

Jewish Occupational Selection: Education, Restrictions, or Minorities?*

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Abstract

Before the eighth-ninth centuries C.E., most Jews, like the rest of the population, were farmers. With the establishment of the Muslim Empire, almost all Jews entered urban occupations despite no restrictions prohibited them from remaining engaged in agriculture. This occupational selection remained their distinctive mark throughout history. Our thesis is that this transition away from agriculture into crafts and trade was the outcome of their widespread literacy prompted by a religious and educational reform in Judaism in the first and second centuries C.E., which gave them a comparative advantage in urban, skilled occupations. We present evidence that supports our argument.

JEL Classification: J10, J20, N30, O10

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1 Introduction

Why since the ninth century have the Jews been engaged primarily in urban, skilled occupations, such as crafts, trade, finance, and the medical profession? Why were the Jewish people a minority in many cities and towns? Why did this occupational selection and demographic characteristics become the distinctive mark of the Jews? The distinctive occupational and residential structure of the Jews has been one of the central questions studied by scholars of Jewish history. The most common explanation is the well accepted view that the Jews were not engaged in farming like the rest of the population because of the restrictions and prohibitions imposed by the local rulers.¹

Simon Kuznets, who documented that at the beginning of the twentieth century, an overwhelming proportion (95 to 99 percent) of the Jews in eastern Europe and North America were engaged in urban, skilled occupations, suggested an alternative explanation.² He explained this pattern as the outcome of an endogenous decision within an economic theory of small minorities: the minority's goal of maintaining cultural cohesion and religious identity made the Jewish minority specialize in certain occupations and live in urban locations.

We show that the existing historical evidence does not support these two explanations at the time when the occupational transition of the Jews occurred in the eighth and the ninth centuries, mainly in Mesopotamia and the entire Muslim Empire, and later in western Europe where the Jews migrated. At this time and in these locations, there were no restrictions on Jewish economic activities. Also, before the occupational transition, the Jews were farmers and also a minority in the lands of the Roman and Persian empires. Given that they were a minority even when they were farmers, Kuznets' theory would predict that they should stay in that occupation to preserve their group identity. Yet, the Jews did not remain farmers despite their minority status.³

Our thesis is that the distinctive characteristic of the Jews was that by the six-seventh centuries C.E., a significant proportion of Jewish farmers had basic literacy whereas the non-Jewish rural population was illiterate. As such, Jewish farmers had a comparative advantage in the skilled occupations demanded in the new urban centers (such as Baghdad) developed in Iraq by the Muslim rulers in the eighth century, and later in the entire Muslim Empire and western Europe where the Jews migrated as new trade opportunities opened from East (China and India) to the West.

Why at the beginning of the eighth century were many Jewish farmers literate whereas the rest of the rural population was illiterate? The main contribution of this article is to provide the historical evidence of the implementation of a religious and educational reform within Judaism that had started in the second-first centuries B.C.E., and underwent a big push after the destruction of the Second Temple in 70 C.E. when the power in the Jewish community shifted from the Sadducees to the Pharisees. The new religious leadership

¹See, for example, Abrahams (1896, p. 249), and Roth (1938, p. 228).

²Kuznets (1960; 1972).

³Baron (1937, vol. 2), Ben-Sasson (1976), and Gil (1997) argued that deteriorating agriculture and urbanization in the Muslim Empire made almost all the Jews move into urban occupations. This argument leaves unexplained why many Jewish farmers moved into these occupations, whereas the rest of the population did not.

transformed Judaism from a religion based on sacrifices in the Temple in Jerusalem to a religion whose main rule required each male Jewish individual to read and to teach his sons the Torah in the synagogue. This reform was implemented in Eretz Israel, Babylon, and other locations where most Jews were farmers who would not gain anything from investing in education. In other words, this educational reform was not prompted by economic motives but was the outcome of an exogenous change in the religious leadership after the destruction of the Temple.

When urbanization expanded as it did in the early Muslim Empire, almost all Jewish farmers moved to the cities where the returns to their human capital were higher than in agriculture. Once they moved to the cities and entered urban occupations, Jewish households invested even more in their children's education. We present a lot of evidence from the documents of the Cairo Geniza and the vast rabbinic *Responsa* literature (described later), which show the almost full implementation of mandatory primary schooling for boys in the Jewish communities after the occupational transition.⁴

One may question whether the change in the religious and social norm had economic returns. We show that the knowledge of Hebrew for religious purposes, the common Hebrew language regardless of the different local spoken languages, and the common Jewish law across all communities, in addition to the network externality highlighted by Avner Greif, provided high returns to Jewish merchants.⁵ This prompted the fast migrations of Jews from the ninth to the twelfth century to North Africa and western Europe, where they acquired high standards of living.⁶

Our article contributes to the growing literature on the long-term economic outcomes of changes in social norms, cultural values, and institutions.⁷ We show that contemporary economic patterns (in this case, the selection of the Jewish people into urban, skilled jobs) have been influenced by a religious reform and a change in social norms that emerged centuries ago.

2 Common Explanations

The main common and widely accepted explanation for the occupational selection of the Jewish people is the restrictions argument proposed by the prominent scholar Cecil Roth who wrote “the Jew was driven by the unfortunate circumstances of his history to be predominantly a townsman. He had to seek an outlet, despairingly, in every branch of

⁴In Botticini and Eckstein (2005) we built a model in which an adult Jewish individual chooses the level of education for his children, his own occupation, and religion. The model predicts our main argument outlined above, and it also makes predictions on conversions out of Judaism.

⁵Greif (1993).

⁶The view that Jews (and other diasporas) invested in human capital because it is portable and cannot be expropriated (see the debate in Brenner and Kiefer [1981], and Ayal and Chiswick [1983]) does not hold for the Jews since their decision to invest in human capital came centuries before their migrations and was motivated mainly by religious reasons.

⁷See, for example, North (1990), Greif (1994), Temin (1997), Chiswick (1999), Berman (2000), Acemoglu, Johnson, and Robinson (2001; 2002), Carlton and Weiss (2001), Mokyr (2002), and Barro and McCleary (2003).

urban economy.”⁸ Earlier, Israel Abrahams asserted that “when the medieval Jews devoted themselves largely to commerce and moneylending, they were not obeying a natural taste nor a special instinct, but were led to these pursuits by the force of the circumstances, by exclusive laws, and by the express desire of kings and people.”⁹ According to this view, the Jewish people did not engage in agricultural occupations since they were prohibited from owning land in many locations.

A less known view, the economics of small minorities, was proposed by Kuznets (1960) who argued that the economic structure of the Jewish people is the result of an endogenous choice. For noneconomic reasons, a minority group has distinctive cultural characteristics within a larger population. The goal of maintaining cohesion and group identity can lead minority members to prefer to be concentrated in selected industries and occupations, with the consequence of ending up living in cities where these occupations are available. This would explain why in most countries where the Jewish people lived in the early twentieth century (eastern Europe, the Soviet Union, and the United States), an overwhelming proportion (95 to 99 percent) of them were engaged in urban, skilled occupations. Before Kuznets, Max Weber had maintained that the Jews voluntarily chose to segregate and to become an urban population in order to maintain their ritualistic correctness, dietary prescriptions, and Sabbath rules, which would have been impossible to follow in rural areas.¹⁰ Kuznets, though, pointed out that his argument was general and applied to any minority like the Italians in Brazil, the Indians in Africa, or the Chinese in Southeast Asia.

3 Occupational Transition

Do the common explanations hold when and where the occupational transition of the Jews occurred? Table 1 answers this question by summarizing the occupational distribution of the Jews in the first millennium.

Before 400 C.E., the occupation of almost all Jews everywhere was farming. The information on their occupational distribution in the three main centers of Jewish life in the classical period—Eretz Israel, Mesopotamia, and Egypt—comes from these sources. For Eretz Israel there are (i) the writings of the Jewish warrior Flavius Josephus in the first century C.E., (ii) the endless number of references to farming in the Mishna, (iii) the many discussions about agriculture in the Talmud of the Land of Israel (*Talmud Yerushalmi*), and (iv) the extensive archaeological evidence showing that most Jews lived in rural villages.¹¹ For Babylon and Mesopotamia, the information comes from the land tax Jews had to pay under the Parthian and the early Sasanian rulers and from later indirect evidence in the debates from the Babylonian Talmud (*Talmud Bavli*). The descriptions of the philosopher Philo in the first century C.E. and the extensive papyrological evidence supply information on the large Jewish community in Egypt.

⁸Roth (1938, p. 228).

⁹Abrahams (1896, p. 249).

¹⁰Weber (1952, pp. 363-64).

¹¹An entire volume (*Zeraim*) of the six forming the Mishna is devoted to the rules that Jewish farmers had to follow. Also, almost all the holidays discussed in the volume *Moed* are related to the numerous agricultural tasks over the year.

TABLE 1—OCCUPATIONAL DISTRIBUTION OF THE JEWS IN THE FIRST MILLENNIUM

Time	Location	Percentage of the Jewish labor force engaged in these occupations		
		Farmers	Artisans, Craftsmen	Merchants, Doctors Moneylenders
0–400 C.E.	Eretz Israel	80-90	few	few
	Mesopotamia	80-90	few	few
	Egypt ^a	70-80	some	some
	Roman Empire ^b	70-80	few	few
400–638	Eretz Israel	70-80	some	some
	Mesopotamia	60-80	many	some
	Egypt	??	??	??
	Roman/Byzantine Empires ^b	??	??	??
638–1170	Eretz Israel	20-30	many	many
	Muslim Empire ^c	10-20	many	many
	Western Europe	5-10	many	many

a. At this time, the Jewish community in Egypt was mainly concentrated in Alexandria. This might explain the larger percentage of urban occupations held by the Jews in Egypt.

b. It does not include Eretz Israel and Egypt.

c. It includes all lands under Muslim rule, including Mesopotamia and North Africa, but not Eretz Israel.

Notes: The percentages should be considered ranges of values instead of exact figures. In many instances, the sources do not provide quantitative evidence. With this caveat in mind, the figures in the table still offer a reasonably good picture of the patterns and trends in the occupational distribution of the Jews throughout the first millennium.

Sources: for ERETZ ISRAEL IN 0-400 C.E.: Applebaum (1976a), Avi-Yonah (1984), Baron (1937, vol. 1; 1952 vols. 1 and 2; and 1971b), Hamel (1990), Jacobs (1990), S. Safrai (1976a), Z. Safrai (1994), and Stern (1976). For MESOPOTAMIA IN 0-400 C.E.: Applebaum (1976b), Baron (1937, vol. 1; 1952 vols. 1 and 2; and 1971b), Jacobs (1990), Neusner (1965-1970, vol. 1, pp. 94-99, vol. 2, p. 14, vol. 3, pp. 24-25; 1990a, and 1990b), Newman (1932), and Stern (1974). For EGYPT IN 0-400 C.E.: Applebaum (1976b), Baron (1937, vol. 1; 1952 vols. 1 and 2; and 1971b); Kasher (1985), Safrai (1976a), Stern (1974), and Tcherikover (1945; 1961). For THE ROMAN EMPIRE IN 0-400 C.E.: Applebaum (1976b), Baron (1937, vol. 1; 1952 vols. 1 and 2; and 1971b), Goodman (1998), Jones (1964), Juster (1914), Safrai (1976a), and Stern (1974). For ERETZ ISRAEL IN 400-638: Avi-Yonah (1984), Baron (1971b), Dan (1990), Herr (1990, Jacobs (1990), and Safrai (1976a). For MESOPOTAMIA IN 400-638: Baron (1971b), Beer (1974), Jacobs (1990), Neusner (1965-1970, vol. 5, p. 134), Newman (1932), and Safrai (1976a). For THE ROMAN AND BYZANTINE EMPIRES IN 400-638: Baron (1971b), and Juster (1912). For ERETZ ISRAEL, MESOPOTAMIA, AND ALL THE LANDS OF THE MUSLIM EMPIRE IN 638-1170: Ashtor (1976), Baron (1952, vol. 3; and 1971b); Benjamin de Tudela (1170), Ben Sasson (1976), Cohen (1994), Gil (1992; 1997), Goitein (1967-1988, vol. 1), Lewis (1984), Mann (1920-1922), Morony (1981), and Udovitch (1981). For WESTERN EUROPE IN 638-1170: Abrahams (1896, chapters 11 and 12, and pp. 245-49), Agus (1965), Baron (1971b), Benjamin de Tudela (1170), Gross (1975), and Roth (1938; 1960).

Gil (1997, p. 593) summarizes this wealth of evidence by saying that in the period before the eighth century, almost all Jews in Eretz Israel and most in the Diaspora earned their living from agriculture. Of course, in the cities, such as Alexandria, Babylon, Jerusalem, and Rome the Jewish people were also engaged in crafts and trade.

The transition away from agriculture into crafts, trade, and moneylending started in the Talmudic period, especially in Babylon. The Babylonian Talmud has many more debates and rulings regarding crafts and trade than the Talmud of the Land of Israel. In the fifth-sixth centuries the Jews abandoning agriculture moved to the towns and became small shopkeepers and artisans in the tanning, linen, silk, dyeing industries, and glassware making.¹² The Babylonian Amoraim (the scholars in the academies from the third to the sixth centuries) were the first to enter the most skilled occupations as traders and merchants (Beer 1974).

The key period of urbanization occurred in the Muslim Empire during the Abbasid rulers from the mid-eighth to the early ninth centuries (Lewis 1993). Many cities developed and Baghdad (established in 762) became the main center. Urbanization in Iraq, Iran, Egypt, and the other lands under Muslim rule led Jews to migrate from small villages to towns and cities, so that in the mid-ninth century the Jewish population in the Muslim regions was almost entirely urban.¹³ The Jews entered into urban and skilled occupations, such as handicrafts, making of jewels, tanning, dyeing, shipbuilding, corn and cattle dealing, bookselling, tax farming, moneylending, and long-distance trade from France and Spain in the West to China and India in the Far East.¹⁴

Two impressive primary sources that illustrate the social and economic life of the Jewish communities in all the lands of the vast Muslim Empire, amply describe this occupational transition. The documents of the Cairo Geniza, which refer to thousands of contracts (sales, marriage deeds, loans, business partnerships), wills, letters, and court records, show that many Jewish people were no longer engaged in agriculture in the lands of the Muslim Empire since few documents refer to Jewish farmers. Given that the urban Jewish communities mainly wrote these documents, it is not surprising that the deeds, contracts, and letters overrepresent urban households.

In contrast, the other primary source does not suffer of this potential selection bias. It is known as the rabbinic Responsa literature and refers to the thousands of written replies (*teshuvot*) and rulings that the *Geonim* (the heads of the academies in Iraq from the sixth century on) sent in reply to the letters they received from the Jews living in rural and urban locations all over the world. Two key pieces of information come from the Responsa. First, in 787 C.E. the Geonim of the two academies of Sura and Pumpedita (the leading academies in Iraq) abrogated a Talmudic law and decreed that debts from orphans and women's dowries could also be exacted from movable property, whereas before that time creditors could claim only landed property (Mann 1917–1921, p. 311). This ruling was dispatched to all Jewish communities in the Diaspora. Some time later, in about 832 R. Moses Gaon explained that “the current situation in which most Jewish people do not own land” motivated that

¹²Baron (1937, vol. 2, p. 244); and Jacobs (1990).

¹³Ben-Sasson (1976, p. 393), and Gil (1997, pp. 593-96).

¹⁴Goitein (1967–1988, vol. 1), and Gil (1997, pp. 598-602).

ruling (Brody (1998, chapter 4). Second, there is a number of questions addressed to the Geonim by farmers, which shows that some Jews were still engaged in agriculture during the Muslim period.¹⁵ Yet, the number of these Responsa compared to the ones dealing with crafts, trade, and moneylending is small, which indicates the shift away from agriculture into urban and skilled occupations. As Gil points out, a selection bias cannot explain this reduction in the Responsa material dealing with agriculture among Jews in the Muslim period.¹⁶ Had agriculture been the main occupation of the Jews at that time, somehow a lot of material would have appeared in the rabbinic Responsa, exactly as three-four centuries earlier most of the rulings in the Mishna and the Talmud discussing occupations concerned farming.

When in 1167-1170 Benjamin de Tudela wrote his travel itinerary describing the Jewish communities throughout the world of his time, the transition away from agriculture into urban occupations had reached a full-fledged stage. He found (or heard of) Jewish communities in small and large cities from Spain, France, Italy, and central Europe, all the way to Tibet, India, the Middle and Near East, Mesopotamia, and North Africa. The Jews described in de Tudela's book were officials of Pope Alexander in Rome, physicians in Amalfi, dyers in Brindisi, artisans in silk in Thebes and Salonika, merchants, tanners and physicians in Constantinople, glassmakers and owners of vessels in Antioch and Tyre, handicraftsmen and dyers in Sidon, Jerusalem, Bethlehem, and Jaffa.

To sum up, all scholars agree that the vast majority of Jews were farmers in the first half of the millennium, whereas at the end of the millennium a small proportion of them remained in agriculture and the vast majority were craftsmen, artisans, merchants, doctors, moneylenders, and long-distance traders in the Muslim lands. These urban, skilled occupations remained the distinctive mark of the Jews throughout history.

4 Restrictions on Jewish Economic Activities

Does the argument based on restrictions hold true during the Arab and Muslim expansion when the Jewish population moved away from agriculture into trade? The answer is no. In this period, there were no legal restrictions on any Jewish economic activity.¹⁷ The Jews could engage in any occupation and could own land as long as they paid the land tax (like all non-Muslims).¹⁸

One may object that the legal codes do not portrait how people actually behaved and there might have been unwritten social norms that made it difficult for Jewish households to

¹⁵Gil (1997, pp. 593-96).

¹⁶Ibid., pp. 598-602.

¹⁷Earlier, in the Roman Empire, some legal restrictions on Jewish economic activities were enacted after the revolts in the first and second centuries C.E. (e.g., the Jews could not enter the civil service or the law profession) (Juster 1914). In contrast, there were no restrictions on the economic activities of the large Jewish community living in Babylon under the Parthian and the Sasanian rulers (Neusner 1965-1970).

¹⁸See Morony (1981), Lewis (1984), Gil (1992), and Cohen (1994). Non-Muslim people had also to pay the poll tax levied on each household head. In the eleventh century, it amounted to 3.4 dirhems per month, about 5 percent of a teacher's salary at that time. The poll tax, however, was levied regardless of the occupation of the household head (Goitein 1967-1988, vol. 1).

own land and to engage in agriculture. However, the contracts, land transactions, business partnerships, and wills of the Cairo Geniza and the letters from the rabbinic Responsa literature clearly show that *any* occupation was available and indeed chosen by the Jews in the Muslim Empire. At the same time, the same documents refer to land holdings belonging to Jews and land transactions among them, which is direct evidence that the Jews not only could but also *did* own land in the Muslim period (Goitein 1967–1988, vol. 1; and Gil 1997).

5 Jewish Demographics and Minority Status

Information on demographic trends show that Kuznets’ explanation (the economics of small minorities) does not pass the test of historical facts for the first millennium. Table 2 indicates that in Mesopotamia, the Jews were a minority from the first to the third century when most of them were farmers, and they remained a minority in the eighth century when most became craftsmen and merchants.¹⁹ Hence, their status as a minority could not have prompted their occupational transition.

TABLE 2—JEWISH AND TOTAL POPULATIONS IN THE FIRST MILLENNIUM (IN MILLION)

Location	Time	Jewish Population	Total Population
Mesopotamia (Iraq, Persia)	3 rd century	1–1.2	8–9
	8 th century	0.8–1	10–12
	12 th century	0.8	10–12
Eretz Israel	60 C.E.	2.25	3
	100	1.5	2.25
	150	1.0	1.75
	235	Migrations to Babylon	
	300	0.5	1.1
	395	0.25	0.8
	5 th –6 th centuries	0.2	1.5
Egypt	1 st century	1	8–10
	2 nd century	0.1	9–10
	8 th century	0.004	7–9
	12 th century	0.012	7–9

Note: The non-Jewish population consisted of Samaritans, Jewish Christians, Cananites, Edomites, and Greeks. In the 5th and 6th centuries, most of the non-Jewish population consisted of Christians. Sources: For MESOPOTAMIA, Neusner (1965–1970, vol. 1, p. 14-15, vol. 2, pp. 246-48), and Issawi (1981, pp. 376, 381). For ERETZ ISRAEL, Herr and Oppenheimer (1990, pp. 108-09). For EGYPT, Issawi (1981, pp. 376, 381), and Musallam (1981, p. 432). For Jewish population in all locations, Baron (1971a) and DellaPergola (2001). For data on total population, Clark (1968) and McEvedy and Jones (1978).

¹⁹For population data, we read the works of leading historians and demographers (for example, Baron [1971a] and DellaPergola [2001]) and we greatly benefited from a very helpful discussion with Sergio DellaPergola. While there is disagreement among scholars on specific numbers, there is a general consensus on the trends and the relative size of the populations in selected locations at given times. The numbers should be considered as ranges of values, instead of exact figures.

At the same time, in Eretz Israel most Jews were engaged in agriculture regardless of whether they were the majority of the population (up to the end of the third century) or a minority (from the fourth century on and in Byzantine period, when the Jews were living mainly in Galilee as farmers).²⁰

The same pattern occurred in Egypt where a large Jewish community lived in the first century C.E.. They were a minority there—one of the many minorities—and yet most of them were engaged in agriculture (the only notable exception being Alexandria, which hosted a large urban Jewish community).²¹

6 Education in Judaism

If restrictions on economic activities or the minority status of the Jews cannot explain their occupational transition in the eighth-ninth centuries, what is an alternative explanation? At the beginning of the first millennium, Jews dressed, looked like, and spoke the same local languages as the non-Jewish populations. We argue that the key difference between Jews and non-Jews was that by the sixth-seventh centuries, a large fraction of the Jewish rural population was able to read (and some to write), whereas the non-Jewish rural population was illiterate. This comparatively higher literacy of Jews was the outcome of a religious and educational reform that had started in the second-first centuries B.C.E. and became the central goal of the religious leaders from the third century C.E. on. This sweeping change completely transformed Judaism into a religion centered around reading, studying and implementing the rules of the Torah, the Mishna, and the Talmud.

Judaism Before 70 C.E. The development of Jewish educational institutions was a slow and long process that occurred between the third century B.C.E. and the first century C.E. in Eretz Israel when the majority of the Jewish population was rural and illiterate.²²

In early times (about 515-200 B.C.E.), academies for higher learning were established in Jerusalem to prepare the priests for the Temple, but their access was restricted to a very small group of people. Schools for higher education were founded in Babylon, Jerusalem, and later in other towns but there is no direct information on how many students attended them.²³

In the first century B.C.E., the president of the *Sanhedrin* Simeon ben Shetah promoted the establishment of free secondary schools throughout Palestine, which were supposed to prepare young adults (16 or 17 years old). Later, the high priest Joshua ben Gamla (ca. first century C.E.) issued a religious ruling that “teachers had to be appointed in each district

²⁰See Dan (1990).

²¹During the first millennium there were many other minorities that kept their distinctive characteristics yet living in villages as farmers (Cohen and Frerichs 1993). The related claim by Weber that the Jews voluntarily chose to segregate and to become an urban population in order to maintain their religious rules is contradicted by groups, such as the Amish in the United States, who remained farmers and yet maintained their religious cohesiveness and group identity.

²²Bar-Ilan (1992) argues that the literacy rate among the Jewish population in Eretz Israel at this time was at most 3-10 percent given that most of the Jewish population was rural.

²³See Drazin (1940) and Morris (1977).

and every city and that boys of the age of six or seven should be sent.”²⁴ During the same period, the famous warrior and writer Flavius Josephus stated that children’s education was the principal care among the Jews.²⁵

Baron attributed the increased emphasis on religious instruction to the competition for the leadership within the Jewish community between the Sadducees who accepted only the Written Torah and adopted the Hellenistic culture, and the Pharisees who aimed to expand the study of both the Written and the Oral Torah among all Jews, and strongly opposed the expansion of the Greek language and culture.²⁶ To reach their goal, members of the Pharisaic group prompted the major change in educational institutions as described above (Ebner 1956). There is no evidence that the ruling of Joshua ben Gamla was immediately implemented. Hezser maintains that the vast majority of the Jewish population in Eretz Israel in the first two centuries C.E. kept being rural and illiterate.²⁷ However, this ruling became a religious law that any Jewish father was asked to obey.

The Mishna, the Talmudic, and the Early Gaonic Period (70-638 C.E.).

The destruction of the Second Temple in 70 C.E. deeply changed the Jewish religion. The Sadducees who led the rebellion against the Romans, disappeared after the destruction of Jerusalem, whereas the Pharisees who did not actively participate in the revolt, left Jerusalem after its destruction and established the new center of religious life in the academy (*yeshiva*) and the Sanhedrin at Jabneh. Under their leadership, the core of Judaism no longer consisted of the rituals, sacrifices, and ceremonies that could only be performed by the priests in the Temple, but became centered around the reading and teaching of the Torah.²⁸

Instruction meant religious instruction to prepare the male children to read, once adults, in the synagogue, which became the center of reading and learning the Torah.²⁹ Synagogues had existed in Eretz Israel well before the destruction of the Temple. However, after the destruction of the Temple many more synagogues were built in towns and even villages in

²⁴See Demsky (1997, p. 368), and Greenberg (1960, p. 1261). This is the quotation in the Talmud [Baba Batra 21a] that refers to the decree of Joshua ben Gamla: "However, that man is to be remembered for good, and his name is Joshua ben Gamla; for were it not for him Torah would have been forgotten in Israel. For at first he who had a father was taught Torah by him, and he who had no father did not study Torah. It was then decreed that teachers of children should be appointed in Jerusalem. However, he who had a father, the father would bring him to Jerusalem and have him taught, while he who had no father, would not come to Jerusalem to study. It was then decreed that teachers of the young should be appointed in every district throughout the land. But the boys would be entered in the school at the age of sixteen and seventeen and if the teacher would rebuke one of them, he would resent it and leave. Thus it was until Joshua ben Gamla decreed that teachers of children should be appointed in every district and every city and that boys of the age of six and seven should be entered."

²⁵Flavius Josephus, *Against Apion*, Book I, sec. 12, and Book II, sec. 19.

²⁶Baron (1952, vol. 2, pp. 274-79). See also Feldman (1996) and Baumgarten (1997). At this time, the Oral Torah consisted of the rulings of rabbis and high priests regarding the implementation of the Written Torah.

²⁷Hezser (2001, pp. 495-97).

²⁸Drazin (1940, p. 25), Maller (1960), and Safrai (1968).

²⁹A tractate of the Mishna (*Megillah*) is devoted to the rules of reading the Book of Esther and the Torah in the synagogue.

Eretz Israel, and especially in the Galilee where most Jews moved after the revolts in 70 and 135 C.E. against the Romans.³⁰

At the same time when many synagogues were built across Palestine, in the yeshiva at Jabneh, which functioned as an academy, a high court, and a parliament, the scholars (*Tannaim*) discussed religious, social, and economic matters submitted to them, interpreted the Bible and the sacred law, and issued rulings. They also systematically organized the vast body of Jewish Oral Law accumulated through the centuries, until rabbi Judah ha-Nassi completed their work by redacting the Mishna about 200 C.E.³¹ In his times, the word *am ha-aretz* (literally “people of the land”), which in early times referred to a Jewish individual who disregarded tithing and the norms of ritual purity and sacrifices (*am ha-aretz lemitzvot*), acquired the new meaning of “one who does not know and does not teach his sons the Torah.”³² For the rabbis and the scholars, to be an *am ha-aretz letorah* meant to be considered an outcast in the Jewish community.

The transformation of Judaism with the core centered around reading and learning the Torah was prompted by the religious leaders in Eretz Israel where half of the world Jewish population lived and the vast majority were farmers, and was accepted and implemented by Babylonian Jews who were also mainly farmers. Given that the main goal was to make every male child able to read the Torah in the synagogue, it is hard to see an economic motive for a religious and educational reform that was promoted within a farming society.

From the third throughout the fifth century the *Amoraim* (the scholars in the yeshiva after the Tannaim) debated, discussed, and clarified the rulings in the Mishna. Their opinions were collected in the Talmud of the Land of Israel, redacted about 400 C.E., which is mainly devoted to agriculture; a farming society was the target audience for whom the rabbis elaborated their rulings.

The implementation of the educational reform received a major push at this time. As Baron points out “in the Talmudic period Jewish learning penetrated still deeper into the masses. This happened at a time when illiteracy was widespread throughout the Mediterranean world and when the Imperial City itself had only begun to establish public schools for the wealthy and the middle class.”³³ Two different and independent sources support this claim. The Talmud of the Land of Israel contains, among others, three relevant rulings: one is about a communal tax to provide for the wages of teachers of the Torah and the Mishna, another is about the requirement that even unmarried people with no children who resided in a town, had to pay for the wages of teachers of the Torah and Mishna, and the third is about the possibility that the community as a whole can fire a teacher if he did not follow the parents’ instructions.³⁴

The second and independent source of evidence comes from the archaeological discoveries on synagogues. During the Talmudic period, the reading of the Torah became more spread

³⁰Flesher (1995) and Levine (2000).

³¹Neusner (1998) and Cohen (1998). The Mishna consists of six volumes of rules: *Zeraim* deals with the rules for farming, *Moed* with feasts, *Nashim* with marriage and divorce, *Nezikin* with civil and criminal law, *Kodashim* and *Tohorot* with sacrifices and other ritualistic issues.

³²Oppenheimer (1977) and Haas (1989, p. 149).

³³Baron (1952, vol. 2, p. 279).

³⁴Safrai (1987, pp. 77-78) and Gafni (1990, pp. 107-09).

among Jews through the attendance of the local synagogues. Many synagogues were built in the third-fifth centuries in Judaea, Galilee, and the Golan.³⁵ Most of these locations were small towns or villages of farmers who funded the construction of synagogues. The archaeological findings on synagogues are the key facts supporting our claim because literary sources, such as the Talmud, indicate that synagogues at this time in Eretz Israel were the place of learning for adults and children.

Although Palestine remained important as center for the yeshiva, Babylon (Iraq) grew in importance as the new center of Jewish religious and economic life. The scholars in the academies in Babylon collected their opinions and comments on the Mishna in the Babylonian Talmud, completed around 500 C.E. Unlike the Talmud of the Land of Israel, the Babylonian Talmud has more material dealing with crafts and trade. Also, unlike the Talmud of the Land of Israel, which describes a communal organization of primary education, the Babylonian Talmud puts more emphasis on the parents' responsibility for paying for their children's education. For example, a ruling required a father to pay for his son's education and to teach him, or to have someone teach him, a craft.³⁶

The other source of information on the extent of religious instruction and primary education of children comes from the archaeological evidence on synagogues, which again provides information independently of the discussions in the Talmud. Many synagogues were also built in Mesopotamia and in all the lands of the Diaspora.³⁷

The growth of the yeshiva in Babylon and the growing number of scholars and students in the academies indirectly show that more students must have gotten some primary education, without which they could not enter the academies. Related to the yeshiva, the institution of the *kallah* (apparently begun in Babylon in the third century) indicates that education was becoming more widespread among the Jewish rural population in Iraq from the fourth century. The months of *kallah* were two months a year (March and August, when there were no agricultural activities) when Jews from everywhere visited the academy where a specific section of the Talmud was read and discussed by scholars. An important event of Jewish life was aimed to occur at a time of the year when (literate) farmers could attend it.³⁸ During the *kallah* in spring, the questions sent from the Jewish communities everywhere were read and discussed by the scholars. The written answers (*teshuvot*, Responsa) to these questions were then sent back through the Jewish merchants. The rabbinic Responsa already existed in Talmudic times but did not constitute a separate body of literature from the Talmud. It is after the Babylonian Talmud was redacted and after the Amoraim were succeeded by the Geonim (the new heads of the academies) that the rabbinic Responsa became a separate body of literature.³⁹

³⁵ Safrai (1968), Aberbach (1982, p. 41), Stern (1993), Safrai (1995), Urman and Flesher, (1995), and Schiffman (1999).

³⁶ Goitein (1962, p. 121) and Gafni (1990, pp. 107-09).

³⁷ Ovadiah (1978), Oppenheimer, Kasher, and Rappaport (1987), Gafni (1995), Oppenheimer (1995), and Levine (1999).

³⁸ Neusner (1965-1970, vol. 4, pp. 384-85).

³⁹ See Alon (1984). For more than five hundred years (from the mid-sixth to the eleventh century) the Gaonic Responsa are one of the main sources of information on the social, religious, and economic life of the Jews in all lands of the Diaspora.

With regards to Jewish education, the rabbinic Responsa provide more information on the Babylonian academies than the primary schools. Yet, from the Responsa there is evidence that there were teachers who taught small children everywhere, even in villages, in Mesopotamia.⁴⁰ These teachers were among the community officials (together with rabbis, judges, and heads of synagogues) listed at the end of letters of excommunication that the Geonim sent to the many Jewish communities in the world.

The evidence from the early Gaonic Responsa is important because it comes before the Muslim period. By showing that more Jews educated their children in the period before the urbanization occurring in the Muslim Empire, the rabbinic Responsa support our claim that the Jews were investing in their children's religious literacy and education before the transition from agriculture into trade.

The Arab and Muslim Period (638-1170). In the Arab and Muslim period, the Responsa of the Geonim and the documents of the Cairo Geniza confirm the common pattern among the Jewish communities: basic literacy among male Jews became almost universal in both rural and urban communities.

The rabbinic Responsa mention that there were teachers of small children everywhere.⁴¹ Sherira Gaon (ca. 967-1006) wrote that “as a rule a Jew knows the Hebrew script.”⁴² This Responsum was given to the question whether a Jewish individual who signed documents as witness understood the content of these documents. Sherira argued that some witnesses did not understand the content of what they were signing but, at the same time, asserted that every Jew knew the Hebrew script, which they learned in the primary schools or in the synagogues. In the synagogues, however, Jewish children did not learn only the Hebrew script, as clearly indicated in the Responsum of Hai Gaon (ca. 1007-1038) “One can teach the young children of the synagogue, while teaching Torah, Arabic script and arithmetic; but without the teaching of Torah, one should not teach these. And one should avoid, as far as possible, teaching the children of gentiles in the synagogues; but if there is a fear it may cause outrage, then it should be permitted, so as to keep the peace.”⁴³ This Responsum is important for three reasons. First, it confirms that even in the Gaonic and Muslim period, the synagogue continued to be one of the major institutions among Jews for providing primary education to children. Many other Responsa refer to schoolchildren as the “children of the synagogues.” Second, the Responsum indicates that there was demand for education that went beyond just learning the Hebrew script. Third, even non-Jews were interested to send their children to Jewish schools to learn non-religious topics.

The thousands of letters, contracts, wills, and written transactions of the Cairo Geniza confirm the picture given in the rabbinic Responsa, but on a larger scale. These documents contain an endless number of references to school fees and teachers' salaries even from small towns and villages, such the little town of Damira, the provincial town of al-Mahalla, or

⁴⁰ Assaf (1925–1942, vol. 2, pp. 11-27).

⁴¹ Ibid., pp. 21-22. For example, in the Responsa of Hai Gaon, he refers to “teachers (*garsai*) of the villages who taught the Talmud despite not being well-versed in Scriptures.”

⁴² Mann (1917–1921, p. 325).

⁴³ Assaf (1925–1942, vol. 2, p. 27).

the small village of Qalyub.⁴⁴ The school fees were listed in the budgets of wealthy and humble households. For example, a wife from a very poor household asking for divorce claimed that her husband did not behave as a proper father because he did not pay the school fees for their sons. The documents often mention the appointment of teachers for orphan and poor children at community expenses. For in addition to the cost of providing his own children with Jewish education, each household head who had resided for twelve months or longer in a given location, had to pay a communal tax to finance the primary education of orphan and/or poor children.⁴⁵ “Teachers of the orphans” are mentioned in records from Old Cairo, Jerusalem, Damascus, and Baghdad.⁴⁶

In the world described in the documents of the Cairo Geniza, primary instructions was given in the synagogue, in the house of the teacher, or in the house of the child’s parents in the case of wealthy and prominent families. Small communities and villages had to invite a teacher by promising a minimum weekly salary, whereas in towns and cities teachers competed one against the other to attract students. In many elementary schools in Egypt, teachers were foreigner Jews who had migrated there from other countries.⁴⁷

After acquiring basic literacy in primary schools and/or synagogues, Jews merchants, physicians, and government officials gained higher skills in both reading and writing to the extent that they could write and discuss about sophisticated religious arguments, as shown in the many letters of the Cairo Geniza. Being a scholar and being a merchant was often the same thing among the most educated Jews.⁴⁸ Joseph rosh ha-seder ben Jacob, a Jewish scholar from Iraq, writing in Egypt around 1150, described the level of education among Jews at that time by saying that there were four types of people: uneducated persons, the broad masses, scholars and doctors.⁴⁹ The masses have learned to read the Pentateuch and Saadya’s prayerbook. The scholar has studied other sections of the Bible and the codified law. The doctor was someone familiar with the Mishna, the Talmud, and their commentaries.

Goitein summarized the wealth of evidence on the extent of Jewish primary education in the Muslim period saying that the documents of the Cairo Geniza show that in the Jewish communities everywhere, “elementary education was universal to a very remarkable degree, but its standards seem to have been rather poor.”⁵⁰ The standards were poor in the sense that having students acquire the ability to read and basic writing skills were the major goals of primary education. Thus, the letters written and/or signed by artisans and small shopkeepers were not written in the beautiful cursive script, but in the large script typical of books that were read and taught in primary schools. The art of writing in beautiful cursive script was taught only in advanced schools and was geared toward four types of professions: government officials, physicians, religious scholars, and merchants.

⁴⁴Goitein (1967–1988, vol. 2, pp. 174, 187, 193).

⁴⁵Greenberg (1960, p. 1270). The fees were also needed for the construction and maintenance of synagogues and for the purchase of books.

⁴⁶Goitein (1967–1988, vol. 2, p. 186).

⁴⁷Cohen (2003, p. 54).

⁴⁸Goitein (1967–1988, vol. 2, p. 195).

⁴⁹Ibid., pp. 205-06.

⁵⁰Ibid., p. 174.

Thus, one thousand years after the religious and educational reform prompted by the Pharisees, most Jews had some basic literacy and a significant number of them, as merchants and scholars, had acquired higher levels of education and learning.

7 Urbanization, Jewish Education, and Migrations

Urbanization, Eighth to Ninth Centuries. Urbanization greatly expanded during the Arab and Muslim period (Lewis 1993). New cities were founded in Iraq and Iran. The Umayyad dynasty, which had their capital in Damascus, established as main centers Basra in 636 and Kufa in 638, whereas the Abbasid rulers developed Baghdad in 762 and Samarra in 836.⁵¹ The estimated population of Baghdad in the eighth and ninth centuries was in the range of 600 thousand to 1 million people, whereas in comparison the largest European cities in the late twelfth century (e.g., Palermo, Paris, Seville, and Venice) had populations in the range of 60,000 to 150,000 people.⁵²

The growth of new cities, towns, and administrative centers increased the demand for urban and skilled occupations in the lands under Muslim rule. The literate Jewish rural population in Iraq and later in all the Muslim Empire moved to urban centers, abandoned agriculture, and became engaged in crafts and trade. In these cities, the Jewish population became very large.⁵³ It has been estimated that about 1 million Jews (80 percent of the world Jewry) lived in Mesopotamia in the eighth century.⁵⁴

Whereas the most educated Jews (the scholars in the academies) had left agriculture and become merchants well before the expanded urbanization in Iran and Iraq, the literate Jewish rural population left agriculture when the growth of cities in the Muslim Empire made available to them the urban and skilled occupations. Although some non-Jews also moved to the new urban centers and entered skilled occupations, most of them remained farmers.⁵⁵ At this time there were many minorities living in Iraq, including the Christians who were almost equal in numbers to the Jews.⁵⁶ The Muslim rulers imposed no economic or occupational restrictions on non-Muslims except for the poll tax that Jews, Christians, and any non-Muslim individual had to pay. Hence, it has to be the distinctive characteristic of the Jewish people—their social structure and literacy—that gave them the comparative advantage to switch to the better paid occupations in the new cities.

Returns to Jewish Education and Jewish Comparative Advantage. Our main thesis is that the educational reform that made the reading of the Torah the core of Judaism endowed the Jews with a comparative advantage in urban, skilled occupations. But how did the investment in religious education, prompted by the transformation of Judaism at

⁵¹Lapidus (1981, p. 203).

⁵²De Long and Shleifer (1993, Table 1) and Watson (1981, p. 56).

⁵³Using various sources, Gil (1997, p. 458) maintains that many Jews lived in more than hundred cities in Iraq and Iran during the Gaonic and Muslim period, and that at the time of the Mongolian invasion in 1258, there were about 200,000 Jews and about 30 synagogues in Baghdad.

⁵⁴Baron (1971a) and DellaPergola (2001).

⁵⁵Baron (1952, vol. 3) and Gil (1997).

⁵⁶Gil (1997, p. 57).

the beginning of the first millennium, bring economic returns to the Jewish people centuries later?

Learning as children to read one language (Hebrew) enabled the Jews to read other languages (Aramaic, Greek, and Latin) that were used in the locations where the Jews were living in the first half of the millennium. Later, in the Muslim period, it enabled them to read and to write documents in Hebrew-Arabic, as the documents of Cairo Geniza amply show, and to write with Hebrew characters the local languages of the locations in western Europe where they migrated (e.g., French, German, and Latin) (Limor 1993, p. 158).

The ability to read religious texts in Hebrew also enabled the Jews to read any other documents written in Hebrew, such as business letters, sale and purchase contracts, partnership deeds, and loans, even if the local languages they spoke were different.⁵⁷ This enabled and enhanced the network externality among Jewish merchants described by Greif (1989). Only a Jewish merchant who could read a fellow merchant's letter, was able to enforce sanctions on Jewish traders who cheated and acted opportunistically toward other Jewish merchants. Thus, literacy was a pre-condition for the use of community sanctions and the Jewish court system through (i) the written letters among Jewish merchants as illustrated by the documents of the Cairo Geniza, and (ii) through the rulings of the scholars in the academies in Iraq dispatched to the Jewish communities everywhere through the mail system of the Jewish merchants, as documented by the huge number of rabbinic Responsa.

In addition to basic literacy, those Jews who learned the Mishna and especially the Talmud, also acquired the rational thinking and the debating ability which is required to understand the Talmudic debates and is also helpful in commercial transactions and moneylending.⁵⁸

Literacy and education were valuable not only for merchants and moneylenders. Unlike today, the production of almost all goods was custom-tailored in the first millennium. Even for artisans and craftsmen such as goldsmiths, jewellers, blacksmiths, producers of weapons, shoemakers, dyers, and tailors, there was an advantage from being able to write contracts, which specified the characteristics of the raw materials and the finished products, in case disputes arose later on with either the customers or the merchants.⁵⁹ Among the documents of the Cairo Geniza, there were letters written and/or signed by artisans and small shopkeepers.⁶⁰

Education and Migrations. Since the early ninth century, as many Jews became craftsmen and merchants, they voluntarily migrated to North Africa, Muslim Spain, Sicily, and towns in western Europe. During the tenth-eleventh centuries, they spread to Champagne and South Germany where fairs and the revival of trade started flourishing (Glick 1999). They could also be found in many locations in Mesopotamia and Egypt. At that time (eighth-tenth centuries), they generated a network of trade embracing Europe, North

⁵⁷The growth of Hebrew as the common language among Jews living everywhere is also reflected by the fact that this period produced most of Hebrew poetry, prose, and translations of stories from Arabic and Latin into Hebrew.

⁵⁸Sombart (1913, p. 149).

⁵⁹Goitein (1967–1988, vol. 1).

⁶⁰Ibid., vol. 2, p. 174.

Africa, the Middle and Near East. These migrations were motivated by increasing trade opportunities that enabled the Jews to reach standards of living comparable to the upper classes in all countries where they settled.⁶¹ Education made mobility less costly since it enabled educated people to stay in touch with each other, which was very valuable to maintain family and business connections when living in different countries (Kahn 1971).

The Jews who were engaged in long-distance trade had the highest human capital.⁶² The documents of the Cairo Geniza and the rabbinic Responsa indicate that they were doing their business by writing letters, they were involved in complicated transactions, moneylending, partnerships and interest-rate calculations that required a sophisticated understanding of trade and partnership rules with both Jews and non-Jews, and trade over many commodities in many languages in different countries. Some of these traders were also the religious leaders of the Jewish communities. Thus, selection certainly occurred with the most educated Jews moving into the high-skill international trade activities.

Both the documents of the Cairo Geniza and Benjamin de Tudela's travel itinerary show that in the Muslim period, the Jews were living in small communities everywhere from China and Aden in the East to Spain and Germany in the West, whereas only few locations (such as Baghdad) hosted very large Jewish communities. In the tenth-eleventh centuries the Jewish Diaspora was at its height and continued throughout history. One implication of our thesis is that the Diaspora and the minority status of the Jews in many locations were not an exogenous fact (as Kuznets postulated) but were the endogenous outcome of their selection into urban and skilled occupations.

8 Concluding Remarks

The novel contribution of this article is to provide the historical evidence to support a simple economic rationale for the transition of Jewish people from farming to urban, skilled occupations from the eighth to the ninth century. The transformation of Judaism into a religion that required each Jewish man to be able to read the Torah, and later the Mishna and the Talmud, made the Jewish people during the first millennium a literate ethnic group in a world where the rest of the population was illiterate. This transformation occurred at a time when the vast majority of the Jews were farmers, and therefore, cannot be attributed to a human capital investment made in order to engage in a particular occupation or to enable migration. Education was an exogenous hedge in the formation of Jewish religion that we take as given. Based on this fact, we argue that the occupational transition was the outcome of an exogenous change in social norms prompted by a religious reform.

During the Middle Ages, and especially in Europe, a large proportion of the Jews specialized in moneylending. The conventional view is that this was the outcome of the prohibitions imposed on Jews from engaging in occupations except moneylending, and prohibitions on non-Jews from engaging in moneylending. Our work raises the possibility that alternative hypotheses related to acquired skills and social networking may provide a different explanation for the ethnic distribution of moneylending in the Middle Ages.

⁶¹Ben Sasson (1976, pp. 393-402).

⁶²Agus (1965, p. 7) and Goitein (1967–1988, vol. 1).

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