motivated by wage differentials, such migration may bring about an array of reactions in the marriage market of the sending village. Assuming an underlying desire to marry, the response may be split between a price effect – a lower supply price of brides, and a quantity effect – fewer women ending up in marriage or more women spending, on average, a shorter spell of time in marriage (as the remaining males now marry more frequently and more than once). But since the local shortage is not a global shortage, the response need not be split in this manner; village women wishing to marry may now migrate to the urban sector characterized by a sex ratio which, from their point of view, is more favourable to marriage. The reason for migration is an expectation that the rate of meeting ‘marriageable’ men will be higher. [This holds true even on the basis of a random drawing (pairing).] Obviously, meeting a trading partner need not result in a trade but, especially if marriage markets are culturally and ethnically, yet not spatially segmented, both the arrival rate of ‘marriageable’ partners and the success probability associated with meeting a partner will be higher; the fraction of the population having the minimal necessary set of traits is larger.

Note that especially if they succeed as migrants, the men who migrated earlier will be able to afford to marry while in the urban sector as this would mitigate the urban sector income and price constraints, which are probably less conducive to family formation than the income and price constraints operating in the rural areas.¹

It is thus possible to differentiate between two types of migration: a labour-market migration and a lagged marriage-market migration. Note that when it comes to the construction of the regression equations, the dependent variable in the former enters as the independent variable in the latter. And if migration is regressed only on wage, such that a cross-market spillover from cause to conduct is overlooked, then in the

¹ A related point is that since the urbanization process is positively and strongly associated with market employment opportunities, which are less contingent upon intra-familial complementarities and exchange than is employment in rural areas, the average duration of marriages and/or the propensity to marry will be adversely affected.

structural equation there will be an upward bias in wage as an explanation of labour migration. Furthermore, note that even if in an adjacent but culturally and ethnically distinct market, for example, migration with a reverse sex selectivity takes place, a high likelihood of a second-round marriage migration prompted by an earlier labour migration *and* following its same route can be expected if the ('institutional') segmentation of marital markets is sharp.²

Assume, as it is typically the case, that if they marry, women marry men who are older than they are by a number of years and that in a given sending-community marriage is universal. Now, a marriage-migration response to labour migration is unlikely to be sex symmetrical. If the initial labour migration is by single females, the remaining males may locally marry younger women. But if the initial labour migration is by single males, the remaining women cannot locally marry older males (this follows from the universal marriage assumption) or younger males (this follows from the assumption of a male-female positive age differential in marriage). Thus, a simple testable prediction is that the elasticity of the response of marriage migration to male-selective labour migration will be larger than the elasticity of the response of marriage migration to female-selective labour migration. If (all) migration is regressed on a wage differential, the upward bias in the structural equation will be larger in the case of male-selective labour migration.³

² In extreme circumstances, when societal considerations place a high value upon marriage, society may take recourse to drastic measures to induce migration in order to facilitate the desired marriages. In the story of the concubine in Gibeah (Judges 19–21), the killing of all the children of Benjamin except 600 men was associated with an oath by the men of Israel not to give their daughters 'unto Benjamin to wife'. Subsequently, in order to rectify this, a combined institutional and market strategy was adopted: a surplus of 400 wives was artificially and brutally created in Jabesh-gilead by slaying all males there, whereas the remaining 200 wives were to be 'caught' by the children of Benjamin in Shiloh and 'imported' to the land of Benjamin. This story provides a sharp illustration of the cost (the shadow price) associated with 'institutional' segmentation of marital markets – a refusal to marry into another ethnic group. Presumably, such marriages could have taken place since it is highly likely that as a consequence of frequent wars of the time, a 'surplus' of females would have existed in some neighbouring nation.

³ It is also possible that the male-selective labour migration will result in a change in the male-female age differential at marriage. One reason why women marry older men in Less Developed Countries (LDCs) is that it is necessary for men to have saved up enough wealth to support a family or to pay the bridewealth. If male-selective labour migration leads to a lower female (bride) supply price in the marriage market at the sending end, women may be willing to marry younger men who have saved a smaller amount of wealth.

Furthermore, consider a situation in which rural-to-urban migration is age and sex-selective largely because of the nature of the differential rural and urban market demands for labour. A marriage-market consideration might better explain the residual migration pattern, i.e., that pertaining to the other sex. For example, in mid-nineteenth century England, there was little market demand for female labour in the countryside after the demise of cottage industry. By one account [Williamson (1985)], there is some evidence suggesting that while rural male children switched from being net marginal economic burdens to net marginal economic benefits between ages 10 and 13, females did not; while urban females switched from burden to benefit between ages 9 and 11, this switch did not occur in the countryside. And, indeed, it appears that for the teen ages, female migration was much greater than male migration. Because the male children did switch from burden to benefit while staying in the countryside, as pointed out, it is possible their parents had an additional marriage-market based incentive to constrain the migration of their sons. If females desiring to marry return to the countryside from the male-deficient towns, parents of male children can expect to reap an additional gain associated with the accumulated wealth of their sons' brides. Indeed, this reasoning receives some support from evidence of there being hardly any remittances to parents from migrant children during the early-to-middle nineteenth century (partly due to the absence of efficient capital markets) and of there being a sharp drop in female rural-to-urban net migration rates in their late teens and of actual return migration of females of marital age. In short, parents of male children could have enjoyed some of the benefits accruing to female migrant children by discouraging their sons from migrating, drawing upon a marriage-market mechanism as a means of partaking in a migration-induced wealth increase of young females.

Parents may strategically choose the level of investment in their children's human capital in order to affect their migration behaviour while in marriage. To proceed we shall make several assumptions that appear to replicate fairly well the stylized facts pertaining at least to today's US economy and society. Suppose that daughters tend to support their parents more than sons do (for example, daughters carry more extensive responsibilities for aged parents) and that the level of a child's support is positively related to both the child's economic well-being and to his/her proximity. Suppose, furthermore, that the likeli-

hood of a child, once in marriage, migrating in response to given expected joint earnings (i.e., of both spouses) elsewhere is a declining function of the difference between these earnings and the couple's actual income, and that earnings are positively related to human-capital endowments. Suppose finally that in human-capital terms, by and large girls 'marry up' whereas boys 'marry down', such that, for simplicity of exposition, marriages are matches wherein a husband possesses one more unit of human capital than does the wife. Given these assumptions, parents will tend to make larger human capital investments in their daughters than in their sons. The reasoning is straightforward. If parents invest n units of human capital in their son he will end up marrying a woman with $n - 1$ units of human capital whereas investing n in their daughter will entail her marrying a man whose human capital is $n + 1$. Clearly, in terms of the value of the marriage-market match, the returns to investment in human capital in the latter case are greater [returns per unit are $(n + 1)/n$] than in the former [returns per unit are $(n - 1)/n$]. The higher match returns are valued more by the *parents* because of our assumption that they derive greater support from a daughter than from a son (entailing them having an incentive to see to it that a daughter is well married (in income-earning terms) that is stronger than the corresponding incentive pertaining to a son). But the higher parental returns also accrue because of the dampening effect of the married couple's higher earnings on its possible migration in response to given expected earnings elsewhere. Whereas the married daughter's household will command $2n + 1$ units of human capital, the married son's household will command only $2n - 1$ units. Thus, the given higher expected earnings elsewhere will be less likely to entail migration by the daughter's household than by the son's. And indeed, that – in terms of human-capital investments – parents in the US favour girls has been noted, though only loosely explained, by Behrman, Pollak and Taubman (1986).

3. Marital stability and intra-marital distributional responses to sex-selective labour-market migration

An additional effect has to be recognized; it has to do with the impact migration has upon existing marriages and the labour-market decisions of those who are married and living in the *receiving* commun-

ity. In the United States, for example, aggregate data indicate that migration rates are higher for never-married men than for never-married women [United States Bureau of the Census (1970, table 7)]. This difference will lead to an increase in the male–female sex ratio in areas that experience net in-migration, and a decrease in the male–female sex ratio in areas that experience net out-migration. Consider then an economy where output is produced by males and females who are paid a wage equal to their marginal product. Male migration to the economy takes place, raising the male–female sex ratio and along with it the wage rate for females.⁴ If the distribution of the value of marriage in favour of a spouse positively depends upon his or her relative bargaining power and if, in turn, this power is positively affected by the spouse's market position [Stark (1984)], the terms of the marital agreement will probably be renegotiated. Such a renegotiation process may result in women who stay married reducing the costs of marriage-specific activities that are disproportionately borne by them, e.g., fertility and child-rearing or, alternatively, in the breakup of marriages. If, as suggested below, the positive substitution effect associated with the relevant variable (women's wage) is stronger than the negative income effect, women's participation in the labour force will increase, which may partly mitigate the initial increase in their relative wage. Such increased participation could, in itself, also lead to erosion of existing marriages and their dissolution. Thus, a simple migration-marriage prediction emanating from this reasoning is that when the conditions underlying it hold, male-selective migration into a community is positively correlated with the rate of marital dissolution in the receiving community.

⁴ A simple proof might be instructive. We wish to show that male migration will entail an increase in the wage rate of females – and a decline of the wage rate of (all) males (including the married non-migrants). We assume that output is produced by a twice-differentiable production function $G(L_F, L_M)$. We also assume a competitive (profit-maximizing) wage determination. Hence,

$$G_1 = \frac{\partial G(L_F, L_M)}{\partial L_F} = W_1 \quad \text{and} \quad G_2 = \frac{\partial G(L_F, L_M)}{\partial L_M} = W_2,$$

where W_1 , W_2 are the wage rates of females and males respectively. By totally differentiating these equations, we obtain $dW_1 = G_{11} dL_F + G_{12} dL_M$, $dW_2 = G_{21} dL_F + G_{22} dL_M$. With male-selective migration (L_F is constant), the first term in each of these equations vanishes, hence $dW_1 = G_{12} dL_M$, $dW_2 = G_{22} dL_M$. From the standard assumptions of production theory – production inputs being supportive and declining marginal products, viz., $G_{12} > 0$ and $G_{22} < 0$ respectively – we obtain $dW_1 > 0$ and $dW_2 < 0$.

What is striking about this case is that the destabilizing consequences in the marriage market arise from actions taken by agents who do not participate in it. A spillover from the labour market, due to the interlinking of markets, is the cause. The incoming male migrants need to substitute for native males in the labour force, but not for native males as bridegrooms (as, for example, might have been the case with respect to Englishmen in Quebec).

4. The effect of marital status on the returns to migration as an investment, and marriage-related responses to this effect

Migration is neither an occupation nor a profession. But human-capital investments can be made in or toward it. The treatment of migration as an investment rather than as a transaction cost invites interesting associations with marriage. The level and composition of other investments and the choices pertaining to them may be highly conditioned by migration, especially if the cross rate of return to the joint decision of making a given investment *and* pursual of migration is substantially higher than the return to each alone. Furthermore, since migration constitutes a response and adjustment to changes in labour markets, it may assume a particularly important role when these changes are large (structural). If being married constitutes a constraint upon migration, then a shift in structural parameters pertaining to labour markets will be negatively correlated with marital rates and the average duration of marriage and positively correlated with marital age and rates of marital dissolution. If being married is considered to be conducive to migration, the signs of the correlations will be reversed. For example, when market institutions in general and capital and insurance institutions in particular are not too well developed (especially as is the case in LDCs), a spouse may assume an important role in conferring financial support and insurance benefits and, therefore, being married will facilitate rather than hinder migration.⁵ It is thus

⁵ Note that in LDCs, an important rationale for having children is that they serve as assets. The demand for children as assets may depend upon the extent to which they raise the mean family income per person, and reduce the uncertainty of family income per person. When children confer these benefits *as migrants* [see Katz and Stark (1985)], marriage and migration are subject to an additional link; marriage constitutes an input in the production of children who, upon reaching adulthood, act as migrants.

tempting to speculate that the major structural changes taking place in the industrialized countries in the 1970s have significantly increased the importance of migration as an adjustment device to changing labour-market opportunities, placing tension on marriages and leading to higher rates of dissolution. The statistical evidence pertaining to the first and third elements in this causation is fairly clear [see Mincer (1985)], but the association with migration has yet to be tested.

Clearly, marriage may constrain migration in ways that are quite subtle. The typical account of the increased participation in the labour force of married women in the advanced economies over the last three decades or so attributes a major role to the rise in the forgone value of time spent in marital activities. This rise, postulated to be attributable to an increase in the demand for female labour, leads to substitution away from 'marriage production'. Clearly, for the growth in the earning power of women to be *realized*, women have to participate actively (and to lengthen their participation) in the labour force, which presupposes that they invest in market-oriented, earning-raising human capital (marketable skills). Not only does migration constitute an element in such participation and investment, it may also be an integral part of many jobs when the full realization of the benefits associated with them presumes migration-linked job mobility, job promotion and travel. Mutual reinforcement may play a role here; if migration results in a steeper wage profile, the incentive for future participation in the labour force is greater, which tends, in turn, to enhance even further the already-mentioned dominance of the substitution effect over the income effect. If migration pays off well, it becomes even more desirable and is pursued at the expense of competing activities.

A structural change may also be demographically induced. Assume, for example, an unusually large cohort reaching adulthood ('baby boomers'). Suppose, again, that women always marry men who are older and hence, that there is a relative scarcity of bridegrooms. Assuming that marriage markets are competitive then, as scarcity generates value, women who wish to 'marry well' (positive assortative mating) will have to increase their market value. This, in turn, may require larger investments in skill acquisition, training and possession of superior earning power and jobs. To a small or large extent, these requirements may mandate migration *as a response mechanism* to differential labour-market opportunities. This argument holds, of course, in addition to an enhanced need to engage in migration that

may arise if marital opportunities as such (mere presence of potential partners) differ sufficiently across marriage markets to warrant migration.

In general, higher labour-market pay may be contingent upon there being greater continuity of work and fewer interruptions in work. In turn, such greater market orientation might mandate a swift response to changing opportunities requiring migration between labour markets. The tension between family commitments and migration response associated with market commitments is partly resolved by erosion of the former, which assumes the form of shorter marriages, postponement of marriage, increased dissolution of marriage and the production of smaller families. Put somewhat differently, a resolution may be conferred by changes in the inputs going into a marriage and the output-mix generated by it. Substitution of investment in market-oriented human capital for investment in marriage-specific human capital illustrates an input response, whereas a smaller family size/reduced fertility illustrates an output adjustment. The timing of fertility may also be adjusted. To demonstrate this point assume, for example, that the timing of the first birth depends upon maximization of life-time earnings. From the point of view of married women, such calculations will have to account for costs and returns associated with acquisition and depreciation of human capital due to temporary withdrawals from the labour force associated with raising children. In those instances (e.g., medicine, academic careers) where the quality of the *initial* labour-market match is important in shaping the profile of life-time utility, where career opportunities are available to women, and where migration is important in effecting a high quality match between skills and jobs, it makes sense to keep the costs associated with migration low, hence to postpone childbearing. In such situations, migration will tend to be associated with a first birth interval of a long duration. However, if the supply of jobs open to women is such that the life-earning profile hardly depends upon the quality of the initial match so that migration makes little difference, the association between migration and the first birth interval may not be signed one way or the other.

This argument could be generalized: marriage and migration may be looked at as means to or stages in a plan aimed at maximizing life-time utility. The level of this utility is sensitive not only to the timing of each one singly but also to their ordering. This is because of the existence of

cross effects and is particularly so when such effects are powerful. Individuals will thus choose a given sequence strategically; a woman in the Philippines will migrate *while single* to an urban area because her migration is conducive to occupational mobility and to securing a higher social status. By thus increasing the (expected) value associated with a subsequent entry into the marriage market, she ends up with higher expected life-time utility than would be the case had she chosen the reverse sequence [cf. Lauby (1987)]. The effective rate of return to the appropriately-timed migration (that is, the rate calculated while capturing the full effect that accrues from complementarities) is thus greater than the direct rate of return. Similar considerations might account for the tendency of rural women in preindustrial Northwest Europe to migrate into service in other households. 'Savings accumulated during service were probably often a substantial contribution to the economic basis of a woman servant's subsequent marriage' [Hajnal (1982, p. 495)].

Concerning the input response, marital formation has an obvious spatial dimension in that the contracting parties engage in production and consumption of services that, for the most part, must be consumed when and where produced; hence, almost by definition, marriage entails cohabitation and the sharing of a household. Likewise, separation and divorce require physical relocation. In an environment characterized by a 50 per cent probability of marital dissolution, if in half the cases the husband leaves the household, the probability of a dissolution-associated move for a person entering marriage is one quarter – surely too high to be ignored in investment planning. Often such moves are strongly associated with 'real migration' either to reduce the psychic costs associated with the dissolution ('to start a new life') or the pecuniary costs, e.g., to avoid child-support payments. It may thus be somewhat difficult to disentangle the migration-effect (or incentive) from the dissolution-effect upon market-oriented human-capital investments of married persons in an environment characterized by high rates of separation and divorce *and* migration, but the estimated coefficient of the effect of separation and divorce in such an investment function may overstate the true coefficient.

Finally, an interesting relationship between earnings, divorce and migration may derive from the realistic assumption, combined with other assumptions, that wage rates for men are higher than for women. Consider a situation whereby location decisions are made jointly by the

married couple so as to maximize total wage income. If the inter-market variation in male wages is larger than the inter-market variation in female wages, and if female wages are not strongly positively correlated with those for males, then when it comes to a locational choice, the husband's wage will weigh more heavily than the wife's. (In the maximand, a premium will be attached to the husband's wage.) In the case of divorce, the husband (whose labour-market location while in marriage better matches the location when single) would be less likely to have a wage-based inducement to migrate than the wife who, under these assumptions, may have sacrificed her own wage prospects while in marriage. All other things being equal, under these circumstances the prediction would then be that in the case of divorce, higher migration rates by women than by men will be observed. To some extent this prediction is confirmed by evidence presented in Sander (1985); in the United States (1970) farm and rural-nonfarm divorced women migrated more frequently than farm and rural-nonfarm divorced men.

In addition, note that migration followed by divorce may reveal an otherwise unobserved distribution of marital wealth between husband and wife. Consider, for example, the case where the wife is a tied migrant, i.e., she joins her husband – who anticipates to gain from migration – despite her anticipated loss. Consequently, she may require some compensation in return for her sacrifice. It is quite difficult to observe such reallocation for married couples, but it might be possible to observe it for couples who become divorced. Peters (1983) shows that the amount of the divorce settlement for women in the United States is positively related to the actual marital investments made by them. Therefore, a woman who is a tied mover and who becomes divorced after a move would be better off at the point of divorce than a similar woman who did not move before divorce.

5. Conclusions

When broadly interpreted, marriage and migration share a number of common features. Both involve search and its resolution (pairing of mates in the case of the former, matching of labour and firms in the case of the latter). In both cases success in finding 'a partner' is sensitive to the availability of partners and to the distribution of their endowments and traits. Almost always, and along with separation and

divorce, marriage mandates spatial relocation which may translate into migration. Both marriage and migration may be seen as a means to an end, e.g., establishing a family, obtaining a well paying job. Both involve a movement that is associated with adjustment costs from one state (e.g., singleness, unemployment) into another (marriage, employment). The decisions to enter marriage and undertake employment or the decisions to divorce and quit a job depend on exogenous parameters, some of which are determined by the marriage market and the labour market. And, indeed, since both marriage and divorce take place in the context of broadly defined markets, they may and often are analyzed applying market concepts, theorems and solutions. Both affect labour supply. Each also commands, and is subject to, a respectable and growing economic and demographic literature. Yet, somewhat surprisingly, we could not pinpoint one single systematic attempt that checks through the interactions between marriage and migration; no study we know of provides explicit delineation of the causal relationships between marriage and migration. We have attempted in this paper to begin to rectify this state of research.

Essentially, we have developed our presentation along three modes of classification: (i) We discussed individual decision-making pending possible migration prior to or following marriage. Individual migration may be undertaken due to labour-market considerations, marriage-market considerations or both. An individual may migrate to improve his or her employment prospects and will postpone marriage if being married hinders such migration. The formation and dissolution of marriage has also been analyzed in the context of changes in the marriage market resulting from population changes brought about by migration, leading, for example, to a change in the sex ratio. (ii) In comparison to a single person, a married couple may find it easier or harder to migrate, depending on the nature of the labour market and whether both spouses work or not. It might be easier for both to find work while in marriage as marriage provides self-insurance by sharing the individual risks of unemployment. Alternatively, a married couple may move because of a better job for one spouse only, yet the move is made somewhat more difficult when the other spouse's job cannot be replaced by an equivalent job. (iii) Marriage dissolution could cause migration when marriage is the only reason that has kept a spouse from moving. It may cause migration due to the added effect of psychological reasons – 'to start a new life'. There are links between our three

modes of classification related to the notion of intertemporal planning. An individual who plans to migrate may well postpone or set forward his or her marriage if a married couple migrates less or more easily. And if one spouse considers the probability of divorce to be high, he or she will be more reluctant to move along with his or her partner to a new location if he or she bears significant individual moving costs. In the preceding sections we have elaborated on these and related issues and suggested several empirical implications. Among social scientists there appears to be a fairly strong tendency to confine scholarly work to well, yet narrowly defined domains – to labour markets (by economists), to marriage processes (by demographers and sociologists). However, as the above discussion demonstrates, an integrated research agenda can delineate interesting new implications. We hope that our ideas will stimulate additional formulation and testing of these implications.

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