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**THE PRICE OF LOVE:
MARRIAGE MARKETS AND INTERGENERATIONAL TRANSFERS
IN COMPARATIVE PERSPECTIVE**

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WHY DOWRIES?

Let our imagination fly to different places and times. Here is Rome in the first century CE. Marcus Aurelius, son of Marcus Tullius, was getting married to Lucretia, daughter of Iulius Quintus who also had two sons. Two centuries earlier, a similar scene was occurring in Athens, where Alexander, son of Phylippus, was getting married to Elena who had one brother. In about 550 CE, in Babylon the Jew Jonah ben Ananieh was getting married to Rachel, daughter of David, whereas in about 745 CE in Fustat Mohamed was getting married to Nasir who had three brothers. In about 1300, in China Ming son of Ping, was getting married to Lin who had no brothers, whereas in Florence Niccolò, son of Cristofano, was getting married to Ginevra, daughter of Lorenzo.

What do these grooms and brides, and their respective families, have in common despite living in very different places and times?

Once married, the brides—Lucretia, Elena, Rachel, Nasir, Lin, and Ginevra—left their natal families and moved into their respective grooms' households. The grooms—Marcus Aurelius, Alexander, Jonah, Mohamed, Ming, and Niccolò—kept living with their parents and working with/for them. Lucretia's, Elena's, Rachel's, Nasir's, Lin's, and Ginevra's fathers provided them with dowries at the time of the marriage. The grooms managed the dowries until

the marriages lasted but the brides (or their families in some cases) retained the ownership over them. When, say, Ginevra became a widow, she was entitled to get her dowry back and she could remarry. Like the grooms who kept living with their parents after the marriage, the brides' brothers also continued to reside with their own parents, to take care of them, and to contribute increasing the family wealth.

In the societies described above and in societies with similar characteristics, how should parents allocate their wealth among their children? Should they wait and leave bequests to both the daughters and the sons? Or should they give dowries to their daughters at the time of the marriage, and leave bequests to their sons? If so, what objectives do parents try to pursue in making this allocation decision? In answering these questions, we provide a new theory of dowries.¹

As explained in Chapter 1, the standard economic model of dowries, implicit in the seminal work of Gary Becker (1981), assumes that dowries (and brideprices) are used as pecuniary transfers to clear the marriage market. The model has two predictions. When grooms are relatively scarce, brides pay dowries to grooms; when brides are relatively scarce, grooms pay brideprices to brides. Moreover, a dowry is a component of bridal wealth. As other components of bridal wealth grow, dowries will disappear and may be replaced by brideprices.

While very insightful and adopted by both economists and non-economists, the standard economic model of dowries faces two potential objections. First, if the main purpose of dowries

¹ The theory described in this chapter, its predictions, and the historical discussion are those described in my article with Aloysius Siow "Why Dowries", *American Economic Review* (September 2003). The reader can find there the full-fledged description of the model, the propositions, and the proofs.

is to clear the marriage market, how do marriage markets clear in societies without dowry or brideprice? In most modern societies that previously had dowries, brideprices did not emerge when dowries disappeared. It is implausible that the value of other components of bridal wealth and/or the relative value of women in marriage rose until the value of dowry and brideprice needed to clear the marriage market were zero and then remained unchanged thereafter. Second, the standard model of dowries cannot account for why in many dotal societies the timing of intergenerational transfers is gender specific, with parents assigning dowries to their daughters and leaving bequests to their sons. As illustrated in Chapter 2, this feature of dotal societies has been first noticed by the anthropologist Jack Goody (1973), and his observation has been confirmed in different dotal societies. However, Goody did not provide an explanation for this “diverging devolution.”

Here we present a theory of dowries that is consistent with the standard economic model without being open to the two objections discussed above. In doing so, we merge Becker’s and Goody’s approaches to the study of dowries and we show that one can explain many features that characterize societies with dowries. In particular, at the market level, our model of marriage market clearing follows the standard economic model. We assume that the marriage market, with or without dowries, clears by wealth matching between brides and grooms.² However, unlike the standard economic model, we do not take as exogenously given the wealth of the brides and grooms. We make these wealth levels endogenous by recognizing that in most dotal societies,

² In transferable models of the marriage market, complementarity in husband's and bride's wealth is sufficient to generate positive assortative matching in marriage by wealth (Becker; and Weiss 1997). In non-transferable models, wealth matching occurs when husband's and wife's wealth are public goods in marriage (Lam 1988; and Peters and Siow 2002). See also Legros and Newman (2003).

the groom's and the bride's parents provide their children with this wealth (through dowries and/or through bequests). When assigning wealth to daughters and sons to make them good prospects in the marriage market, parents have to solve an intra-family resources allocation problem, which we will describe below.³

At the individual level, we also conform to the standard economic model of dowries by focusing on the substitution between different components of bridal wealth. However, the standard model of dowries implicitly postulates that pecuniary transfers at the time of marriage are part of the least costly mix of providing bridal wealth. This assumption precludes a discussion of the circumstances in which dowries are or are not part of the least costly mix of providing bridal wealth. Such a discussion, though, is relevant for understanding the modern disappearance of the dowry. The novelty of our theory of dowries is the assertion that the modern disappearance of dowries is due to a change in the environment for producing bridal wealth and not to a change in the relative values of brides versus grooms. Thus, brideprices do not have to appear when dowries disappear. Also, the general absence of pecuniary transfers at the time of marriage in modern industrial societies suggests that these transfers are an inefficient way to redistribute resources between husbands and wives, and not that there is no redistribution between spouses.⁴

A Theory of Dowries

³ The pioneering work on altruistic bequests by Becker (1981) and strategic bequests by Bernheim, Shleifer, and Summers (1985) is the starting point for studying an intra family incentive problem.

⁴ Lundberg, Pollak, and Wales (1997), and Chiappori, Fortin, and Lacroix (2002) and the references therein provide empirical evidence of such redistribution.

To make the description of the model simpler and clearer, we illustrate the theory with an example.⁵ Consider a family in medieval Tuscany with two children, a son (Niccolò) and a daughter (Ginevra). Medieval Tuscany is the backstage of this example, but one could have well considered any of the dotal societies we described in chapter 2 (from ancient Babylon, to Sung China, to medieval Byzantium).

Niccolò's and Ginevra's father (in many past societies, decisions about wealth distribution within the household were taken by the male head of household) has to decide how to allocate his capital between his two children. The capital can consist of land, livestock, shares in commercial enterprises, or money. The father cares about the welfare of both his children. When deciding how to allocate this capital between Niccolò and Ginevra, he has two options: (i) he can assign all his assets to one child only, have this child (once adult) work with these assets and produce wealth, and at his death distribute this wealth to both children through bequests, or (ii) he can assign his assets to both children (say, 50 percent to each, or two-thirds to Niccolò and one-third to Ginevra, or one-fourth to Niccolò and three-fourths to Ginevra), have them work with these assets and produce wealth, and at his death, distribute the wealth they both produced by leaving bequests.

Suppose that in the society we are describing there is a social norm such that after marriage, Niccolò, the son, continues to live and work with his parents. In contrast, Ginevra, once she gets married to Lorenzo, will leave her natal household and move into her in-laws household. How does this affect the father's decision regarding how to distribute his initial capital?

⁵ The formal model in Botticini and Siow (*American Economic Review* 2003).

Let x be the share of capital allocated to the son. This allocation to the son is unobservable by outsiders because the son lives with his parents and thus his capital is intermingled with his parents' assets. $1-x$ is the share of initial capital that is allocated to the daughter in the form of a dowry. With the initial capital received from the parents, each child can choose to either work, or shirk. Since in many of the past societies described above women did not often engage in productive activities outside the household, one could argue that the groom rather than the bride work, and use and or invest the dowry. The insights of our theory do not change at all if we assume that the groom and not the bride manage the dowry and decide whether to work hard or not with this capital they received from the bride's parents.

In contrast, what matters are two asymmetries generated by the virilocal character of Ginevra's marriage. First, it seems reasonable to assume that Niccolò, the bride's brother, has a comparative advantage in working with the natal family assets with respect to his sister or his brother-in-law.⁶ If these assets consist of land holdings, since Niccolò has been working on the family farm for several years, he is likely to have a better knowledge of the type of soil, the wind directions, the irrigation needs, and the type of crops that are better suited to be planted than his sister or his brother-in-law (the groom). The sister is unlikely to have worked on the family farm since women marry very early in many of the societies with dowries. Lorenzo, the brother-in-law (the groom) does not know the characteristics of these land holdings at all since he never worked on them. A similar argument can be applied if the assets are those of a craft or commercial

⁶ This assumption is in the spirit of Rosenzweig and Wolpin (1985) model, which explains the comparative advantage of sons who live with their parents in working the family farms as a consequence of land-specific returns to experience associated with weather variability. Outsiders, such as a married daughter and her husband, do not have the same family-specific skills. The same argument can apply to crafts and trade activities whenever family-specific skills are important in a given business.

activity. For example, Niccolò, the bride's brother, is more likely to know the business details of, say, the bank or silk shop or wool trade his father owns and in which Niccolò himself is engaged, than his sister Ginevra or his brother-in-law Lorenzo (the groom) who never worked in such activity. Therefore, the first asymmetry between brother and sister is that the virilocal marriage makes the brother (who stays and works for the natal family) more knowledgeable and able to better use his natal family's assets.

The second asymmetry stems from the following consideration. Once Ginevra marries and moves into Lorenzo's household, her parents will no longer be able to take the wealth that she and her husband Lorenzo produce in the groom's household, and cannot distribute this wealth between Ginevra and her brother Niccolò through bequests. The bride's parents simply lack property rights on the groom's household estate and wealth. Meanwhile, since Niccolò lives with his parents even after the marriage and his assets are intermingled with those of his parents, the wealth he contributes to produce can be taken away by his parents and redistribute to his sister Ginevra through the parents' bequests.

In addition to affecting Niccolò's and Ginevra's consumption, the wealth they receive from their parents (and in the case of Niccolò, also the wealth he produces while still unmarried in his parents' household) has an impact on their welfare from another point of view: their wealth will be a key variable in determining whom he or she is likely to marry and their utility from that marriage. When looking at the marriage market, we follow Becker (1981) and assume that there is assortative matching by wealth in the marriage market.⁷

⁷ Existence of equilibrium in wealth matching marriage models with parental investments is shown in Siow and Zhu (1998), and Peters and Siow (2002).

So far we described the key features of the problem Niccolò's and Ginevra's father faces. He cares about both his children. He knows that Ginevra, once married, will move into his husband's household and work for his family. Whatever Ginevra and her husband produce, Ginevra's father will not be able to take it away and redistribute it to his son Niccolò. Also, he realizes that Niccolò has a comparative advantage in working with the family's assets. Lastly, he is aware that the wealth he endows his children with, will make them a good match in the marriage market, in addition to positively affecting their welfare through the consumption. What is the best way for Niccolò's and Ginevra's father to allocate his initial wealth (his assets) between his two children and his wealth at the time of his wealth? There are two options.

Option 1: The "No Dowry" Solution

The father does not provide Ginevra with a dowry, and he allocates his entire initial capital to the son. With these assets Niccolò works hard and helps increase the family's wealth. Years later, when the father dies, the estate gets divided equally between the son and the daughter through bequests.⁸

Option 2: The "Dowry" Solution

Alternatively, the father can provide Ginevra with a dowry, and allocate the remaining assets to the son. Again, with these assets Niccolò works hard and helps increase the family's wealth. Years later, when the father dies, the estate goes almost entirely to Niccolò (or if Ginevra

⁸ In Botticini and Siow (2003), Option 1 is the first-best outcome.

gets a bequest, this will be smaller compared to the share of wealth that Niccolò obtains).⁹

Which of the two options is the “best”? Option 1 has the advantage that the assets go to the child (in this case, the son) who has a comparative advantage in using them. If the son gets these assets, he will produce more wealth compared to his sister and his brother-in-law for the reason explained earlier. The father, who cares about both children, will then redistribute this wealth by leaving bequests to both the son and the daughter. Option 1 seems optimal from many points of view: it allocates the assets to the person who is more productive and then distributes the wealth produced to both children.

Why is Option 1, though so desirable, not implementable? Here is where the role of “incentives” can shed light. If the son knows that his father will be able to redistribute the wealth the son contributed to produce by giving a bequest to his sister, the incentives to work hard will be smaller. That is, the son will not work hard if he has to share in the bequest with his sister. In economics jargon, the sister is a “free-rider.” Through her bequest, she obtains a share of the profits generated by her brother’s effort without compensating him. She gets a share of the family’s wealth even if after the marriage, she moved out of the natal household and did not contribute to produce this wealth.

In contrast, though less desirable because some initial assets go to the less “efficient” child (the daughter) through the dowry, Option 2 has the property that the son works harder with the family’s assets because he knows he will keep most or even all the profits from his effort. In particular, this incentive to work hard will be larger if the father provides the daughter with a

⁹ In Botticini and Siow (2003), Option 2 is the (second-best) subgame perfect Nash equilibrium.

sufficiently large dowry such that he will not want to redistribute too much wealth away from his son *after* the son has worked hard. The son knows this and therefore will have the incentive to work hard with the family's assets.

We may summarize the above discussion as follows. Since married sons live with their parents, they have a comparative advantage in working with the family assets relative to their married sisters. Absent any incentive problem, parents should not assign any dowry but rather give the daughters their full share of the estate through bequests ("Option 1"). However, if married daughters fully share in the parents' bequests, their brothers will not obtain the full benefits of their efforts in extending the family wealth and, therefore, will supply too little effort. While bequests are more efficient for distributing wealth to daughters, they have poor incentive effects for sons. Thus, in order to mitigate the disincentive for their sons, parents will want to assign large dowries and consequently small bequests to their daughters ("Option 2").¹⁰ That is, since bequests are chosen after children choose their effort levels, the children recognize that altruistic parents may use bequests to redistribute wealth among the children. Anticipating this redistribution, the children may free ride on each other's effort. To deter this free riding, parents will provide dowries to daughters even though daughters are less efficient in using the capital than sons. Bequests to daughters will be smaller than that for sons.¹¹

¹⁰ Our model is in the spirit of Zhang and Chan (1999). While the point is not developed in their work, they maintain that daughters in virilocal societies may prefer dowries because they will have difficulties in getting their share of the natal families' wealth otherwise.

¹¹ Notice that the inability of the parents not to change bequests after they observe the output of the children is critical. If parents can commit, they should give all the initial capital to the son, and write a will such that the son will get no bequest if he does not exert effort and he gets half the output if he exerts effort. Thus, Option 1 can be implemented if parents can commit to punishing their son for shirking. In the absence of such commitment mechanism, Option 1 ("No dowry") is not implementable.

Comparing the Theory to the Historical Evidence

The theory of dowries we just illustrated generate five predictions. The theory does not simply establish a link between virilocal marriages and dowries but it provides a much richer set of implications. These predictions are interesting in themselves from a theoretical point of view, but they become relevant if they turn out to be supported by the historical evidence of dowries and bequests across different civilizations.

The first prediction [Prediction 1 (i)] simply summarizes the discussion about virilocal marriages and dowries we presented above. However, at the same time, we show that our theory of dowries is more general. In particular, we show that dowries are not gender-specific but can be provided not only to daughters but also to sons if these sons leave the natal household when they marry. This is what Prediction 1 (ii) suggests and we show that there is historical evidence to support this prediction.

PREDICTION 1: VIRILOCALITY AND DOWRIES

(i) In virilocal societies with individual property rights, in which parents can transfer wealth to their children, dowries emerge to mitigate a potential free-riding problem among siblings.

Is there historical evidence of such link between virilocal marriages and dowries? From the survey we presented in Chapter 2, it was clear that in virilocal societies so far apart from each other both geographically and temporally, such as the ancient Near Eastern civilizations, ancient Greece and Rome, medieval Byzantium, the Jews from antiquity to about 1300, Arab Islam, Sung China, Hindu India, Japan, and medieval and early-modern Europe, one finds

dowries (see Table 3.1).

[TABLE 3.1 HERE]

There is a negligible number of neolocal societies (the bride and groom set up their own new household), which have the custom of dowry. According to the ethnographic data from Murdoch (1967), these are the Cheremis of Finnic descent in the 1890s and the Hutsul (eastern Slavs) around 1900. Nine neolocal cultures have brideprices, and in eight neolocal societies there are no transfers occurring at marriage.

The absence of dowries in the Dravidian kinship region in India may be explained by the features of post-marital residence and marriage patterns there. Unlike in the Hindu marriage pattern, virilocality is not the norm among the Dravidians practicing cross-cousin marriages (Karve 1993, pp. 60-62). Moreover, in cross-cousin marriages, gift-giving among the groom's and bride's households is often not required (Trautman 1993).

Perhaps the most glaring exception to virilocality and dowries occurs in contemporary sub-Saharan Africa in which virilocality appears associated with brideprices instead of dowries. Data on hundreds of cultures we coded from the *Ethnographic Atlas* by Murdoch (1967) confirm this pattern (Table 3.2).

[TABLE 3.2 HERE]

Of the 131 African societies with brideprices, 110 are also virilocal. However, unlike the

past civilizations described above, which were mostly monogamous, most African societies with brideprices are characterized by polygyny (79.4 are polygynous societies, 16.8 are characterized by limited or occasional polygyny, whereas only 3.8 percent are monogamous cultures). Also, seven percent of the societies with brideprices and virilocality have collective instead of individual property rights. In this context, dowries cannot exist simply because parents cannot transfer wealth to their children, regardless of gender.

Lastly, as argued by Boserup, the type of agricultural practices in Africa may have favored brideprices over dowries. Boserup distinguishes between plough agricultural systems (such as those in medieval Europe, and past and contemporary Asia) and non-plough agricultural systems, common in African societies. In the former type of agriculture, the role of female labor is limited, whereas women have a more important role in the latter system of agriculture. In Africa, grooms “buy” the labor force of their brides by paying brideprices to the brides' kin.

Our explanation for the absence of dowries in Africa is related to Boserup's argument but is different. As Boserup noted, much of African societies practiced slash and burn to clear land for agriculture. After clearing the land, households planted crops for a few years, exhausted all the nutrients in the land, and then moved to another location thereby obviating the use of the plough. Under this system of agriculture, there was no land to bequeath because without crop rotation, the land was ruined and abandoned in a few years. Hence, there was no trade-off between dowries and bequests (at least as far as land goes).

The discussion so far seems to indicate that daughters get dowries and sons are left bequests. However, our theory of dowries is more general and it shows that dowries are *not* gender-specific. That is,

(ii) In virilocal societies, regardless of gender, parents will provide lump-sum transfers (dowries) to those children who marry off and leave the natal household.

(iii) In contrast, in uxorilocal societies where the groom moves into his in-laws' household and contributes to increase their wealth, bride's parents do not provide their daughter with a dowry but make the son-in-law share in the bequests.

To make the previous two implications clear, this example may help. Instead of Niccoló and Ginevra—the two siblings in the medieval Tuscan household of our earlier example—consider another medieval Tuscan household with a father, a mother, and three sons—Bartolomeo, Nofri, and Matteo. Bartolomeo gets married and leaves the paternal household. From then on, he stops working for the natal family and starts working in the bride's household. Matteo enters a monastery. Nofri is the one who stays with the parents and work for them. How should their father allocate the initial capital and distribute the bequests to maximize the wealth produced in the household (and therefore, the children's and father's welfare)?

Our theory predicts that Bartolomeo whose marriage is uxorilocal (the groom moves into the bride's household) and Matteo who enters the monastery should get “dowries,” that is lump-sum transfers when they leave the paternal household and no longer contribute to increasing their natal family's wealth, whereas Nofri should inherit the family's estate.

Is there any historical evidence that this allocation of initial assets and bequests predicted by our theory actually occurred?

In thirteenth-century Byzantium children who moved out of their natal households received dowries and were excluded from bequests (Laiou 1998, 151-60). Regardless of gender,

a distinction was made between υπεξουσιοι (children living in their parents' households) and εξοπρικοι (children married off with a dowry and who were not living in their parents' households). The prevailing custom was that unmarried or married children who lived with, worked for, and took care of, their parents, were the heirs; in contrast, those children who married off with dowries were not considered among the κληρονομοι (the heirs). Thus, the dowry was not an advance on inheritance but the major share of the parental estate that a daughter or son marrying off obtained.

The same free-riding concern may explain why in medieval and early-modern England, younger sons who left their natal families to become soldiers (or to join the clergy), received cash gifts rather than bequests (Gies and Gies 1987, 169). In medieval and Renaissance Italy, daughters who became nuns and sons who entered monasteries also received dowries (Botticini 1999). From the viewpoint of incentives and the free-riding problem, children who joined the monastic life were similar to those who married off and left their natal families: in both cases, their parents gave dowries to those who left and made the children who stayed the heirs.

There is also a lot of evidence from ancient Greece, thirteenth-century Byzantium, Sung China, and Japan from the Edo period on that in uxorilocal marriages the groom himself brought a dowry to the bride's family whereas bride parents did not provide a dowry to their daughter but made the son-in-law share in the bride family's bequests.

To summarize, the first prediction of our theory is that what matters is who leaves the natal household and does no longer contribute to the natal family's wealth. These children should get "dowries," that is, inter vivos lump-sum transfers at the time they leave the natal household. Those who keep living with the parents, work for, and take care of, them, should

receive the bequests. The fact that historically dowries were more often associated with daughters than sons simply reflects the fact that virilocal marriages were more widespread than uxorilocal ones.

We said that dowries are usually lump-sum inter vivos transfers. But does our theory indicate whether there is an optimal form for a dowry contract?

PREDICTION 2: NO INCOME SHARING IN DOWRY CONTRACTS

To increase the incentives for sons to work hard with their family assets, dowry contracts should not contain any income sharing provision.

Prediction 2 implies that when dowries are used to provide incentives for sons to work, it is important that dowry contracts do not unravel the incentive effect. Therefore, a dowry contract should minimize the sharing of profits generated with the family assets after the bride leaves her natal household. We are able to document this feature of dowry contracts in three societies far apart from each other. Dowry contracts did not have income sharing clauses in ancient Athens (Table 3.3).

[TABLE 3.3 HERE]

Dowries consisted of cash, rents of houses, or interest payments from mortgages whereas profits from land and other commercial enterprises in which the effort of the bride's brothers affected the outcome, did not appear as part of the dowry.

No income sharing was also a characteristic of dowry contracts among the Jewish communities in the Mediterranean in the high Middle Ages, as shown in the documents from the Cairo geniza (Goitein 1978).¹² Table 3.3 indicates the composition of dowries provided by Jewish fathers living in numerous countries in the Mediterranean in the tenth--twelfth centuries. In all documents, the dowry consisted of clothing, bedding, jewelry, copper, and furniture; cash was not a frequent item, while a third of the documents listed houses or portion of houses as part of the dowries. Yet, no marriage contract contained the clause that the dowry should be paid with a share of the profits generated from the bride family's business.

Systematic evidence is available from medieval and early Renaissance Florence, where virilocality was the norm. Here we use these impressive Tuscan data (more than six thousand dowry contracts) just to check whether prediction 2 of our theory of dowries is supported. Part II of the book will use these data to describe in great detail marriage markets, dowries, and bequests in Florence from 1250 to 1450.

[TABLE 3.4 HERE]

Table 3.4 indicates that most dowries were paid in cash, or consisted of clothing, bedding, and furniture. Interestingly, the proportion of contracts in which the dowry consisted (partly or totally) of land holdings increased in the decades across the Black Death of 1348. One possible explanation could be that parents were more willing to transfers land to their daughters

¹² I am very grateful to Yossef Rapoport for suggesting us to look into Goitein (1978) for data on Jewish dowry contracts from the Cairo geniza.

through dowries when there were fewer or no surviving sons, as it was the case when the plague hit the male children in the households. Consistent with prediction 2 of our theory, a negligible percentage of contracts contained income sharing clauses in both urban and rural marriages. The rarity of such clauses was not due to the lack of knowledge of income sharing since in both trade and agriculture, share contracts were well known in medieval and early Renaissance Tuscany (Ackerberg and Botticini 2002). However, when it came to dowry contracts, income sharing agreements were rare.

The evidence from ancient Athens and the Jewish communities in the Mediterranean in the high Middle Ages, and the systematic data coming from the thousands of dowry contracts in medieval and early Renaissance Florence supports the argument that dowries mitigated a potential free-riding problem by not including profit sharing arrangements with the brides' families' assets.

Of course, dowry contracts helped solve other problems. Many contracts had clauses entailing deferred payments. A typical specification was the bride's household promising to pay one-third of the dowry after the first year of the marriage, one-third after two years, and the remaining one-third after three years. Deferred payments offered three advantages. The bride's parents may be liquidity constrained. Also, consistent with Zhang and Chan (1999), deferred payments provided incentives for the groom's family not to mistreat their daughter-in-law. Lastly, the bride's family could avoid paying the dowry if she died during childbirth.

The absence of income sharing clauses in dowry contracts in past societies is apparently at odds with the evidence on marriage choices and risk sharing from some contemporary developing countries. For example, Rosenzweig and Stark (1989) have shown that in rural India,

when the bride's family faces adverse income shocks, the groom's family aids the bride's family. In such village economies, parents strategically place their daughters in marriage to provide insurance for both families. However, at a closer look, there is no contradiction between our finding of no income sharing in dowry contracts in past societies and risk sharing through marriage in contemporary India. The absence of income sharing clauses in dowry contracts in past civilizations does not mean that the groom's and bride's family did not share income risk at all.

When daughters receive dowries, will they be disinherited, that is, excluded from bequests from the natal household? That is, if parents want to minimize the free-riding problem described above and make the children who work for them have the best incentives to work hard, should they exclude their daughters (and those sons) who leave the paternal household at the time of the marriage? This is what our theory predicts.

PREDICTION 3: EXCLUSION OF DAUGHTERS FROM BEQUESTS

In virilocal societies, daughters will receive most of the wealth transfers from their parents through dowries and not through bequests. Daughters are more likely to receive bequests when there are no brothers. In this case, the free-riding problem does not exist and parents make their daughters inherit their estates.

Two types of evidence support this prediction. First, narrative evidence indicates that in various societies daughters obtained no dowries but were left bequests when there were no

brothers. In ancient near eastern civilizations, ancient Greece, medieval Byzantium, medieval western Europe, Arab Islam, Japan from the Edo period, among the Germanic tribes in the high Middle Ages, and among the Jews daughters could not receive bequests unless there were no surviving brothers in their natal households (see Chapter 2). In contrast, in the Roman republic and empire and in Sung China daughters *could* in principle receive bequests even if they had surviving male siblings, although no evidence is available to document whether they *did* receive bequests.

Second, micro data we collected from a sample of wills written in medieval and early Renaissance Florence supply systematic evidence that parents rarely transmitted their wealth to daughters via bequests (Table 3.5). In the Florentine statutes of 1322-25, in case of intestacy male descendants (sons, and in their absence, grandsons, brothers, and nephews) had priority in receiving the family estate with respect to daughters and other female descendants. However, the statutes granted testamentary freedom: a testator could leave his estate to both his sons and his daughters if he/she wished (Bellomo 1961).

[TABLE 3.5 HERE]

In the thirteenth century, 25 percent of the Florentine testators having sons and daughters left bequests to both. In the two decades before and after the Black Death the percentage was ??? percent, and in years 1420-1435 it became ??? 21 percent. In those instances in which parents left bequests to daughters, the size of the bequest to a daughter was small with respect to the dowry she got at the time of her marriage. Thus, the timing of intergenerational transfers in

medieval and early Renaissance Florence provides support to our model: daughters most often obtained their shares of their natal families' wealth through dowries and not through bequests.

If daughters are excluded from bequests, does this mean that parents discriminate among their children according to gender? Our theory of dowries indicates that this is not necessarily the case.

PREDICTION 4: PARENTAL VALUATION OF DAUGHTERS AND SONS

While daughters can be excluded from parental bequests when receiving dowries, they are not necessarily discriminated against their brothers if the size of dowries is similar to what the brothers receive as bequests. In other words, the small bequests (if any) received by daughters in dotal societies is not an indication of discriminatory treatment of daughters versus sons.

Historians have maintained that since dowries disinherit women, they bring an unequal distribution of family wealth among female and male siblings (Hughes 1978; and Klapisch-Zuber). However, they have not presented systematic evidence to substantiate such a claim. The problem has to do with the type of evidence required to compare dowries and bequests in a given household. Dowry contracts indicate only the amount of the dowry; there is no way to know how many siblings a bride had, or how wealthy her family was. Wills inform us about how a testator bequeathed his/her property, but they rarely provide the value of the family estate.

Fifteenth-century Tuscany is a fortunate case because the Florentine catasto (census and

property survey) of 1427 enables one to match brides, grooms, and their families in such a way that it is possible a systematic comparison between the size of dowries assigned to daughters and the bequests to their brothers. We anticipate here what we will describe in detail in chapter 6: the existence of dowries, by itself, did not prevent daughters from receiving roughly an equal, or higher, share of their parental wealth (see Table 6.2). Even if parents did not leave any bequests to their daughters in Florence, these data suggest that children, regardless of gender, received similar shares of parental wealth.

Why Did Dowries Disappear in Developed Economies?

Our theory of dowries explained why dowries emerge, what consequences they bring in terms of wealth distribution among siblings, and what an optimal dowry contract should look like. But dowries seem to have almost disappeared in most contemporary developed countries, whereas they remain popular in some places such as South-East Asia. Why is this the case?

PREDICTION 5: WITHER DOWRIES?

As the labor market becomes more developed and children are less likely to work in the same occupations as their parents, the use of bequests to align work incentives within the family becomes less important and the role of dowries as a mechanism to mitigate the free-riding problem among married children also declines. Instead of assigning dowries, parents will transfer wealth to both their daughters and sons as human capital investments and bequests.

A theory of dowries has to explain its disappearance in previously dotal societies. The

nexus between virilocality and dowries helps us explain the disappearance of dowries. Virilocal societies are primarily agricultural economies and/or economies where the gains for children to remain in the family business is substantial. As the labor market becomes more developed, as the demand for different types of occupations grows, children are less likely to work in the same occupations as their parents. They are also less likely to work for their families. The use of bequests to align work incentives within the family becomes less important. Moreover, as the labor market develops, the value of human capital investments also rises. Since it is costly to provide a dowry, the demand for dowry within the bride's family will fall as the need to use bequests and align the work incentives of sons falls. Instead of assigning dowries, parents will transfer wealth to both their daughters and sons as human capital investments and bequests.

As the labor market develops and sons work outside the family business, the gains from living in an extended family also become smaller. Instead of virilocal households, sons are more likely to set up their own, neolocal, households when they marry. Again, the use of bequests for sons to align their work incentives decreases. Thus, the role of dowries as a mechanism to mitigate the free-riding problem among married children also declines. When dowries become an inefficient source of brides' wealth, they will disappear. Unlike the standard economic model of dowries, we argue that there is no connection between the disappearance of dowries and the appearance of brideprices.

We present evidence from North America, Brazil, and Greece to support our theory regarding the disappearance of the dowry. We also discuss the case of India, where dowries have not disappeared despite modernization.

While dotal marriages occurred in isolated communities in colonial North America, it

was not a widespread practice (Gillian Hamilton, 1999; and Carole Shammas, 2002). For example, in Connecticut in the late eighteenth century, between 46 and 67 percent of married daughters were assigned inter vivos transfers, likely at the time of their marriage, from their natal families. In the 1820s, only 40 percent received such transfers, often consisting of bedding and cooking tools, and far less than the daughters' shares in their natal families' estates (Toby Ditz, 1986). British American fathers left their estates to their children, but they commonly did so in their wills or according to the intestacy provisions of their colony instead of through inter vivos transfers (Shammas, Marylynn Salmon, and Michel Dalhin, 1997).

The contrast between the European pattern of dotal marriages and the North American experience can be explained in light of our theory. North America during colonial times was an immigrant society. By definition, first generation immigrants were not working with their parents' assets in the home country and the free-riding problem does not apply. In later times, the colonies and early United States enjoyed the highest level of internal migration between the late 1760s and the 1830s (Shammas, chapter 4). The settlement of North America meant that many individuals left their parental homes to settle in new territory, again violating the virilocal assumption needed for a dotal society. Also, with the emergence of corporate capitalism in the nineteenth century, which led to the separation between ownership and control, sons were less likely to work in the family business and parents were less concerned about transmitting intact the family farm or firm to their children (Shammas, Salmon, and Dalhin).

A similar story applies to modern Brazil. Here the insightful study by Muriel Nazzari (1991), who analyzes probate records of wealthy, propertied, testators and studies the evolution of dowries in São Paulo, a coastal community in Brazil, from 1600 to 1900, provides additional

evidence supporting our theory. In the seventeenth century, wealthy Paulistas derived most of their wealth from agriculture. Most married sons lived with, and worked for, their parents. At this time, most daughters of property owners received dowries at marriage. Gold was discovered in the interior of Brazil in the eighteenth century and many young men moved and settled there, no longer living with their parents nor working on their family farms. In that period, nine percent of property owners allowed their daughters to marry without a dowry but left them bequests. In the nineteenth century, São Paulo grew, the urban labor market became more diverse and sons became more independent of their fathers. The trend away from dowries and toward bequests for daughters became stronger: Dowry values fell and three-quarters of property owners allowed their daughters to marry without a dowry and left them bequests.

Moving to twentieth-century Greece, one notices that dowries are still common among rural and working-class families, whereas the custom of the dowry is gradually disappearing among the urban and more educated households (Lambiri-Dimaki, 1985, p. 168). Instead of the dowry, urban parents in the middle- and upper-classes prefer to invest in their daughters' education and human capital. This is consistent with our story that the expansion of the labor market, the growing importance of general human capital acquisition, and modernization will erode the institution of the dowry.

A very different story applies to South Asia where dowries are still widely popular. In the past fifty years, in both North and South India, the custom of the dowry has spread to social and economic groups that did not have it in earlier times; at the same time, dowry values have undergone a sharp increase. The term “dowry” in contemporary India refers to the goods that the groom and his family demands to the bride family at the time of the marriage, over which the

bride retains no ownership. This has nothing to do with the *stridhana*, the goods (clothes, jewelry, etc.) that the bride's family gives to the bride and over which she has property rights. This distinction is very important because it clearly separates India from the past civilizations we surveyed; in these past societies, the dowry referred to the real property, movables, and cash that the bride's family transferred to the bride and over which she retained ownership.

With this distinction in mind, Caldwell, Reddy, and Caldwell (1983) have put forward two explanations for dowry inflation in India: (i) the marriage squeeze hypothesis, and (ii) hypergamy (increased demand for socio-economically more successful husbands). The marriage squeeze hypothesis maintains that due to population growth and the gender age gap at marriage, marriageable men are scarce relative to marriageable women. The econometric evidence for India on this hypothesis is not conclusive (Rao; Edlund 2000; and Dalmia, forthcoming).

Our interpretation of the Indian case is close to the hypergamy hypothesis. Our theory predicts that urbanization and modernization in India will eventually eliminate the use of dowries. However, urbanization (and the consequent modernization) is proceeding slowly in India. In 1901, 89 per cent of the population lived in rural communities. In 1981, 76.3 per cent of the population continued to live in rural communities, and net rural to urban migration contributed less than 19 percent to the total growth of the Indian urban population between 1971 and 1981 (Mohan 1985; and Rosenzweig and Stark, 906). India was and still is primarily a rural and virilocal society.

While urbanization and modernization was and is slow, there is a substantial difference in living standards between rural and urban regions. Mohan showed that the urban-rural ratio of per capita domestic product increased from 1.83 in 1950 to 2.56 in 1970. Given the slow pace of

urbanization, there is a large return for a rural bride to be able to marry an urban groom. As Caldwell, Reddy, and Caldwell (1983, p. 347) emphasize, "Parents desire their daughters to marry educated men with urban jobs, because such men have higher and more certain incomes, which are not subject to climatic cycles and which are paid monthly, and because the wives of such men will be freed from the drudgery of rural work and will usually live apart from their parents-in-law. In a sellers' market, created by relative scarcity, there was no alternative but to offer a dowry with one's daughter."

Consistent with this explanation, one finds that in South India, especially in Madras, in the 1930s the practice of dowry spread firstly among the Brahman community where men gained early access to European education and salaried employment in the public sector (Lardinois 1996, 295). Moreover, all over India, new opportunities to earn cash wages in factories, government jobs, and white collar occupations have been secured more by men than women (Sharma 1993, 349). Therefore, even in the urban context, brides' potential contribution to family income has become relatively smaller when compared to prospective grooms. The hypergamy theory may explain the expansion and intensification of the practice of dowry occurring in recent decades.¹³

According to our theory regarding the disappearance of dowries, dowry inflation is likely to be transitory and driven by the slow pace of urbanization in India and the income differences between the two sectors. As urbanization proceeds and modernization takes place, the relative

¹³ Evidence from contemporary China provides further support to the hypergamy theory. During the 1940s characterized by war and disorder, many tenant farmers in the villages managed to acquire land from their landlords and became rich. These newly wealthy households in the villages arranged marriages with elite families in towns; in doing so, they provided larger and larger dowries to their daughters (Siu 1990, 16--17).

supply of educated grooms should increase and the urban-rural income differences should fall. Dowry inflation should eventually disappear. The Indian experience suggests that in a transitional society, from virilocal/rural to neolocal/urban, the relative values of some grooms may rise and the use of dowries may expand before withering away.

Our explanation for dowry inflation does not concern castes directly. The caste system may reinforce the custom of dowry in two ways. First, to the extent that higher castes urbanize earlier and lower castes do so later, dowry inflation will evolve from higher to lower castes. Second, as castes are often defined by occupations, individuals from a given caste find it difficult to leave their occupation because they cannot leave their caste; sons are more likely to follow their fathers' occupations. Thus, the existence of the caste system in India can make the transition from virilocal to neolocal society (and the consequent disappearance of dowries) slower with respect to other developing economies. Although the Indian experience does not contradict our model, we are agnostic as to what the correct model is. Anderson (2003) has an alternative hypergamy model where modernization and caste inheritance rules interact to generate an increase in the relative values of high caste grooms and dowry inflation in India.

TO BE COMPLETED.

CHAPTER 3

TABLE 3.1— MARRIAGE TRANSFERS AND VIRILOCALITY IN PAST CIVILIZATIONS

To be done.

TABLE 3.2— BRIDEPRICES AND VIRILOCALITY IN CONTEMPORARY AFRICA

Parents transfer property to ^a	Post-marital residence	
	Virilocal	Else ^d
Male children	51.8	19.0
Other family members ^b	29.0	66.7
None ^c	7.2	4.7
All children	0	9.5
All children (smaller share to daughters)	11.8	0
Number of observations	110	21
	Extent of Polygyny	
Societies with polygyny	79.4	
Societies with occasional/limited polygyny	16.8	
Societies with monogamy	3.8	
Number of observations	131	

Source: George P. Murdock. Ethnographic Atlas. Pittsburgh: University of Pittsburgh Press, 1967.

Notes: The numbers in the columns are percentages. Murdock coded information on 862 societies from the five continents. For these cultures various ethnographic variables are coded, such as the mode of marriage, marital residence, community organization, settlement pattern, linguistic affiliation, the existence of slavery, etc. However, to avoid including two or more societies whose

cultures are very similar since they are derived from a recent common source, the 862 societies are grouped into 412 clusters, whose cultures are genetically closely related. The information in Table 3.2 refers to the clusters.

^a The transfer of property includes both inter vivos transfers and bequests.

^B “Other family members” include: uncles, aunts, cousins, brothers, and nephews of the individual who transfers property.

^C This group includes those societies where land is held collectively (e.g., tribal or clan land). In this instance, individuals cannot transfer real property because they do not have individual property rights on assets. In these eight societies, the transfer of movable property (such as cattle) occurs in the following way: in three cases, movable property is transferred to male children only, in four cases to other family members, in one case no information is provided.

^d “Else” includes all other post-marital residence patterns, such as uxorilocal, neolocal, ambilocal, and avunculocal marriages.

TABLE 3.3— FEATURES OF DOWRY CONTRACTS IN THE ANCIENT AND MEDIEVAL WORLD

Contract characteristics	Athens, 4-6 th centuries BCE	Jews in the Mediterranean, 10-12 th centuries CE
Payment (movables) ^a	0	93.44
Payment (cash) ^a	89.5	4.91
Payment (rents from houses) ^a	10.5	0
Payment (houses) ^a	0	29.50
Payment (land holdings) ^a	0	1.63
Profit sharing clause ^a	0	0
Number of observations ^a	19	61

Sources: For dowry contracts in ancient Athens we use Claudine Leduc, “Come darla in matrimonio? La sposa nel mondo greco, secoli IX-IV BC.” In *Storia delle donne. L'antichità*, edited by Pauline Schmitt Pantel. Bari: Editrice Laterza, 1991, p. 293. For dowry contracts among the Jewish communities we use the marriage contracts in Goitein (1978, pp. 364-93). Goitein reports information on about 300 contracts regarding marriage payments. Only 61 of these documents list in details the type of goods forming the dowry.

^a Percentages of contracts with the listed characteristic.

TABLE 3.4—FEATURES OF DOWRY CONTRACTS IN FLORENCE AND ITS COUNTRYSIDE, 1242-1436

	Years					
	1242-1299		1340-1360		1420-1436	
Contract characteristics	Urban	Rural	Urban	Rural	Urban	Rural
Payment (movables) ^a	2.8	0.4	17.9	11.7	14.6	19.4
Payment (cash) ^a	96.1	99.2	90.9	92.0	95.7	94.6
Payment (houses) ^a	4.8	1.2	5.4	1.6	4.5	0.9
Payment (land holdings) ^a	0.9	1.2	8.3	10.8	3.5	1.7
Profit sharing clause ^a	0	0	0.2	0.2	0.6	0.1
Number of observations (Total = 6,158)	123	366	1154	1818	1427	1270

Sources: State Archives of Florence (henceforth ASF), Diplomatico and Notarile Antecosimiano (869 volumes of notarial contracts).

Note: “Urban” refers to marriages in which either the bride or the groom (or both) resided in the city of Florence. “Rural” refers to marriages in which both the bride and the groom lived in the villages in the countryside of Florence.

^a Percentages of contracts with the listed characteristic.

TABLE 3.5— BEQUEST BEHAVIOR IN MEDIEVAL AND RENAISSANCE FLORENCE

Bequest behavior in Florentine households with both sons and daughters			
Years	Percentage of testators leaving bequests to daughters	Percentage of testators not leaving bequests to daughters	Number of testators
1260-1299	25%	75%	182
1340-1360	39%	61%	1285
1420-1436	21%	79%	2447

Sources: ASF, Notarile Antecosimiano, 869 volumes of notarial contracts.

The Price of Love

Slides for Chapters 5-8

How did Tuscan grooms and brides match?

- Fairly isolated urban and rural marriage markets

Years	G-urban B-urban	G-rural B-rural	G-urban B-rural	G-rural B-urban	All
1269-1299	17.9	74.1	5.7	2.3	475
1340-1360	31.7	61.0	2.7	4.7	2955
1420-1435	44.7	49.7	3.6	0.1	3721

- Brides' age: 16 Grooms' age: 26

Marriage payments: dowries

Dowry

=

intergenerational transfer

**father divides his wealth:
daughters (dowries) and
sons (bequests)**

**dowry = pre-mortem
inheritance**

**dowry = share of household
wealth**

Dowry

=

groom price in marriage mkt

**bride's father offers this
price (dowry) to find a
groom for his daughter**

**matching in marriage
market occurs**

Marriage markets before 1348

[“Dante Alighieri and Giovanni Villani were right”]

Median Dowry

Years	(current lire)	(constant lire)
-------	----------------	-----------------

Florence

1260-1299	100	304
1340-1347	300	395

Rural villages

1260-1299	50	152
1340-1347	85	112

The Black Death of 1348

- It killed about a third of the European population (25 million people the estimated death toll)



- Subsequent (local) bouts in 1363, 1374, 1383, 1390, 1400 and at intervals during the 15th and 16th centuries

Marriage markets: Short-run impact of the plague

Years	Dowries (current lire)		Dowries (constant lire)	
	Median	Mean	Median	Mean
Florence				
1340-1347	300	683	395	899
1348-1351	103	364	135	479
1352-1360	425	816	415	798
Rural Villages				
1340-1347	85	126	112	166
1348-1351	50	79	66	104
1352-1360	80	108	78	105

Long-run impact of the plague

Years	Dowries (current lire)		Dowries (constant lire)	
	Median	Mean	Median	Mean
Florence				
1260-1299	100	177	304	537
1340-1347	300	683	395	899
1348-1351	103	364	135	479
1352-1360	425	816	415	798
1420-1435	866	1597	866	1597
Rural villages				
1260-1299	50	65	152	198
1340-1347	85	126	112	166
1348-1351	50	79	66	104
1352-1360	80	108	78	105
1420-1435	136	168	136	168

Divergence between urban and rural deepened after 1348

in the 1270s

median urban dowry = twice median rural dowry
(304 lire) (152 lire)

in the 1420s

median urban dowry = six times median rural dowry
(866 lire) (136 lire)

Going back to the questions...

1. **The short-term and long-term impact of the plague on marriage markets and dowries?**

Done.

2. **Why did urban and rural households react so differently to the same demographic shock?**

Almost done.

Mr. Economics' answer

A combination of

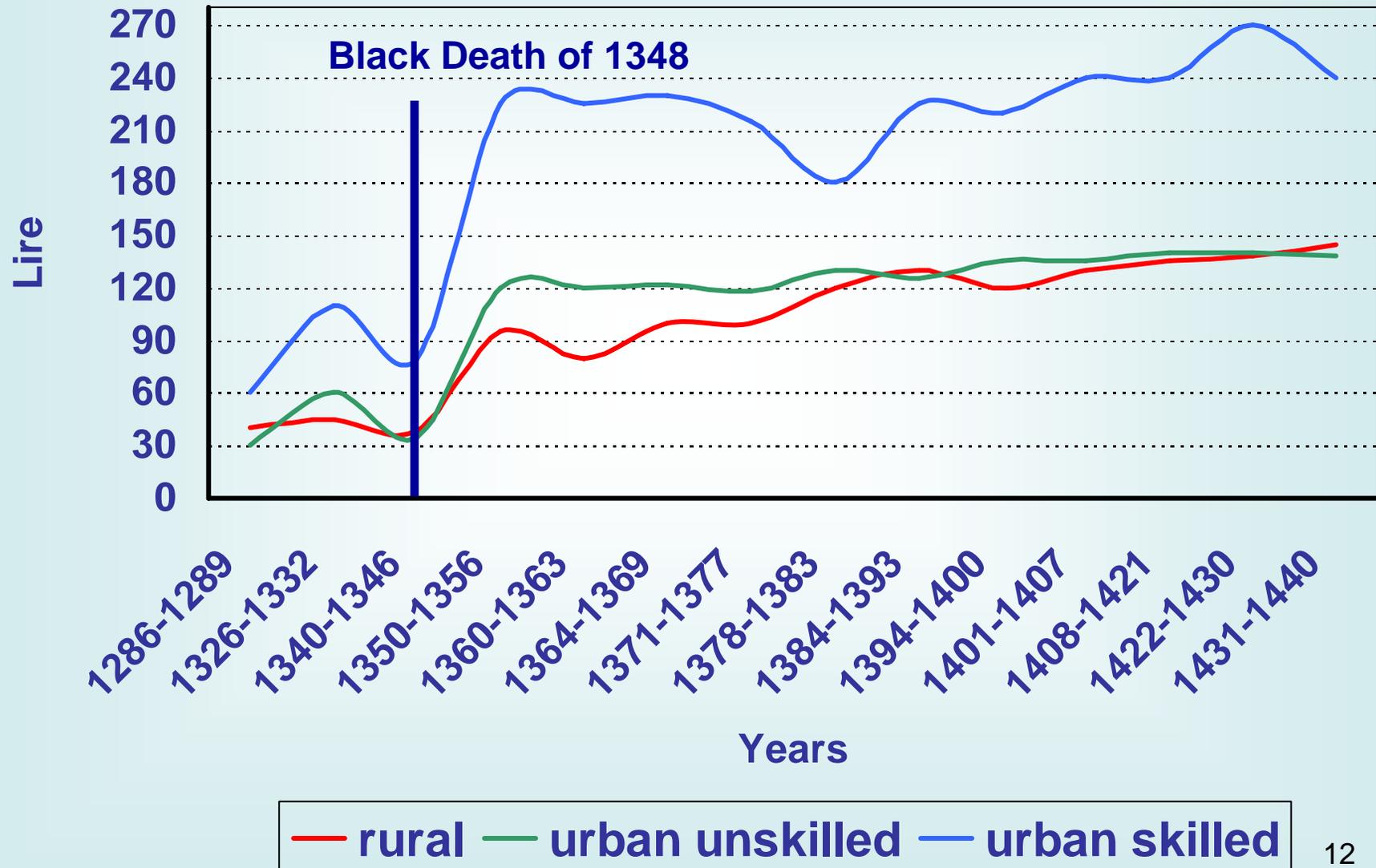
- **huge labor supply shock**
- **different social norm in urban and rural marriage markets**

can explain the divergent pattern in urban and rural dowries despite the same demographic shock

1. Labor supply shock

- **The Black Death (and subsequent plagues) brought a huge negative labor supply shock**
- **Wages (incomes) of both skilled and unskilled workers sharply rose**

Annual average wages (Florence, urban & rural)



Labor supply shock and marriage markets

Urban & Rural

- rising real wages made it possible for fathers to give larger dowries to daughters
(dowry as intergenerational transfer should increase)

Urban

- “desirable” grooms (skilled workers, craftsmen, merchants) became scarce
- higher groom heterogeneity
(dowry as price in marriage mkt should increase)

2. Social norms in marriage mkts

Adapting Cole, Mailath, Postlewaite (*JPE* 1992)

- **Two identical economies (preferences, technology, endowments)**
- **Daughters (brides) ranked by dowries given by parents**
- **Sons (grooms) ranked by some exogenous characteristic**
- **Brides and grooms match in marriage market**
- **Economy A (Aristocratic norm): women's status is inherited**
- **Economy W (Wealth-is-status norm): women's status is determined by relative wealth**

Main prediction

- **In wealth-is-status equilibrium, parents have stronger incentives to save and make larger transfers (dowries) to their daughters than in the aristocratic equilibrium**

Historical evidence

Rural economy

- Rural society was still a feudal society, status was not determined by wealth
- The plague of 1348 increased rural wages
- But fathers had no incentive to give higher dowries to their daughters as their status would not improve

Urban economy

- Florence was a society in which status was affected by wealth
- The plague of 1348 raised wages and incomes
- Hence fathers had an incentive to give higher dowries to their daughters: this would improve their status and their matching in marriage mkt

Long-run impact of the plague

Years	Dowries (current lire)		Dowries (constant lire)	
	Median	Mean	Median	Mean
Florence				
1260-1299	100	177	304	537
1340-1347	300	683	395	899
1348-1351	103	364	135	479
1352-1360	425	816	415	798
1420-1435	866	1597	866	1597
Rural villages				
1260-1299	50	65	152	198
1340-1347	85	126	112	166
1348-1351	50	79	66	104
1352-1360	80	108	78	105
1420-1435	136	168	136	168

Competing hypotheses

Selective plague [plague affected sex ratios]

False. Fewer women (120 to 100) before & after the plague

Larger shares of the pie

False. Similar number of surviving children

Data from 4550 last wills

- Number of surviving children per household [Florence]

1260-1299	1.66
1348-1350	1.22
1420-1435	1.82
- Number of surviving children per household [rural villages]

1260-1290	2.45
1348-1350	1.27
1420-1435	1.92