

EQUITY AND EQUALITY: THE ECONOMICS OF FEMALES' PROPERTY RIGHTS IN THE ISLAMIC MIDDLE EAST 700–1500

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Abstract

The paper investigates a newly constructed dataset of females' property and employment income collected from the archival documents of medieval Egypt, and empirically links females' property rights to structural economic change in the Middle East. The analysis points to a change in occupational structure as a major factor that enabled females' attachment to urban labour markets, and triggered a shift in income distribution in favour of women. Concurrently, Islamic Law gave females property rights equal to those of males, including the right to consent to the practice of birth control. Two long-term consequences are highlighted: higher household's income and demographic transition to a low fertility rate. The paper concludes that an episode of economic growth in the medieval Middle East favoured females' participation in the economy and the formation of female-friendly legal institutions.

Keywords: Gender economics, labour markets, property rights, income distribution, demographic trends.

JEL: J13, K11, J21, J31, N65

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I. INTRODUCTION

There is currently no consensus among scholars over women's role in the economic development of pre-modern Europe. The literature saw a surge in the number of publications, exposing three major debates, females' role as a cultural factor, their role in the demographic transition, and females' role in economic growth. The cultural factor debate gave females a specific role in the historical division of labour, one that attached them to basic physical functions, such as in the plough economies, that destined them to limited and debased economic

participation in modern societies.¹ Another heated debate emerged around the role of the EMP, the European Marriage Pattern, as to when and where the pattern emerged and whether it could have provided the explanation for the modern demographic transition.² The assumption being that females experienced change in their occupational structures in the aftermath of the Black Death, and that triggered a significant lowering of population growth thus leading to economic growth. Finally, the issue of females' wages in England's Industrial Revolution.³ It has come to the forefront when evidence revealed that women's wages were low, even very low, precisely when high wages were touted as the reason behind the technological inventions leading to the Industrial Revolution.

These debates are stimulating and thought provoking for economic historians working in non-European environment and exploring their own evidence of females' attachment to labour markets and its impact. The Middle East, with its current low rate of female employment, and abysmal record on females' rights, seems an unlikely place to find historical evidence suggesting females' role in the economy. Yet, as this paper will demonstrate, medieval records offer plenty of evidence on females' attachment to labour markets and female-friendly legal institutions.⁴ The historical evidence points to changes in economic structures in the aftermath of Justinianic Plague 541-750 AD, that perfectly explain a transition, such as manpower shortages, low population levels, high urbanization rate, and rise in aggregate demand for consumer goods. The literary evidence also documents how females entered labour markets in large numbers, whereas, a new dataset collected from the archival records of medieval Egypt, statistically demonstrates increasing values of females' property and income. Legal sources, theory and court records, demonstrate that Islamic law included a sophisticated array of females' property rights, including rights over reproductive activities. Simultaneously they demonstrate that the shift of income distribution in favor of females led to a rise in household worth, but whilst females kept

¹ On females and the plough, Alesina, 2013; On the significance of culture for economic development, Mokyr, 2016; On the cultural factors in the economic development of the medieval and modern Middle East, Heydemann, 2008; Shatzmiller, 2018.

² Support for the link between EMP and economic growth in Van Zanden, 2012; Voiglander and Voth, 2013; Opposition to it in Dennison and Ogilvie, 2014; Edwards and Ogilvie, 2018.

³ Supporters of high wages, Allen, 2011 for England; De Pleijt and Van Zanden, 2018 for females' wages in continental Europe; Opponents of females' high wages, Humphries and Schneider, 2019, for England.

⁴ On females' current legal infringement see AHDR, 2005.

undivided control over their share. If it substantially led to low fertility rate, females' entry to labour markets in the early Islamic rule in the Middle East deserves to be considered a turning point in the economic history of the Islamic Middle East.

Historiography, Data and Methodology

In general, and in comparison to other medieval societies, the Middle East does not suffer from lack of written sources. It benefitted from the early developments in the Arabic language, that facilitated literacy, and from the development of the Arabic paper that provided cheap writing material and expanded the boundaries of learning, previously limited by papyri and vellum.⁵ Written orders for instance, expedited shipment of merchandise, and increased efficiency in economic transactions. Islamic economic historians, such as Maurice Lombard, Claude Cahen, Eliyahu Ashtor, in the past, and more recently Avram Udovitch, did not pay much attention to females, to their role in the economy or to their wages. It was not due necessarily to sexism, nor was it due to the absence of evidence, but to the irrelevancy of either economic growth or females' role to the historical agenda. The change may have begun with Goitein's investigation of the *Geniza* records which shed much light on medieval women.⁶ The *Geniza* is also rich in statistical evidence, the bane of all medieval societies, from wages and prices, to taxation, to commercial expenditures supporting quantitative investigations, including those of women. In addition, the medieval Middle East was relatively urbanized at an early date.⁷

The literary sources for females' labour and females' property rights were previously studied by me and used to write two monographs on each subject.⁸ The abundancy of the Arabic legal sources, for instance, permitted me to study the legal theory of females' property rights and place it against the practice, in court records, notarial documents, and jurists discussions, for compliance and enforcement.⁹ Using the literary sources I previously established the economic dimensions of females' labour attachment, questions such as females' occupations, output

⁵ On the effect of the Arabic paper on literacy levels see Shatzmiller, 2018. On females' labour, Shatzmiller, 1988, 1994, 1997, 2013a.

⁶ Goitein, 1967–1988. Each of the volumes contains large quantitative of data on and discussion of women.

⁷ Bosker, Buringh and van Zanden, 2013.

⁸ Shatzmiller, 1994 on labour and Shatzmiller, 2007 on females' property rights.

⁹ See also Shatzmiller, 1995, 1996, in addition to 2007.

system and division of labour.¹⁰ In this paper I apply new statistical data of females' property and income, collected from 650 marriage contracts from medieval Egypt, to economic performance, living standards, GDP per capita, and household income, in search for females' role, share and empowerment.¹¹

Although the *Geniza* documents written in Judeo-Arabic, were previously used to investigate the economic history of the medieval Middle East, a short introduction is required.¹² The documents in question originated in a small, mostly urban, community of Jews, numbering 10,000–12,000 souls in Egypt and 7000 in Syria-Palestine.¹³ Their social and economic structures and conditions resembled those of urban Islamic communities, and Jewish males and females appear in Arabic records and were employed in the same urban sectors as Muslims.¹⁴ The marriage contracts used here are the most frequently found legal personal records of the *Geniza*, and understandably so. They conserved detailed personal data on wealth, property and ownership of wives and their families. In content, structure and formula, they are identical to the Islamic marriage contracts, with few exceptions. They show the same payments at marriage, the bride price—both early and delayed, and the family gifts, all denominated in local currency, with dates of possession, and locations of the assets. More significantly, many of the Jewish marriage contracts contain an additional clause giving the Jewish bride exclusive right over her wages, over her bride price money, over property she received and other income she will garner. As will be demonstrated in the next section, these were precisely the Muslim woman's property rights. Goitein was the first to draw attention to the clause in the Jewish *kettubot*, marriage contracts, and immediately linked it to the economy and to the prevalence of females' wage income, in spite of absence of females' wage observations in the *Geniza*, or in either Jewish or Islamic sources.¹⁵ A clause that effectively diverted control of property from husband to wife, in contradiction of Jewish law, was likely to solicit opposition from medieval and modern Jewish

¹⁰ Shatzmiller, 1988, 1994, 1997, 2013. For datasets,
<http://www.medievalislamiceconomy.uwo.ca/>

¹¹ For the dataset http://www.medievalislamiceconomy.uwo.ca/equity_equality/index.html

¹² Gil, 1971; Stillman, 1973; Greif, 1989; Goitein, 1967.

¹³ Ashtor, 1959; Golb, 1965.

¹⁴ The occupations provided by the *Geniza* documents were used in the occupational classification study of the medieval Middle East. Shatzmiller, 1994, p.81.

¹⁵ Goitein, 1967, 1, pp. 127–130; Goitein, 1978, 3, pp. 133–135, 179; Friedman, 1980, 1, pp. 239–31. Friedman published a large sample of marriage contracts.

scholars, objecting to Islamic influences on Jewish law.¹⁶ Unlike Muslim women, Jewish women also did not inherit in their father's estate, but no reform to this law surfaced under the influence of the Islamic practice of females' inheritance.¹⁷ Islamic marriage documents, although frequently found in the archives, never provide sufficient quantifiable basis.¹⁸

The paper proceeds as follows: The first two sections after the Introduction, sections II and III, summarize our findings on females' property rights and females' entry to labour markets as based on the literary sources. The list of females' property rights includes the rights to four wealth components, bride price, family gift, inheritance, wages, as well as the 'rights over the body', namely rights over reproductive activities. The following section summarizes the evidence on the new labour environment that led to females' entry into labour markets. Special attention is paid to labour shortages, high wages and demand for luxury goods. Among the outcomes, change in occupational structures, rising productivity of the textile industry, and expanding division of labour linked to females' skills in spinning and sewing, dyeing and embroidering, are highlighted. The link between females' participation in the textile sector and the amount of linen rags produced, raw material of Arabic paper, is made.¹⁹ Section IV explores the quantitative evidence provided by the dataset of marriage contracts and its significance to economic indicators in the medieval Middle East. We develop estimates of females' worth over a life time and suggest numbers previously unavailable for combined household income and GDP per capita. The results permit us to argue that the evidence uncovered of females' property over a life time constitutes a shift in income distribution in favor of women. As well as that females' attachment to labour markets was a turning point in the economic history of the medieval Middle East in the post-plague environment. The final section, section V, concludes with reflections on the strength of the empirical evidence presented in the context of recent criticism of Islamic law, as growth retarding institution. We emphasise the role of the Islamic law in responding to the needs of the economy, as well as that of female-friendly legal institutions to females' empowerment.

¹⁶ Ackerman-Lieberman, 2014; Cohen, 2016.

¹⁷ On Jewish inheritance in *Geniza* documents, Rivlin, 1999.

¹⁸ See individual Islamic marriage contracts in Zomeño, 2000; Rapoport, 2005; Shatzmiller, 2007, pp. 19–60. Mouton, 2013 on 83 marriage documents from tenth- to eleventh-century Damascus. Rāgib, 2018, pp. 33–35.

¹⁹ Shatzmiller, 2018.

II. FEMALES' PROPERTY RIGHTS IN ISLAMIC LAW

The Islamic legal system was formed gradually in the Middle East and when it emerged in a codified form it contained equal property rights for women, that remain valid until today.²⁰ It is the argument made in this section that there was a historical link between these rights, the new labour environment, and females' attachment to labour markets. This section consists of a summary of females' property rights based on theory, *fiqh* and *furūc*, records of legal practice, in manuals of contracts, or formularies, *shurūt*, *kutūb wathā'iq*, and in records of enforcement in archival court documents and consultations, *fatwas*.²¹

The transition from common property rights, typical of nomadic societies, where herds were held in common by the tribe, to individual property rights, where land and real estate were held individually, occurred as Muslims entered the Middle East.²² It was to be beneficial to the economy in many ways. Individual property rights protect landowners' investments, for example, limit "free riders," minimized transaction costs, and increased efficiency in factor markets, among others. The law envisions property rights as embedded in the human being from the moment of conception, or from the moment that pregnancy was visible and could be certified, for purpose of litigation.²³ By definition, property rights are 'gender blind', with the exception of special circumstances as discussed below, but the existence of the law meant that every free person, male or female, had the right to acquire, own and dispose freely of property transferred to him or her through gift, inheritance and wages.

Table 1 provides a comprehensive overview of all females' property rights, in normal and special circumstances, the timing of their acquisition, and how and when they could be exchanged in return for males' rights. The list begins with property ownership, gift and inheritance, followed by employment income and rights over the body.

Table 1
Females' Property Rights*

²⁰ Among the many studies on the formation of Islamic law, see Hallaq, (ed.) 2004; El-Shamsy, 2013.

²¹ Shatzmiller, 1995, 2007, 2013a.

²² North, 1981.

²³ See documents ensuring the property rights of the unborn discussed in Shatzmiller, 2007.

Right	Acquisition	Requirement	Legal Status
Receive mandatory gift (bride price)	Marriage	Marriage	No forgiveness or trading in allowed
Receive mandatory maintenance	Marriage, divorce, widowhood	Marriage	May be traded for husband's rights
Inheritance (mandatory)	Any time	Any time	No forgiveness or trading in allowed
Receive gifts	Any time	Any time	Forgiveness option
Earn wages	Any time	Occasionally husband's agreement is required	No forgiveness or trading-in
Invest (sales, loans)	Majority	Majority and release from interdiction	No forgiveness or trading-in
Gifting	Majority	Majority and release from interdiction	At will
Agree to consummation of marriage	Marriage	Delivery of bride price	Taking possession of the bride price
Agree to birth control	Marriage	Compensation required	Only to free women
Receive payment for wet nursing	Marriage	Husband's agreement	At will

*Based on Shatzmiller, 2007.

Gifts

In addition to the rights to gift and be gifted universally shared by males and females, females receive a mandatory gift at the time of marriage in the form of bride price. They also receive at marriage the right to maintenance, namely shelter, food, and clothes. The bride price could be in the form of cash, jewelry, household items, or other material goods. In addition, marriage contracts show that brides received non-mandatory gifts from their families that most frequently included houses, stores, orchards, plots of land, as well as cash. Family gifts, though not mandatory were registered in the marriage contract and became the property of the bride. All Islamic marriage contracts, as early as eighth-century Afghanistan and ninth-century Egypt, show that bride price was always paid in two installments, early and delayed, and that the delayed became a debt on the husband, to be paid on a fixed date stated in the marriage contract, or upon demand, divorce or widowhood.²⁴ The mandatory gifts, bride price and maintenance, could, and as court documents show, were indeed used in divorce initiated by the wife to acquire the husbands' rights, such as the right to force her to move away from her hometown, in return for his right to marry a second wife, or in return for her right to initiate divorce.

Inheritance

The Qur'anic inheritance system demanded that the estate be divided among specified heirs, family members, including females, with only third available to dispose of by will. All

²⁴ Rapoport, 2005; Khan, 2007, pp. 52–59; Mouton et al., 2013.

family members were entitled to inherit from every male or female family member and from each other.²⁵ Females were to receive a smaller, a half of a male's share. Archival documents from fifteenth century Granada show that with the number of surviving heirs declining, the size of the estate reverting to each grew and arrangements between siblings and parents were easily reached to prevent the physical division of total or urban properties at the moment of estate division.²⁶

Wages

The *ijāra*, the Islamic law of Hire, is 'gender blind' when it comes to employment, to hiring practices or to payments.²⁷ Indeed, the Qur'anic dictum, "*men have a share in what they earn and females have a share in what they earn*" (Q 4:32), appears to have provided the principle of equality in keep wage earning. Written hiring contracts are rare in the archival documents, though every property transaction required a written document. It may be suggested that hiring workers for wages was too common and going to court too time consuming and expensive that most hiring was done orally. The exceptions to this rule were for special jobs, such as well digging and wet nurse hiring with a trail in the records.²⁸ Wet nursing for example, was the only female occupation that benefitted from a specific hire contract in the notaries' manuals.²⁹ It was unique because it was long-term, ideally two years, but otherwise a year, several months, or any other combination. The Qur'an specified that the wet nurse should suckle the baby for two years and be paid wages for the duration of that time by the baby's father (Q 2:233). A wet nursing contract signed between the father and the wet nurse, also had a place for the wet nurse's husband to sign. Jurists were aware that a new pregnancy would stop the milk flow and spoil the contract, and that by signing, the husband of the wet nurse committed to refrain from sexual relations with his wife.³⁰ The husband's signature was required since he was giving away the right he had acquired in her body, the right to sexual relations with his wife, by paying the bride price. A legal waiver on his part was necessary.³¹ Court cases show attempts by

²⁵ On the inheritance system, Powers, 1986.

²⁶ Shatzmiller, 2007, pp. 61–76, 100.

²⁷ On the legal context of female hire, Shatzmiller, 2007, 149–175.

²⁸ The papyri documents from Egypt, eighth to tenth centuries, include some hiring, though most refer to the rent of land. Frantz-Murphy, 2001. Shatzmiller, 1994; Shatzmiller, 2007.

²⁹ Shatzmiller, 2007, pp. 103–107.

³⁰ Shatzmiller, 2007, pp. 93–117; Shatzmiller, 2013a.

³¹ Shatzmiller, 2007, pp. 176–195.

husbands to demand a share in his wife's wages from wet nursing, attempts that were always rejected by the courts. The jurists point to the contract and the option given to the husband not to sign it. Jurists also rejected offers by related or unrelated females to breastfeed children free of charge, and some of them defended even the mother's right to claim wages for suckling her own child. In case of divorce it was agreed that husbands should pay their wives for suckling their baby. If not paid, the mother was not obligated to breastfeed, nor was she held responsible if the baby died as a result. By the same token that loans extended by wives to husbands had to be registered in court and settled before estate division, so the rigorously defended females' wages in strict separation of property in marriage, the jurist turned the courts into female-friendly institutions, preventing husbands from encroaching on female's property.

Reproductive rights: the rights over the body

Table 1 also includes the 'rights over the body', of interest since they directly concern reproductive rights. Pregnancy, like the power of the female body to produce mother's milk, was generating income and a female's property right. The legal sources agreed that in cases where birth control practice by males is to take place, the permission of the wife is required and monetary compensation was due, as she is forgiving a property right to children and sexual fulfillment.³² In other instances, the law defended the right of the bride to delay intercourse, until she was sure that all commodities included in her bride were indeed in her possession. Indeed, so serious was the matter that the notaries prepared a document for a father to sign that he kept nothing of his daughter's assets, received or bought with the bride price.

In another instance, delay in pregnancy may occur if the husband claimed that his bride was not a virgin on the first night. The marriage transaction would be cancelled while a female doctor was called for verification. If the accusation was correct, the bride ran the risk of having her marriage annulled or forfeiting the bride price while the husband was given the choice to divorce or force his wife to accept a reduced bride price. Once more, the notaries drafted a notarial document in anticipation of such instance, in which a father testifies before the court that a loss of virginity may have occurred by accident in childhood. Legal age restrictions for marriage could also act to delay pregnancies. The law specified that no intercourse should occur

³² Musallam, 1983, pp. 30–31; Shatzmiller, 2007, pp. 93–117; Shatzmiller, 2013a.

between groom and bride if she was not “ready” for sexual intercourse, which was fixed at age 12, even if a marriage contract was signed and bride price paid. Of course, the strongest and more effective delay was caused by the two years suckling period.

Demographers and economic historians alike, have suggested that females’ attachment to labour markets may have been a factor in low fertility rate. The legal evidence of the practice of voluntary birth control in early Islamic societies, is not a proof of its practice or success, but it is certainly suggestive. The early date of the authorization of the practice, well before the tenth century, may have been the cause of the long delay in population recovery in the Middle East. A link to social norms generated in the aftermath of the plague and the growing household income because of females’ earnings is also made. Husbands and wives may have been incentivized to keep the number of children down for several reasons. First, to maintain two earners household welfare; second, to neutralize the effect of the inheritance law that split the estate too many ways; third, to limit consuming household resources.³³ Placing responsibility of birth control in the hands of males, also indicates a more practical approach to achieving birth control.

Finally, limitation of births was also linked to the appearance of individual property rights:

*A group living in an exclusive property rights regime has an incentive to limit births, so that the rate of return to its members’ labour would increase. Groups, would limit fertility by taboos, infanticide, and various other means to keep the relationship between the population and the resource base constant.*³⁴

Later scholarship would link lower population to more humane methods of population control, such as females’ employment, which is also supported by the case of the Middle East. Moreover, the depiction of voluntary birth control in the Islamic law points to the presence of a social norm. In the Middle East, the grief over a small child’s death was a cherished theme in Arabic literature.³⁵ Having a smaller but better children, may not have been a foreign concept to parents living in an environment of skill premiums, educational institutions and rising literacy levels in cities. The next section explores the economic transition that facilitated this social norm, females’ entry into labour markets.

³³ Compare De Moor and van Zanden, 2010; Van Zanden, 2012; Voigtländer and Voth, 2013; Dennison and Ogilvie, 2013; Cinnirella, Klemp and Weisdorf, 2017; Edwards and Ogilvie, 2018.

³⁴ North, 1981, pp. 68, 85.

³⁵ Gil’adi, 1993.

III. FEMALES' ENTRY INTO LABOUR MARKETS

Female property owners appear early in the sources, as early as of the eighth ninth century, followed by evidence on females occupations and females' wages.³⁶ An array of non-skilled and skilled females' occupations in the sources include the following: coiffeuses, mourners, soothsayers, school mistresses, errand girls, prison attendants, slave tenders, servers and money collectors in public baths, tax collectors at the gates, washers of the dead, wailers, care-takers of public establishments, match makers, launderers, tax collectors from prostitutes, brick makers, millers, vinegar and sweets makers, bakers and cooks, peddlers and brokers. Females were employed as wardens, sellers of local produce, home-made products and agricultural products, such as linseed oil, chicken, eggs or twigs, and silk worm cultivators. Legal documents show them investing, lending money, buying wheat and storing it for speculation, selling assets through brokers, taking loans, endowing assets and drawing wages as custodians, purchasing plantations, land, residential properties, slaves, orchards, silos, and irrigation shares in the village canal. In the service sector, we found high skilled female occupations including doctors, midwives, teachers of reading and writing to females, poetry reciters, singers and musicians, calligraphers and secretaries.

Yet, the significance of the female wage earner is best depicted by the rise of the textile sector. By the end of the eleventh century the size of the urban labour force employed in the textile sector in the medieval cities ranged between 18 and 22 per cent of the labour force.³⁷ Division of labour and specialization was highly developed: By the eleventh century we count 166 different textile occupations exclusively.³⁸ It was an efficiently organized sector. In Egypt for instance, a well-integrated network of growers of industrial crops, merchants and dealers looked after supply. Productivity was not hampered by State's regulations, or professional organizations. Professional guilds, which were in evidence during the Roman and Byzantine periods in the Middle East, disappeared, so that innovative techniques, commercialization and

³⁶ For details, Shatzmiller, 1988, 1994, pp. 347–353, 1995, 1997, 2007, 2012, 2013. Pamuk and Shatzmiller, 2014.

³⁷ Shatzmiller, 1994, p. 215; Shatzmiller, 2013b.

³⁸ List of occupations in the textile industry in

http://www.medievalislamiceconomy.uwo.ca/cost_of_living/occupations.html; Shatzmiller, 1994, pp. 118–124.

markets could flourish. Human capital improvement occurred in areas related to the textile sector. Production techniques improved greatly in every region, benefitting from growing literacy and cheap paper, from travelling and migrating artisans, or learning skills from observing imported textiles.³⁹ Brokers, or ‘clothiers’ ran an output system that accommodated a comprehensive system of supply and demand. Tax farmers, or tax collectors, female and male, served as a link between workers, their products and the markets. They distributed the orders, supplied the raw material for spinning and sewing, collected the finished items, paid wages and taxes.⁴⁰

The literature that studied the medieval Islamic textile sector agrees that it was a large, flexible, innovative, well capitalized sector.⁴¹ Females’ entry to labour markets and into textile production followed the structural changes in labour. Lower population levels, and transformation in the agricultural sector were major factors. Agricultural production shifted from focusing on cereal cultivation to intensive cultivation of industrial crops, sugar cane, cotton and flax, new plants, some geared to textile production.⁴² There were also new labour-saving devices,⁴³ and extension of seasonal cultivation to summer crops.⁴⁴ Urbanization facilitated the development of manufacturing, by encouraging concentration of financial capital and development of human capital.⁴⁵ Females’ workshops benefitted from the urbanization in the Middle East. While male artisans worked in ateliers spread out across the city, females’ labour was communal. Spinning and embroidery workshops were in private homes, where several females worked together, preserving gender separation but benefitting from collective child minding. Female’s labour contributed to productivity by high level of specialization, stimulating aggregate consumption of their products. Textiles became a major item of value storage for consumers. Evidence of high wages, typical to a post-plague environment generated growth in demand for high-end manufactured goods and luxury items and their commercialization.⁴⁶

³⁹ Serjeant, 1972; Lombard, 1978; Shatzmiller, 1994; Rāgib, 1982; Shatzmiller, 2018

⁴⁰ Goitein, 1967, pp. 99–116; Shatzmiller, 1994, 2012, 2013b.

⁴¹ The studies devoted to textiles in Islam are too numerous to be detailed here. See for instance, Serjeant, 1972; Lombard, 1978, Frantz, 1981.

⁴² Watson, 1983; Frantz-Murphy, 1981; Bulliet, 2009; Shatzmiller, 2018.

⁴³ Al-Hassan and Hill, 1986, pp. 37–92.

⁴⁴ Cooper, 1977.

⁴⁵ Bosker, Buringh, and van Zanden, 2013.

⁴⁶ Goitein, 1957, 1967, 1973; Stillman, 1972; Gil, 2004.

Although we know that females entered urban economic networks in large numbers in response to manpower shortages, and that their skills in textile production transformed the sector, we remain uncertain about the size of the females' population involved in wage earning in the cities.⁴⁷ For instance, Goitein believed that in every household, one or several females earned wages:

.... "*textiles, were, of course, the main field of female remunerative occupations*"; "*thus the demand for spindles must have been large enough to encourage people to concentrate on making them*". "*Each married woman was expected to engage in some work in addition to her household chores, and that in every household, one or several females devoted part of their time to spinning.*" *Each female "sent some spinning and embroidery of her own to the market".*⁴⁸

The evidence of the legal sources, Jewish and Muslim, is equally strong if not conclusive. The clause in the Jewish marriage contracts included the phrase: "her husband cannot claim her earnings, nor force her to earn wages for the household."⁴⁹ Both Jewish and Muslim legal sources reported friction between husband and wife over her wages and his attempts to possess them.⁵⁰ Females' monopoly over major occupations such as spinning, also suggests a larger proportion of females in wage earning. Females reserved a monopoly over spinning of every fiber from wool, to silk, cotton and linen. They also held a monopoly over embroidery, over silk dyeing and sewing of sumptuous garments, brocade weaving, carpet weaving, and lace making. Males therefore could monopolize commercial weaving, an aspect of the pre-eminence of specialization and division of labour in the sector. These references indicate a large females' working force and the fact that females' property rights could not have been maintained unless females' wages were widespread. The existence of female-friendly legal institutions encouraged females' attachment to labour markets. Despite the evidence, estimates of female participation in labour force is kept to no more than a third of the female population in the next section.⁵¹

IV. QUANTITATIVE

This section links together law and labour by placing numbers on females' property rights to argue that females' wages were substantial and giving them property rights was a real

⁴⁷ Shatzmiller, 2012, 2013b, 2018

⁴⁸ Various citations in Goitein, 1967, pp. 100, 127-128.

⁴⁹ Goitein, 1978, pp. 133-135, quote, 132.

⁵⁰ Goitein, p. 135c.

⁵¹ Shatzmiller, 1994, pp. 347-368.

concern, not a theory. The evidence is derived from a dataset of 650 marriage contracts from medieval Egypt that enables us to derive numerical value for bride price, family gift, inheritance and wages, and suggest female's worth over a life time.⁵² The value averages of the first two components, bride price and family gift, are simpler, being a one-time payment, the other two, inheritance and wages, more complicated to estimate given their uncertain nature as accumulated over a life time. Once established, averages are then compared to various measurements of living standards, to assess their relative place in male's and female's existence and economic resources' framework. Next, we estimate females' worth and household's income and finally GDP per capita estimates.

1. The Bride Price

We begin by establishing the value of property given to the bride at marriage. It was the earliest mandatory gift from groom to the bride, to be paid in two installments, one immediate, the other delayed. The first installment was registered in cash in the marriage contract and was due before consummation of the marriage could take place. In most cases, the first was converted into household items to be delivered directly to the bride. The second, referred to as the 'delayed' made the bride price value a lifelong enterprise. Registered at the same time as the first, in cash in the marriage contract, it was a debt, to be paid to her at a specified date. **Table 2** presents the average prices of the early, delayed, and combined bride price in dinars in our dataset.

TABLE 2
Early, Delayed and Combined Bride Price

	Egypt 11th-13th Centuries in Gold Dinars	
	Average	Number of Observations
Bride Price (Early)	15.35	116
Bride Price (Delayed)	31.80	132
Bride Price (Combined)	50.45	114

Source: http://www.medievalislamiceconomy.uwo.ca/equity_equality/appendices/index.html

Since the bride price was mandatory for getting married, we compared it first to male's daily wages. When a groom earning a daily wage of 0.065 dinars, he needed to envision working

⁵² Datasets and Appendices on
http://www.medievalislamiceconomy.uwo.ca/equity_equality/appendices/index.html

for 235 days, or 9.4 months, to earn the average early bride price of 15.35 dinars.⁵³ To pay for the second payment, the delayed bride price, an average price of 31.80 dinars, an unskilled worker, paid a daily wage of 0.065 dinars, would have to work for 489 days, or 69.8 weeks, or 1.34 years. Finally, to pay for the combined bride price, an average of 50.42 dinars, the entire sum paid by the husband to his wife over a lifetime, a husband earning daily unskilled wages would work for 772 days, or 30.88 months, or 2.5 years.

Next, we compared the bride price to two consumer goods, books and garments. A book in eleventh-century Egypt could be bought for 40 days of unskilled wages, but by the thirteenth century, its price dropped and it could be had for only 8 days' wages.⁵⁴ The change in the price of books in Egypt had several reasons, one of them, the decline in the price of raw material, the linen rages, which was directly linked to the entry of females into textile production. In medieval Cairo, buying a book was much cheaper for a man than getting married, but garments were a better measurement of wealth for the bride. A long price list of garments was compiled from the *Geniza* records including from brides' trousseaus, by Y. Stillman and Ashtor.⁵⁵ The least expensive *thawb*, a staple clothing item, averaged between a $\frac{1}{2}$ and 1 dinar, and between a $\frac{1}{2}$ dinar and 3 dinars for the least expensive *jukaniyya'*, another common item of clothing. Prices doubled and tripled when these items were made from luxurious materials, such as brocade and silk, in a variety of colors, with elaborate decorations on the borders, embroidery, gilding, etc. A luxurious *thawb*, the kind included in the trousseau of wealthy brides, had an average price of 6.20 dinars.⁵⁶ 'High-income' grooms, or rather their families, which most likely paid for high end bride price, regarded them as an investment.⁵⁷

In conclusion, paying an early bride price by unskilled wages was probably not an impediment for getting married, although paying the delayed portion required some planning if paid solely by unskilled daily wages. The husband needed income to pay for the maintenance of the household, food, shelter and clothing, so that paying the wife's debt would require withdrawing income from elsewhere, which may be the reason why it was 'conveniently'

⁵³ For male wage in eleventh- to thirteenth-century Egypt, Pamuk and Shatzmiller, 2014, p. 202.

⁵⁴ Shatzmiller, 2018, p. 12, Table 4.

⁵⁵ Stillman, 1972; Ashtor, 1969.

⁵⁶ http://www.medievalislamiceconomy.uwo.ca/equity_equality/index.html. Shatzmiller, 2018, 21–22, Table 7.

⁵⁷ Goitein, 1966.

forgotten. The ability of the husband to pay the delayed bride price on time was contingent on his economic success in the years following the marriage. Paying the delayed also meant moving property or income from his control to hers, so husbands probably took time to comply. For the wife, it was a different matter. The difference between receiving the delayed bride price on time or not at all, directly affected her financial worth. As we saw in **Table 2**, the delayed had an average of double value than the first; it could have been invested by her if given on time and provide her with income that would remain in her hands. In both Jewish and Islamic law, the payment of the delayed left a trail of legal documents. In Jewish documents, the husband put his property as collateral.⁵⁸ In the Islamic case, the evidence points to flexibility in its payment. Payment could be made on the date specified in the marriage contract, or paid upon request of the wife, alternatively on divorce or in widowhood and if unpaid at the time of the husband's death, was deducted from the estate before estate division. In conclusion, receiving the delayed on time was crucial, especially to the Muslim wife given her property rights, because it meant shifting property and income from his control to hers, so that its potential for investment could be realized. The delayed bride price had additional value to the Muslim wife: it could be used in to "buy" back the husband's privileges and duties, such as paying maintenance, taking a second wife, or moving his wife to another city. Its existence was a reassuring to wives and one of the more useful of her property rights. We will return to other economic implications of the bride price below.

2. Family Gift

Our data shows that not all brides received property as a family gift at the moment of marriage but most of them did. In the case of the Jewish bride, family gift came from her father, and may or may not represent her share in the estate, unlike a Muslim bride, who she frequently received marriage property gifts from both parents. In addition, in many instances a Muslim bride was related to her groom through the practice of cousins' marriage and thus received family gifts from her aunt on the groom's side as well.⁵⁹ **Table 3** presents three averages of family gifts, based on our database of marriage contracts. Goitein divided his data into three sections according to the value of the family gift: "poor," "middle class" and "rich". As expected, the highest number of observations was for the "middle class" group, with an average

⁵⁸ Goitein, 1967, p. 179.

⁵⁹ Shatzmiller, 2007.

family gift of 143 dinars. Most family gifts were in the form of real estate, with location and price specified in the marriage contract which was notarized and signed by the court witnesses.

How valuable was the family gift to the wife as an economic asset? Data from archival Islamic documents indicates that for a Muslim woman, the family gift was the most stable economic asset under her control over a life time.⁶⁰ For the Jewish wife it was different. According to Jewish law, the family gift, *nedunya*, like the bride price, *mohar*, were transferred to the husband and remained under his control for the duration of the marriage. With the insertion of the clause in the marriage contract, new and different instructions were provided: “The rent from her property is to be in her hands, not his, for her to deal with as she sees fit in her business affairs.”⁶¹ Beside the influence of Islamic law, it may be suggested that parents wanted to make sure that the house they gave their daughter as a marriage gift, would not be lost in divorce and would remain under her control to provide income for a life time.⁶² Muslim wives were more assertive about their property rights: court documents and *fatwas* show that females went frequently to court to demand rent from their husbands when they lived in a house that belonged to her.⁶³

TABLE 3

Family Gift	Egypt 11th-13th Centuries in Gold Dinar		
	Median	Mean	Number of Observations
Poor (<50)	18.	20	22
Middle Class (50–200)	90	96	29
Rich (>200)	329	431	14
Total	61	143	65

Source: http://www.medievalislamiceconomy.uwo.ca/equity_equality/appendices/index.html

Bride Price and Family Gift—Was There a Correlation? Regression Analysis

Both Goitein and Friedman suggested that Jewish marriage occurred between families of equal wealth and thus that there was a correlation between the size of the bride price and the size

⁶⁰ Evidence presented in Shatzmiller, 2007.

⁶¹ Friedman, 1980, p. 285, note 190, 291–92.

⁶² Friedman, 1980, p. 303.

⁶³ Shatzmiller, 2007, pp. 53–60

of the family gift. They did not try to demonstrate it statistically but left it at that. The question is of interest beyond the history of Jewish family and society though, because marriage between families of equal wealth was an economic tool for females. It meant larger size of the property under her control and explain the historical evidence of *waqf* making by females. To establish a correlation between the two, a regression analysis was performed, relating the bride price to the family gift. We used the value of each of the early, delayed and combined bride price as representing the husband's family wealth, and related them to the family gift, representing the bride's family wealth.

Table 4 shows what our dataset looked like while **Table 5** shows the regression results.

TABLE 4
Combined Bride Price and Family Gift
 Egypt 11th-13th Centuries in Gold Dinars

Bride Price	Observations	Mean	Median	Interquartile Range	Mode	Standard Deviation	Variation	Min	Max
Early	116	15	8	16	5	25	625	1	200
Delayed	132	31	20	30	20	37	1393	1	300
Combined	114	50	30	50	25	75	5575	4	502
Family Gift	65	143	61	152	50	189	35500	2	795

Source: http://www.medievalislamiceconomy.uwo.ca/equity_equality/appendices/index.html

Table 4 shows that the most common value of a family gift, 50 dinars, was higher than the combined bride price, regardless of any statistical average. Other useful observations from **Table 4:** the ‘mode’ accurately represents the most common value of each of the variables in the dataset, while the relative high values of standard deviation and variance indicate that the median might not be an accurate representation of the averages. **Table 5** shows that the lowest correlation was between early bride price and the family gift, a coefficient of 0.048. The correlation between the delayed bride price and the family gift, had a coefficient of 0.090, while the strongest correlation, a coefficient of 0.624, was found between the combined bride price, representing the groom's family wealth, and the family gift, as the bride's family wealth. The results of the regression analysis confirm that bride price and family gift were historical sound indicators of wealth equivalence between contracting families. The regression also confirmed that the combined bride price is a more accurate measure of wealth than either the early bride price or the delayed portion, because the combined bride price represents the yields of property

and income that accumulated during marriage. We conclude that there was indeed a correlation between bride price and family gift, but not overwhelmingly so.

TABLE 5
Regression Analysis of Bride Price and Family Gift

Dependent Variable	Observations	Coefficient	Robust Standard Error	T-Stat	F-value	R squared
Early Bride Price	152	0.048	0.011	4.45	19.80	0.4284
Delayed Bride Price	169	0.090	0.021	4.23	17.85	0.3145
Combined Bride Price	145	0.624	0.032	19.3	372.66	0.952

*Bride Price=B0+B1 Family Gift+Ui

Finally, we suggest that for the Jewish wife, who did not benefit from the clause that gave her control over the bride price and the family gift, there would not be benefit from these assets over a life time. In the Jewish household, whose property was controlled by the husband, all increased values accrued to him with no impact on female's worth in the long-run. In comparison, Muslim females with equal property rights directly benefitted from marriage between families of equal wealth. Such marriage meant more property under her control and bigger economic potential in the long-run.⁶⁴

3. Inheritance

The suggestion that Jewish brides received their share in the estate as a family gift is not at odds with precedence, or with the literature.⁶⁵ Friedman suggested that the high average value of Jewish family gifts was related to the fact that Jewish females did not inherit in the father's estate and that the family gift represented their share.⁶⁶ The pattern was observed in various European regions, where the dowry represented the daughter's estate portion. D. Hughes, in a seminal article, traced the transformation of the bridal gift into a dowry paid by her father, and suggested that it was a "Mediterranean pattern".⁶⁷ As we saw earlier, Islamic law on female's inheritance was different. The identity and shares of the estate were determined by the Qur'anic hierarchy of heirs, while Muslim daughters received only half of the share of sons, but they

⁶⁴ See samples of female' wealth from Granada family court transactions. Shatzmiller, 2007.

⁶⁵ Friedman, 1980, pp. 285–288.

⁶⁶ Friedman, 1980, p. 302.

⁶⁷ Hughes, 1978.

inherited from both father and mother, sisters and brothers. Given the ambiguity surrounding Jewish females' inheritance, the value of the inheritance in our calculations in both cases, Jewish and Muslim, we arbitrarily set component number 3 as the value of the family gift. The results presented in **Table 7** that estimate life time worth will have the same equivalent of family gift and inheritance.

4. Wages

Current females' attachment to labour markets generates much interest in females' wages among economists who believe it to be as beneficial to the economy.⁶⁸ A more flexible approach to the study of economic growth as a short-term episode, also makes it easier to look at females' wages in a historical economic growth context.⁶⁹ Methodologies developed for estimating female remuneration in post-plague Europe and England suggest a fluctuating wage gap of a half or three-quarters of a male's wage.⁷⁰ It is therefore frustrating for economic historians of the Middle East that the *Geniza* material, otherwise rich with statistical data, did not provide observations of females' wages. While explicable, the fact that females were paid piecemeal, for threads spun, for pieces of cloth sewed, for the amount of silk dyed, or by the task performed, rather than by the day or month, the lack of wage observations forces us to use proxy estimates.

Table 6 offers estimates of females' wages in the Middle East, when 50 and 66 per cent of male's unskilled wages, in monthly wages for the benchmark years used for males' wages in a previous study.⁷¹

⁶⁸ Bowlus and Robinson, 2017; Doepke, Tertilt and Voena, 2012.

⁶⁹ The literature includes De Moor and Van Zanden, 2010; Van Zanden, 2012; Voigtländer and Voth, 2013; De Pleijt, Van Zanden and Carmichael, 2018; Sarasua, 2019. On wages and GDP in the Industrial Revolution Allen, 2001; Angeles, 2007; Hatcher, 2011; Fouquet and Broadberry, 2015.

⁷⁰ Van Nederveen Meerkerk, 2010; Muldrew, 2012; Doepke, Tertilt and Voena, 2012. The National Females' Law Center Report of (2014) shows that American females who work full time, year-round were typically paid 78 cents for every dollar paid to their male counterparts. http://www.nwlc.org/sites/default/files/pdfs/wage_gap_over_time_overall.pdf (accessed March 2019)

⁷¹ Discussion in Pamuk and Shatzmiller, 2014, pp. 218–221; On wages and GDP estimates, Fouquet and Broadberry, 2015.

TABLE 6
Females' Average Monthly Wage
 Egypt 11th-13th Centuries in Dinars

Year	Male's Wage	Female's Wage 50%	Female's Wage 66%
1020	1.80	0.9	1.2
1060	2.10	1.05	1.4
1092	2.20	1.1	1.474
1160	1.80	0.9	1.2
1220	2.00	1	1.34
1250	1.80	0.9	1.2
1285	2.00	1	1.34
Average	1.957	0.978	1.30

A female's monthly wage was 0.978 dinars a month, when 50 per cent of a male's wage, and 1.30 dinars, when 66 per cent of male male's monthly wage of 1.957 dinars. The average yearly income of females from wages was 11.736 dinars, (0.978×12) as 50 per cent of male's wage, and 15.6 dinars (1.30×12) as 66 per cent of male's wage. With these estimates we can now turn to combining all sources of females' property and income for a lifetime worth estimates.

Females' lifetime worth and the household

Table 7 presents estimates for accumulated property and income in the hands of females over a lifetime. The first two sources of property, bride price and family gift, averaged 50.42 and 143 dinars, were shared by all females irrespective of ethnicity. Different estimates, however, were necessary in the case of inheritance, since Jewish females may not have been given inheritance but instead received a family gift. Muslim women received both family gift and inheritance. For wages as well, two scenarios were developed, one with average wages as 50 per cent of male's wage, another with average wages as 66 per cent. We estimated the length of female's working years as being 20, making allowance for interruptions in earning, due to child birth and care giving. The result presented in **Table 7** suggest to us that wages were a significant component of females' lifetime worth, and that —not surprising in a high-wage environment. In the theoretical situation that every female generated wage, Jewish females had a lower rate of lifetime worth due to the lack of inheritance, 428–505 dinars compared to 751–648 dinars of Muslim females.

TABLE 7
Females' Lifetime Worth
Egypt 11th-13th Centuries in Gold Dinars

Average Bride Price	Average Family Gift	Average Wage at 50%/66%	Inheritance	Combined Worth without Inheritance	Combined Worth with Inheritance
50.42	143	234–312	143	428–505	571–648

Source: http://www.medievalislamiceconomy.uwo.ca/equity_equality/appendices/index.html.

The high averages of females' wage and life time worth presented in **Table 7** also explain why females sought employment and why husbands were willing to accept the inconveniences it created. It explains why it was worth while fighting for in the case of the Jewish bride, although it meant she would have to pay for her clothes in this case. Muslim females' worth was "net," her maintenance was the charge of her husband, regardless.⁷²

When it comes to estimating the size of the female population engaged in wage earning we adopted rates of females' participation in the labour force between 30–60 per cent, following conclusions that household worth was higher in societies where their wages amounted to no less than half of the male's wage.⁷³ As suggested by **Table 7** household that included females combined worth, was higher than one without it. The Middle East economy was a complex one, with productive agricultural sector, lower population levels, high human capital, innovative manufacturing sector, and efficient service sector. Even without wages, females' share of economic assets in society grew in relation to that of males', magnified by their property rights. The gains from the prosperity created in the post-plague period were transferred to females in the form of bride price, family gift and inheritance. Employment income further increased their worth and created additional stream of household's income.

Females' share in GDP

It is not unusual to find comments that Maddison's estimates of GDP per capita in medieval societies are based partly or entirely on speculation.⁷⁴ Admittedly, with the absence of

⁷² See loan given by wife to husband to pay for their daughter's bride price in Shatzmiller, 2007.

⁷³ Calderon et al., 2017; De Vries, 1993, pp. 103–5, p. 341. Various approaches to females' wages in van Nederveen Meerkerk, 2010; De Moore and Van Zanden, 2006; Muldrew, 2012; Van Zanden, 2012; Humphries and Weisdorf, 2013; De Pleijt and van Zanden, 2018; Humphries and Schneider, 2019.

⁷⁴ Bolt and Van Zanden, 2014.

females' wage observations, our claims that females' income moved GDP higher in the Middle East would be judged equally speculative. Nonetheless, trying to get answers to questions of significant economic consequence and integrating females into Middle East economic history and comparative studies, makes the exercise worthwhile. To gauge females' wage contribution to GDP per capita the two rate of females' wages for the four bench mark years, 760 to 1430 are calculated and then reduced to a quarter to avoid double counting females' contribution to GDP twice. Based on males' unskilled wages for medieval Egypt, the contribution of females' earnings to the GDP is accounted for.⁷⁵ **Table 8** presents the results, the uncertainties that accompany medieval data, notwithstanding.

Table 8
Females' GDP Per Capita
Egypt 8th -13th Centuries in 1990 US Dollars

Year	GDP per capita Males*	GDP Per Capita Females 50% [66%]	Total GDP (Males + Females 50% [Males + Females 66%])
760	800–910	120–136 [158–180]	920–1046 [958–1090]
1060	730–830	109–124 [144–164]	839–994 [974–994]
1220	580–660	87–99 [114–130]	667–694 [759–790]
1430	590–680	88–102 [117–134]	678–707 [797–814]

* Pamuk and Shatzmiller, 2014.

In conclusion, when female contribution is added to Middle East medieval GDP per capita estimates, a comparatively high GDP per capita for a medieval economy, appears even higher. However, the results are not at odds with episodes of post plague economic growth, and in an high wage environment that accompanied short term growth in pre-industrialized societies.⁷⁶ Where the case of the Middle East episode stands out among episodes where females' attachment to labour markets supported higher household income, is in its role in institutionalizing females' property rights in Islamic law.

⁷⁵ Pamuk and Shatzmiller, 2014, 218–221. Calderon et al. 2017, p. 341, suggested that where female wages amounted to no less than half of the male ones, worth of household income may be obtained by multiplying male's wage by 1.3.

⁷⁶ Fouquet and Broadberry, 2015.

V. CONCLUSION

The question of females' empowerment is at the core of this paper, as it needs be in all investigations of women's engagement in the economy. Recent literature portrayed Islamic law as a source of economic stagnation and decline in the pre-modern and contemporary Middle East.⁷⁷ Implicitly, the evidence presented here offers a very different historical picture of legal institutions, one of pragmatism and flexibility towards change. The paper presented a multitude of economic changes in structures and institutions that favourably affected women, but it was the legal system that transformed the gains made by females into a long-term legal equality. The expediency exhibited by the change in legal institutions becoming female-friendly occurred because it made economic sense. Giving females equal property rights encouraged them to participate in the economy, while the reverse, depriving them of control over income, would have caused them to reject it. The benefit to the economy by females' engagement in labour markets was expressed by the increase in urban households' worth and their purchasing power, and enforced females' property rights was instrumental in maintaining those gains. The shift in income distribution in favor of females, also points to importance of the urban sector. Islamic law was an intellectual product of the urban elites' and supported new urban social norms. Females' property rights only make sense in comparable framework.

Property rights provide better protection to more economic investors and better income distribution, so that the evidence that Muslim legal minds embraced it and endorsed the concept in theory and practice, is revealing. To them the protection of females' gains by the legal separation of property in marriage made perfect sense. It provided protection of realized gains and capital accumulation and supported the new economic environment. The archival documents dating from as late as the fifteenth century Granada on the brink of falling to the Christians' onslaught, display how entrenched females' property rights in society and in females' minds.⁷⁸ The economic cultural approach to females that tied women to the plough, is contradicted by empirical evidence from the medieval Islamic Middle East. On the contrary. The evidence

⁷⁷ Kuran, 2011.

⁷⁸ On investments in urban real estate by females up to the conquest, see Shatzmiller, 2007, pp. 176–196.

supports the prevalence of a culture of legal institutional support of females' agency and thus to females' empowerment.

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