

Religious Culture and Economic Performance: Agricultural Productivity of the Amish, 1850–80

METIN M. COŞGEL

The farming practices of the Amish have differed in various ways from those of other farmers. I use the information from federal census schedules to examine the differences during the period 1850 to 1880 in light of Amish culture. Amish farmers did not resist technological change during 1850–80, but the evidence shows other systematic differences. They adopted distinct patterns in investment to ensure the survival of their religious culture, which in turn affected their relative performance.

Do religious beliefs affect economic activities and performance? This is an old and important question, but also a complicated one to address. For large groups, the role of religion is particularly elusive because it is difficult to identify precisely which religious beliefs have a direct impact on economic behavior and to isolate the effect of this behavior on productivity. The problem is highly simplified, however, for smaller religious groups such as the Amish, who are well known for their distinct religious beliefs and lifestyle.

Historians and sociologists have extensively studied the origins, evolution, and significance of Amish customs. The effect of Amish beliefs on economic activities and performance, however, has received little systematic analysis. In this article I investigate the agricultural practices and productivity of Amish farmers in a comparative framework, focusing particularly on Amish settlements around Kalona, Iowa, during the period 1850 to 1880. The analysis is based primarily on the information recorded in the agriculture and population schedules of the U.S. Censuses. Comparisons between the Amish and other farmers reveal various persistent differences in farming that reflect some of the distinct features of Amish culture.

The Journal of Economic History, Vol. 53, No. 2 (June 1993). © The Economic History Association. All rights reserved. ISSN 0022-0507.

The author is Assistant Professor of Economics at the University of Connecticut, Storrs, CT 06269-1063.

I am grateful to Lester J. Miller, the staff at the State Historical Society of Iowa City, and the Iowa Mennonite Museum and Archives for information on Kalona history. George Grantham, David Wishart, and the editors of this JOURNAL provided helpful comments and suggestions. I also thank Brad Andrew, Jennifer Easdon, and Linda Rudolph for research assistance, and the University of Connecticut Research Foundation for financial support.

THE AMISH IN IOWA

The history of the Amish people began with the upheavals of the Protestant Reformation.¹ In the 1690s they emerged as the most orthodox followers of the Swiss Anabaptist leader, Jacob Amman. Escaping religious persecution, they migrated to America in two waves, first in the early 1700s, and later between 1815 and 1860. The first Amish families moved to Iowa in 1846 and formed the largest Amish settlement west of the Mississippi River in Johnson County, near the present town of Kalona.²

This study focuses on the two townships in Johnson County where the Amish concentration was heaviest, Sharon and Washington. It also focuses on the period 1850 to 1880, because the community had no major schisms before the 1880s, and the current opposition to technological advances had not yet emerged. The Amish in these townships differed from other farmers in their religious culture, but faced the same physical constraints in farming. The two townships thus provide a setting where it is possible to assess the effect of religious culture in a comparative framework. Moreover, the agriculture schedules of the U.S. Censuses for this period provide detailed information about the operations of each farm, allowing for quantitative comparisons.

Genealogical studies and oral histories make it possible to distinguish Amish from other farmers in census records. Agriculture schedules recorded 3 Amish farmers in 1850, 28 in 1860, 73 in 1870, and 94 in 1880. During the same time period, there were also 45, 108, 203, and 237 non-Amish farmers, whose records are available in complete form.³

FARMING AND THE AMISH

How would we expect the religious beliefs of the Amish to affect their farming practices and productivity? The Amish regulate their economic practices according to their interpretations of the Bible and prefer farming over other occupations for religious reasons. The precise rules and norms are recorded in the *Ordnung*, the Amish form of common law. It is well known, for example, that Amish farmers have generally rejected the use of tractors and various other machinery in farming during the twentieth century and have deviated from mainstream

¹ See, for example, Hostetler, *Amish Society*; Kraybill, *Riddle*; and Yoder, *Tradition*, for the history of the Amish.

² See Gingerich, *Mennonites*; Schwieder and Schwieder, *Peculiar People*; Wick, *Amish Mennonites*; and Yoder, "My Amish Boyhood," for the history of the Amish in Iowa.

³ These numbers are slightly less than the actual number of farms, because for 1850 and 1860 the agriculture schedules enumerated only farms with annual produce worth \$100 or more. For 1870 and 1880 they enumerated only farms of three or more acres or with an annual produce worth \$500 or more.

farming practices in other ways.⁴ One might therefore expect Amish farmers of today to be less productive than their non-Amish neighbors because of such differences in farming technology.⁵

The Amish resistance to technological change in farming, however, is a relatively recent phenomenon. There is little evidence of opposition to mechanized farming before the twentieth century, particularly during the period studied in this paper. Amish farmers were some of the first to adopt, and even invent, new developments in technology.⁶ Therefore, the causes of any difference in their productivity must be sought elsewhere.

Commentaries on the farming practices of the Amish before the twentieth century have consistently praised them as being among the best farmers. The distinct and superior farming practices of the Amish are often attributed to their persecution in Europe and the confiscation of their land. They were forced to become tenants on marginal land and are said to have excelled in farming to ensure the survival of their communities.⁷ It has also been observed that for the Iowan Amish, success at farming is a sign of God's blessing and strength of character.⁸

Such observations represent a common sentiment among students of the Amish and suggest a positive effect of Amish religious beliefs and history on economic performance, *relative* to other farmers.⁹ The performance itself, however, has never been systematically studied, and the superior performance of Amish farmers (during the nineteenth century) has almost become an unquestioned presumption.

WERE THE AMISH FARMERS MORE PRODUCTIVE?

Agriculture schedules itemize the inputs and outputs of each farm recorded in the censuses, making it possible to calculate the cost and revenue of operating farms. We can aggregate the information on the basis of religious affiliation and use the ratio of revenue to cost as a

⁴ See, for example, Kraybill, *Riddle*, pp. 171–83; and Hostetler, *Amish Society*, pp. 117–46, for current agricultural practices and farm technology among the Amish. Similarly, the *Ordnung* rejects various conveniences such as electricity, television, and cars as “worldly” and sets standardized patterns in clothing, household appliances, and even grooming.

⁵ But see, for example, Berry, *Unsettling*, pp. 213–17, for the superiority of Amish practices in other respects.

⁶ Fisher, *Farm Life*, chap. 4; and Yoder, *Tradition*, pp. 226–27. Also see Gingerich, *Mennonites*, pp. 210–11; and Yoder, “My Amish Boyhood,” pp. 118–19, for the Amish in Iowa. The Amish do not oppose new technology per se, but for the danger it might present to their community.

⁷ See Correll, *schweizerische Täufermennonitentum*; and its review by Maurer, “Review,” for the success of Mennonite groups in Europe. See also Kollmorgen, *Culture*, pp. 16–21.

⁸ Gingerich, *Mennonites*, p. 208.

⁹ See, for example, Hostetler, *Amish Society*, pp. 89–91; Kraybill, *Riddle*, pp. 188–89; Stoltzfus, “Amish Agriculture,” pp. 197–99; and the references in Getz, “Economic Organization,” pp. 117–18.

simple measure of productivity to compare the economic performance of Amish and other farmers.

The information provided by census schedules on cost and revenue is less detailed before 1870. On the cost side, the schedules for 1850 and 1860 provide only the values of farms, farming implements and machinery, and livestock. The estimate of total cost is thus restricted to the user cost of capital only (calculated by multiplying the total value of these assets by the rate of interest).¹⁰ On the revenue side, the schedules provide only earnings generated from orchard products, market gardens, home manufactures, and animals slaughtered (or sold for slaughter). We thus need to estimate the revenue from grain production by using market prices and the reported quantities that each farmer produced.¹¹

The productivity estimates for 1850 and 1860 thus need to be interpreted with some caution, because not all inputs and products are accounted for in the calculation. If the omitted items are not reasonably proportional to those included, then the estimates will not reflect relative productivities accurately. Moreover, the size of the samples, especially for 1850, may be too small to reach any definitive conclusions.

The census information for 1870 and 1880 is more detailed, allowing for a more reliable comparison. For example, in both years farmers reported the "estimated value of all farm productions (sold, consumed, or on hand)."¹² Furthermore, information about cost included the wages paid (for both 1870 and 1880), the cost of building and repairing fences (for 1880 only), and the cost of fertilizers purchased (for 1880 only).

In addition to the revenue-cost ratio, we can use the average revenue of land as another proxy for productivity. This measure (calculated by dividing the total revenue of each farmer by the acres of improved land he owned) would indicate the productivity of land. Although this measure may fail to reflect the productivity of the overall farming operations accurately in the presence of other variable inputs, the two productivity proxies nevertheless appear consistent in this case.

¹⁰ Federal Government Bond yield for 1850 and Railroad Bond yields for 1860–80 are used to calculate the cost of capital, as reported in Homer and Sylla, *History*, pp. 287–88. Productivity comparisons, reported in Table 1, are robust to other estimates (for example, local mortgage rates reported by Bogue, *From Prairie*, p. 178), because the same rate applies to all farmers.

¹¹ There are reliable estimates of agricultural prices for Iowa beginning in 1851. See Strand, *Prices*. Prices for 1850 are estimated using the price indices for Cincinnati, reported by Cole, *Wholesale Commodity Prices*, p. 186; and Berry, *Western Prices*, pp. 572–73.

¹² One might object to using the estimates provided by the farmers, because of possible errors or bias in reporting. Reported estimates, however, closely reflect market values, as we can infer from the high correlation between farmers' estimates and those calculated from market prices and the quantities reported by each farmer. The simple correlation coefficients between the two estimates of cost and revenue range between .75 and .96 across censuses, with no systematic differences between the Amish and other farmers.

TABLE 1
COMPARISON OF AVERAGE PRODUCTIVITY, AMISH AND NON-AMISH FARMERS,
1850-1880

	1850	1860	1870	1880
Revenue-Cost Ratio				
Amish	3.98	4.13	3.28	2.67
Other	5.45	5.29	4.48	3.09
	(1.10)	(1.89)	(4.14)	(2.42)
Average Revenue of Land (\$/Acre)				
Amish	6.67	12.26	14.36	9.18
Other	6.13	12.45	16.39	17.78
	(0.31)	(0.18)	(1.82)	(1.96)
Sample Size				
Amish	3	28	73	94
Other	45	108	203	237

Notes: See the text for an explanation of the calculation of cost and revenue. The *t*-statistics are in parentheses and test for the difference between the two means. At the 5 percent level, Amish farmers had significantly lower revenue-cost ratios during 1860-80 and lower average revenue of land during 1870-80.

Source: U.S. Bureau of the Census, *Census Schedules*, 1850-1880. Also see notes 10 and 11.

As Table 1 demonstrates, comparison of productivities reveals a consistent differential in favor of non-Amish farmers. The revenue-cost ratios for 1870 and 1880 are lower than those for 1850 and 1860, due primarily to the difference in the items included in cost. The decline in the ratios for 1880 reflects the additional items included in cost and the fall in agricultural prices during the census year. Despite such fluctuations in the absolute levels of revenue-cost ratios, the relative difference in productivity between Amish and non-Amish farmers persisted, challenging the conventional view about the superior productivity of Amish farmers.

Note that the productivity proxies used above may be biased because they omit labor inputs not reported in the schedules, such as the unpaid labor input of family members and friends. The productivity differential may thus simply be the result of a difference in the ratio of unpaid labor to other inputs between the two groups of farmers. In our case, however, the direction of the bias actually reinforces the conclusion of Table 1. On Amish farms, the labor input of family members was probably higher, because the average family size was significantly higher.¹³ Amish farmers might also have had greater access to non-household labor within the religious network because of their well-known cooperation in farming operations.

¹³ See note 18.

TABLE 2
DETERMINANTS OF PRODUCTIVITY, AMISH AND NON-AMISH,
NATIVE AND FOREIGN-BORN FARMERS, 1860-1880

Variable	1860	1870	1880
Constant	4.55* (2.67)	3.71* (4.13)	4.21* (9.84)
Amish ^a	-0.54 (0.17)	-0.01 (0.07)	-0.84 (0.86)
Age	-0.04 (1.79)	-0.03* (2.58)	0.002 (0.26)
Amish × Age	0.05 (1.03)	0.02 (0.88)	-0.0007 (0.05)
Nativity ^b	-1.08* (2.06)	0.10 (0.39)	-0.21 (1.13)
Amish × Nativity	-0.72 (0.57)	-0.88 (1.28)	-0.07 (0.16)
Number of Products	0.77* (3.10)	0.44* (4.74)	-0.05 (1.54)
Amish × Number of Products	-0.39 (0.95)	-0.24 (1.18)	0.05 (0.81)
Total Value of Farming Assets ^c	-0.00072* (5.00)	-0.00036* (8.73)	-0.0001* (3.97)
Amish × Value of Farming Assets	0.0001 (0.96)	0.00014 (1.62)	0.00004 (0.76)
Degrees of Freedom	126	266	321
R ²	.30	.32	.14

* = significant at the 5 percent level.

^a Dummy variable assigns 1 to Amish and 0 to non-Amish farmers.

^b Dummy variable assigns 1 to native-born and 0 to foreign-born farmers.

^c This represents the sum of the values of farm, implements and machinery, and livestock.

Notes: The revenue-cost ratio is used as the productivity proxy. Figures in parentheses are *t*-statistics.

Source: U.S. Bureau of the Census, *Census Schedules*, 1860-1880.

EXPLANATIONS OF PRODUCTIVITY DIFFERENTIAL

To understand why Amish farmers were less productive, we must first identify the determinants of productivity. I tested for the effect on productivity of age, nativity, number of products, and the total value of farming assets, using a dummy variable to test for the difference between Amish and non-Amish farmers in the way each variable affected their productivity. Table 2 reports the results.

The degree of standardization of our sample can be established by examining the differences in the composition of the Amish and non-Amish groups that might have contributed to the differential in productivity. The differential might have resulted, for instance, from a gap in the farming experience between the two groups. Although census records do not provide information on longevity in farming, we can use age as a proxy for experience. Non-Amish farmers were indeed older on average by about three years in 1870 and 1880 (though the average age was approximately equal in 1860). But the difference in age does not

seem to explain the productivity differential; Table 2 reveals either an insignificant (for 1860 and 1880) or a negative (for 1870) relationship between age and productivity.

It would seem that the nativity of farmers might also have affected their productivity. For example, if new immigrants followed traditional methods in farming, their practices and performance might have differed from those of native-born farmers, and significant disparities in the proportion of new immigrants in the two groups could have contributed to the difference in their average productivities. The evidence from our sample, however, does not support this conclusion. Although the coefficient of nativity is statistically significant for 1860, the difference in the proportion of foreign-born farmers between the two groups was too small (36 percent for the Amish and 32 percent for other farmers) to account for the productivity differential. Moreover, although the difference in the proportion of foreign-born farmers was substantial in 1870 and 1880 (19 percent and 15 percent for the Amish and 39 percent and 38 percent for other farmers), the coefficient of nativity is insignificant in both years, suggesting that nativity had little or no effect on the relative productivities of the Amish and other farmers.

Population characteristics such as age and nativity appear to be insufficient explanations for the productivity differential. To understand why Amish farmers were less productive, the relationship between religious beliefs and farming practices must be examined in more detail. Amish farmers might have pursued a distinct objective in selecting farming products, which could have reduced their productivity. For example, they might have been highly averse to the risks their community would have faced by exposure to outside markets and sought to ensure their own self-sufficiency by producing a diverse selection of products. As John Hostetler has observed, rather than specialize in certain products, "Amish farmers today, as in earlier periods, prefer general farming or a diversity of crops."¹⁴

We can check the applicability of this observation to the period considered in this article by comparing the number of items produced by the Amish with those produced by other farmers. Among the products listed in the agriculture schedules, Amish farmers produced an average of 6.7 different items in 1850, 6.7 in 1860, 9.6 in 1870, and 13.2 in 1880. By contrast, other farmers produced an average of 6.1, 6.5, 8.5, and 10.5 items.¹⁵ The comparison thus shows greater diversity in the product choices of the Amish farmers, especially after 1870.

¹⁴ Hostetler, *Amish Society*, p. 122. But see Stoltzfus, "Amish Agriculture," pp. 199–201, for recent changes in practices.

¹⁵ Between 1860 and 1880, each new census required the reporting of additional products, which accounts for part of the increase in the average number of items produced by the farmers. The *t*-statistics for the test of the difference in the averages are 0.65 for 1850, 0.77 for 1860, 5.51 for 1870, and 6.32 for 1880. The average number of items produced by the Amish farmers was thus significantly higher for 1870 and 1880 at conventional levels.

The important question in the present context is whether the Amish preference for diversity was costly. Although product diversity might have helped to insure controlled interaction with the outside world, the Amish might have paid a premium for it in lost income. The regression results of Table 2, however, show either a positive (for 1860 and 1870) or an insignificant (for 1880) relationship between the number of products and productivity. This finding suggests that the product choices of Amish farmers did not cause them to be less productive.

Systematic differences in the use of farming inputs between the Amish and non-Amish farmers might have caused the differential in productivity. Although the Amish did not oppose technological change before the twentieth century, they might have had other restraints on the use of farming inputs based on their religious beliefs. For example, as Melvin Gingerich reports, Amish farmers in Iowa “object[ed] to mules because they believe[d] it contrary to the plan of nature that two species of animals should be crossed.”¹⁶ Accordingly, census records show no mules and asses on Amish farms during the period 1850 to 1880. It is difficult to assess, however, how much of the differential in productivity can be attributed to such variations in the *composition* of livestock holdings or other inputs.

More important is the difference in the *level* of *all* inputs. As Table 2 shows, the coefficient of the total value of farming assets is consistently significant and negative, demonstrating a negative relationship between farm size and productivity. Moreover, as Table 3 shows, the amount of land as well as the values of farms, farm implements and machinery, and livestock were all significantly greater on average for Amish farms. Given the differential in productivities, comparison of inputs therefore suggests that Amish farmers overinvested in their farming operations, exceeding the optimal size. The question that remains is why the Amish invested so heavily in farms, machinery and implements, and livestock, when additional investment actually reduced the efficiency of their operations.

THE BEQUEST MOTIVE

The Amish were primarily concerned with preserving their religion and maintaining a stable community. Because of their belief that they should separate from the world, they minimized contact with outsiders and did not actively seek to recruit members, except from their own families. Therefore, although they did not face persecution in Iowa, they recognized that their religious traditions could survive only if their children chose to stay in the community and retain the Amish religion. Therein lies the clue to understanding the effect of religious culture on

¹⁶ Gingerich, *Mennonites*, p. 209.

TABLE 3
AVERAGE SIZE OF LAND AND VALUES OF FARMING ASSETS, AMISH
AND NON-AMISH, 1850-1880

Asset by Group	1850	1860	1870	1880
Land ^a (Acres)				
Amish	227	207	173	159
Other	189 (0.59)	193 (0.40)	140 (2.48)	133 (1.97)
Value of Farm (\$)				
Amish	847	2621	5579	5542
Other	853	2300	3790	4255
Value of Machinery and Implements (\$)				
Amish	75	101	298	224
Other	93	84	238	151
Value of Livestock (\$)				
Amish	340	452	1080	1157
Other	255	433	899	847
Total Value of Assets ^b (\$)				
Amish	1262	3174	6957	6923
Other	1201 (0.16)	2817 (0.85)	4927 (4.20)	5253 (3.19)

^a This represents the sum of improved and unimproved land.

^b This represents the sum of the values of farm, implements and machinery, and livestock.

Notes: The *t*-statistics are shown in parentheses and test for the significance of the difference between two averages. The average size of land and the total value of the assets of Amish farmers was significantly higher in 1870 and 1880 at conventional levels.

Source: U.S. Bureau of the Census, *Census Schedules*, 1850-1880.

the investment practices of the Amish. Because the preservation of their religion depended on children, they encouraged large families and invested in the future of their religious community.

The Amish have always preferred large families.¹⁷ They interpret the Biblical passage "go forth and multiply" literally, and advocate large families by encouraging early marriages and opposing birth control. The Amish farms in our sample thus housed consistently greater numbers of people than non-Amish farms, by an average of about one person per farm. The average household size for Amish farms was 8.6 in 1850, 7.3 in 1860, 6.6 in 1870, and 6.4 in 1880. By contrast, non-Amish farms housed on average 5.4, 6.0, 5.6, and 5.3 people during the same years.¹⁸

Large families, however, also presented the Amish with a problem;

¹⁷ See Ericksen et al., "Fertility Patterns," for recent trends.

¹⁸ Household size is calculated from the population schedules, and includes members of extended family such as stepchildren and parents, but excludes those boarding on farm for work-related reasons, such as farm laborers and domestic servants. The *t*-statistics for the test of the difference between the two averages are 1.79 for 1850, 2.36 for 1860, 2.98 for 1870, and 3.46 for 1880. The average size of the Amish household was significantly higher in all years at the 5 percent level.

TABLE 4
THE BEQUEST MOTIVE: WEALTH^a REGRESSED ON FAMILY SIZE

Variable	1860	1870	1880
Constant	1281.6 (3.05)	2487.9 (4.78)	2763.3 (5.18)
Family Size (common slope)	257.6 (3.99)	445.7 (5.08)	463.3 (4.99)
Dummy ^b × Family Size (differential effect for the Amish)	10.4 (0.2)	206.1 (3.03)	189.0 (2.49)
Degrees of Freedom	133	273	328
R ²	.12	.17	.13

^a This represents the total value of the farm, machinery and implements, and livestock.

^b Dummy variable assigns 1 to Amish and 0 to other farmers.

Notes: Figures in parentheses are *t*-statistics. All coefficients, except for the differential effect for 1860, are significant at conventional levels.

Source: U.S. Bureau of the Census, *Census Schedules*, 1860–1880.

because children could stay in the community only if they were able to support their own families after they got married. As Eugene Ericksen, Julia Ericksen, and John Hostetler have found, “[w]hen families are able to set their children up in farming, the children are likely to remain Amish.”¹⁹ In the absence of established institutions for credit, the ultimate responsibility rested on the parents to secure farms for their children. As Gingerich observes for the Amish in Iowa, “[m]any a father has had an ambition to acquire enough land in a solid block so that each son could be given a farm.”²⁰ Large families thus required Amish parents to invest heavily in farming inputs (with the expectation that they would be passed down to future generations), suggesting the presence of a bequest motive as an explanation of their investment patterns.

A common procedure to test for the presence of the bequest motive is through the relationship between wealth (total value of farming assets) and family size.²¹ If the motive was present, we would expect farmers with larger families to hold more wealth. As Table 4 shows, the coefficient of family size is positive and significant for all farmers, confirming the presence of the bequest motive in the overall sample. More important, however, is whether the motive was significantly different for Amish farmers, an expectation that can be tested by using a dummy variable that differentiates Amish from non-Amish farmers. As Table 4 shows, the coefficient of the differential effect (Dummy × Family Size) is positive and significant for 1870 and 1880, confirming the presence of a higher bequest motive for Amish farmers.

How successful was the bequest motive? Comparison of the agriculture and population schedules for two consecutive censuses reveals the

¹⁹ Ericksen, Ericksen, and Hostetler, “Cultivation,” pp. 64–65.

²⁰ Gingerich, *Mennonites*, p. 237.

²¹ See, for example, Hurd, “Research,” pp. 617–21, for a review of tests for the bequest motive.

TABLE 5
SUCCESS OF THE BEQUEST MOTIVE
(Number of Farmers)

Status in Census Records	1860 and 1870 Censuses		1870 and 1880 Censuses	
	Amish	Other	Amish	Other
Total recorded in first census	28	108	73	203
Recorded in both censuses	16	54	54	111
Farm taken over in second census ^a	7	4	9	5
Not recorded in second census	5	50	10	87
New farmer in second census (X)	57	149	40	126
Child in first census ^b (Y)	16	10	21	15
Percentage of children among new farmers (Y/X)	28	7	53	12

^a Farmer died or retired between censuses; farm taken over by child or spouse.

^b Farmer was recorded as child of farmer parents in the population schedules of the first census and separately as a new farmer in the agriculture schedules of the second census.

Notes: In addition to population schedules, genealogical studies were used to determine family connections for the Amish in a few uncertain cases. Similar information is not available for other farmers; thus, the number of farmers reported as "Child in first census" may be slightly lower than actual, if the census schedules are incomplete.

Sources: U.S. Bureau of the Census, *Census Schedules, 1860-1880*; and Gingerich, *Cemetery Directory*.

changes in farm ownership that occurred over the decade, making it possible to test the success of the Amish in maintaining their religious community. As Table 5 shows, among the new farmers recorded in 1870 and 1880, a higher percentage of Amish than non-Amish had farmer parents living in the area a decade ago. Similarly, a lower percentage of Amish farmers left the area during the period 1860 to 1880. These results testify to the stability of the Amish community and to the success of Amish parents in affecting the decisions of their children to remain Amish and continue farming in the same location.

The bequest motive of the Amish farmers thus clarifies their investment patterns during the period 1850 and 1880. The Amish sought and successfully achieved the survival of their religious community by investing heavily in land and other inputs in farming. By this means, they secured farms for their children's future, even though the productivity of their own farms lagged behind those of other settlers. They sacrificed current income in order to raise their bequests and invested heavily in the next generation.

CONCLUSION

The experience of Amish farmers who lived near the present town of Kalona, Iowa, during the period 1850 to 1880 demonstrates how religious culture can affect economic practices and performance. The Amish were primarily concerned with the survival of their religion and

the stability of their communities. Their farming practices accordingly differed from those of their non-Amish neighbors, particularly in the selection of inputs: they held larger assets in farming in order to safeguard the future of their religious community. Such differences in farming practices resulted in lower levels of productivity, contrary to widely held presumptions about the relative performance of Amish farmers during the nineteenth century.

It would be presumptuous to generalize about the relationship between religion and economic performance from the experience of this one community. Amish practices in farming have evolved over time, and other religious groups assuredly have entirely different beliefs and practices. The case of the Amish in Iowa does show, however, that the shared beliefs and objectives of a religious community can produce distinct patterns of economic behavior and affect their productivity.

REFERENCES

- Berry, Thomas S., *Western Prices Before 1861* (Cambridge, MA, 1943).
- Berry, Wendell, *The Unsettling of America: Culture and Agriculture* (New York, 1977).
- Bogue, Allan G., *From Prairie to Corn Belt* (Chicago, 1963).
- Cole, Arthur H., *Wholesale Commodity Prices in the United States: 1700-1861* (Cambridge, MA, 1938).
- Correll, Ernst, *Das schweizerische Täufermennonitentum* (Tübingen, Germany, 1925).
- Ericksen, Eugene P., Julia A. Ericksen, and John A. Hostetler, "The Cultivation of the Soil as a Moral Directive: Population Growth, Family Ties, and the Maintenance of Community Among the Old Order Amish," *Rural Sociology*, 45 (Spring 1980), pp. 49-68.
- Ericksen, Eugene P., et al., "Fertility Patterns and Trends Among the Old Order Amish," *Population Studies*, 33 (July 1979), pp. 255-76.
- Fisher, Gideon, *Farm Life and Its Changes* (Gordonville, PA, 1978).
- Getz, Jane C., "The Economic Organization and Practices of the Old Order Amish of Lancaster County, Pennsylvania," *Mennonite Quarterly Review*, 10 (Jan. 1946), pp. 53-80; (Apr. 1946), pp. 98-127.
- Gingerich, Mary A., *Cemetery Directory of Amish and Mennonites in Iowa, Johnson, and Washington Counties of Iowa* (Kalona, IA, 1972).
- Gingerich, Melvin, *The Mennonites in Iowa* (Iowa City, IA, 1939).
- Homer, Sidney, and Richard Sylla, *A History of Interest Rates* (1st edn., 1963; 3rd edn., New Brunswick, 1991).
- Hostetler, John A., *Amish Society* (1st edn., 1963; 3rd edn., Baltimore, 1980).
- Hurd, Michael, "Research on the Elderly: Economic Status, Retirement, and Consumption and Saving," *Journal of Economic Literature*, 28 (June 1990), pp. 565-637.
- Kollmorgen, Walter M., *Culture of a Contemporary Rural Community*. Rural Life Studies No. 4 (Washington, DC, 1942).
- Kraybill, Donald B., *The Riddle of Amish Culture* (Baltimore, 1989).
- Maurer, H. M., "Review of Correll, *Das schweizerische Täufermennonitentum*," *American Journal of Sociology*, 31 (Mar. 1926), pp. 677-80.

- Schwieder, Elmer, and Dorothy Schwieder, *A Peculiar People: Iowa's Old Order Amish* (Ames, IA, 1975).
- Stoltzfus, Victor, "Amish Agriculture: Adaptive Strategies for Economic Survival of Community Life," *Rural Sociology*, 38 (Summer 1973), pp. 196–206.
- Strand, Norman V., *Prices of Farm Products in Iowa*, Iowa State College of Agriculture and Mechanic Arts, Research Bulletin No. 303 (Ames, IA, 1942).
- U.S. Bureau of the Census, *Federal Census Schedules*, National Archives and Records Service, Agriculture and Population Schedules (microfilm, Washington, DC, 1850–1880).
- Wick, Barthinius L., *The Amish Mennonites* (Iowa City, IA, 1894).
- Yoder, Paton, *Tradition and Transition* (Scottsdale, PA, 1991).
- Yoder, Sanford C., "My Amish Boyhood," *The Palimpsest*, 30 (Mar. 1958), pp. 109–44.