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July 2004

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ABSTRACT

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

This paper documents the major features of Jewish economic history in the first millennium to explain the distinctive occupational selection of the Jewish people into urban, skilled occupations. We show that many Jews entered urban occupations in the eighth-ninth centuries in the Muslim Empire when there were no restrictions on their economic activities, most of them were farmers, and they were a minority in all locations. Therefore, arguments based on restrictions or minority status cannot explain the occupational transition of the Jews at that time. Our thesis is that the occupational selection of the Jews was the outcome of the widespread literacy prompted by a religious and educational reform in the first century ce, which was implemented in the third to the eighth century. We present detailed information on the implementation of this religious and educational reform in Judaism based on the Talmud, archeological evidence on synagogues, the Cairo Geniza documents, and the Responsa literature. We also provide evidence of the economic returns to Jewish religious literacy.

JEL Classification: J10, J20, N30, O10

Keywords: first millennium, human capital, Jewish economic history, migration, occupational choice, religion and social norms

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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 urban centers 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

An alternative explanation has been suggested by Kuznets (1960, 1972). He first documented that at the end of the nineteenth century and the beginning of the twentieth century, the Jews in Eastern Europe and North America were not engaged in agriculture independently of the size of the agricultural sector in a given country.² He explained this fact as the outcome of an endogenous decision within an economic theory of small minorities. Taking the minority status as exogenous, he argued that the minority's goal of maintaining its identity made the Jewish minority specialize in certain occupations.

We argue that the existing historical evidence does not support the above explanations at the time when the occupational transition of the Jews occurred. The transition away from agriculture into crafts, trade, and finance 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.³ At the time when the occupational transition occurred, no restrictions and prohibitions existed. As for Kuznets' theory, we show that before the occupational transition, the Jews were farmers *and* were 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 this occupation to preserve their group identity that had been built at that time for a farming society. Yet, Jews did not remain farmers despite their minority status.

The historians Baron (1952), Ben-Sasson (1976), and Gil (1992; 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.

Our thesis is that the distinctive characteristic of the Jews was that by the eighth century a significant proportion of Jewish farmers were literate whereas the non-Jewish rural population was illiterate. As such, Jewish farmers had a comparative advantage in the skilled, high-paid occupations demanded in the new urban centers developed by the Muslim rulers. When the demand for skilled occupations increased all over the Muslim Empire and later in western Europe, many Jews were able to enter these occupations and later to migrate.

Why were Jewish farmers literate whereas the rest of the rural population was illiterate

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

²Reich (1960) also provides a lot of data on the occupational distribution of the Jews in this period.

³See Baron (1937; 1952), Ben-Sasson (1976), and Gil (1992; 1997).

at the beginning of the eighth century? Our main contribution is to provide the historical evidence of the implementation of a religious and educational reform within Judaism that had started at the beginning of the first millennium. After the destruction of the Temple in 70 CE, the power in the Jewish community shifted from the priests in the Temple (the Sadducees) to the group that promoted learning and speaking Hebrew (the Pharisees). The new religious leadership changed Judaism from a religion based on sacrifices to a religion whose main rule required each male Jewish individual to be able to read the Torah and to teach his sons the Torah. 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.⁴

In Botticini and Eckstein (2004, henceforth BE), we built a model in which an adult Jewish individual chooses the level of education for his children, his own occupation (trade or farming), and religion. The model predicts that, because of the implementation of the religious and educational reform within Judaism, Jewish farmers invest more than non-Jewish farmers in their children's education, and given that, they always prefer to become merchants. Yet, the demand for urban, skilled occupations restricts the proportion of Jews who can engage in these occupations. When the demand for skilled occupations expands, literate Jewish farmers move to the cities. Therefore, the model predicts our main argument outlined above.⁵

In this paper we provide detailed evidence regarding the implementation of the educational reform among the Jewish rural population, which is the main fact supporting our argument for the occupational transition. At the same time, these historical facts support the predictions of the model we presented in BE. The main evidence consists of (i) the rabbinical discussions and rulings in the Talmud about an education tax, teachers' salaries, and the function of synagogues as learning places for children and adults, and (ii) archeological findings on many synagogues built in Eretz Israel and Babylon between the third and the sixth centuries.

When urbanization expanded as it did in the early Muslim Empire (section 8), almost all Jewish farmers moved to the cities where the returns to their human capital were higher than in agriculture.

Another prediction of the model presented in BE is that, once become merchants, Jews will invest even more in their children's education. In Section 7, we present a lot of evidence from the Cairo Geniza documents and the vast Responsa literature (described later), which show the full implementation of mandatory primary schooling for boys in the Jewish communities after the occupational transition.

One may question whether the change in the religious and social norms had economic returns that can support our claim. We show (section 9) that the knowledge of Hebrew for

⁴It is a popular view (see the debate in Brenner and Kiefer (1981) and Ayal and Chiswick (1983)), that Jews (and other diasporas) invested in human capital because, unlike physical capital, it is portable and cannot be expropriated. However, the decision by Jews to invest in human capital came *before* the migrations and was motivated mainly by religious reasons.

⁵The model also makes predictions on conversions out of Judaism.

religious purposes, the common Hebrew language regardless of the different local spoken languages, and the common Jewish law across all Jewish communities, in addition to the network externality highlighted by Greif (1989; 1993), provided high returns to Jewish merchants. 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 paper contributes to the existing and growing literature on the long-term economic outcomes of changes in social norms, cultural values, and institutions (e.g., Greif 1994; Temin 1997; Chiswick 1999; Acemoglu, Johnson, and Robinson 2001, 2002; Carlton and Weiss 2001; and Mokyr 2002). We show that contemporary economic patterns (in our case, the selection of Jews into urban, skilled jobs) have been heavily influenced by a religion reform and a change in social norms that emerged centuries ago.”

The paper is organized as follows. Section 2 presents the main explanations of the occupational selection of the Jews into crafts and trade, section 3 provides the historical evidence of the occupational transition of the Jews, and section 4 summarizes the restrictions on Jewish economic activities in the first millennium. Section 5 presents Jewish demographic information, whereas section 6 outlines our main argument why the Jews became merchants. Section 7 describes in detail the Jewish religious and educational reform and its implementation. Section 8 presents historical evidence on the urbanization growth in the Muslim Empire, and section 9 discusses the economic returns to Jewish religious education. Section 10 concludes.

2 Common Explanations

The Restrictions Argument. “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 urban economy” wrote Cecil Roth (1938, p. 228), the prominent scholar of Jewish history.⁷ According to this view, the Jewish people did not engage in agricultural occupations since they were prohibited from owning land, and guilds’ regulations excluded nonmembers, such as Jews, from the occupations regulated by the guilds. Moneylending, the medical profession, and the diamond industry were the few occupations in which Jews were permitted to engage. This argument has become the widely accepted explanation among scholars and the public for the occupational selection of the Jewish people.

The Economics of Small Minorities. Instead of restrictions and prohibitions, Kuznets (1960, 1972) 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. Thus, the goal of maintaining cohesion and group

⁶See BE (section 6) for a discussion of Jewish migrations.

⁷Earlier, Abrahams (1896, p. 249), quoting the scholar Loeb, asserted that “when the medieval Jews devoted themselves largely to commerce and moneylending, there 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.”

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. For Kuznets, this would explain why in most countries where the Jewish people lived in the early twentieth century (Eastern Europe, the Soviet Union, the United States, and Eretz Israel), an overwhelming proportion (95 to 99 percent) of them were engaged in urban, skilled occupations (Kuznets, 1960, p. 1608, Table 2).⁸

3 Occupational Transition

To verify if the argument based on restrictions and Kuznets' theory hold, we first need to describe when and where the occupational transition of the Jews occurred.

Table 1 summarizes the occupational distribution of the Jews in the first millennium. Before 400 CE (when the Talmud of the Land of Israel was redacted), the occupation of almost all Jews in both Eretz Israel (where they were a majority) and elsewhere (where they were a minority) was farming.⁹ The information on their occupational distribution in the three main centers of Jewish life in the classical period—Palestine, Babylon, and Egypt—comes from the following sources. For Eretz Israel there are the (i) writings of the Jewish warrior Flavius Josephus in the first century CE, (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, and (iv) the extensive archeological evidence showing that most Jews lived in rural villages (Safrai 1976a).¹⁰

For Babylon, 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 Talmud Bavli (the Babylonian Talmud).¹¹ Information on the large Jewish community in Egypt is supplied by the descriptions of the philosopher Philo in the first century CE and by the extensive papyrological evidence (Tchericover 1945; 1961).

Gil (1997, p. 593) summarizes this wealth of evidence by saying that in the period before the eighth century, most Jews in Eretz Israel and in the Diaspora earned their living from agriculture. Of course, in the cities, such as Jerusalem, Alexandria, Babylon, and Rome the Jewish people were also engaged in crafts and trade. But there is no question that agriculture remained the main occupation of the Jewish population living in numerous countries from the first throughout the eighth century.

⁸Before Kuznets, Max Weber (1917, pp. 363–64) argued 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. 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 (p. 1604).

⁹Malamat (1976), Tadmor (1976), and Fuchs and Sevenser (1995).

¹⁰An entire volume (*Zeraim*) of the six forming the Mishna is devoted to the rules that Jewish farmers had to follow. Also, almost all the feasts discussed in the volume *Moed* are related to the numerous agricultural tasks over the year.

¹¹Newman (1932, pp. 33–47); and Neusner (1965–1970, vol. II, p. 14, vol. III, pp. 24–25).

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

Time	Location	Farmers	Craftsmen, Artisans	Merchants, Moneylenders, Doctors,
0–400 CE	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 Empire ^b	??	??	??
638–1170	Eretz Israel	20-30%	many	many
	Muslim Empire ^c	10-20%	many	many
	Western Europe	5-10%	many	many

Sources: Benjamin of Tudela (ca. 1170), Abrahams (1896, ch. XI and XII, and Appendix at pp. 245–49), Juster (1912; 1914), Mann (1920–1922), Newman (1932), Baron (1937, vol. 1; 1952, p. 244), Roth (1938; 1946; 1960; 1978), Tcherikover (1945; 1961), Agus (1965), Neusner (1965-1970; 1990a; 1990b), Jones (1964), Grayzel (1965), Goitein (1967), Encyclopedia Judaica (1971), Beer (1974), Stern (1974; 1976), Gross (1975), Applebaum (1976a; 1976b), Ben Sasson (1976), Lewis (1976; 1984), Malamat (1976), Safrai (1976a), Tadmor (1976), Morony (1981, p. 152), Udovitch (1981), Avi-Yonah (1984, p. 20-23), Dan (1990), Hamel (1990), Jacobs (1990), Gil (1992; 1997), Cohen (1994), Safrai (1994), and Goodman (1998).

Notes: The percentages in this table 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 percentages still offer a reasonably good picture of the patterns and trends in the occupational distribution of the Jews throughout the first millennium.

^a At this time, the Jewish community in Egypt was mainly concentrated in Alexandria. This might explain the larger percentage of non-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.

The transition away from agriculture into crafts, trade, and moneylending started in the Talmudic period, especially in Babylon. The Babylonian Talmud (redacted in about 500 CE) 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 (Baron 1937, vol. 2, p. 244). The *Amoraim* (the scholars in the academies in Babylon) were the first to enter the most skilled occupations as traders and merchants. From many discussions in the Babylonian Talmud it is clear that although

the Jews deemed important to own land, they were aware that trade was more profitable (Beer 1974, 38).

The key period of urbanization occurred in the Muslim Empire during the Abassides rulers from the mid-eighth and the early ninth centuries (Lewis 1993). Many cities developed and Baghdad 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 at the end of the eighth century the Jewish population in the Muslim regions was almost entirely urban.¹² The movement of the Jews to the cities brought to a full-fledged stage their transition away from agriculture into urban and skilled occupations, such as handicrafts, jewellers, tanning, dying, shipbuilding, corn and cattle dealing, bookselling, tax farming, and moneylending. They also became engaged in long-distance trade from France and Spain in the West to China and India in the East.

The occupational transition is amply documented in two impressive sources that illustrate the social and economic life of the Jewish communities from the ninth to the fourteenth century. The Cairo Geniza documents refer to the thousands of contracts (sales, marriage deeds, loans, business partnerships), wills, letters, and court records.¹³ These documents 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 Cairo Geniza deeds were mainly written by the urban Jewish communities, it is not surprising that the rural folks do not appear in large numbers in these records.

In contrast, the other primary source documenting the Jewish occupational structure does not suffer of this potential selection bias. It is known as the Responsa literature and refers to the written replies and rulings that the Geonim (the heads of the academies in Iraq) after debating with the students and scholars in the academies, sent in reply to the letters asking for advice 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 CE 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 be exacted also from movable property, whereas before that time only landed property could be claimed by creditors (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 in a Responsum that the ruling was motivated “by the current situation in which most (Jewish) people do not own land” (Brody 1998). 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 (Gil 1997, pp. 593–96). 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 (1997, p. 593) points out, a selection bias cannot explain this reduction in the Responsa material dealing with agriculture among Jews in the Muslim period. *Had* agriculture been the main occupation

¹²Ben-Sasson (1976, p. 393), and Gil (1997, pp. 593–96).

¹³Based on these documents Goitein (1967–1988) wrote a monumental work on the social and economic history of the Jews in the Mediterranean (mainly in Egypt), whereas Gil (1992; 1997) used them to study the Jewish communities in Palestine and Iraq.

of the Jews at that time, somehow *a lot* of material would have appeared in the Responsa, exactly as three-four centuries earlier a lot of material pertaining to agriculture had been discussed in the Mishna and the Talmud.

When in 1167–1170 Benjamin of 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 the Jews in small and large cities from Spain, southern and central Europe, all the way to Tibet, India, Middle and Near East, Mesopotamia, and North Africa. The Jews 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 in Antioch and in Tyre (where they also owned maritime vessels), and handicraftsmen and dyers in Sidon, Jerusalem, Bethlehem, and Jaffa. Many Jews were also scholars devoted to the study of the Talmud.

To sum up, *all* scholars agree that almost all 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 greatest majority became craftsmen, artisans, merchants, doctors, and moneylenders. 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? Table 2 summarizes the evidence on legal restrictions and prohibitions regarding Jewish economic activities in the first millennium. Three types of restrictions are considered: on land ownership, on slave ownership, and on the types of occupations the Jews could engage in.

Before the rebellions in the first and second centuries (70, 115, 135 CE), there were no legal restrictions anywhere imposed on Jewish economic activities. After the revolts and until the Arab expansion, some restrictions were imposed on the Jewish people in the lands of the Roman and Byzantine empires. For example, the Jews could not enter the civil service or the law profession. In contrast, no restrictions of any kind were imposed on the large Jewish community living in Babylon under the Parthian and the Sasanian rulers (Neusner 1965–1970).

During the Arab and Muslim period when the occupational transition occurred, there were no legal restrictions on any Jewish economic activity. This is true in all lands belonging to the Muslim Empire where non-Muslims *could* own land as long as they paid the land tax (Gil 1992, 1997; and Morony 1981). Jewish people were not prohibited from owning and employing slaves in farming.¹⁴ There were also no legal restrictions on the occupations the Jews could choose (Lewis 1984; and Cohen 1994).

¹⁴Some Jews were actively involved in the slave trade, and even the heads of the academies owned slaves (Gil 1997, pp. 603–8).

TABLE 2—RESTRICTIONS ON JEWISH ECONOMIC ACTIVITIES

Time	Location	Land Ownership	Slave Ownership	Occupations Prohibited
0–200 CE	Eretz Israel	None	None	None
	Mesopotamia	None	None	None
	Egypt	None	None	None
	Roman Empire ^a	None	None	None
200–638	Eretz Israel	Some	Some	Civil service
	Mesopotamia	None	None	None
	Egypt	Some	Some	Civil service
	Roman/Byzantine Empire ^a	Some	Some	Civil service
638–1170	Eretz Israel	None	None	None
	Muslim Empire ^b	None	None	None
	Western Europe	None	None	None

Sources: See Table 1.

^a It does not include Eretz Israel and Egypt.

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

The legal codes, however, only indicate what the legal background was. They do not portrait how people actually behaved. For example, there might have been unwritten social norms that, even in the absence of legal prohibitions, made it difficult for Jewish households to own land and to engage in agriculture. To exclude this possibility we have the contracts, land transactions, business partnerships, and wills from the Cairo Geniza and the letters from the Responsa literature, which show that *any* occupation was available and indeed chosen by the Jewish people in the Muslim Empire (Goitein 1967). 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 (Gil 1997).¹⁵

To sum up, the restrictions argument does not pass the test of the historical facts at the time when the occupational transition occurred.¹⁶

¹⁵ Additional historical evidence makes the restrictions argument unconvincing. First, even if the Jews could not own land, they could have worked as tenants (most non-Jewish individuals did not own land and worked as tenants throughout the first millennium). In fact, this is what happened in Eretz Israel just after the revolts against the Romans when a portion of the land holdings belonging to Jewish farmers were confiscated, and some of them became tenant-farmers (Heinemann 1990, p. 269). Second, in the late Roman and early Byzantine empires other groups (e.g., the Samaritans) were discriminated against land ownership and, yet, they did not become merchants (Osman 1976, p. 138). Third, it seems paradoxical that restrictions pushed the Jewish people into more profitable occupations, such as crafts and trade.

¹⁶ Non-Muslim people had to pay the poll tax levied on each household head (Goitein 1967). 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.

5 Demographics

Information on demographic trends and patterns is needed to show that Kuznets' explanation (the economics of small minorities) does not pass the test of historical facts. Before examining demographics, we want to point out that for the size of the Jewish and non-Jewish populations in the relevant locations in the first millennium, we relied on the works of the leading historians and demographers (e.g., Baron 1971; and DellaPergola 2001). 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.¹⁷

From Table 3 it is clear that in Babylon and Mesopotamia, the Jews were a minority well before becoming merchants in the eighth century. They were a minority in the first-third centuries when most of them were farmers, and they remained a minority in the eighth century when most became craftsmen and merchants. Their status as a minority could not have been the reason for their occupational transition.

At the same time, in Eretz Israel the Jewish people remained engaged in agriculture regardless of whether they were the majority or a minority. Table 4 shows that up to the end of the third century, the Jews formed the majority of the population there, and Table 1 indicates that most of them were farmers. But even when they became a minority in the fourth century, agriculture remained their main occupation. Later, in the Byzantine Empire, there were urban areas but the Jews were living mainly in Galilee as farmers (Dan 1990).

The same pattern occurred in Egypt and Syria where large Jewish communities lived in the first century (Table 5). 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).

It should also be noted that during the first millennium there were many other minorities that kept their distinctive characteristics yet living in villages as farmers (Cohen and Frerichs 1993). For example, in the fifth-sixth centuries there were in Palestine 1.5 million people and the majority were Christians. Yet the minorities such as Druses, Hellenistic pagans, Samaritans, some Arabic tribes, and the Jews themselves kept their religious identity and group cohesion while remaining farmers.¹⁸

In addition to demographic information on specific locations, Tables 3–5 show a major demographic trend in the size of the world Jewish population: it decreased from about 4.5 million in the first century CE to about 1.2 million in the Muslim period. The reduction was the outcome of deaths during the revolts in the first-second centuries, and conversions during the first half of the millennium (see section 5.2 in BE for a discussion on conversions out of Judaism).

¹⁷We built Tables 3–5 after a careful reading of the references listed in the tables' footnotes and a very helpful discussion with Sergio DellaPergola. As in some cases the references provided conflicting data, we had to make a decision about what evidence to accept and reject. The numbers should be considered as ranges of values, instead of exact figures.

¹⁸The 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.

TABLE 3—JEWISH AND TOTAL POPULATION IN IRAN AND IRAQ (IN MILLION)

Period	Total Population	Jewish Population
3 rd century (Under Sasanian rule)	8	0.8 – 1.2 (most were farmers)
8 th century (Under Muslim rule)	8 – 10	0.8 – 1.2 (occupational transition)
12 th century (Under Muslim rule)	?	0.8 (most held urban occupations)

Source: Neusner (1965, vol. I, p. 14–15, vol. II, pp. 246–48), Clark (1968), McEvedy and Jones (1978), and Issawi (1981, pp. 376, 381).

TABLE 4—JEWISH AND TOTAL POPULATION IN ERETZ ISRAEL (IN MILLION)

Period	Total Population	Jewish Population
60 CE	3	2.25
100	2.25	1.5
150	1.75	1.0
235	—	Large migrations to Babylon
300	1.1	0.5
395	0.8	0.25
5 th –6 th centuries	1.5 ^a	0.2

Source: Herr and Oppenheimer (1990, pp. 108–09).

Note: The non-Jewish population consisted of: Samaritans, Kutim, Jewish Christians (very few in the first century CE), Cananites, Edomites, Greeks.

^a Mostly were Christians.

TABLE 5—JEWISH AND TOTAL POPULATION IN OTHER REGIONS (IN MILLION)

Region	Period	Total Population	Jewish Population
Syria ^a	2 nd century (Under Roman rule)	3 – 4	0.1
	8 th century (Under Muslim rule)	3 – 4	?
	12 th century (Under Muslim rule)	2 – 4	0.024
	1 st century (Under Roman rule)	10 – 12	1
North Africa (with Egypt)	2 nd century (Under Roman rule)	10 – 12	0.1
	8 th century (Under Muslim rule)	7 – 9	?
	12 th century (Under Muslim rule)	7 – 9	0.07
	1 st century (Under Roman rule)	10 – 12	1

Source: Issawi (1981, pp. 376, 381), B. F. Musallam (1981, p. 432).

^a Includes Syria, Jordan, and Lebanon.

6 Why Did the Jews Become Merchants?

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? In 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 after the second century CE more and more male Jews were able to read (and some to write), and at the end of the millennium, the greatest majority of male Jews were literate, whereas the non-Jewish rural population was illiterate. The comparatively higher literacy of Jews with respect to the non-Jewish populations was the outcome of a religious and educational reform that started in the first century CE and became implemented in the third to the eighth centuries. 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.

The next section presents in detail the main evidence of the implementation of the religious and educational reform in Judaism during the first millennium.

7 Reform in Judaism

Judaism Before 70 CE. The development of Jewish educational institutions was a slow and long process that occurred between the third century BCE and the first century CE in Eretz Israel when the majority of the population was rural and farming was the main occupation.

In earlier times (about 515–200 BCE), 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.¹⁹

In the first century BCE, 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). Orphans and children whose fathers did not have the time or the knowledge to provide them with some basic education, however, did not receive the necessary primary education required to meet the standards of admission to the secondary schools. Later, the high priest Joshua ben Gamla (ca. 64 CE) issued a religious ruling that “teachers had to be appointed in each district and every city and that boys of the age of six or seven should be sent.”²⁰

¹⁹Drazin (1940), and Morris (1977).

²⁰This is the quotation in the Talmud that refers to the decree of Joshua ben Gamla: “However, that man is to be remembered for good, and his name is Joshua ben Gamala; 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

Baron (1952, p. 274–79) attributed the increased emphasis on religious instruction to a shift in leadership and power within the Jewish community. Until the destruction of the Second Temple in 70 CE, there were two main groups within Judaism—the Sadducees and the Pharisees. The Sadducees, who included the high priests in the Temple in Jerusalem, the aristocratic landowners, and the wealthy merchants, accepted only the Written Torah (the first five books of the Bible) and adopted the Hellenistic culture. In contrast, the Pharisees aimed to expand learning and the study of both the Written and the Oral Torah among all Jews, and they strongly opposed the expansion of Greek language and culture.²¹ To reach this goal, members of the Pharisaic group prompted a major change in the educational institutions as described above (Ebner 1956).

The development of educational institutions was a change that occurred within the Jewish religion, was prompted by the religious leaders, and was focused on religious instruction and literacy. The main goal was to make every male child to be able to read the Torah. The educational reform occurred in Eretz Israel at a time (third century BCE—first century CE) when half of the world Jewish population lived there and they were farmers, and it was accepted by Babylonian Jews who were also mainly farmers at that time. It is hard to see an economic motive for a religious and educational reform that was mainly promoted within a farming society.

There is no evidence that the ruling by Joshua ben Gamla was immediately implemented in Palestine, Babylon, or in other locations (Hezser 2001). However, his ruling became a religious law that any Jewish father was asked to obey. The next step of the educational reform was again a development within the religion.

The Mishna, the Talmudic, and the early Gaonic Period (70–638 CE). The destruction of the Second Temple in 70 CE brought a deep change in the Jewish religion. The core of Judaism consisted no longer of the rituals, sacrifices, and ceremonies that could only be performed by the priests in the Temple. The rabbis and sages belonging to the Pharisees who left Jerusalem and established the new center of religious life in the academy (*yeshiva*) and the *Sanhedrin* at Jabneh, made the reading and teaching of the Torah the core of Judaism, and they stated that the worship of God was achieved not only by prayer but also by study.²²

The sages (*Tannaim*) had their center of activity in the *yeshiva*, which functioned as an academy, a high court, and a parliament, where the sages discussed religious, social, and economic matters submitted to them, interpreted the Bible and the sacred law, and issued rulings. In the *yeshiva* in Israel the scholars organized the vast body of Jewish Oral Law accumulated through the centuries in a systematic way, until rabbi Judah ha-Nassi

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 Gemala 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.” [Baba Batra 21a, cited in Greenberg (1960, p. 1261).]

²¹See Feldman (1996). At this time, the Oral Torah consisted of the rulings of rabbis and high priests regarding the implementation of the Written Torah.

²²Drazin (1940, 25), Maller (1960), and Safrai (1968).

completed their work by redacting the Mishna in about the year 200 CE (Cohen 2002).²³

During this time, the synagogue became the center of learning and reading the Torah. Instruction meant religious instruction as the main goal was to prepare the male children to read, once adults, in the synagogue during the weekly service.²⁴ An entire tractate of the Mishna (“*Megillah*”) is devoted to the rules regarding the reading of the Book of Esther (“*Megillah*”) and the Torah in the synagogue.²⁵ Synagogues had existed in Eretz Israel well before the destruction of the Temple; archeological findings or literary sources (e.g., Flavius Josephus, New Testament) indicate the existence of synagogues in the first century BCE (in Herodium, Gamla, Jerusalem, Nazareth), and in the first century CE (in Dor, Caesarea, Jericho, Masada) (Flesher 1995). However, after the destruction of the Temple many more synagogues were built in towns and even villages in Eretz Israel, and especially in Galilee where most Jews moved after the revolts against the Romans (e.g., in Chorazin, Capernaum, Qiryat Sefer, Migdal, and Hammath-Tiberias) (see Levine 2000).

It is during the Tannaitic period that membership in the Jewish community became identified with the knowledge of the Torah. In earlier times, *am ha-aretz* (literally “people of the land”) referred to a Jewish individual who disregarded tithing and the norms of ritual purity and sacrifices (*am ha-aretz lemitzvot*). Under the influence of the redactor of the Mishna, rabbi Judah ha-Nassi, the word acquired the new meaning of “one who is illiterate,” someone who did not know and did not teach his sons the Torah.²⁶ To be an “*am ha-aretz letorah*” in a Jewish community meant to be considered an outcast.

Christianity grew within Judaism but in the first century CE the two religions did not differ significantly. In fact, in the first two centuries, there were many groups within Judaism (Jews, early Christians, Samaritans, Essenes, Zealots, etc.), and up to the time of the Bar Kokhba revolt in 135, the Roman rulers themselves did not distinguish among these groups.²⁷ After about 150 CE, these groups started departing from each other. For Christianity, faith replaced obedience to the Law.²⁸ One century earlier Paul’s major goal had been to make Christianity a Gentile religion (Alon 1980, p. 296). For this purpose, he declared that obedience to the Torah and circumcision were no longer required to pagans who converted to Christianity whereas they were still binding for Jewish Christians (Nock 1969). The Samaritans, on the other hand, did not accept the Mishna (and later the Talmud) and kept considering sacrifices an important part of their religion. In the second

²³The Mishna consists of six volumes of rules: *Zeraim* deals with the rules for farming, *Moed* with feasts, *Nashim* with marriage and divorce, *Nezikin* with financial issues, *Kedeshim* and *Teharot* with sacrifices and other ritualistic issues.

²⁴A law enacted during the first century allowed a community to transform a synagogue structure into a Bet Ha-Midrash (institution of higher learning for studying and interpreting the Torah), but prohibited the sale of a Bet Ha-Midrash for exclusive synagogue use (Greenberg 1960, 1277; and Goldin 1960, 158).

²⁵The Megillah was read in Hebrew and translated into Aramaic by a translator at the public reading during the month of Adar. The choice of the month of Adar enabled rural folks who lacked education to have a person visit them and read the Megillah to them, or alternatively the farmers could go to the synagogues in the nearby town to hear it recited. Non-Hebrew speaking Jews, like those living in the towns in Asia Minor or along the Syrian coast where Greek was the vernacular, were permitted to read the Megillah in their vernacular (Rabbinowitz 1931, p. 19).

²⁶Oppenheimer (1977), and Haas (1989, 149).

²⁷Cohen (1987); and Neusner (1990c).

²⁸Neusner (1987, 1990c).

century Rabbi Gamliel II established that the meat butchered by the Samaritans was not kosher and therefore he officially declared them outside of the Jewish community.

After the redaction of the Mishna, from the third to the fifth century in Eretz Israel the *Amoraim* (the scholars in the yeshiva after the Tannaim) debated, discussed, and clarified the rulings in the Mishna brought to their judgement. Their opinions were collected in the Talmud Yerusalmi (the Talmud of the Land of Israel), which was redacted in about 400 CE. While there are also rules about trade, the Talmud Yerusalmi is mainly devoted to agriculture; a farming society was the target audience for whom the rabbis and the Amoraim in Eretz Israel elaborated their rulings regarding agriculture (Neusner 1998).

The implementation of the educational reform received a major push at this time. Two different and independent sources support this claim. First, the Talmud reports that the grandson of Rabbi Judah worked to establish an education system in Israel despite the financial difficulties of his times. To accomplish this goal, he asked three distinguished scholars to travel to many locations and to appoint teachers of children in many towns and villages (Aberbach 1982, p. 30-31). The Talmud Yerusalmi contains three other 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.²⁹

The second source of evidence of the spreading of primary education among the Jews in Israel in Talmudic times comes from the archeological discoveries on synagogues. During the Talmudic period, the reading of the Torah became more spread among Jews through the attendance of the local synagogues. The archeological evidence in Table 6 shows that a lot of synagogues were built in the third-fifth centuries in Judaea, Galilee, and the Golan. Most of these locations were small towns or villages of farmers who funded the building of these synagogues. The archeological findings on synagogues are the *key* facts supporting our claim because from literary sources we know that synagogues at this time in Israel were the place of learning for adults and children.³⁰

While Palestine remained important as center for the yeshiva, Babylonia (Iraq) grew in importance as the new center of Jewish religious and academic life. Like their counterparts in Eretz Israel, the Amoraim in Babylon collected their opinions and comments on the Mishna in the Talmud Bavli (the Babylonian Talmud), completed around 500 CE. Unlike the Talmud Yerusalmi, the Talmud Bavli has more material dealing with crafts and trade. Also, unlike the Jerusalem Talmud, 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. In fact, a father was obligated to pay for his son's education and was required to teach him, or to have someone teach him, a craft (Goitein 1962, p. 121; Gafni 1990, pp. 107-109).

²⁹See Safrai (1987, pp. 77-78), and Gafni (1990, pp. 107-109). The quote refers to "sekhar sofrim ve-mishenim" (Talmud Yerusalmi, Peah 88 21).

³⁰Safrai (1976b), Aberbach (1982, p. 41), Safrai (1995), Urman (1995), and Schiffman (1999).

TABLE 6—SAMPLE OF SYNAGOGUES IN ERETZ ISRAEL, 200–750 CE

<i>Date of construction</i>	<i>Location</i>	<i>Region</i>	
3 rd century	Horvat Shema	Galilee	
	Nevoraya	Galilee	
	En-Gedi	Judea	
	Eshtemoa	Judea	
	Gush Halav	North of Meiron	
Mid-3 rd –4 th centuries	Merot	Galilee	
	Bet Alpha Galilee	Galilee	
	Hammat Tiberias	Galilee	
	Gush Halav	Galilee	
	Khirbet Shema	Galilee	
	Hammat Gader	Galilee	
	Maoz Hayyim	Galilee	
	Rehov	Galilee	
	Bet Shean	North Galilee	
	Qatzrin	Golan	
	Horvat Sumaqa	Carmel range	
	Horvat Rimmon	Shephelah	
	4 th century	Hirvat ha-Amudim	Eastern Galilee
		Maoz Hayim	Beth-Shean Valley
Horvat Susiya			
Gaza			
Zumimra		Lower Golan	
3 rd –5 th centuries	Anim	Golan	
	Yiafia	Golan	
	Kefar Hananiah	Golan	
5 th century	Horvat Kanef	Lower Golan	
	En Neshut	Lower Golan	
	Kazrin	Lower Golan	
	Assalieh	Lower Golan	
6 th century	Dabiya	Lower Golan	
	Umm el-Kanatir	Lower Golan	
	Horvat Dikke	Lower Golan	
7 th century	Rehov	Beth-Shean Valley	
7 th - 8 th centuries	Beth-Shean	Beth-Shean Valley	

Sources: Levine (1982; 2000), Stern (1993), Urman and Flesher (1995).

Like in the case of Eretz Israel, the other source of information on the extent of religious instruction and primary education of children comes from the archeological evidence from the synagogues, which provides information independently from the discussions in the Talmud. Synagogues were also built in Mesopotamia and in all the lands of the Diaspora.³¹

During the Talmudic period, the leadership of the Jewish communities in Babylon became totally entrusted to the religious leaders and the scholars in the yeshiva. The Exilarch who held the political and administrative power over the Jewish community there, used the rabbis as bureaucrats in its administration. For example, the rabbis and the scholars in the academies became judges in the local courts, market inspectors, and poll-tax collectors (Morony 1981, p. 317). The rabbis were also responsible for the management of communal institutions such as the synagogues and the schools (Neusner 1965–1970, vol. IV, p. 61; and Neusner 1976, p. 135).

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 *kalla* indicates that education was becoming more spread among the Jewish rural population in Iraq from the end of the fourth century. The *kalla* months were two months a year (March and August, when there were no agricultural activities) Jews from everywhere visited the academy where a specific section of the Talmud was read and discussed by scholars. This means that an important event of Jewish life was aimed to occur at a time of the year when (literate) farmers could attend it. During the *kalla* in the spring, the questions sent from the Jewish communities everywhere were also read and discussed by the scholars. The written answers (*teshuvot* = *Responsa*) to these questions were then sent back through the Jewish merchants. The *Responsa* of the scholars and sages were an institution already existing in Talmudic times but they did not constitute a separate literature from the Talmud; in contrast, they formed an integral part of the Talmud. It is after the Talmud Bavli was redacted and after the Amoraim were succeeded by the *Geonim* (the new heads of the academies) that the *Responsa* became a separate body of literature (Alon 1984). For more than five hundreds years (from the time the Babylonian Talmud was compiled in about 500 to the eleventh century when the last Babylonian Gaon was elected), the Gaonic *Responsa* are one of the main sources of information on the social, religious, and economic life of the Jews in all the lands of the Diaspora.

With regards to Jewish education, the *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 the villages in Mesopotamia (Assaf 1925–1942, vol. II, pp. 21-22). 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 various communities in the world. Thus, the teachers were an integral part of the communal bureaucracy in the Jewish communities.

The evidence from the early Gaonic *Responsa* is very important because it comes before the Muslim period. By showing that more Jews educated their children in the period before

³¹Ovadia (1978), Levine (1982, table p. 199), Oppenheimer, Kasher, and Rappaport (1987), Gafni (1995), Kasher (1995), Oppenheimer (1995), and Levine (1999).

the urbanization occurring in the Muslim Empire, the 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 CE). There are two main sources of information for the spread of primary education in the Jewish communities during the Arab and Muslim period: the Responsa of the Geonim described earlier, and the documents from the Cairo Geniza. Both types of sources confirm the common pattern among the Jewish communities in the Arab and Muslim period: basic literacy among male Jews became almost universal.

Sherira Gaon (ca. 967-1006) wrote that “as a rule a Jew knows the Hebrew script” (Mann 1917–1921, p. 325). This Responsum was given in the context of legal documents signed by witnesses. The question had to deal with whether Jewish individuals who signed documents as witnesses 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 Hay 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” (Assaf 1925–1942, vol. II, p. 27). 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 Responsa literature also shows that basic literacy became almost universal among the Jews at this time, involving both the urban and the rural people. Some Responsa mention that there were teachers of small children (*melamdei tinokot*) everywhere, and even in the villages there were teachers and learners of Torah (Assaf 1925–1942, pp. 21-22).³²

The thousands of letters, contracts, wills, and written transactions from the Cairo Geniza confirm the picture regarding primary education among Jews given in the Responsa, but on a larger scale. From these documents Goitein (1971, p. 174) concluded that in the Jewish communities everywhere “elementary education was universal to a very remarkable degree, but its standards seem to have been rather poor.” The standards were poor in the sense that the ability to read and basic writing skills was the major goal 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

³²For example, in the responsa of Hai Gaon, he refers to “teachers (*garsai*) of the villages” that taught the Talmud despite not being well-versed in Scriptures.”

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.

The universality of primary education among Jews in the tenth-thirteenth centuries is supported by the endless number of references to school fees and teachers mentioned in documents even from small towns and villages, and by the appointment of teachers for orphan and poor children at community expenses. The school fees were listed in the budgets of wealthy and humble households. A wife from a very poor household, for example, claimed that her husband did not behave as a proper father because he did not pay the school fees for their sons. References to hiring teachers and teachers' salaries are found in many letters, even from the little town of Damira, the provincial town of al-Mahalla, or the small village of Qalyūb (Goitein 1971, pp. 174, 187, 193).

In addition to the cost of providing his own children with Jewish education (2 *dirhems* per month per child), 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.³³ "Teachers of the orphans" (the name assigned to those who taught orphans and poor children at community expenses) are mentioned in records from Old Cairo, Jerusalem, Damascus, and Baghdad (Goitein 1971, p. 186).

In the world described by the Cairo Geniza documents, primary instruction 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 (Goitein 1971, p. 186). In many elementary schools in Egypt, teachers were foreigner Jews that migrated there from other countries (Cohen 2003, p. 54).

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 from the Cairo Geniza. Being a scholar and being a merchant was often the same thing among the most educated Jews (Goitein 1971, p. 195).

This description by Joseph rōsh ha-seder ben Jacob, a Jewish scholar from Iraq, writing in Egypt around 1150, summarizes in a beautiful way the level of education among Jews at that time. According to this scholar, in his times there were four types of people: uneducated persons, the broad masses, scholars and doctors (Goitein 1971, pp. 205-6). The masses have learned to read the Pentateuch and Saadya's prayerbook. The scholars have studied other sections of the Bible and the codified law. The doctor was someone familiar with the Mishna, the Talmud, and their commentaries.

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.³⁴

³³Greenberg (1960, p. 1270), and Zeitlin (1978, p. 303).

³⁴In BE we provide evidence that the vast majority of the non-Jewish population was illiterate in the first millennium.

8 Urbanization

The Arab and Muslim expansion brought an acceleration in urbanization (Lewis 1993). New cities and administrative centers were founded in Iraq and Iran. The main centers established by the Umayyad dynasty were Basra (in 638) and Kufa, whereas in the late eighth and early ninth centuries the Abbasid rulers developed Baghdad (in 762) and Samarra (Lapidus 1981, p. 203). The center of the empire was transferred from Syria (the Umayyads had their capital in Damascus) to Babylonia and later to Baghdad, which was a new city with up to 30 synagogues.

The figures on population size in selected cities (Table 7) indicate that in the eighth–ninth centuries, the Near East under Muslim rule was highly urbanized in comparison to Europe.

TABLE 7—POPULATION SIZE IN SELECTED CITIES (IN THOUSAND)

City	Time Period (Centuries)	Total Population	Time Period	Jewish Population
Iraq and Iran				
Baghdad	8 th –9 th	600–1,000	ca. 1170	200
Samarra	8 th –9 th	500+	ca. 1170	?
Basra	8 th –9 th	200–600	ca. 1170	50
Kufa	8 th –9 th	400	ca. 1170	35
Nishapur	9 th	100–500	ca. 1170	?
Isfahan	8 th –9 th	100	ca. 1170	75
Qayrawan	9 th	100	ca. 1170	?
Europe (8th largest cities)				
Palermo	ca. 1170	150	ca. 1170	7.5
Paris ^a	ca. 1170	110	ca. 1170	1.5
Seville ^b	ca. 1170	80	ca. 1170	many
Venice	ca. 1170	70	ca. 1170	?
Florence ^c	ca. 1170	60	ca. 1170	0.1
Granada ^d	ca. 1170	60	ca. 1170	many
Cordoba ^d	ca. 1170	60	ca. 1170	many
Cologne	ca. 1170	50	ca. 1170	some

Sources: For total population in cities in Iraq and Iran see Andrew Watson (1981, p. 56, footnote 45). For total population in European cities see De Long and Shleifer (1993, Table 1, second column). For Jewish population in Iraq and Iran see Gil (1997, p. 488) and Benjamin of Tudela (ca. 1170). For Jewish population in European cities see Benjamin of Tudela (ca. 1170).

^a Tudela mentions that great scholars lived in Paris but does not provide numbers. However, he lists 300 Jewish households (about 1,500 people) for Marseilles.

^b Tudela does not provide numbers for Seville. However, about 6,000 Jewish households (about 30,000 people) lived in Seville in the mid-fourteenth century.

^c Tudela does not provide numbers for Florence. However, he lists 20 Jewish households (about 100 people) for nearby Pisa.

^d Tudela does not provide numbers for Cordoba and Granada. However, both cities hosted very large Jewish communities.

The largest European cities in the late twelfth century did not yet reach the size that the cities in Iraq and Iran had five centuries earlier. In the cities of the Muslim Empire, the Jewish population was very large.³⁵ In fact, about 70 percent of the world Jewry lived in the Mesopotamia in the eighth century (see Table 1 in BE).

Occupational Transition. The growth of new cities, towns, and administrative centers increased the demand for urban and skilled occupations in the lands under Arab and Muslim rule. The Jews in Iraq and later in all the Muslim Empire moved to the urban centers, abandoned agriculture, and became engaged in crafts and trade.

Notice that the rabbis and the Amoraim (the scholars in the academies) were merchants in Babylon well before the Muslim period. In other words, the most educated and literate among the Jews had already left agriculture before the increasing urbanization in Iran and Iraq under Muslim rule. The growth of cities and towns in the lands of the Muslim Empire made available the high-skilled occupations to a large number of literate Jewish farmers. While some non-Jews also moved to the new urban centers and entered skilled occupations, educated Jewish farmers were the first to enter these occupations (Baron 1952; Gil 1997).

9 The Economic Returns to Jewish Religious Education

An important question related to the above argument is how the ability to read the Torah in Hebrew provided the Jews with a comparative advantage in high-skill occupations.

First of all, the ability to read and write in one language (Hebrew) as a child helped Jews to read and to speak in other languages as well. The development of the Hebrew-Arabic, the Yiddish, and the Ladino documents the ability of Jews to write in Hebrew alphabet the local languages spoken in the places where they lived (from Spain in the West to India in the East).

The ability to read religious texts also enabled the Jews to read and to write any other documents written in Hebrew, such as business letters, contracts, loans, and sales, even if the local languages they spoke were different.³⁶ Therefore, the religious requirement to learn the Torah in Hebrew turned out to be profitable in the economic sphere as well: the Jews learned the Torah in Hebrew, and then they used this knowledge to write business contracts and transactions in Hebrew/Arabic, which is the way most of the Geniza documents were written. This enabled and enhanced the network externality among Jewish merchants described by Greif (1989; 1993). Literacy was a pre-condition for the use of community sanctions and the Jewish court system through the correspondence (*Responsa*) among Jewish merchants. Only a Jewish merchant who could read a fellow merchant's letter and could enforce sanctions on members who cheated and displayed opportunistic behavior towards other Jewish merchants.

³⁵Using various sources, Gil (1997, p. 458) maintains that many Jews lived in more than hundred cities in Iraq and Persia during the Gaonic and Muslim period, and that at the time of the Mongolian invasion in 1258, there were about 200 thousands Jews living in Baghdad.

³⁶The 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 to Hebrew.

In addition to the Cairo Geniza documents analyzed by Goitein and Greif, the vast rabbinic Responsa literature indicates that the investment of the Jews in literacy and learning of the Jewish law enabled them to exploit the network externality to a great extent (Mann 1917–1921).

Literacy and education was valuable not only for merchants and moneylenders. Unlike today, the production of almost all goods was custom-tailored in the first millennium. Therefore, even for artisans and craftsmen such as goldsmiths, blacksmiths, shoemakers, dyers and tailors, there was an advantage from being able to write contracts between the artisan and the customer, which specified the size and type of goods in case disputes occurred later on. Also, craftsmen and artisans bought raw materials from, and sold their finished products to, local and distant merchants. Again, the ability of drafting or reading a contract, as well as the use of the mail network and the court system, was highly valuable.

In addition to basic literacy, those Jews who engaged in learning the Mishna and especially the Talmud, also acquired the argumental thinking which is the essential feature of many Talmudic debates (Sombart 1913, p. 149).

Lastly, there is a feature of literacy and education that might have influenced the large migrations of Jews: literacy made mobility less costly since it enabled educated people to stay in touch with each other. Since the late ninth century, as many Jews became craftsmen and merchants, they voluntarily migrated to Muslim Spain and towns in Europe. During the tenth century, they spread to Champagne and South Germany (Glick 1999). The documents from the Cairo Geniza and the rabbinic Responsa supply a lot of evidence of the migrations of the Jews motivated by increasing trade opportunities that enabled them to reach standards of living comparable to the upper classes in Spain and Germany.³⁷ The Jews could also be found in many places in Mesopotamia and Egypt. At that time (eighth-tenth centuries), they generated a network of trade embracing Europe, North Africa, the Middle and Near East (see section 6 in BE for more information).

The Jews who were engaged in long-distance trade were literate and had high human capital (Agus 1965, p. 7; Goitein 1967). In fact, from the Cairo Geniza documents and the rabbinic Responsa we know that they were doing their business by writing letters, they were involved in complicated transactions, moneylending, partnerships and interest-rate calculations that required sophisticated understanding of trade rules with both Jews and non-Jews, and trade over many commodities in many languages in different countries. Some of the 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.

10 Conclusions

The novel contribution of this paper is to provide the historical evidence to support a simple economic rationale for the transition of Jews from farming to urban, skilled occupations from the eighth to the tenth 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

³⁷Agus (1965); and Ben Sasson (1976, pp. 393–402).

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 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 the religious transformation.

An important support to our theory comes from the fact that the size of the Jewish population reduced substantially at the time when they were farmers and they had to invest in children's education. The timing of these changes—first the transformation of Judaism and the educational reform, later the occupational transition, and lastly the migrations to the cities in the growing economies of western Europe—brings further support to our thesis.

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

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