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For Better and for Worse – How Unpaid Bride Wealth provides Security

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For better and for worse

How unpaid bride wealth provides security

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Abstract

The obligation to pay bride wealth at marriage is usually associated with the continuation of the lineage or considered a compensation for the loss of labor for the family that provides the bride. In this paper a different interpretation is advanced. The obligation to pay of bride wealth is seen as informal insurance which relies on the fact that bride wealth liabilities are contingent claims. Empirical evidence from Zimbabwe is presented to support this claim. In the absence of formal insurance mechanisms, bride wealth qualifies as an important security enhancing institution: the arrangement covers nearly the complete Zimbabwean adult population and permits to pool risks between many different families. Additionally the amounts involved are large and the period of time during which the claims provide security long. Like any informal insurance arrangement, the marriage system is prone to failure as a result of covariant risk and information and enforcement problems. It is shown how the marriage procedure deals with these problems.

JEL classification: G21; O17, Q14

Key words: Risk; Insurance; Institutions; Bride Wealth; Africa

1. Introduction[1]

African rural households involved in rain fed farming are exposed to large income variations. Being risk averse these households try to shield their consumption from these fluctuations. One way to do so is to rely on insurance arrangements. Unfortunately formal insurance services are generally absent in Africa's rural areas. But informal arrangements are not. This is unsurprising in view of the magnitude of the income risks involved and the advantages that

[1] This paper has benefited greatly from extensive discussions with and suggestions from Marleen Dekker, Jan-Willem Gunning, Peter Lanjouw and Takawira Mumvuma.

tightly knit communities have in dealing with information and enforcement problems.

An illustration of a successful informal insurance arrangement in Africa are contingent credit contracts. These have been described by Udry (1990 and 1994) for Northern Nigeria. Despite being credit arrangements they comprise an insurance element because loan repayment depends on the economic condition of the agents involved. Creditors are lenient if their debtors go through a difficult period, while debtors make an extra attempt to repay if their creditor is in trouble. The Shona, the dominant ethnic group in Zimbabwe, operate a marriage system that comprises elements similar to the ones in a contingent credit contract. Instead of an outstanding loan, a claim is generated by demanding bride wealth for a daughter when she gets married of which the groom pays only part at the date of marriage. The bulk remains outstanding and its repayment is contingent on the economic situation of both the groom as his father in law.

There are several important differences between the bride wealth arrangement of the Shona and Udry's contingent credit suggestive of the importance of the marriage arrangement as insurance. Firstly, the size of the claims is of a different order of magnitude (two to five years of average household income). Secondly the duration of the claims is much longer; complete repayment often takes as long as a lifetime. Additionally by associating claims to marriage, virtually nobody is excluded from the benefits of the arrangement. This is of importance, especially for the vulnerable who risk exclusion from informal insurance arrangements at times of covariant shocks (e.g. Sen, 1981). And finally the bride wealth system manages to combine the advantages of a large risk pool with the benefits of close monitoring.

The suggestion that unpaid bride wealth enhances household security is new. In the anthropological literature bride wealth payments are primarily identified as means to ascertain the continuation of the lineage or as compensation for the loss of labor (Goody and Tambiah 1973; Holleman 1975; Kuper, 1982; Tambiah, 1989). Marriage is also considered as vehicle that enhances trust between individuals or families. In this form it facilitates the pooling of resources (Rosenzweig, 1988; Rosenzweig and Stark, 1989; Baerends, 1991) or the diversification of income risk (Arnott and Stiglitz, 1991). But bride wealth as a contingent claim has not been advanced before.

The data for this paper are from a unique African panel data set, collected annually between 1992 and 1999 among a group of approximately 400 beneficiaries of Zimbabwe's land reform program. Starting in 1997 comparable information has also been gathered on a group of 150 non-program participants. An elaborate description of this data set can be found in Kinsey (1999) and Hoogeveen and Kinsey (forthcoming).[2] For the determination of household incomes and livestock ownership use is made of all panel years. For questions related to the amount of bride wealth demanded and paid, use is made of a marriage module that was added to the questionnaire in 1996 and which comprises information on 571 marriages. For information on bride wealth related transfers use is made of surveys held between 1997 and 1999 when questions pertaining to this issue were asked.

The paper is organized as follows. In section two the insurance problem of a rural African household is presented. It is shown how a claims and liabilities arrangement can enhance security, and it is shown that to meet this requirement the arrangement should be contingent and the size of the claim large. The following section contains the main assertion of this paper. It not only qualifies the bride wealth arrangement of the Shona as a claims and liabilities arrangement, in an empirical test it is confirmed that the arrangement is conditional. In section four implications of the security enhancing interpretation of the bride wealth arrangement are considered. Consequences for contract enforcement, for the use of the arrangement by those whose incomes are less subject to variability, for the timing of marriage by the poor, for efficiency and the existence of other informal security enhancing arrangements are treated along with the question whether bride wealth as security enhancing mechanism is confined to Zimbabwe. Section five presents conclusions.

2. Conditional claims and liabilities

Formal insurance is generally not observed in Africa's rural areas. The reasons for this are well understood. Geographic correlation makes weather related risks difficult to cover. The cost of dealing with asymmetric information problems and enforcement difficulties raise insurance premiums beyond levels that households are prepared to pay. On top of that,

[2] The data were collected under the supervision of Bill Kinsey. He kindly provided access to the information.

households may doubt the promise of the insurance company to cover losses if they arise. These problems do not preclude the appearance of informal insurance arrangements directed at idiosyncratic risks. Especially in communities where the cost of information collection can be kept down, contract enforcement is facilitated by the interlinked nature of transactions, punishment of non-compliers is possible and premiums are collected after the event, informal insurance arrangements can flourish. Burial societies, work parties, fire associations and reciprocal gift exchanges are examples of these (Scott, 1976; Fafchamps, 1992; Platteau, 1997).

In certain circumstances households run the risk of becoming excluded from informal insurance arrangements. Consider the following illustration for instance. A family in rural Africa tills the soil using cattle and its yields fluctuate from year to year. The household lives in a village and its variations in yield are less than perfectly correlated with that of its neighbors. Villagers with good harvests provide the household with gifts in years that it has been unlucky. In years in which the household obtained a good harvest the favors are returned. In this way the households in the village operate a reciprocal insurance arrangement.

Because of the occurrence of some disease the household loses its draft power. From now on it has to prepare its land by hand which substantially reduces expected income. At plowing times the household tries to borrow draft animals, but by the time they are provided, the animals are worn out and the optimal time for planting long gone. The family tries to save from its proceeds, but buying two heads of cattle requires such a large amount that it is next to impossible to save a sufficiently large fraction from the meager income. Life becomes very hard. Nonetheless the household continues to participate in the reciprocal arrangement, albeit at a scale that is adapted to its lower mean income.

Then a drought strikes, decimating aggregate village income. In their struggle to deal with the adverse circumstances the better off villagers sell livestock to buy food. The poor family does not have this possibility and is dependent on the solidarity of the better endowed villagers. But now that resources are scarce, they prefer to continue their reciprocal relations exclusively amongst themselves. Selling livestock to safeguard their poor neighbor –who is already weakened by malnutrition and whose prospects for survival are limited– at the expense of future income generating possibilities embedded in their cattle, is considered too costly.

That the latter possibility is the harsh reality for numerous African households is illustrated by, amongst others, Sen (1981) and Ravallion (1997). Sen was the first to show that famines do not have to occur due to the non-availability of food per se, but may be the consequence of the inability of some households to lay a claim on food or on the resources to purchase food. This can occur despite the presence of solidarity networks. Fafchamps (1992) and Coate and Ravallion (1993) formalize why at times informal insurances fail to offer protection. They point out that continued participation in an insurance arrangement where premiums are paid ex post and where the main punishment is exclusion from future insurance is only attractive if for each period the utility of reneging on the insurance plus the discounted expected utility that will be obtained if one is excluded from future insurance is less than or equal to the utility obtained from sticking to the contract now and in the future. The failure to insure can thus be related to two factors: (i) the (utility) costs of a net transfer to the unlucky household and (ii) the expected future benefits to the members of the insurance pool from a continued participation of the unlucky household.

In the example the failure to provide solidarity could have been prevented by stronger enforcement. This might have been in the form of punishment of the coalition of wealthy households or through the advance payment of insurance premiums. Relying on credit would have been another option. If credit schemes are arranged like certain rotating credit arrangements where the most needy obtain the pot first (Besley, 1995) or if people with good income draws accept to lend to those with bad draws, then credit contributes to income pooling (Platteau and Abraham, 1987; Udry, 1990 and 1994). But if the risk of default is high, typically when a household finds itself in a poor state of affairs, relying on credit is dangerous because it is not evident that someone will be prepared to lend to such a household. In fact, the more desperate the situation, the less likely it is that someone will be able to obtain resources as a credit, so that credit is probably not an option for the household in the example.

Another possibility is to make sure that each household has the right to put a claim on another household (and an offsetting obligation to meet a request). A claims and liabilities arrangement may provide security if claims *have to* be honored irrespectively of the wealth status of the requesting household. In the example this kind of claim might have been of help in two ways: if the household could have effectuated it at the time of drought, or if it would have allowed the household to obtain before the drought resources with which cattle could be purchased. In the latter situation the household would have been less destitute when the drought arrived and

therefore less likely to become excluded from the solidarity arrangement. And, if it were excluded nevertheless, it could at least have sold its beasts to obtain food with the proceeds.

A claims and liabilities arrangement can be organized as follows.[3] At its start a group of households issues claims on each other such that the net wealth position of each participant remains unchanged. After the issuance each household holds both a claim on a household in the pool and is indebted to another household in the same pool. If there are three households and the size of the debt is x then A holds a claim of x on B and has an obligation of similar size with respect to C. If B has a claim of x on C then each of the households in the pool is connected through claims and liabilities. If household A is the household in the illustration, then it may obtain the resources to purchase draft animals by effectuating its claim on B. If B cannot fulfill the request it may approach C and use the resources received to fulfill the obligation toward A. The passing on of the claim till it has reached a net provider of goods may be considered a way to deal with small risk pools by creating a string of bilateral relations.

A←B← C

Obviously if C is not able to fulfill the request, it may approach A. In that case the arrangement fails because all claims and liabilities cancel. This could occur in the instance of a covariate shock. One way to avoid this is to ensure that the pool of households from which can be claimed is large, implying a long chain of individual relations. Another possibility is to broaden the claim to include all endowments, so that even in the event of an aggregate income shock, claims can be put on the buffer stocks of well endowed households. A third option is to allow claims to be unfulfilled for a prolonged period of time and to wait till the debtor has accumulated sufficient wealth to repay. This strategy obviously only works if there is sufficient change in wealth status over time.

For a proper functioning of the arrangement the claims should not be too small. There are at least two reasons for this. First if claims and liabilities are created only once, they will have to do a lifetime. More importantly having considerable claims is instrumental in avoiding a situation that is known within an IS-LM framework as the monetarist model. The monetarist

[3] This mechanism has also been described as a possibility in the theoretical literature (Gauthier, Poitevin and González, 1997), but only for the case where ex ante payments are made irrespective of the realization of risk. In this case, the transfer is conditional on the realization of the risk, but independent of the state of wealth of the household.

model describes a situation in which there is insufficient liquidity around causing the transactions need for money to become the limit on output. In our if case claims are too small people might become hesitant to call them in out of fear for running out of claims in the future. But if agents become hesitant to effectuate their claims, it means that they are not easily passed on from one household to the next. It follows that the means of dealing with small risks pools through a string of relations collapses and that the size of the risk pool becomes limited to those indebted to you. A sizeable claim helps to avoid this situation.

Unlike in a credit transaction where credit is demanded ex post, one expects that no interest will be paid on this ex ante arrangement. The reason for this is that a conditional claims and liabilities arrangement increases the net present value of expected utility of any participating household by reducing the variability of future income. Hence it is attractive to participate in a claims and liabilities pool, even in the absence of a possibility to demand interest. If a family is only prepared to join if interest is paid on net balances then other households would appear demanding less interest, effectively bidding the interest on the arrangement down to zero. But if a household used its claim but it did not yet fulfill its obligation then it is a net recipient of resources. In the absence of interest payments it follows that there is a real transfer of resources (unpaid interest) from the wealthy household to the poor one. This is a risk pooling element in the claims and liabilities arrangement.

If the total outstanding claim is sufficiently large, then it may allow the household to deal with all idiosyncratic risk. In that case the claims and liabilities mechanism is an alternative for informal insurance (provided that in the long run all households earn equal amounts). But if the total amount of claims is relatively small, then it pays to only effectuate these if the household is affected by grave events. And if it holds more than one claim, it will first effectuate the one on a relatively wealthy household so as to increase the probability of payment and to avoid a circular cancellation of claims and liabilities. This suggests that the arrangement automatically becomes conditional even if it was not intended to be so originally. There is an additional reason why one expects a claims and liabilities arrangement to be conditional. If a household would have to fulfill a claim when it does not possess the resources (including outstanding claims) to do so, then for precautionary reasons the household may decide not to participate in a claims and liabilities pool.[4] A way to avoid refusal is to ensure that the obligation to repay

[4] See also Skinner (1988) for a similar argument as to why households facing fluctuating incomes may be hesitant to borrow.

debt is conditional on possessing sufficient income (or outstanding claims).

3. Marriage among the Shona

Shona marriage is a family affair and its arrangement takes a substantial period of time during which the families involved have many opportunities to familiarize themselves.[5] The choice of spouses is left to the individuals concerned but has to be sanctioned by their parents. If the families of the prospective partners agree with the choice of their children, negotiations involving senior representatives of each family start about the compensation required for the girl: the bride wealth. Bride wealth is divided into two portions of which *roora* is the more substantial part. It is a payment in cattle and cash and is associated with rights by the groom's family over the children born from the union. Roora is paid to the father of the bride. He can do with it as he likes but preferably he reserves the cattle received for the marriage exchanges of the young men of his family as they are entitled to receive from their father the cattle required for their first marriage. Full payment of roora is extended over an elaborate period. After paying the first installment of roora, the wife moves to the family of her husband where she is handed over to the head of the family of the groom. Only after a few days does he transfer the bride to her husband. In this way he underscores the family character of the marriage. After the girl has moved to the household of her husband the families remain related through a claim/liability, providing security to the girl's family. Details of this arrangement are considered below.

3.1 Information problems and covariance of risk

Like formal insurance, informal insurance has to deal with information problems and problems posed by aggregate risk. To solve the former, detailed information on the incomes (and effort!) of the participants in the insurance pool is needed. If the members of the pool live in the same village, whether a farmer is hard working may be regarded to be common knowledge. Estimating each other's income is also feasible. A well trained farmer should be able to reliably guess someone's harvest from the crops observed in the field. Among the Shona even this skill is not required. Unlike in other places farmers are not secretive about their proceeds. After harvesting maize for instance (the main crop and staple food), the cobs are dried in

[5] Shona marriage is extensively described in Holleman (1975), Bourdillon (1987), Weinrich (1977), Kileff

stacks put up outside the household and observable by anyone. Information problems about the receipt of a household's income therefore are not insurmountable obstacles for informal arrangements among the Shona.

A more pressing issue for an insurance operating in rural areas with rain fed farming, is the problem posed by aggregate risk. Income is closely related to the weather and as weather is strongly geographically correlated, pooling of household incomes can do little in terms of insurance. Consider table one for instance. It shows that crop and household income are highly correlated with national rainfall (correlation coefficients of 0.28 and 0.24 respectively). For an insurance company operating at the national level, these correlations might suggest scope for its services but for an informal arrangement such spreading is usually not attainable. Besides the problem caused by covariance is not entirely reflected in the correlation coefficients. In 1992 for instance, a drought year, two third of the households did not harvest any maize and the households that harvested something produced an output that was one fifth of the mean harvest produced between 1991 and 1998. In 1995 another drought hit the country which left a quarter of all households without any maize to harvest. The remaining households produced only half of the 1991-1998 average. A local insurance that would try to cover these risks from insurance premiums would easily go bankrupt in these circumstances.

A solution for this problem is not to pool incomes but to look for an insurance mechanism vested in a good that is less correlated with rainfall but which is still an important determinant of income. Livestock is an option here. As table one shows, household cattle ownership is only weakly (and insignificantly) correlated with national rainfall. But, the possession of cattle is closely associated with the ability to earn agricultural income. Households that possess sufficient draft animals obtain higher yields and cultivate a larger area because of their ability to use the plow and apply manure (Hoogeveen, 1999).

Table 1 here

The marriage arrangement makes use of the independence of cattle ownership and rainfall as cattle represents the bulk of the value of roora demanded. In 1995 the most recent year for which marriage information was collected, of the 27 marriages concluded that year, bride wealth demanded consisted of Z$ 1765 in cash and 7.8 heads of cattle. At a median value of

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and Kileff (1992), Meekers (1993), Vijfhuizen (1998) and Dekker and Hoogeveen (2000).

cows, heifers and bulls of respectively Z$ 1200, Z$ 1000 and Z$ 1500 it follows that approximately 85 percent of bride wealth is demanded in livestock units.

If a livestock based insurance mechanism is to function, the information problem surrounding the ownership of livestock has to be solved. Fortunately in Zimbabwe it is not difficult to establish the number of cattle a household possesses as the animals are put into the family kraal every night where they are to be observed by anyone. To the degree that direct observation is not possible (for instance because some beasts have been lent) then the daughter/wife is in a unique position to ensure an impartial flow of information between the two families bond by a claim/liability arrangement, to which she is intimately connected.

There are two additional arguments to base an insurance mechanism on livestock. First, cattle is the main store of wealth. Even if one does not intend to use the animals for plowing, they are still useful as buffer stock to be liquidated in adverse circumstances. Kinsey *et al.*(1998) show for instance that livestock sales were the primary source of money for food purchases during the 1992 and 1995 droughts in Zimbabwe. Table one confirms this. It shows that the sale of cattle is strongly (negatively) correlated with rainfall. Second, households without sufficient draft animals risk ending up in a poverty trap (Hoogeveen, 1999). So the possession of sufficient animals is a major concern. And as the number of cattle may be decimated by exogenous events that can therefore permanently affect a household's wealth status, a mechanism that ensures access to additional beasts in adverse times is of great value.

3.2 Outstanding claims

If the demand of bride wealth is to result in a claim that has an insurance function three criteria have to be met. First, all bride wealth should not be paid at the time of marriage. Amongst the interviewed households there is clear resentment against those that pay their bride wealth too quickly. Doing so is associated with the denial by the son in law of the relationship between his family and their in laws (Dekker and Hoogeveen, 2000). Second, given that weather risk is an annual phenomenon and that the total amount which can be claimed limited (when all daughters are married, additional claims cannot be generated), a payment schedule that lasts a long time, preferably a life time, is attractive. Thirdly, the claim has to be conditional. In this way one is able to obtain cattle when such is needed and one avoids having to provide cattle when animals cannot be spared. The first two are treated in

this subsection. The third aspect is treated separately.

Of the 571 marriages for which information is available, 20 percent of the marriages completed their bride wealth liabilities. In 79 percent of the marriages, cattle payments were still due. Figure one presents a kernel estimation of the number of livestock paid as function of the years of marriage. It shows that about ten percent is paid at the time of marriage. After 35 years of marriage about 20 percent of bride wealth is still outstanding. Both are in accordance with the insurance function of claims.

Figure 1 here

That after 35 years a substantial part of bride wealth is still outstanding, does not imply that bride wealth is not paid in full. On the contrary, at the death of one of the spouses several options for the repayment of bride wealth may be explored. If the wife died young and she has unmarried sisters, one of them might replace her in a substitution marriage. If the husband died young, a brother might replace him in a replacement marriage. In each of these cases, the remaining liabilities are passed on to the new couple. If substitution or replacement marriages do not take place, the outstanding debt may be paid from the inheritance (resulting in an outtransfer of cattle). A relatively new phenomenon is that the wife of the deceased is allowed to remarry. In that case, the husband's brother will take care of the widow, but allow other men to date (and marry) her. Any bride wealth received will then be used to repay outstanding bride wealth liabilities. If none of these options is available, the bride wealth liabilities are taken over by the family of the deceased groom.

3.3 Conditionality of the arrangement

For marriage claims to enhance security, it is essential that a family can provide bride wealth when it is relatively wealthy and that it obtains bride wealth when needed. If the household has to supply bride wealth when it is poor then the bride wealth system need not enhance household security and prudent families will be reluctant to participate because they run the risk to have to give up resources when they are already low.

Since families hold both liabilities and claims, a bride wealth arrangement can only be functional if cattle ownership changes over time. Wealthy households are especially interested

in the security offered by a claims and liabilities arrangement if maintaining their wealth is not automatic and households with few cattle can only meet their obligation if they can improve their wealth position over time. Table two, which comprises information on cattle ownership after (bride wealth related, or other) cattle transactions took place, shows substantial movement in cattle ownership. Of the households that possessed few (at most two) beasts in 1992 40 percent had moved to the wealthier categories of households owning at least seven animals. The reverse also happens. Of the households in the wealthy categories in 1999, 30 percent owned two or fewer head of cattle in 1992.

Table 2 here

About eight percent of the households had two beasts or less both in 1992 and in 1999. These households might endanger the existence of the debt arrangement if they claim outstanding bride wealth, while remaining unable to pay their due. To deal with this possibility and only if the groom is very poor and sincere, the father of the bride may allow the groom to pay (part of) the outstanding roora from the bride wealth received from marrying of a daughter out of one's own marriage (Holleman, 1975). Debt repayment is thus ensured though it will be postponed for a long period (a generation!).

Another way to prevent the collapse of the arrangement because of the non-payment of bride wealth, is to make the whole family responsible for the honoring of bride wealth debt. That is one reason behind the family character of Shona marriage. If the groom cannot pay, his father (who is also the owner of bride wealth claims if he has married daughters) might be in a position to pay. So if husband A is in need, he can approach his father, who may tell A's sister's husband (B) to pay part of his outstanding bride wealth. If B cannot repay he can approach his father who, in turn, can put a claim on his son in law (C). In this way there is a string of debt relations that can be called upon, so that there exists a large group of people who can possibly become the net source of cattle to be transferred to a household in need. It follows that if such individualized mutual debt relations work, that there are numerous households that both receive an in-transfer of cattle and transfer cattle out. Only households in need would be net recipients, while (temporarily) well to do households would be net providers.

If the payment is circular A → B → C → A, then quickly all households would be out of

claims. This obviously can not be efficient so that A has an incentive to look for a household that is immediately able to pay, suggesting that the arrangement is contingent. Also, in years with covariate risks it does not make sense if everybody starts calling in bride wealth debt as this means that cattle is circulated but not much is attained. In those circumstances it only helps to claim from wealthy households.

In the marriage arrangement elaborate safeguards are built in, that ensure the spreading of claims and liabilities relations in a way that makes it more likely that a request for payment can be met. Reverse exchange marriages where both a son and a daughter marry into the same family (and for which no net bride wealth payments would be due) are taboo, just like marrying someone with the same clan and sub-clan name. Bourdillon (1987) presents an extensive treatment on the kind of Shona kinship relations that are allowed. In short the rule is that relations are forbidden if one is related to the third degree (for instance if a child of your parents' siblings is married into a given family then you are not allowed to marry into that same family). In practice this creates an enormous group of affines that can easily comprise several hundred families.

To further explore whether a family in need manages to obtain bride wealth from its debtors, and whether its debt owners reclaim bride wealth when the family is relatively wealthy, two village level fixed effects logit regressions are presented in table three. One with as dependent variable whether the family received bride wealth; the other with the provision of bride wealth as dependent variable. Due to missing information, 33 observations had to be dropped, leaving a total of 1631 observations. As it is unknown whether a family has any outstanding or claimable debt, the estimations are limited to the sub-population of households with heads aged 35 or over. The presumption is that heads of household of at least this age can reasonably be expected to participate in the bride wealth system. In doing so the sample size was reduced to 1543 observations.

The amount of livestock resources (before transfers) is taken as indicator of family wealth. Obviously consumption is the preferred measure to approximate welfare status, but no reliable information on expenditures is available. Livestock holdings are a reasonable alternative, if only because Zimbabwean families associate livestock ownership strongly with wealth (Scoones, 1995). This should come as no surprise, given the important role draft animals fulfill in income generation (Hoogeveen, 1999) and its role as buffer stock (Kinsey *et al.*, 1998).

Seen in this light, livestock ownership is probably a better proxy for a family's permanent wealth status than household income which fluctuates strongly from year to year. Nonetheless, the latter factor is also included (as the log of real total household income) to inform on how resource fluctuations affect the transfer of bride wealth. Additionally, to capture the covariate element of income, rainfall in millimeters and measured at the national level is incorporated.

For families that provided *and* received bride wealth in a given year the order of the events is not known, so that no causal inferences can be made. For our purposes this is fine as it does not matter whether a family first provided bride wealth, then considered its possession of wealth too low after which it called in bride wealth; or whether the family first received bride wealth and thereafter became more willing (and able) to honor a request for the repayment of outstanding debt. It is expected that it matters whether a household possesses sufficient draft animals for plowing. Therefore a distinction is made between households that transfer bride wealth and possess a minimum number of draft animals and those that do not. The cut off point is put at 2.5 trained oxen equivalents, a number that allows the household to pull a plow. [6]

To allow for the fact that a household obtains a transfer of cattle as first installment of bride wealth payment when a daughter gets married, a dummy variable is included for daughters aged 15 or over that got married and started to live with their husband. No information on marital status was available for those below the age of 15. A household may also experience an out-transfer of wealth following a death in the family. This will be the case if the deceased is a wife for whom bride wealth is still outstanding, but also if it is a husband who still has to pay part of the outstanding bride wealth. In either case one expects an out-transfer. This is included by a dummy variable for death in the family. Finally, differences due to participation in the land reform program are allowed for. To this end a dummy for non-beneficiary households is included.

Table 3 here

[6] The following fractions, based on relative prices, are used to obtain trained oxen equivalents: cow 0.73; heifer, 0.61; bull, 0.89; trained oxen, 1.00; young oxen, 0.57; calf , 0.30; donkey, 0.18; sheep, 0.08; goat, 0.06 and pig, 0.06. Obviously owning 33 pigs will not allow one to plow, but a household that possess this number of pigs is in a position to sell them and purchase the draft power required. Livestock markets in rural Zimbabwe are sufficiently liquid to allow for such substitution.

The estimation results are reported in table three. The first thing to note is that the sign of the coefficient on pre-transfer livestock possessions switches. It is negative in the case of the receipt of bride wealth (implying that poorer households are more likely to obtain bride wealth) and positive for the provision of livestock so that the wealthier households are more likely to provide bride wealth.

For households possessing sufficient draft animals, in-transfers of bride wealth are positively associated with out-transfers. The same holds for out-transfers of bride wealth which are positively associated with in-transfers. This is suggestive of the circulation of cattle, a phenomenon reported by Mair (1977) to be the "essence of the bride wealth system" p.58. From our perspective it is a way to deal with the problem of small risk pools. Households that received an in-transfer of bride wealth and that are poor do not participate in the passing on of bride wealth: in their case the coefficient is insignificant. A Wald test (reported at the bottom of the table) shows that the coefficients for wealthy households differ significantly from those for poor households. It follows that wealthier households are the ones that participate in the circulation of cattle, and that the poorer ones do not. In combination with the fact that the livestock poor are more likely to receive bride wealth and less likely to provide it, it suggests that cattle is circulated through society till it reaches its destination at a poor household.

That wealthy households are more actively involved in the circulation of cattle, is also illustrated by the fact that those with higher incomes participate more actively in the provision *and* in the receipt of bride wealth: in both regression the signs for real income are positive. Despite this active participation by the wealthy, the bride wealth system is not immune to the consequences of covariate events. The regression for the in-transfer of bride wealth shows this: households are more likely to receive bride wealth in years of good rainfall.

Death in the family leads to an out-transfer of bride wealth, either to settle unpaid bride wealth (in case a wife dies) or to deal with inheritance issues (in the case a husband dies). Marriage leads to an in-transfer in accordance with the results of the kernel regression presented as figure one. Non-land reform beneficiaries participate less in bride wealth exchanges. This might be because resettled households, who started off as complete strangers, actively build networks within their own villages. One of the ways to do so is through intra-village marriages, which in turn, facilitates monitoring and the transfer of bride wealth. In communal areas intra-village marriages are uncommon. Another reason might be that land reform beneficiaries rely

for a much larger fraction of their income on agriculture (in 1997/98 for instance crop income alone made out 64 percent of the income of land reform beneficiaries 40 percent of non-beneficiaries) thus making them more reliant on bride wealth transfer.

In conclusion, the regressions confirm that unpaid bride wealth is a conditional arrangement allowing poor households to obtain resources. The probability of providing bride wealth increases with the possession of household wealth as measured in livestock equivalents. Households with higher incomes, and resettled households participate more actively in the bride wealth system. The arrangement is not immune to covariant risks and in years with little rainfall the probability to receive an in-transfer of bride wealth decreases.

4. Implications of insurance interpretation of bride wealth

In the previous section the prime assertion of this paper was established. Bride wealth claims and liabilities enhance household security by creating claims whose repayment is contingent on the economic situation of both the groom and his father in law. But the results of table three could be given a different interpretation if being wealthy is associated to having a larger bride wealth liabilities. This could come along if in the negotiations on the height of the bride wealth, the wealth of the father in law is taken into account in such a way that wealthier families demand less for their daughters than they have to pay for their sons. Or it could occur if households with a surplus of sons become relatively wealthy, because young men are more productive than young women. Unfortunately, household wealth at the time when bride wealth is demanded, and the total claims and liabilities of each household have not been recorded, so that this interpretation cannot be put to empirical scrutiny.[7]

Therefore to put the insurance interpretation of marriage to further scrutiny several of its implications are considered. In this section it is considered how the arrangement is enforced, what the consequences are if income risks are smaller and diversification easier (for those

[7] Since rainfall is the most important determinant of income in rural Zimbabwe, and as income and wealth are associated one way to check whether bride wealth depends on household wealth is to investigate the correlation between rainfall and bride wealth demanded. In regressions in which the height of the bride wealth is explained by rainfall alone and in combination with a squared term, none turned out be significant.

living in urban areas), whether daughters from households that are vulnerable to income shocks (the poor) marry younger because of the incentive to possess a positive balance in bride wealth claims.

4.1 Enforcement

In section two, it was stated that a "claims and liabilities arrangement may provide security if claims have to be honored irrespectively of the wealth status of the requesting household". How it can be assured that claims will be honored has not been made clear, but obviously it is of interest to know how the enforcement issue is solved in the bride wealth arrangement. That it is solved follows implicitly from the fact that bride wealth resources are transferred in a way that enhances household security. There are several mechanisms that improve the possibilities for contract enforcement. First there is the moral obligation that one has to pay its due. Especially since bride wealth claims are generated before the event. So unlike a credit provider who may refuse to provide his personal resources to another household, someone who owes unpaid bride wealth is likely to feel obliged to fulfill the request. This is reinforced by the fact that he has received something important from the claimant: his wife. She, by the way is likely to make precisely this point to her husband. Secondly there is flexibility in the repayment. The number of cattle is carefully stipulated in the bride wealth negotiations, there is flexibility in the kind of beasts that have to be provided (Dekker and Hoogeveen, 2000). And, finally there are the (extra) legal means of contract enforcement.

In the marriage arrangement punishment may be imposed if the son in law is in a position to repay but refuses to do so. The claimant has the possibility to take his daughter and her children into custody until the demand for debt repayment, or a sufficient part thereof, is honored (Holleman, 1975). The possibility to take one's daughter and her children back, is a serious threat for two reasons. Firstly it deprives the unwilling husband of his contribution to the lineage and of sons that will take care of him in old age (Bourdillon, 1987). Secondly, in a society where labor markets are absent, family labor goes at a premium and ambitious men try to build around themselves a sizeable family of agricultural laborers (Binswanger and McIntire, 1987; Bourdillon, 1987). In many instances it is not necessary to resort to the drastic measures of custody and does it suffice to suggest that ancestors with the ability to cause barrenness in the marriage might be displeased by the refusal of the son in law. Such a threat is taken very seriously also because certain ceremonies in the marriage procedure, like the transfer of a

cow to the mother of the bride (because she carried the daughter in her womb) which is subsequently dedicated to maternal ancestors, create a close connection between the payment of bride wealth and the birth of offspring (Holleman, 1975).

Another possibility is to turn to a traditional court. The marriage procedure comprises several elements which facilitate ruling by traditional courts. Use is made of an intermediary for instance. This is a carefully selected, trustworthy person, who operates as go-between when the intention of marriage is made known to the family of the bride. He (women do not act as intermediary) acts as official witness to all marriage transactions and is expected to be an impartial observer. In court the intermediary is the official witness who reports in how far and in which manner the parties have met their respective liabilities under the marriage agreement. Also the exchange of tokens (which in a society where illiteracy is common, have the status of written agreements) between the bride and her future husband at the initial stages of the marriage procedure facilitates court rulings (Bourdillon, 1987). If the court decides that cattle should be paid and the son in law perseveres in his refusal then the court has the power to confiscate the cattle required.

These measures help to ensure the insurance function in the bride wealth arrangement/ But in some instances this does not suffice. Approximately four percent of the marriages are dissolved on grounds that are related to the (non)-payment of bride wealth. These divorces are personal tragedies but they do not threaten the existence of the bride wealth insurance system. A divorced woman may remarry, in which case the bride wealth demanded will be lowered, dependent on the number of children she has given birth to (Dekker and Hoogeveen, 2000).

Another way to opt out of the insurance arrangement is to fulfill a bride wealth obligation as soon as one is able to do so. But there is a social stigma that prevents son in law's from doing so (Dekker and Hoogeveen, 2000). This stigma is still in place as is illustrated by the fact that bride wealth is repaid slowly over time. Of the 571 marriages only 21 percent had repaid all bride wealth cattle even though households possess sufficient cattle to do so. In fact in 30 percent of the cases, the head of household could repay the outstanding bride wealth liabilities of all married women residing in his household and still be left with at least six head of cattle!

4.2 Changes in risk

Voluntary informal insurance mechanisms may fail if households become more involved in the market economy or following the implementation of social safety nets like food for work schemes (Platteau, 1987; Dercon, 1999). The reason for this is opposite to the reason why punishment helps enforce an informal insurance arrangement. In this case these innovations provide extra possibilities for income smoothing. Since the informal insurance is voluntary, these additional possibilities undermine the functioning of the insurance.

Changes in Zimbabwe's economic environment, which in turn affected the income variability of households, have indeed affected the marriage arrangement. Service marriages, at which the son-in-law works for the father of the bride to fulfill his bride wealth liabilities disappeared after the occurrence of a labor market (Holleman, 1975). More recently opposition has arisen against the passing on of wives in replacement marriages. Nowadays it is more common to allow them to remarry. This change appears to be a response to the HIV/AIDS epidemic. Especially if one suspects the husband to have died of this disease, does one prefer his wife to remarry with someone else, rather than with a brother of the deceased husband.

Certain authors suggest that the demand of bride wealth (the core element of the insurance mechanism), is rapidly disappearing. Meekers (1993) reports for instance that "young couples increasingly oppose the payment or roora", p.50. She draws her conclusion on the basis of data collected in Harare, Zimbabwe's capital city. But her finding need not hold in a rural context. A priori one would expect urban households to have more reason to deflect from an informal insurance scheme: they are less dependent on the vagaries of the weather, some households are sufficiently wealthy that they can opt-out of any informal insurance arrangement, social control is less in urban areas and possibilities for income source diversification are greater. That in an urban setting roora is loosing its appeal is therefore not terribly surprising. But in rural areas, where formal insurance is absent and risks invariably large, it would be. It is therefore not very surprising that an attempt in 1950 to limit bride wealth by legislation failed in its purpose and had to be repealed in 1962 (Bourdillon, 1987). But also the more recent evidence (as presented in figure two for instance) suggests that there is no ground to expect that bride wealth is loosing its insurance function in rural areas. On the contrary. The figure suggests that the core element of marriage, the creation of mutual debt relations, has has hardly changed since 1935. Also, the fact that land reform beneficiaries, who depend on agriculture for a much larger fraction of their income and are therefore more vulnerable to risk, are more actively involved in the bride wealth claims and liabilities

exchanges is at least suggestive of the opposite. Bride wealth still has an important insurance function.

Figure 2 here

4.3 Timing of marriage

The optimal timing of marriage over the household lifecycle would be to marry daughters early in life, and sons late. If daughters marry when they are young, then the household becomes a net claimant to unpaid bride wealth. If, during this period some bride wealth is repaid, this allows the household to experience a period of high returns. Late marriage of sons has several advantages: the loss of productive draft power for the first installment of the bride wealth is postponed and, by postponing the marriage, the household has more time to accumulate sufficient cattle. If the household acquires many beasts, additional cattle becomes less productive so that the marriage of a son is relatively cheap in livestock terms. Unfortunately the available data do not allow us to test whether the payment of bride wealth is a factor that helps explain the finding that Zimbabwean men enter their first marriage at a much later age than Zimbabwean women (CSO, 1995).[8]

Changing the perspective slightly, one would expect the timing of marriage of unmarried daughters to be such that it coincides with a time when (i) cattle is desperately needed or (ii) when the household is in the "danger zone" so that it is good to have a debtor on which claims can be put. This possibility is explicitly recognized in what has been labeled credit marriages, the arrangement where a young daughter, in exceptional cases even a yet unborn girl, is promised for marriage in order to obtain advance payment of the bride wealth. Credit marriages are officially prohibited. Nonetheless Vijfhuizen (1998: 21) reports a surge in credit marriages after the 1992 drought in Chipinge District. Less extreme is the finding that daughters of poor households marry when they are relatively younger. This is suggested by the information presented in table four where it is tested whether the mean age of marriage is lower for girls from families with few heads of cattle (labeled poor) relative to those with sufficient draft animals, the non-poor.

[8] The median age at first marriage for men is 25 years, compared with 19 for women. Only 11 percent of men are married by age 20, compared to 62 percent for women

Table 4 here

4.4 Efficiency

It was suggested in section two that in a conditional claims and liabilities arrangement no interest would be demanded of a household that is a net debtor. This reflects the risk pooling element in the bride wealth system. Only a household in need calls in (part of) its outstanding debt. In doing so it is likely to be due more than it owes. As a detailed assessment of livestock value in Zimbabwe's communal areas by Scoones (1992) demonstrates that cattle yield a high return, this amounts to a substantial transfer of resources (unpaid interest). These high returns might be a reason to quickly call in all outstanding debt. After all, a family that ensures that its son-in-laws pay all bride wealth due and that is slow in paying its bride wealth liabilities, generates a high return from its action. That this does not happen (most bride wealth remains unpaid for a substantial period) illustrates that households value the option value of a livestock claim or that interest is paid. The latter is not the case. Only when repayment is urgently needed and the debtor unable to fulfill the request, will he try to give the impatient father in law a small contribution that is not considered repayment of the outstanding bride wealth. And even this is considered to be more a sign of "the earnest inclination to pay off the debt" (Holleman, 1975: 173) than payment of interest.

The absence of the demand of interest and the conditional receipt/payment of claims are the risk pooling elements in the bride wealth system. Obviously, these kinds of risk pooling are not fully efficient. A formal insurance would allow families to pool risks beyond unpaid interest on transferred endowments, and a formal credit agency would be able to offer credit beyond the limits imposed by the amount of outstanding bride wealth debt. Nevertheless, it is tempting to conclude that the presence of a security enhancing institution like Shona marriage implies a welfare gain relative to the situation where it would be absent: why else would this kind of arrangement have come into existence? But this interpretation need not hold in a dynamic context since the combination of marriage and bride wealth provides a link between procreation and security and puts a premium on having children (unmarried daughters). This is not inefficient per se, as long as the consequences of such an arrangement are fully borne by the household. But, the increase in the rate of birth is likely to have spillover effects to other households. These might be negative, for instance when land becomes scarce, or positive

when increased population pressure leads to technological innovations.

An additional aspect is that it is unclear what the consequences of the bride wealth arrangement are for other informal insurance mechanisms. The need for such arrangements has diminished substantially as the size of the bride wealth claims and liabilities is large relative to income. At an average value of 7.8 heads of cattle and Z$ 1765 in cash (in 1995) bride wealth represents two yearly incomes for resettled households and five for communal households! If one takes into account that in Zimbabwe a women at the end of her fertility would have given birth to 6.3 children (CSO, 1995), not all of whom survive or get married, then it suggests that households hold claims and liabilities representing a large part --25 percent is a conservative estimate, of their lifetime income. So the bride wealth system will negatively affect the incentive to join a different arrangement: a household that holds claims and liabilities is already able to smooth away the worst fluctuations in income. But a conditional claims and liabilities mechanism could just as well reinforce the functioning of an informal insurance arrangement. This is the case when the household is demanded to fulfill its bride wealth obligation at a time when it has to make a large net transfer to the pool. If the household has to fulfill this request first, then the net contribution to the pool diminishes and opting out of the insurance becomes less attractive. In any event, unambiguous conclusions about the Pareto improving character of Shona marriage or about the effects of the arrangement on the existence of other informal insurance mechanisms cannot be drawn.

4.5 Relevance beyond Zimbabwe

This paper has shown that the demand of bride wealth improves security for Shona households in Zimbabwe by associating marriage with the possibility to obtain livestock. Through its association with marriage, the enforcement problem is reduced because punishment which affects the procreation of the lineage is considered a serious threat. And by demanding livestock, the problems associated with covariant risks can be largely circumvented. The Shona are not the only ethnic group in Southern Africa that demand bride wealth and attribute a central role to cattle in their economy. The Xhosa, Twana, Zulu, Swazi, Ndebele, Khoi, Herero, San, Shona, Tonga, Lunda, Lozi, Ndemby, in short all but one of the ethnic groups living in southern Africa distinguished by Middleton *et al.* (1995) do so, just like the Nuer who live in Sudan, the Gusii in Tanzania and the Turkana in Kenya. The only exception in Southern Africa are the Bemba, who live in a tse-tse infested area and cannot keep cattle.

The demand of bride wealth and the importance of cattle is not the only aspect uniting these ethnic groups. They also practice rain fed agriculture in semi-arid tropical areas that can be characterized by land abundance and relatively low population density. These factors can in turn be associated with the absence of land, labor, formal credit and insurance markets and large geographically correlated weather risks (Binswanger en McIntire, 1987). The absence of labor markets creates a premium on family labor so that, like in Zimbabwe, enforcement of any informal insurance arrangement might be facilitated if it allows to pose a threat on the ability for procreation and the availability of family labor. Given that these ethnic groups face similar weather risk, use a comparable, draft power based, production technology and demand bride wealth in the form of cattle there is a fair reason to assume that they too make use of the possibility not to pay all bride wealth at the time of marriage. If they do so they enhance, like the Shona, household security by creating claims and liabilities.

5. Conclusion

In this paper it is claimed that the marriage arrangement in Zimbabwe in which bride wealth is demanded for an unmarried daughter, is an informal security enhancing mechanism. To be functional as insurance mechanism, the arrangement has to deal with information problems and covariant risk. By expressing bride wealth primarily in cattle, information problems are dealt with because the number of cattle possessed can be observed by anyone. The importance of covariant risk is reduced because cattle ownership is much less correlated with rainfall than is income, while the ownership of cattle is closely associated with the ability to generate income.

The claim of this paper is supported by empirical evidence. It is shown that only a small fraction of bride wealth is paid at the time of marriage and that most remains outstanding for a prolonged period. In regression analysis it is shown that bride wealth claims are contingent: families obtain resources when they are less well off while resources are provided by households that possess sufficient heads of cattle.

The importance of the bride wealth as informal insurance arrangement stems from several factors. First, the amounts involved are large. The average value that unmarried sons and daughters represent is conservatively put at 25 percent of lifetime household income.

Secondly, the mechanism incorporates nearly the complete adult population including the vulnerable. And finally it is a smart way of creating a large insurance pool without the need for a central organization that monitors each participant in the pool.

To put the insurance interpretation of marriage to further scrutiny several of its implications are considered. It is shown how the arrangement is enforced by relying on different kinds of (threats with) punishment. It is also shown that in urban areas, where income risks are smaller and diversification easier, opposition to bride wealth has arisen. This does not apply to rural areas. Daughters from households that are vulnerable to income shocks (the poor) and who therefore have a greater incentive to possess a positive balance in bride wealth claims are shown to marry younger. Sometimes poor households even promise their under-aged daughters into marriage.

Though the insurance interpretation of marriage suggest that the arrangement is likely to enhance welfare it is shown that this need not be the case. The marriage arrangement may be an obstacle to the introduction of other insurance mechanisms and it may contribute to high population growth. Finally it is argued that the arrangement need not be confined to Zimbabwe. It could be functional in many parts of Africa as long as they are characterized by land abundance, the demand of bride wealth and the use of cattle as draft power and store of wealth

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Table 1

Correlation coefficients for the period 1992/3-1997/8[1]

	National rainfall in mm
Household crop income	0.28 *
Household real total income[2]	0.24 *
Household maize yield	0.32 *
Household cattle	0.03
Household cattle sold	- 0.11 *

[1]All income sources are in Z$1990. Presented are population correlations for resettled households in the natural regions II, III and IV. An asterix indicates a correlation significant at the 1 percent level or higher.

[2] Total income comprises gross income from agriculture and own enterprises, income from livestock products, public transfers and private remittances and income from off farm employment.

[3]Measured in livestock equivalents, based on median prices.

Source: Kinsey surveys. Rainfall data obtained from the Zimbabwean Meteorological Service.

Table 2

Household cattle ownership in 1992 and 1999 (n=385)

observations	number of beast in 1992					
number of beast in 1999	at most 2	3 or 4	5 or 6	7 or 8	9 or 10	more than 10
at least 2	29	7	5	4	0	6
3 or 4	8	3	12	2	2	13
5 or 6	4	7	15	6	1	9
7 or 8	8	6	7	4	3	9
9 or 10	1	3	4	6	2	7
more than 10	8	14	11	22	13	124
observations	58	40	54	44	21	168

Source: Calculated from Kinsey data

Table 3

Village level fixed effects logit regressions of bride wealth received (intransfer) and paid (outtransfer) [1]

Dependent variable is 1 if household received / provided bride wealth		*Intransfer*		*Outtransfer*	
		Odds ratio	**P-value**	**Odds ratio**	**P-value**
Pre transfer livestock possession (in equivalents)		(-) 0.9576	0.006	(+) 1.0241	0.064
Bride wealth transferred out /in for households with sufficient draft cattle	(*)	(+) 1.0496	0.034	(+) 1.0524	0.054
Bride wealth transferred out/in for households with few draft cattle	(**)	(-) 0.9463	0.901	(+) 1.1615	0.724
Log real household income		(+) 1.2678	0.053	(+) 1.3734	0.002
Rain in mm		(-) 0.9978	0.028	(+) 1.0004	0.682
D-death in family		(+) 1.0306	0.918	(+) 1.7396	0.007
D-daughter married		(+) 4.3313	0.000	(+) 1.0577	0.684
D-communal area		(-) 0.7307	0.000	(-) 0.4862	0.000
Obs.		1631		1631	
Relevant subpopulation (head of household aged 35 or above)		1543		1543	
F (6,20)		70.09		16.89	
Prob > F		0.0000		0.0000	
Wald test on equality of coefficients of (*) and (**)	F(1,25)	0.06		0.05	
	Prob > F	0.8160		0.8168	

[1] Stratification by natural region (3 in total), clustering by village (28 in total). Observations are not weighted. The period covered is 1995/6 – 1997/8. Village

level dummies are not reported.

Table 4

Mean comparison test of age at marriage of own daughters married between 1994 and 1998 from poor and non-poor households*

	Age at marriage	*Std. error*	*Obs.*
Non-poor	21.9	0.34	170
Poor	20.6	0.59	40

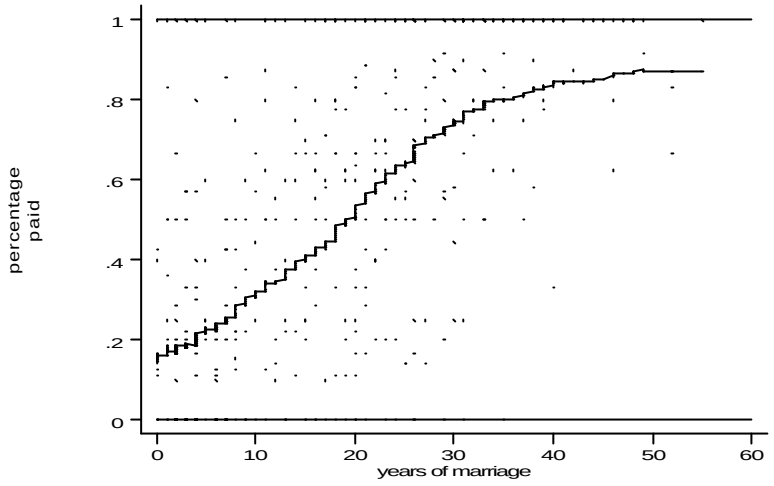
H_0:	mean (non-poor) – mean(poor) = x = 0		
H_a:	x < 0	x unequal 0	x > 0
T-stat	1.93	1.93	1.93
P-value	0.97	0.06	0.03

* T-test on the equality of means. Data are not assumed to have equal variances. Poor is defined as having less than or equal to 2.5 livestock equivalents. Age of marriage could only be determined for surveys done between 1995-1999, reflecting the years 1994-1998..

Source: Kinsey surveys

Figure 1

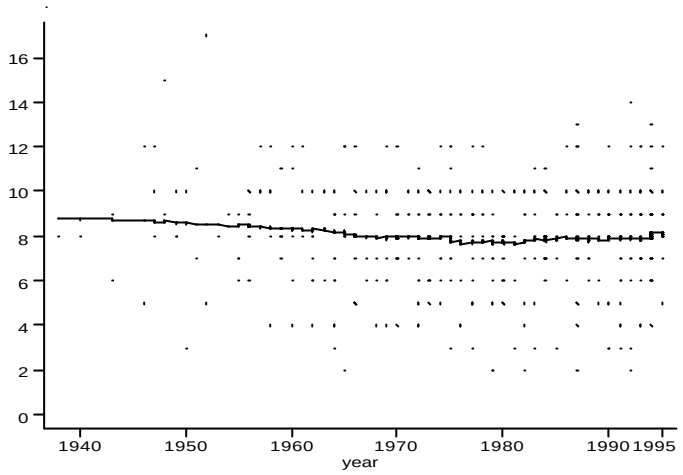
Kernel estimation of the percentage of bride wealth outstanding and date when marriage was concluded .



Source: Kinsey surveys

Figure 2

Kernel estimation of the bride wealth demanded and year of marriage



Source: Kinsey surveys