Abstract

In recent years, blamed Islamic institutions, Islamic law and culture, for the current underdevelopment of the Middle East. According to European economic historians Islamic institutions were, and are, ‘growth retarding’, ‘averse to change’, ‘path dependent’, ‘lacking creative destruction’, ‘extractive’ rather than ‘inclusive’. This paper challenges this view by pointing to its unhistorical methodology and nonfactual assessment of Islamic institutions. Two changes in economic structures are investigated empirically and methodologically. The first, a demographic transition, a shift from high to low population level, the second, a change in property rights regime from common to individual. The paper argues that Islamic institutions, legal, cultural and economic, enabled these structural changes to exercise their potential as growth stimulators.

I. Introduction: Concept and Methodology in the Investigation of structural change and economic development of the Middle East

Economists know what blocks economic development in the contemporary Middle East: lack of support of intellectual freedoms, lack of the rule of law, lack of citizenship rights, lack of entrepreneurship and markets, as well as lack of attention to the multitude of national experiences are obstacles to economic development. Yet, the science of economics has still to deliver a remedy to what ails the Middle East, while economic history has not been very helpful either by supplementing the past for the present. Although the literature has certainly grown in recent years from a trickle to a torrent, somehow all historical studies end with the same conclusion: Islamic economic institutions were, and are, inefficient and growth retarding, averse to change, path dependent, lacking ‘creative destruction’, ‘extractive’ rather than ‘inclusive’. Whether it is done through the lenses of the New Institutional Economics, (NIE), or economics of religion, or the economics of culture, or yet the economics of minorities and ethnicity, all that economic historians could do is continue to embrace the belittling spirit of the 19th century
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philosophers: poverty, underdevelopment, decline and lack of progress is “Islamic” in nature. 1 European economic historians concluded that the failure of the contemporary Middle East have its roots in the failure of past Islamic economic institutions.

All the while, investigation of Middle East economic history is using a skewed methodology. Economic historians writing on the Middle East use a basic second-hand general narrative of the Middle East, and apply to it the most sophisticated theoretical and quantitative approaches in their arsenal. In all fairness, some European historians are aware of the faulty methodology, “Many explanations for Europe’s rise and the Islamic world’s stagnation have been posited in the largely narrative, theoretical economic history literature… “attempts to empirically back up these hypotheses are few.” 2 Surely, the lack of empirical evidence in these accounts, coupled with disregard and careless misinterpretation of data to suite a preconceived idea, will not be tolerated in other circumstances. Surely, economic history journals will never publish articles employing such flawed methodology in the investigation of Europe’s economic history! Both the concept and the methodology of this approach are ill conceived. It is scholarly dishonest and frankly harmful to blame medieval institutions for causing contemporary economic backwardness by being incompatible with economic growth. Worst, it is factually incorrect. As this paper will demonstrate, nothing is further from what the evidence suggests. Islamic economic institutions were formed during a period of economic resurgence, they did not inhibit a dynamic growth process and instead, contributed, facilitated and enhanced growth. An empirically based investigation of changes in economic structures concurrent with the Islamization and Arab settlement of the Middle East demonstrate the point. These were changes in population levels and a transition to low fertility rate, and a structural change to property rights, from common to individual property rights.

Before presenting the evidence, a few general comments are warranted. The backdrop to this paper is a Middle East economic resurgence attested to through economic indicators of change, to which I drew attention in previous publications. These indicators include changes to labour and technology,3 and to urbanization and the monetary system.4 There were geo-political

1 There is no point nor room here to revisit this material. I reviewed the literature and the arguments in previous occasions. Shatzmiller, 2011 and Shatzmiller, 2018a.
2 Bosker, Buringh and Van Zanden, 2013, p. 1419:
3 Shatzmiller, 1994
4 Shatzmiller, 2017a.
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economic advantages that benefited the economy that came with the new Islamic rule and delayed resurgence in ninth-thirteenth century Europe. 5 Thanks to series of standardizations, the benefit of the structural changes that took place in the centre, in the Middle East, travelled quickly to the rest of the Arab Empire. There, in Iberia, North Africa and the lands to the North East, economic institutions and tools facilitated resurgence in the provinces. Interaction between the center and the peripheries was enhanced and enhancing, something that their European contemporaries, the Carolingians, could not achieve.6 Local pools of knowledge also survived better in the Middle East than in Europe, enhancing technological innovations. The standardizations in religious expressions, language, script, literacy tools, weights and measures and law, made transaction technology more efficient and growth accommodating. Early change that occurred in the regions known for higher agricultural productivity, Iraq and Egypt, generated higher incomes, more demand for consumer goods and new preferences in food and clothing and benefitted manufacturing and trade. 7 These were instrumental in the Smithian growth that was visible in the eleventh century.

Technology and rational economic decisions are one aspect painfully missing from the debate about the Islamic institutions. Like Europe, the regions conquered by the Arabs were not unfamiliar with technological achievements of previous generations. Some regions of the Middle East were previously incorporated into the Roman empire while other benefitted from technological developments under the Sasanians, such as development in irrigation techniques, for example. The regions to the North-East that fell to Islam, were linked through the silk trade routes to technological innovations from China and plants from India. Traders brought their financial instruments and knowledge of calculation with them. The translation movement of Greek sciences to Arabic in the ninth century confirmed the existence not only of a society, culturally rich and technology savvy but also the availability of investigative tools. Christians, Jews and pagans transmitted pool of theoretical knowledge that encouraged technological innovation, and with no church dogma to interfere with knowledge acquisition Muslims from all regions engaged in scientific investigation. Indeed, technological innovation picked up early and everywhere. As early as the end of the 8th for example, technology of houseware production

5 Persson and Sharp, 2015.
6 For the Carolingians and Islam, Sénac, 2006.
7 On technological innovations in agriculture, Watson, 1983.
changed with a switch from the use of mineral alkali to plant ashes in glass and soap making. Plants readily available at the desert margin, the Arabic ushnān, replaced the alkali needed as flux in the glass production and were cheaper than the minerals and lowered the melting temperature thus cutting production costs. 8 The discovery of Arabic paper, making paper from cheaply available linen rags, made paper cheaper, available for use in writing and accounting. 9 As will be argued below, much of the technological innovation was a response to chronic labour shortages in the Middle East, although the same conditions in medieval Europe did not yet delays in Europe were blamed on the failure to retrieve and advance technological legacy.10

Making rational economic decisions is an integral part of economic growth, and capitalism did not leave the Mediterranean with the end of the Roman Empire. The Umayyad administration’s intervened to ensure that the mints in the conquered regions did not shut down and continued to function, contributing to the maintenance of monetary circulation and increase money supply.11 The Samanid administration’s decision to develop the rich silver mines under their control in tenth century Uzbekistan and North-Eastern Iran, was instrumental in forcing trade to pass through their territories. Using their geographic advantages to develop an economic edge over Baghdad through their superior coinage, they forced traders to exchange their goods through their cities.12 The shift in trade routes benefitted the mining industry and favoured commercialization. Urbanization picked up steam drawing labour from the countryside and a new class of artisans emerged. Rise in agricultural productivity fuelled by technological innovation, efficient labour markets and manufacturing, growth in human capital made the service industry grow accordingly.13 Not all changes were beneficial to economic development. Land ownership, for instance, remained with the central government and did not become free private in spite of individual property rights. Peasants and farmers in Egypt, for instance, did not

8 The alchemist Jābir ibn Hayyān d. probably 815 who was identified by Sarton as the introducer of manganese dioxide as colourant. Heidemann, 2006, p. 35.
9 Shatzmiller, 2018b.
11 Walmsley, 2010. “…the remarkable feature of coin production in the 7th-8th centuries was the multiplication of towns that minted coins when compared to late Roman practices,” p. 23.
12 See al-Muqaddasi, 1994, p. 285 for analysis of the goods coming from the North-East into Baghdad. We are comparatively well informed on mining technology and production. See Morony, 2019; Power, 2012; Rosenberger, 1970.
own their land, a pattern that endured until the 19th century, “Since land could normally not be bought and sold, nor leased or pledged, there was no market price of land and no market rental of land services.” 

Peasants property rights were limited to cultivate a particular piece of land in their village. Disruptive factors were political and included Bedouin invasions, ambitious renegade military officers, local urban factions.

Throughout the discussion of structural changes in the early medieval Middle East economic theory is present by its use in the analysis of the empirical evidence of economic development in comparative studies. For example, it is central to the first structural change in the demographics to conceptualize it as Malthusianism. Bruce Campbell offered a useful comparative context to the question of why population level provides only a temporary relief from Malthusian equilibrium and post-Malthusian recovery, so that discussing the Middle East using its methodological approach and investigative framework is beneficial. We use the literature to argue that post-Malthusian population growth and growth theory clarify the uniqueness of the Middle East in this respect. Most societies with post-Malthusian economic growth episodes failed in exiting Malthusian regime, so it is essential to show how the Middle East differed. Our quantitative data is insufficient to follow or be inserted into the European data but we do employ quantitative methodologies in a different environment, relying instead on more qualitative evidence. In the end, much depends on our ability to properly understand and interpret the significance of the demographic transition.

II. Population Level and Demographic Transition

Middle East population estimates vary considerably, whether we talk about the total of the Arab Empire, or of an individual region. For example, estimates for Egypt, the region with the best available data, present a blurred picture:

**POPULATION ESTIMATES FOR EGYPT 800-1000**

14 That was going to remain a pattern in Egypt. Hansen, 1983, p. 475.
16 Findlay and Lundahl, 2006, provide a useful summary.
We rely on estimates from three studies devoted to the demographics: the canonical articles by Russell, the *Atlas of world population* by McEvedy and Jones, and an article by Issawi. These were used and discussed by Findlay and Lundahl authors of a seminal paper on the impact of the plague on economic development. As can be seen from the chart it is impossible to derive a conclusive demographic trend for Egypt, or the Middle East for that matter based on these estimates. Our analysis of the demographic trajectory of the medieval Middle East will take the estimates into consideration but in conjunction with an independent empirical body of qualitative and qualitative evidence as well as theory. I present the evidence in four sections, the first establishes a pre-Islamic Malthusian phase in the Middle East with a sixth century peak in cultivation and settlement expansion. The second section explores the stages of population decline, beginning with the first visitation of the bubonic plague in 541, followed by plague recurrences. The third, deals with the early labour shortages and the administration attempts to alleviate them. Settlement priorities, calling for immigration and slave imports, were the policies used. The fourth section deals with the adoption of voluntary birth control by Muslims and suggests that it was already in reaction to the resulting economic benefits, such as raised incomes and rising expectations. It will be argued here that our evidence suggests a trend of from high to low with the ninth century recovery that due to various reproductive strategies kept population in check. As a result, post-Malthusian gains were maintained.

Egypt’s population estimates were used here because Egypt played a significant role in the economic recovery of the Middle East after the plague, but also because Egypt as well as Iraq have settlement patterns that easily show expansion and retraction. The picture derived from archeological studies we can see that both Egypt and Iraq experienced a Malthusian a peak in the sixth century. Both regions experienced a remarkable expansion in the cultivated area, in settlement, cities and villages, with every land surface suitable cultivated and an urban economy to boot. Wars, famines, diseases, earthquakes and climate change, the usual of positive checks, were manifested as well. While a Malthusian phase is easier to demonstrate through archeology in the two-river irrigated agricultural economies, it is more complicated in the case of Syria-Palestine. There agriculture is typically Mediterranean, based on rain fed grains and hills planted with olive trees and wines and population that is more sparsely located. Yet, even in Arabia, which is even less susceptible to archeology, demographers believe that a Malthusian crisis occurred there as well before the Islamic conquest of the Middle East.

Despite the doubts expressed by historians of Late Antiquity about the severity of the Justinian plague, the literary evidence pointing to a major population decline is undeniable after the first visitation of 541. With the scientific confirmation of the strain found in the Middle East as a Bubonic plague, the absence of mass graves is non-consequential. The population continued to decline with plague recurrences visiting the now Islamic Middle East, labour shortages became a major preoccupation of the administration. It is estimated that between the seventh and the ninth centuries the Middle East lost about 50% of its population. The numbers below illustrate the severity of the impact.

Table 1
Number of Plague Victims sixth-ninth century

21 Adams, 1965 for Iraq; Alston, 2001 for Egypt.
22 Morony, 2004, p. 172-175.
23 Fuks and al. 2017 with extensive bibliography.
<table>
<thead>
<tr>
<th>Date (C.E.)</th>
<th>Estimated No. of Deaths</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>541-543</td>
<td>5,000-16,000/day</td>
<td>Constantinople</td>
</tr>
<tr>
<td>541-543</td>
<td>majority of population</td>
<td>Egypt</td>
</tr>
<tr>
<td>541-543</td>
<td>Entire villages and towns depopulated</td>
<td>Palestine</td>
</tr>
<tr>
<td>557-558</td>
<td>35,000 in three months</td>
<td>Amida</td>
</tr>
<tr>
<td>Mid 6th-Mid 8th c</td>
<td>decimated</td>
<td>Levant</td>
</tr>
<tr>
<td>743-744</td>
<td>600,000 in one month</td>
<td>Bostra and Hawran</td>
</tr>
<tr>
<td>743-744</td>
<td>100,000</td>
<td>Lower Mesopotamia</td>
</tr>
<tr>
<td>773-774</td>
<td>1,000/day</td>
<td>Mawsil (Mawsil)</td>
</tr>
<tr>
<td>841-843</td>
<td>500/day</td>
<td>Ramla</td>
</tr>
<tr>
<td>841-843</td>
<td>Many villages deserted</td>
<td>Mesopotamia to Syria and the coast</td>
</tr>
<tr>
<td>841-843</td>
<td>1/3 of population</td>
<td>Palestine</td>
</tr>
</tbody>
</table>

**Source:** Morony, 2007.

Given Malthusian pressure in Arabia and population decline in the Middle East it is understandable that settlement began even before the conquest was completed. Soldiers were told to settle in Iraq as early as 636 and other immigrants from Arabia were directed to settle in cities, first in the garrison cities of Kūfa and Basra, and in 640 ordered all the way up to Mawsil. In Egypt, where the Muslim administration prohibited the settlement of soldiers, the need for manpower was unrelenting. Between 641 and 776 the government tried to redress the shortage of labour by returning fugitives to their villages and forcing land tenure on them. Bedouin tribes’ who migrated first to Syria, were sent to Egypt in 673. Similar evidence of government’s involvement in settlement comes from the Northern frontier, where the Umayyad administration continued the policy of settling Arab soldiers in garrison cities, *ribāts*, along the

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Byzantine frontier, the *thughūr*. In 717 the Umayyad Caliph ʿUmar II issued a call for immigration to the Arabian tribes:

“The Prophet has said, the gate of emigration, (al-higra), should be opened to all the people of al-Islam... we open it up to whosoever may emigrate of the Bedouin, and who sells his cattle and removes from his Bedouin abode to the abode of emigration...”

The invitation extended by the new Islamic state to immigrants to come to the Middle East is similar to what we would expect on basis of migration theory, naming the State as ‘labour-recruiter’, and using the ‘push-pull’ theory. The ‘push’ factors, the demographic pressure at home, the lack of resources in the desert already lacking resources, the low income and low living standards, the lack of economic opportunities, were all typical of societies that engage in migration. The Middle East displays the ‘pull’ factors as well, demand for labour, availability of land, good economic opportunities, all offered by the new location.

The government did not stop there. With natural growth flattened by plague recurrences, and demand for manpower in both rural and urban areas constant, import of slaves may have presented a potential solution to labour shortages. Provenance was a logistic hurdle, though. Slaves in sufficient numbers could only come from regions unaffected by the plague, namely Black Africa, Central Asia, and North-Eastern Europe. Indeed, the Arabic sources are very clear as to provenance of the slaves, those referred to as *saqāliba*, reflect a Slavonic origin, different from generic slaves, ‘*abd*, or Black slaves, *Zanj*, or Turkic slaves, Atrāk. Estimates of the number of slaves arriving in the Middle East between 650-1500 are for 6 million from Africa and several millions from central Asia. However, their impact on labour markets remained limited. Only two episodes in the Arabic sources refer to slaves in agricultural labour for the entire medieval period. The first involved Black slaves in Iraq, the *Zanj*, the other, slaves in

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30 Ager, 2008; von Sivers, 1982. The pattern of the *Ribāt* settlement is also known from Islamic Central Asia. de la Vaissière, 2008.
34 McCormick, 2001, p. 737, n. 44 and pp. 738-740. The Slav/slave etymology, which McCormick traced to the ninth century, surfaced in Arabic at the same time
35 Clarence-Smith, 2006. pp. 11-16.
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North Africa. European historians overstated the impact and role of an assumed slaves’ imports from Western Europe to the Middle East crediting Muslims with the abolishment of slavery in Europe and the end of gold coinage. None of this is substantiated by the Arabic sources.

Military slavery in Islam is better represented in the sources and better investigated and understood. Recruiting soldiers as slaves which began by the Abbasid state as early as the eighth century remained the only kind of slave recruitment undertaken by the State, the rest was left in private hands. Turning military slaves to rulers in Egypt and Syria, thirteenth-sixteenth century was a transformation in political structures.

As far as labour markets were concerned, slaves prices were determined by supply and demand. Our data shows that slaves prices were high in the early centuries of Islamic rule but declined afterwards signaling rising availability of local labour with population recovery. The graph below demonstrates the trend.

**Slaves Prices Seventh to Thirteenth Century in Gold Dinars**

![Graph showing slaves prices from the 7th to 13th centuries in gold dinars]

*Source:* Ashtor, 1969; Ragheb, 2002

We derive confirmation of the demographic trajectory we paint also from evidence of the trend in wheat prices in Egypt. Egypt was the major wheat producer of the Mediterranean during

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36 Popovic, 1976, Talbi, 1981.
37 Duby, 1974; McCormick, 2002 on the role of Islamic slave traders but see the paucity of evidence for trade relations between Carolingian Europe and the Middle East in Sénac, 2006.
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Roman and Byzantine periods, so that the low prices during the first two centuries of Islamic rule is indicative of low demand due to low population levels. With population recovery in the ninth century, wheat prices began to rise, reaching a peak between the tenth-twelfth century.39

![Wheat prices in Egypt 7th-13th century in Gold Dinars](image)

Slaves do not appear on records as employed in manufacturing either and instead most were involved in domestic service. As slavery in Islam became a one generation institution, slaves did not reproduce in sufficient numbers to maintain the slave population. Their impact on population levels occurred mainly through a lenient manumission mechanism. Islamic law prohibited the enslavement of Muslims and encouraged their conversion and manumission once in the abode of Islam. Manumission of one’s slaves was recommended as a charitable act, and manumission documents commonly surface in the archives. 40 A slave ‘mother’, *umm walad*, who bore a child to her master, would become free with her child, which meant that many females were manumitted while young and in child bearing years. The practice stands in contrast to the practice in Rome, where female slaves were not manumitted before they reached menopause.41 Military slaves, as in the case of the Mamluk slaves of Egypt, whose numbers are estimated in the tens of thousands, transitioned automatically as a group into Islam and freedom and were subsequently incorporated into society.42

40 On manumission of slaves when held in partnership, Udovitch, 1970, pp. 113-115.
41 Scheidel, 1997.
The most significant factor that played a role in maintaining low population levels in the long-run, was the practice of voluntary birth control. The practice was thoroughly documented by Basim Musallam in his book on the subject published in 1983. It shows that ‘coitus interruptus’ or ḍāl, appeared early, that it was legally sanctioned and authorized by the jurists of all schools, and that couples practiced it because they wanted to avoid hardship to themselves and have children with better opportunities. Musallam convincingly argued that ḍāl placed the responsibility for birth control on males, but noted that the agreement of the wife was required to protect the rights of women to children. He also believes that the practice was associated with the Black Death being the epitome of ‘bad times’, ‘by which civilized people reacted to the political upheavals, insecurities in the cities and the countryside’. Thus, in spite of its early mentions in hadiths, Musallam concluded that the practice was a later occurrence, an outcome of the horrors of the Black Death and was specific to Egypt and Syria. However, Musallam’s suggestion is challenged by the evidence itself. The practice is discussed in the earliest traditions, the hadiths, in details in the early legal sources, and appears in a final codified version in Islamic law, sharī'a, complete by the 9th-10th centuries. It is therefore most likely that the ‘bad times’ Muslims referred to were those caused by the Justinian plague recurrences, not the Black Death and that when the Black Death appeared, the practice was already well established.

It is nonetheless correct that the evidence we have of small families dates from the fourteenth century, and that because of the proximity to the Black Death, needs to be treated with caution. Probate inventories dating from 1390-1393 Mamluk Jerusalem revealed that the city had a high rate of unmarried single women, divorced and widowed individuals and that statistically 58% of males and females had no children. Huda Lutfi concluded that “Small families seem to have been more common than larger ones. David Powers also found small families in fourteenth

43 Musallam, 1983.
44 Musallam, p. 109 and pp. 115-121.
45 Compare Blanc, 2019 for Europe.
47 Musallam, 1983, pp.105-121.
48 Musallam, 1983.
49 Lutfi, 1985.
century North Africa, “No family had more than three children and the average number of children per family was 1.6.”\textsuperscript{50} Archival documents from 15th century Granada, dealing with estate division also show small families, with one or two siblings inheriting. \textsuperscript{51} Middle East demographers noted the presence of small families in the medieval Middle East and drew the following conclusions. Russell suggested that the average family in Egypt was about 3.5 persons,\textsuperscript{52} a number endorsed by Michael Dols as the average size of medieval household of 3.5 after the plague. \textsuperscript{53} Lutfi concluded that “it was more common for families who had children to have 1 or 2 rather than 3 or 4 so the average household is 2.7 which is lower than the 3.5 average that Russell estimated for a medieval family.” \textsuperscript{54} Two surviving children per urban household may seem low to the modern observer but in view of what we know about voluntary birth control, in addition to the levels of infant mortality in the urban areas of the medieval Middle East, two children per couple, appears to be a reasonable number. There is no way to know how effective was the practice. It might have been as ineffective as the array of herbs and potions suggested by the medical literature to prevent conception, or the “taboos, infanticide, and various other means”, suggested by North.\textsuperscript{55} This is not to distract from the weight of the evidence collected by Musallam nor from the conclusion that may be drawn. We can now add new evidence of rising standards of living and rising household income as additional plausible reasons for the practice.

Both growth theory and comparative studies, postulate that the presence of higher incomes, higher living standards, human capital and growing expectations, need to be considered reasons for the practice of voluntary birth control. Becker and Galor suggest that in households with higher incomes and standards of living, parents would opt to have fewer children in favor of ‘better ones’ that could benefit from higher education and better remuneration. \textsuperscript{56} The rise in living standards in the medieval Middle East, as well as the rise and spread of education and literacy, is evidence that cannot be disregarded as support to the practise. We are able now to

\textsuperscript{50} Powers, 1990, p. 241.  
\textsuperscript{51} Shatzmiller, 2007, pp. 1-6. Kedar’s and estimate of household of 8 is untenable  
\textsuperscript{52} Russell, 1965, p. 72.  
\textsuperscript{54} Lutfi, 1985, p. 256  
\textsuperscript{55} North, 1981, p.85.  
\textsuperscript{56} Becker, 1960; Galor, 2011; Livi-Bacci, 2012, pp. 34-41.
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quantitatively substantiate an assumed rise in incomes and in living standards in the early e Middle East in the aftermath of the Plague and recurrences. 57 Wages paid to unskilled labour in Iraq and Egypt were two or three times the subsistence level during the eighth-tenth centuries, but when compared to wages paid to skilled labour, they appear minimal. They show clearly that employers paid a skill premium to the likes of teachers, astronomers, physicians. The Table below, while somewhat dramatic and likely based on exaggerated reports by the chroniclers, demonstrate the range of the skill premium in eighth-tenth centuries Iraq, where a community of scholars flourished. Concentration of scholars explains the intellectual achievements, like the translation of Greek sciences and codification of Islamic law. The Chart below demonstrates.

**Average wage of skilled and unskilled labour in Iraq Eighth-Tenth Century (Dinars/Day)**

![Average wage of skilled and unskilled labour in Iraq Eighth-Tenth Century](chart.png)

**Source**: Ashtor, 1969; Pamuk and Shatzmiller, 2014. 58

The skill premium paid to the ‘intellectuals’ corresponded to the rise in educational institutions, libraries, academies, madrasas, mosques, in itself a response to the demands of the growing needs of courts and administration for literate personnel. 59 The migration pattern of the

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57 Pamuk and Shatzmiller, 2014.
58 The skilled wages presented a challenge. Five entries produced data standard deviations of 14.52 and 222.61 for the 9th and 10th century respectively (none of the five entries came from the 8th century). Excluding the five entries produced standard deviations of 0.77 and 0.91 for the 9th and 10th century respectively, closer to the standard deviation of 0.37 for the 8th century.
59 Shatzmiller, 2018.
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Arab tribes, namely their preference to settle in the cities, facilitated the standardization of the Arabic language and its elevation to the status of the language of culture and that of state institutions. Typically, as standards of living rose so did the expectations of parents and their will to invest in their children’s education and to limit their number. More support for a long-term low population level and the maintenance of the post-Malthusian gains comes from the second structural change, a transition to individual property rights.

III. Property Rights and Women’s Empowerment

The transition to individual property rights may have begun in Mecca with the profits from trade accumulating there and Meccan elites trying to exclude others from sharing in them, as some have suggested. 60 Once in the Middle East, where land and real estate were held individually, the transition was completed with the newly codified Islamic law showing well defined individual property rights. 61 Although the process was not complete and land ownership in Egypt remained in the hands of the government, private land existed in the other regions such as Muslim Spain and North Africa. The benefits of property rights to the economy are well established and include protection of investment, limiting “free riders”, minimizing transaction costs, and the Islamic Middle East would be no exception. More significant however, was the change individual property rights brought to women’s legal status and economic involvement. In the space available here only slim mention of the rich empirical evidence on the changes available, can be made. It includes evidence on Muslim women’ property rights,62 and on women’s labour,63 which will allow us to provide a summary.

North argued that a group living in common property rights regime has no interest in limiting births, unlike a group living in exclusive property rights regime. The group, which achieved equilibrium between return on fixed resources, will strive to curtail birth through “taboos, infanticide, and various other means,” 64 The theoretical and the comparative body of literature on the issue has increased considerably since North, to focus on the role of women’s

60 Ibrahim, 1990.
61 On the formation of Islamic law see papers collected in Hallaq, ed., 2004.
economic empowerment as the motivation behind low fertility rate. The literature suggests three major themes in the debate over women and economic development: females’ role as a cultural factor, their role in the demographic transition, and females’ role in economic growth. Women earning wages contributed to the two wage earners’ household, whose income and living standards were higher. A household with two wage earners would be more likely to have fewer children and therefore engage in voluntary birth control. The studies that focus on post-Malthusian demography have paid increased attention to the changes in women’s income and their economic empowerment, and female labour played a significant role in the transition. The European model, the EMP, not quite a voluntary birth control, rather an involuntary one, rationalised lower fertility rate because of women being absent from the hearth for long periods of time due to their pasture activities. Based on the literature Campbell suggested that it was indeed the measure that ensured that not all economic gains were eliminated with population recovery.

Indeed, women’s property rights in the Islamic law provide a wider social and economic context for the practice of birth control. Muslim society priorities, expressed through Islamic law viewed reproductive behaviour as one of the individual’s property rights and women have identical property rights to those of men. They inherit from all family members and bequeath, have the right to exclusive ownership and enjoyment of property and income generated through wage earning. Table 2 presents women’s property rights in the Islamic law in a diagram.

<table>
<thead>
<tr>
<th>Right</th>
<th>Acquisition</th>
<th>Requirement</th>
<th>Legal Status</th>
</tr>
</thead>
</table>

65 Cinnirela, Kemp and Weisdorf, 2017.
67 Voigtländer and Voth, 2013.
68 Manifested in the debate over women’s wages in England’s Industrial Revolution, Allen, 2011; rebuttal Humphries and Schneider, 2019.
69 De Moore and Van Zanden, 2010; Voigtländer and Voth, 2013; Livi-Bacci, 38-39
71 EMP and economic growth in De Moore and Van Zanden, 2010; Voigtländer and Voth, 2013; rebuttal Dennison and Ogilvie, 2014.
72 Campbell, 2013.
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<table>
<thead>
<tr>
<th>Action</th>
<th>Event</th>
<th>Rights</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receive mandatory gift (bride price)</td>
<td>Marriage</td>
<td>No forgiveness or trading is allowed</td>
</tr>
<tr>
<td>Receive mandatory maintenance</td>
<td>Marriage</td>
<td>May be traded for husband’s rights</td>
</tr>
<tr>
<td>Inheritance (mandatory)</td>
<td>Any time</td>
<td>No forgiveness or trading in allowed</td>
</tr>
<tr>
<td>Receive gifts</td>
<td>Any time</td>
<td>Forgiveness option</td>
</tr>
<tr>
<td>Earn wages</td>
<td>Any time</td>
<td>No forgiveness or trading in</td>
</tr>
<tr>
<td>Invest (sales, loans)</td>
<td>Majority</td>
<td>At will</td>
</tr>
<tr>
<td>Gifting</td>
<td>Majority</td>
<td>Majority and release from interdiction</td>
</tr>
<tr>
<td>Agree to consummation of marriage</td>
<td>Marriage</td>
<td>Taking possession of the bride price</td>
</tr>
<tr>
<td>Agree to birth control</td>
<td>Marriage</td>
<td>Compensation required</td>
</tr>
<tr>
<td>Receive payment for wet nursing</td>
<td>Marriage</td>
<td>Only to free women</td>
</tr>
</tbody>
</table>

**Source:** Shatzmiller, 2007.

The significance of the above-mentioned rights means not only that females had the right to acquire, own and dispose freely of property transferred and acquired through various means, gift, inheritance, wages, but also, that there was no conjugal property at marriage and no interference from fathers or husbands. There is plenty of empirical evidence in the literacy sources to fill in the legal framework with content. A spectrum of women’s trades and economic activities includes occupations in the manufacturing sectors, especially in textile production with female monopoly on spinning, and in the service sector, in addition to tasks performed in the rural sector, harvesting and dairy production. Together with empirical evidence on women’s labour and female’s attachment to labour markets in the Middle East law and labour evidence suggest that Muslim household was a two earners household. The challenge remains providing quantitative evidence to support the claim that women’s property rights in the law corresponded to ‘real’ economic gains, and secondly that it had a positive impact on economic development.

To provide reliable quantitative evidence on partial women’s property, we turned to marriage contracts where the value of payment and property transferred to brides are registered.

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A collection of 650 marriage contracts with data on bride price and family gift dating from eleventh-thirteenth century Egypt was analysed with the following results. 74

Table 3
Combined Bride Price and Family Gift
Egypt 11th-13th Centuries in Gold Dinars

<table>
<thead>
<tr>
<th>Bride Price</th>
<th>Observations</th>
<th>Mean</th>
<th>Median</th>
<th>Interquartile Range</th>
<th>Mode</th>
<th>Standard Deviation</th>
<th>Variation</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early</td>
<td>116</td>
<td>15</td>
<td>8</td>
<td>16</td>
<td>5</td>
<td>25</td>
<td>625</td>
<td>1</td>
<td>200</td>
</tr>
<tr>
<td>Delayed</td>
<td>132</td>
<td>31</td>
<td>20</td>
<td>30</td>
<td>20</td>
<td>37</td>
<td>1393</td>
<td>1</td>
<td>300</td>
</tr>
<tr>
<td>Combined</td>
<td>114</td>
<td>50</td>
<td>30</td>
<td>50</td>
<td>25</td>
<td>75</td>
<td>5575</td>
<td>4</td>
<td>502</td>
</tr>
</tbody>
</table>

Family Gift  | 65            | 143   | 61     | 152                 | 50   | 189                | 35500     | 2   | 795 |

Source: http://www.medievalislameconomy.uwo.ca/equity.equality/appendices/index.html

In the absence of data on women’s wages and only sporadic quantitative data on women’s inheritance, a complete picture of medieval women’s worth eludes us. Although partial, it is possible to make an argument in favour of a trend based on the results. Property and wages owned by women most likely played a role in household decision to limit the number of children produced. If we are to follow the argument presented here the conclusion needs to be that the transition to individual property rights in the medieval Middle East responded to changes in economic structures. Women’s and household’s incomes increased and together played a role in lowering fertility rate, which in turn permitted the economic gains achieved earlier to remain.

Recent publications by the IMF on the ‘Year of Women’s events’, show that women’s progress to equality with men, in the work force, income and empowerment is still slow,75 and that women in Muslim countries are stuck at the bottom of the international scale.76 Although women’s status is only a part of the puzzle of what ails the contemporary Middle East, this paper argued that Islamic law is not the cause. It concludes that methodologically and empirically, the evidence from the Middle East displays vibrant growth promoting Islamic economic institutions.

74 Datasets and Appendices on http://www.medievalislameconomy.uwo.ca/equity.equality/index.html
76 ADHR 2005.
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