

Community Characteristics and Demographic Development: Three Württemberg Communities, 1558-1914 *

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Abstract

Demographic behaviour is influenced not just by attributes of individuals but also by characteristics of the communities in which those individuals live. A project on ‘Economy, Gender, and Social Capital in the German Demographic Transition’ is analyzing the long-term determinants of fertility by carrying out family reconstitutions of three Württemberg communities (Auingen, Ebhausen, and Wildberg) between c. 1558 and 1914. A related project on ‘Human Well-Being and the “Industrious Revolution”: Consumption, Gender and Social Capital in a German Developing Economy, 1600-1900’ is using marriage and death inventories to investigate how consumption interacted with production and demographic behaviour in two of these communities. This paper examines the historical, political, institutional, geographical, and economic attributes of the communities analyzed in these projects and discusses their potential effects. The aim is to generate testable hypotheses and relevant independent variables for subsequent econometric analyses of demographic behaviour.

JEL Classifications: N0; N33; N43; N53; N63; N73; N93; J1; J13; O13; O15

Keywords: economic history; demography; fertility; gender; social capital; institutions; politics; geography; occupational structure; Germany

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List of Abbreviations

Archives:

HStAS	Hauptstaatsarchiv Stuttgart	(Central State Archive Stuttgart)
LKA	Landeskirchliches Archiv Stuttgart	(State Church Archive Stuttgart)
PAA	Pfarrarchiv Auingen	(Parish Archive Auingen)
PAE	Pfarrarchiv Ebhausen	(Parish Archive Ebhausen)
PAW	Pfarrarchiv Wildberg	(Parish Archive Wildberg)

Sources:

KKP	Kirchenkonventsprotokolle	(community church court minutes)
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Archival file designations:

Bü.	<i>Büschel</i>	(archive parcel)
Bd	<i>Band</i>	(volume)
fol.	folio	(folio)
r	recto	(front side of sheet)
v	verso	(reverse side of sheet)
Zettel	Zettel	(loose piece of paper)

Document transcription conventions:

ins. followed by word(s) enclosed in square brackets = these words were inserted after original text was written (usually above the line or in the page-margin)

gstr. followed by word(s) enclosed in square brackets = these words are crossed out in document

Coinage, Weights, and Measures

Coinage

1 Taler (Rtl.)	=	1.5 Gulden	
1 Gulden (fl.)	=	60 Kreuzer	
1 Batzen	=	4 Kreuzer	
1 Kreuzer (kr., x)	=	3 Pfennig	= 6 Heller
1 Pfennig (pf.)	=	2 Heller (h.)	
1 Pfundheller (lbhlr.)	=	20 Schilling (sch.)	= 43 Kreuzer

Weights

1 Pfund (lb.)	=	467.59 gram	= 0.97 pounds
1 Centner (C.)	=	100 Pfund	

Cubic measure (grain)

1 Scheffel (schf.)	=	8 Simri	= 177.2 litres
1 Simri (sri.)	=	22.15 litres	

Area measure (land)

1 Morgen	=	0.32 hectare	= 0.78 acre
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1. Introduction

Demographic behaviour is influenced not just by human biology and attributes of individual persons, such as wealth and occupation, but also by characteristics of local communities – factors specific to the particular village or town in which people are living. Such community characteristics work in two ways. First, there are exogenous features – natural endowments of the locality and events that strike it from the outside, without its inhabitants having any significant capacity to affect these features. Second, there are endogenous characteristics – features of the locality arising from, or significantly shaped by, collective decisions reached by the community or its decision-makers.

The exogenous influences seem at first sight to be straightforward. Different localities experience different historical events – for example, territorial annexation, military invasion, revolution, or fire. Alternatively, different localities experience the *same* event, but at different times – thus ultimately all communities may get clean drinking-water, good roads, agrarian reforms, or railway links, but they get them decades or even generations apart.

Endogenous community influences work through collective decisions or shared norms of the inhabitants. Thus a community may hold particular norms – or embrace particular decisions – about religion, education, women's status, child labour, poor relief, extra-marital sexuality, or permission to marry. Such norms can be self-sustaining and will influence demographic decisions both directly (through mandating marriage age or family size) and indirectly (through altering the costs or benefits of fertility). Even apparently exogenous influences may turn out to be partly endogenous, when a community decides collectively on whether to resist invaders, set up fire brigades, organize revolts, reform agrarian institutions, or pay for connection to infrastructure.

This paper examines those community characteristics with a potential to affect demographic decisions for three German communities – a small town and two villages – between 1558 and

1914. A project on ‘Economy, Gender, and Social Capital in the German Demographic Transition’ is analysing long-term fertility change in Europe over three centuries by reconstructing demographic behaviour in these three communities.¹ It uses the technique of ‘family reconstitution’, which involves linking birth, marriage and death records to reconstitute all families in each community over the entire period of analysis. The technique of ‘record linkage’ is then applied to link socio-economic information from other documentary sources such as censuses and tax registers to the reconstituted families. This makes it possible to analyse the socio-economic determinants of fertility, on the level of both communities and individuals.

A subsequent project on ‘Human Well-Being and the “Industrious Revolution”:
Consumption, Gender and Social Capital in a German Developing Economy, 1600-1900’ builds on the family reconstitution database for two of these communities – the small town and one of the villages.² It investigates how changes in consumer demand and time allocation – particularly by women and the poor – contributed to economic development on the micro-level over three centuries (c. 1600 – c. 1900). It links inventories of ordinary people’s possessions with information (derived from family reconstitutions, tax registers and censuses) on their occupation, land-ownership, wealth, office-holding, sex, literacy, fertility, mortality, and membership in communities, guilds and voluntary associations (‘social capital’). These data will then be analysed statistically to identify the interactions between consumption, production, and demographic behaviour in a historical developing economy.

A necessary first step in the analysis is to understand the community-level characteristics that had the potential to affect individual and group behaviour. This paper examines the historical,

¹ This project has been supported at the University of Cambridge for three years (1.1.2005-31.12.2007) by a generous grant from the Leverhulme Trust (F/09 722/A). For further details, see <http://www.hpss.geog.cam.ac.uk/research/projects/germandemography/>.

² This project is supported at the University of Cambridge for three years (1.1.2008-31.12.2012) by a generous grant from the Economic and Social Science Research Council (RES-062-23-0759). For further details, see <http://www.econ.cam.ac.uk/faculty/ogilvie/ESRC-project-English.pdf>.

political, institutional, geographical, and economic attributes of the communities analysed in these projects, and discusses their potential effects, with a specific focus on demographic behaviour. The aim is to generate testable hypotheses for later econometric analyses of the longitudinal and cross-sectional determinants of demographic behaviour.

2. Location, Size, and Aggregate Population

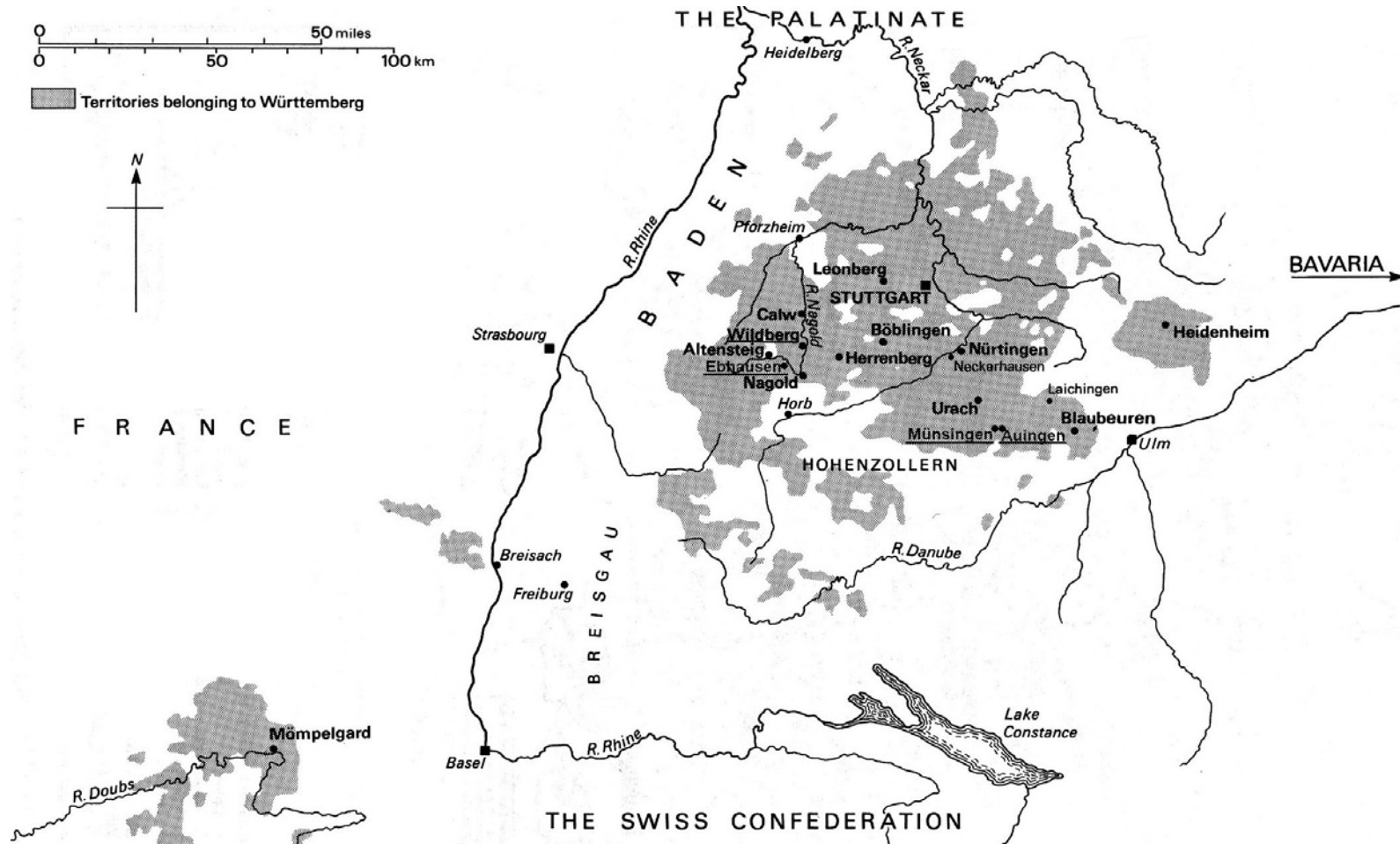
The three communities analysed here are the small town of Wildberg, the medium-sized village of Ebhausen, and the small village of Auingen. Since the Middle Ages, all three have been part of the territory of Württemberg in south-western Germany. The locations of Württemberg, and the three communities analysed here, are shown in Map 1. Württemberg was a county (*Grafschaft*) of the Holy Roman Empire of the German Nation (*Heilige Römische Reich Deutscher Nation*) from the twelfth century to 1495, and then a Duchy (*Herzogtum*) of the Empire from 1495 to 1806. Membership in the Empire meant that Württemberg was subject to some legitimate intervention in its internal affairs by Imperial institutions, as discussed below in Section 4.1.³ After the abolition of the Old Empire in 1806, Württemberg became a Kingdom (*Königreich*) and an independent state, although still part of the new, 39-member German Confederation (*Deutscher Bund*) established in 1815. In 1871, the Kingdom of Württemberg became part of the newly united Imperial Germany (*Deutsche Kaiserreich*), which it remained until the end of the First World War.

Württemberg is categorized as a ‘German territory of the second rank’ – neither a gigantic composite state such as Brandenburg-Prussia nor one of the small German territories belonging to Free Imperial Cities, free nobles, or religious houses.⁴ The territorial fragmentation of southwest Germany meant that before 1806 Württemberg shared borders with (and in some cases included within its own boundaries enclaves of) territory belonging to

³ For a detailed discussion, see Ogilvie (1999b).

⁴ Vann (1984), 36.

Map 1:
Eighteenth-Century Württemberg Showing Locations of Wildberg, Ebhausen, Münsingen, and Auingen



Source: Ogilvie (1997), Map 1, p. xxi.

Baden-Baden, Baden-Durlach, Fürstenberg, Hohenzollern, Electoral Palatinate, Anterior Austria (the Habsburg possessions in southwest Germany), various Free Imperial Cities, various other temporal principalities (e.g. belonging to Free Imperial Knights), and various ecclesiastical principalities. It also possessed its own territorial enclave of Mömpelgard (Montbéliard) inside what is now France. The territorial reorganization associated with the abolition of the Empire in 1806 gave rise to a simplified geopolitical situation for Württemberg, as can be seen from Map 2. After 1806, Württemberg shared a boundary on the east with Bavaria, and on the other three sides with Baden, with the exception of a short distance on the south, where it bordered Hohenzollern and Lake Constance. Before 1806, Württemberg had a relatively modest territorial area of about 9,500 km², but after the territorial transformations of the Napoleonic period, during which it incorporated many neighbouring small principalities, Württemberg comprised more than double that area (19,500 km²), with a maximum north-south length of 225 km and a maximum east-west breadth of 160 km.⁵

Map 1 shows the location of the communities under analysis – Wildberg, Ebhausen, and Auingen. All three communities are located 50-60 km from Stuttgart, the capital city of Württemberg. All three were in outlying regions of the territory – Wildberg and Ebhausen near the border with Baden in the west and Auingen near the border with the territorially fragmented region of Swabia lying between Württemberg and Bavaria in the east. Wildberg and Ebhausen are located in the Württemberg section of the range of forested hills known as the Black Forest (Schwarzwald): the small town of Wildberg lies 45 km southwest of Stuttgart, and the village of Ebhausen 9 km further southwest along the Nagold River. The village of Auingen, by contrast, is located very close to the small town of Münsingen, about 60 km southeast of Stuttgart in the Swabian Jura (Schwäbische Alb), a medium-sized mountainous plateau in south-eastern Württemberg. All three communities studied here are

⁵ Boelcke (1989), 16; Boelcke (1987), 164.

**Map 2:
Württemberg 1810-1945**



Source: The map and accompanying text as published in Wikipedia Commons by Benutzer: Ssch, at <http://commons.wikimedia.org/wiki/File:KgrWuerttemberg.png#file> (accessed 26 Feb. 2009) are licensed under the GNU Free Documentation License <http://www.gnu.org/copyleft/fdl.html>.

thus located at a similar latitude (48°), but Auingen lies 80 km to the east of Wildberg and Ebhausen.

Württemberg was also a 'territory of the second rank' as far as population was concerned. Table 1 displays its population alongside those of central European territories of the 'first rank' (Austria and Prussia), for selected years between c. 1200 and 1918. Over the six centuries between c. 1200 and 1806, the population of Württemberg experienced no overall increase, lying at something between 600,000 and 700,000. By comparison, Austria had four times the population of Württemberg in 1525 in 1600, around seven times its population in 1700, and still around six times its population in 1790. Only in the course of the nineteenth century did Württemberg begin to catch up, and that was mainly because of its territorial acquisitions after 1806. Even then, Austria had between two and three times the population of Württemberg throughout the nineteenth and early twentieth centuries. The contrast with Prussia was even greater. Around 1700, Prussia had about five times the population of Württemberg, rising to nine times in 1790 and 1840, 13 times in 1870, and 16 times its population in 1910.

This cannot be ascribed to Württemberg's demographic losses during the Thirty Years War (1618-1648). It is certainly true that Württemberg's population underwent very serious decline in the seventeenth century, falling to an estimated low of about 140,000 in 1654, immediately after the war ended.⁶ It took until around 1725 before Württemberg recovered the population level it had reached in 1600, before the war.⁷ But Brandenburg-Prussia suffered even more serious population losses in the Thirty Years War; it recovered from them much more quickly, especially in the eighteenth century when it combined rapid internal population growth with the acquisition of populous new territories such as Silesia.

⁶ Vann (1984), 36.

⁷ Schaab (2000), 462.

Table 1:
Population of Württemberg, Austria, Prussia, Stuttgart, and the Three Communities,
Selected Years, c. 1200 - c. 1918

Year	Württemberg	Austria	Prussia	Stuttgart	Wildberg	Ebhausen	Auingen
1200	c. 0.65 m						
c. 1400				4,000			c. 200
1470							c. 240
1500				5,000			
1525		c. 1.50 m					c. 165
1587				c. 9,000	c. 830		c. 300
c. 1600	c. 0.45 m	c. 1.80 m		10,000	c. 750		c. 350
c. 1625					1,542	453	c. 350
1634	c. 0.47 m			< 8,327	1,650	640	435
1641-2	c. 0.11 m				1,005	65	28
1654	c. 0.14 m			c. 4,500	1,079	207	84
c. 1675					1,430	305	141
c. 1700	0.32 m	c. 2.10 m		13,000	1,225	320	202
1707	0.34 m			16,000	1,326	348	233
1713			1.60 m		1,242		c. 264
c. 1725				c. 11,300	1,518	531	334
1744			2.40 m		1,477	624	338
1754		2.73 m		c. 17,000	1,452		
1773				c. 19,000	1,495	765	349
1780		2.97 m			1,629	831	c. 410
1790	0.62 m	3.05 m	5.40 m		1,658	925	440
1796	0.64 m		8.70 m	19,500	1,652	1,029	424
1806	0.65 m		9.70 m		1,533	1,043	424
1812	1.38 m	c. 3.05 m		21,000	1,699	1,289	c. 462
1816	1.41 m		10.35 m		1,646	1,236	484
c. 1825		c. 3.20 m	c. 12.73 m	29,143	1,873	1,274	504
1834	1.59 m	c. 3.48 m	13.51 m	c. 35,000	1,640	1,597	498
1840	1.65 m	3.65 m	14.93 m	38,000	1,597	1,622	544
1849	1.74 m	c. 3.88 m		47,837	1,520	1,658	584
1855	1.68 m	c. 4.07 m	c. 16.94 m	50,804	1,411	1,378	566
1861	1.72 m		18.49 m	61,314	1,459	1,341	637
1867	1.78 m		c. 19.26 m	75,781	1,589	1,349	701
1871	1.82 m	c. 4.52 m	24.60 m	91,623	1,453	1,320	722
1875	1.88 m			107,273	1,312	1,320	733
1880	1.97 m	4.94 m	27.00 m	117,303	1,422	1,281	738
1890	2.04 m	5.39 m		139,817	1,418	1,192	720
1900	2.17 m	5.97 m		c. 170,000	1,290	1,182	863
1905				249,443	1,342	1,399	1,001
1910	2.44 m	6.61 m	40.16 m	286,218		1,351	1,007
1914	2.53 m	6.77 m		c. 308,436			

Sources: For Stuttgart and Württemberg, see Boelcke (1987), 68-9, 95, 165, 215-16; Hippel (1992), 505, 635; Schaab (2000), 495; http://de.wikipedia.org/wiki/Einwohnerentwicklung_von_Stuttgart. For Wildberg, Ebhausen and Auingen, see LKA, Synodusprotokolle (1584-1822); HStAS, A 281 Kirchenvisitationsakten (1563, 1599, 1601-1806); StAL E 258 III Nr. 98 (Fasz.), Oberamt Calw (Gmde. Ebhausen) (1834-1917); StAL E 258 III Nr. 7698 (Film), Oberamt Münsingen; StAL E 258 III Nr. 7699 (Film), Oberamt Nagold (1834-1917); StAL E 258 III Nr. 7700 (Film), Oberamt Urach. Population counts were also extracted from the following published sources: Königliches Statistisch-Topographisches Bureau, ed., *Königlich-Württembergisches Hof- und Staats-Handbuch*. Stuttgart (counts for 1821, 1824, 1828, 1831, 1835); Hausleutner (1790) (counts for 1622, 1634, 1639, 1645, communicant and catechist numbers only); Königliches Statistisch-Topographisches Bureau (1862), 150, 252; Landesarchivdirektion Baden-Württemberg (1997), II:69. For Württemberg and Prussia, see <http://www.tacitus.nu/historical-atlas/population/germany.htm>. For Austria, see <http://de.wikipedia.org/wiki/%C3%96sterreich#Bev.C3.B6lkerungsentwicklung>.

Württemberg, by contrast, saw fairly gradual population growth in the course of the eighteenth century, by 1806 reaching the level it had last attained about six centuries earlier, around 1200.

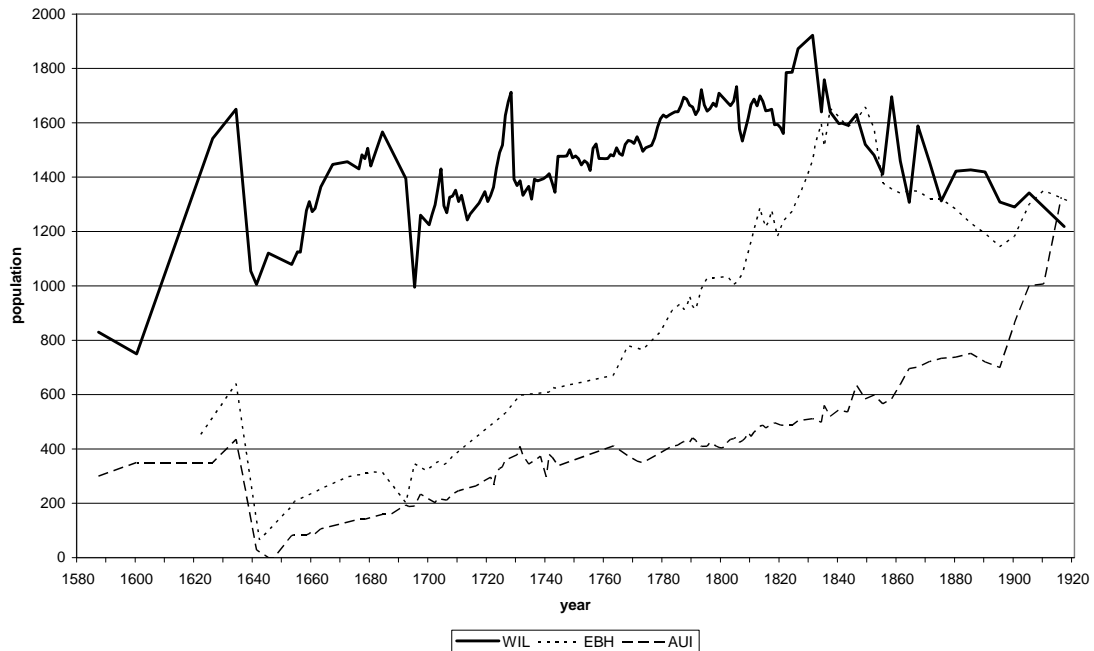
The territorial acquisitions which came to Württemberg in the course of the abolition of the Holy Roman Empire more than doubled its population between 1806 and 1812, but even then it had less than half the population of neighbouring Bavaria and less than one-seventh the population of Prussia. High emigration (especially during the economic crises of 1816/17, 1846/47 und 1852/54) and notoriously high infant mortality rates (often over 300 per 1000) caused the population of the Kingdom of Württemberg to rise only very gradually in the course of the nineteenth century.⁸ By the standards of other territories of German-speaking central Europe, it remained a ‘territory of the second rank’ demographically as well as politically.

The population development of our three communities, outlined in numbers in Table 1 to set them in a broader context, can more easily be interpreted by the graphical display in Figure 1. The town of Wildberg almost doubled its population between c. 1600 and c. 1634, a development largely due to the expansion of the worsted-weaving proto-industry in the region (discussed below in Section 8.1). But the full force of the Thirty Years War reached Württemberg in 1634, with an Imperial invasion of the Duchy accompanied by horrific population loss, caused not just by the direct effects of warfare, but also by the infectious diseases and economic dislocation it brought in its wake.⁹ For Wildberg, further population loss ensued around 1690, with several French invasions from the west. The town did not attain its pre-1634 population size again until the 1730s, and even then only briefly. Its population grew only very slowly from then up to c. 1830, at which point it declined fairly consistently, with only brief and temporary recoveries, up to 1918.

⁸ Boelcke (1989), 16; Hippel (1992), 506-07; http://www.deutsche-schutzgebiete.de/koenigreich_wuerttemberg.htm.

⁹ Stier / Hippel (1996), 235-9.

Figure 1:
Total Population in Wildberg, Ebhausen, and Auingen, c. 1580 – c. 1920



Source: As for Table 1.

The village of Ebhausen followed a similar trajectory to that of Wildberg, not surprisingly since it was located only 8 km from the town and also became a centre of proto-industrial worsted-weaving after about 1600. Thus we observe a rising population in Ebhausen during the 1620s and early 1630s, followed by a catastrophic decline in the later 1630s after the Imperial invasion, a gradual recovery up to c. 1690, and then another sharp shock with the renewed military invasion by French forces in the 1690s. From that point on, Ebhausen’s population development diverges from that of Wildberg, in the sense that it follows an almost uninterrupted trend of much faster population growth, surpassing the declining town in 1837, and experiencing its own population peak in 1849. After that, however, Ebhausen’s population declined almost in tandem with that of Wildberg, with a particularly bad period between 1870 and 1900, before experiencing a mild recovery up to the First World War.

The Swabian Jura village of Auingen shows a not dissimilar population trajectory to Wildberg and Ebhausen up to the end of the Thirty Years War, but a very different development thereafter. From 1580 up to 1634, Auingen remained a small, primarily agricultural village (as discussed in Section 6 below), and its population was fairly stable or slightly rising. With the Württemberg military catastrophe of 1634, it suffered even more seriously than the other two communities, and in fact was totally deserted by its inhabitants from 1645 to 1647. Recovery thereafter was steady but very slow, and it took until 1760 for the village to re-attain the population level it had reached before the Thirty Years War. During the eighteenth and early nineteenth centuries, Auingen mirrored the slow population expansion of Wildberg more closely than the accelerating growth shown by Ebhausen. But unlike either Wildberg or Ebhausen, Auingen maintained and indeed accelerated its population growth after the mid-nineteenth century. Indeed, from the mid-1890s to the First World War, for reasons we will examine in Section 8.3, Auingen experienced a striking acceleration of its population growth rate, by 1916 actually equalling the size of Wildberg and Ebhausen.

The three communities under analysis thus had different population sizes and different population growth rates over the period 1558-1914 covered by this study. The size and growth rate of a community's population are not only the *results* of demographic behaviour; they may also exert a causal influence on that behaviour. There may be limited resources – arable fields, pastures, water supply, residential space, or employment – which place limits on the size of population that can be supported locally, whether in the short or the long term. If population growth is very fast, it may exceed the rate at which these economic resources can be expanded, thereby limiting the continuation of that growth. Even if resources are not *actually* limited, there may be a social *perception* that they are limited, and this may lead to social decisions being taken by the community, for instance to limit access to common lands, restrict the granting of marriage permits, penalize illegitimate fertility, or encourage emigration. For all these reasons, an awareness of the size and growth rate of the populations

of the communities under study at different times is an important variable in understanding the determinants of their demographic behaviour.

3. History, Politics, and War

An important set of community-level influences on demographic behaviour consists of exogenous historical events which affect one community but not others, or which affect most localities at some point, but occur in different places at different times. Such historical events may be largely accidental, as in the case of storms, floods, or fires, which are hardly under the control of the community or its inhabitants. Alternatively, such events may be partly endogenous, in the sense that the community has some control over the shape they take; examples would be political changes and military events. This section provides a brief outline of the historical events affecting the three communities studied here, with particular attention to those events which might have affected demographic developments. A detailed time-line of historical events affecting each community, as well as Württemberg as a whole, is provided in the appendix to this paper.

3.1. Medieval Origins

All three of the communities under analysis here were founded in the medieval period, as part of the territorial expansion of their then rulers into the more peripheral frontier zones of the hilly regions of southwest Germany. However, the Swabian Jura was settled at an earlier date than the Württemberg Black Forest, and hence Auingen was founded much earlier than Wildberg and Ebhausen. For that reason, Auingen inherited a number of socio-economic and institutional characteristics from the early medieval period which the Black Forest communities never experienced.

The history of the village of Auingen, like many of the other variables influencing its demographic development, is best considered alongside that of the nearby town of Münsingen. Auingen was located just 2 km away from Münsingen, and was administratively subordinate to it in the same way that Ebhausen was administratively subordinate to the 8-km-distant Wildberg. The Münsingen-Auingen area was already inhabited in antiquity and in the early medieval period, and Auingen has archaeological remains of graves from the Bronze Age, the late Iron Age (second to third century BC), and the early Merovingian period (mid-fifth to mid-eighth century).¹⁰ Münsingen appears to have already been the centre of its own administrative district in the Merovingian period or shortly thereafter, and Auingen was already almost certainly one of the villages it administered. One early modern document (dating from 1654) claims, albeit without providing evidence, that ‘the chronicles show that Münsingen is the oldest county on the Swabian Jura, set up by the Merovingian King Dagobert in Anno 636’.¹¹ Münsingen is mentioned by name in documents of 772 and 809, and the ‘Auingen Mark’ is mentioned in 770 in documents from the monastery of Lorsch in the Rhine Valley.¹² A fortress was built on a knoll on the north border of the Auingen village lands by unknown persons in the early twelfth century, although it was probably abandoned by 1300, and is mentioned in 1454 solely as a ruin surrounded by forest.¹³

Thus Auingen and Münsingen have a settlement history reaching far back into the early medieval period. The main legacy of these early medieval origins, as far as our study is concerned, is that Auingen land was subject to a more complicated set of manorial payments and restrictions than was the case in later-settled regions such as the area around Wildberg and Ebhausen. Land in Auingen was subject to a variegated array of temporal and ecclesiastical landlords, and fell into a variety of different legal categories (partible peasant lands, theoretically impartible fief-farms (*Lehengüter*), common lands regulated by a single

¹⁰ Landesarchivdirektion Baden-Württemberg (1997), II:66.

¹¹ Memminger (1825), 109-10 (quotation on 110); Dirschka (2009), 1.

¹² Landesarchivdirektion Baden-Württemberg (1997), II:66; Königliches statistisches Landesamt (1912), 571.

¹³ Memminger (1825), 18, 121; Landesarchivdirektion Baden-Württemberg (1997), II:66-7.

community, commonly-used wastes regulated by groups of villages, and so on). As we shall see in Section 7, this variegated array of institutional legacies from Auingen's feudal past may have played a role in the slow and belated development of its agricultural economy in the later nineteenth century, with repercussions for its demographic pattern.

Auingen thus had a long history of settlement before it even became part of the territory of Württemberg. The village of Auingen is thought to have come, along with Münsingen, from the lordship of the Counts of Urach (a town 16.5 kilometres away) to the Counts of Württemberg in 1263. At this date, Münsingen (and thus also Auingen) were frontier communities at the confluence of several moderately important roads.¹⁴ At some point before 1339, the counts of Württemberg fortified Münsingen, raised it to the status of town, and granted it market rights and considerable administrative autonomy, including over surrounding villages such as Auingen.¹⁵ However, only a minority of the land in Auingen was yet under the feudal lordship of the Counts of Württemberg, and it was not until the early eighteenth century that all the land in the village was taken over from alien overlords. In other institutional respects, however, from 1263 Auingen was gradually subjected to the intensifying territorial administration of the ruling house of Württemberg. This was undoubtedly rendered more perceptible for the village than for many other settlements in the County by the fact that between 1251 and 1482, the town of Münsingen was often used as a residence by the Counts of Württemberg.¹⁶

Throughout the medieval period, the Münsingen-Auingen region, because of its location near the frontier of Württemberg, was continually subject to military incursions, a fact that may explain the fluctuating demographic development between 1396 and 1525 observable in Table 1. In 1378, the counts of Württemberg were in conflict with the south German Free

¹⁴ Dirschka (2009), 3.

¹⁵ Maurer (1965), 455; Landesarchivdirektion Baden-Württemberg (1997), II:67; Königliches statistisches Landesamt (1912), 541-2, 571; Dirschka (2009), 3.

¹⁶ Memminger (1825), 111.

Imperial Cities to the east, and Münsingen was invaded, plundered and burnt down by the army of Ulm (a Free Imperial City 51 km to the east), a military catastrophe which must almost inevitably have affected nearby Auingen.¹⁷ Although Münsingen and Auingen were mortgaged by the Counts of Württemberg to the Counts of Helfenstein in the early fifteenth century, they were redeemed by Württemberg in 1432.¹⁸ Between 1442 and 1482, Urach (capital of the administrative district by which both Münsingen and Auingen were administered until 1654, and located only 14 km from Münsingen) was the *Residenzstadt* (capital city) selected by one of the two dynastic lines of the Counts of Württemberg.¹⁹ In 1449-50, the counts of Württemberg were again in conflict with the south German Free Imperial Cities to the east, and Münsingen was again invaded and burnt by the army of Ulm, again with almost inevitable (though unrecorded) repercussions for nearby Auingen.²⁰

In 1482, the two branches of the family of the counts of Württemberg, along with the parliamentary estates, met in Münsingen. This was the first meeting of the Württemberg parliament at which prelates, nobility, and 'Landschaft' – representatives of the rural districts – assembled together, and one of the last attended by the nobility, who declared themselves *reichsunmittelbar* (directly subject to the Emperor rather than vassals of Württemberg) in 1519. At this meeting, the counts and the parliamentary estates signed the famous Treaty of Münsingen (*Münsinger Vertrag*) which reunified Württemberg after it had been territorially divided between the two dynastic lines of the house of Württemberg for the preceding forty years, declared the county to be in future impartible, and granted the parliamentary estates the right to be consulted by the rulers in some political matters – a limited right by modern democratic standards but unusual by the standards of the time.²¹

¹⁷ Dirschka (2009), 3; Memminger (1825), 111-12; Königliches statistisches Landesamt (1912), 549.

¹⁸ Memminger (1825), 111 gives 1432; Dirschka (2009), 3, gives 1434.

¹⁹ Dirschka (2009), 4.

²⁰ Dirschka (2009), 4.

²¹ Maurer (1965), 455; Schaab (1974a), 190; Dirschka (2009), 4-5.

In view of these events of 1482, it is not surprising that there are indications in the building history of Münsingen that there was a substantial expansion of the town in the late medieval period.²² Around 1500, Münsingen was so significant that it was ranked as the fourth city in the duchy of Württemberg, after Stuttgart, Tübingen and Urach.²³ Auingen, however, shows a population decline between 1470 (48 households, c. 240 souls) and 1525 (33 households, c. 165 souls), which contrasts with a mild growth in population in neighbouring communities over the same period.²⁴ There is thus no indication that medieval Auingen enjoyed any demographic or economic benefits from its long history of settlement, its proximity to Münsingen, or its early incorporation into the state of Württemberg. This continued to be the case well into the early modern period, as we shall see in the next section.

By contrast with the Swabian Jura communities of Münsingen and Auingen, the Black Forest communities of Wildberg and Ebhausen are both comparatively young settlements, founded only in the thirteenth century, a period at which Münsingen and Auingen had already been in existence for nearly half a millennium. Wildberg was established in the early thirteenth century, a period during which two-thirds of the towns of southwest Germany were founded.²⁵ It has no surviving foundation document, but appears in a document of 1237 as an already inhabited settlement.²⁶ At that period, the Counts Palatine (*Pfalzgrafen*) of Tübingen were administering considerable territories in the Wildberg-Ebhausen region as representatives of the Dukes of Swabia who at that time were Holy Roman Emperors. It was probably around 1200 that these *Pfalzgrafen* built a fortification on a 'Wildberg' ('wild hill', meaning a hill from which the forest had not yet been cleared and which had not yet been built upon) in a bow of the Nagold River, and put it into the hands of a vassal called a *Dienstmann* (literally 'serving man' or 'servitor'). It is probable that the fortification was built in Wildberg in order to fortify the frontiers of Hohenberg territory against neighbouring, competing feudal lords

²² Landesarchivdirektion Baden-Württemberg (1997), II:4-5; Dirschka (2009), 5.

²³ Dirschka (2009), 6.

²⁴ Landesarchivdirektion Baden-Württemberg (1997), II:69.

²⁵ Flik (1985), 168.

²⁶ Klauf (1987), 43; Natale (1965), 751.

who were all in the process of trying to become territorial lords at that time.²⁷ The lands of the new settlement of Wildberg appear to have been cut out of the lands of the surrounding older (Alemannic) villages of Effringen, Gültlingen, Jettingen and Sulz, and were consequently unusually small in extent; this may have contributed to its inhabitants' early specialization in export-oriented textile proto-industry, which has already been mentioned and is discussed in detail below in Section 8.²⁸

Around 1235, the daughter of the Pfalzgraf of Tübingen married Reichsgraf Burkhard III von Hohenberg, bringing as her dowry the area around Wildberg. The Hohenbergs transformed this area into a separate Dominion (*Herrschaft*) of Wildberg. In 1252, a female religious community called the Convent of Maria Reutin was founded below Wildberg on the right bank of the Nagold, and the town grew alongside the convent throughout the thirteenth century.²⁹

The village of Ebhausen studied here is made up of two neighbouring hamlets called Ebhausen and Wöllhausen. These were probably established at the same time as Wildberg, in the first quarter of the thirteenth century, since the oldest church bell is estimated to have been cast between 1230 and 1250.³⁰ Documents of 1245, 1267 and 1297 mention Governors (*Vögte*) of Wöllhausen and Ebhausen, so the villages were evidently sufficiently populated to support the costs of a local feudal administrator.³¹ By 1303, the Dominion of Wildberg included not just Wildberg itself but also most of the villages that would later be administered by the town as part of the Württemberg district (*Amt*) of Wildberg, including Ebhausen and Wöllhausen.³²

²⁷ Klaß (1987), 45.

²⁸ Frauer (1987), 153.

²⁹ Klaß (1987), 45.

³⁰ Schmidt-Ebhausen (1955), 131-2, 135.

³¹ Oertel (2006), 5.

³² Klaß (1987), 48.

In 1355, the Dominion of Wildberg was divided between two Hohenberg brothers, with the town of Wildberg co-ruled by both brothers but Ebhausen belonging to only one of them (Burkhard VII).³³ In 1364, the heirs of Burkhard VII sold their half of Wildberg, together with a number of villages including Ebhausen-Wöllhausen, to the Pfalzgraf (later Elector) Ruprecht I of the Palatinate.³⁴ The Electors of the Palatinate ruled the Dominion of Wildberg (including Wildberg and Ebhausen) until 10 August 1440, when they sold it to the Counts of Württemberg for 27,000 Gulden.³⁵

The fact that the Black Forest communities of Wildberg and Ebhausen were founded nearly half a millennium later than the Swabian Jura communities of Münsingen and Auingen, and were established by a single ruler for the purpose of defending ‘frontier’ regions of his territories in the process of thirteenth-century state-building, had implications for the institutional legacy of the communities. In particular, local land in the Württemberg Black Forest was not subject to such a complicated set of feudal burdens and legal categories as it was in the older settlements in the Swabian Jura. This may have contributed to the slightly earlier timing and greater ease of agricultural development in the nineteenth century, discussed in Section 7 below. Furthermore, the two Black Forest communities did not become part of Württemberg until two centuries later than the Swabian Jura settlements, and Wildberg was never used as a residence by princes. As a consequence, the two Black Forest communities were not subject to Württemberg state-building at all until the mid-fifteenth century, and even then lay distinctly on the periphery of the County, essentially remaining ‘frontier’ settlements, subject to very light or non-existent regulation by the central authorities. This may have contributed to the economic dynamism which was to characterize the Wildberg-Ebhausen region in the sixteenth and early seventeenth century, particularly the astonishing rise of the worsted proto-industry (discussed below in Section 8.1).

³³ Klab (1987), 49.

³⁴ Klab (1987), 49.

³⁵ Klab (1987), 51, 57; Natale (1965), 751; Königliches statistisch-topographisches Bureau (1862), 90.

This does not mean that Wildberg and Ebhausen experienced an untroubled economic development in the late medieval period. On the contrary, both settlements suffered from serious, exogenously inflicted events in the second half of the fifteenth century, in the form of catastrophic fires. In 1464 the entire town of Wildberg burnt down, and the parliamentary estates (*Landschaft*) of Württemberg granted 4000 Gulden for rebuilding the town which had just become part of the County 24 years earlier.³⁶ At sometime around the same period, Ebhausen also suffered a major fire, which we know because the Ebhausen copy of a 1452 document recording a forestry agreement is described in a 1495 document as having been burnt in ‘the Ebhausen fire’; an inscription in the church is dated 1455, which may have been when the village was rebuilt after the fire.³⁷ Thus, although we do not have as early population figures for Wildberg and Ebhausen as we do for Auingen, it is likely that the population of the two Black Forest settlements resembled that of Auingen in suffering serious fluctuations in the late medieval period, both because of exogenous disasters such as fire and because of their inherently insecure status as ‘frontier’ settlements on the boundaries of the jostling principalities participating in the ‘territorialization’ of central European states in the late medieval period.³⁸

3.2. The Long Sixteenth Century (c. 1500 – 1618)

The differing legacies our three communities inherited from the medieval period can be traced in their differing experiences in the sixteenth century. Overall, the sixteenth century is regarded as a period of economic and demographic growth throughout Europe, and southern Germany participated in this development even more than most areas. Indeed, the sixteenth century is the last period, before the nineteenth century, at which Germany is regarded as

³⁶ Klabß (1987), 113.

³⁷ Schmidt-Ebhausen (1955), 130, 135 note 1.

³⁸ For a clear-sighted discussion of this process of ‘territorialization’, see Zmora (1997).

having been a European example of economic dynamism and success.³⁹ On the other hand, the sixteenth century was also a period of rebellion and upheaval in southern Germany, as the population began to feel the increasing pressure of taxation, religious coercion, and regulation emanating from the expanding early modern state and its associated administrative structures, both temporal and ecclesiastical.⁴⁰ This combination of economic flowering and political unrest played itself out differently in the settlements of the Swabian Jura than it did in the Black Forest region.

The town of Münsingen, as already mentioned, was counted as the fourth most important in the new duchy of Württemberg around 1500.⁴¹ In the early sixteenth century it continued to be a residence of the Württemberg ducal family to which the prince resorted temporarily on hunting expeditions or for longer periods in emergencies. Thus in 1502 when Stuttgart was inflicted by the plague, the ducal chancellery moved from Stuttgart to Münsingen and the Duke wrote his will there in that year.⁴² But this was Münsingen's high-point and from that time onward it declined in importance.

One contributory factor may have been its frontier position and its consequent heightened exposure to the various popular uprisings of the early sixteenth century. In 1514, Münsingen and Auingen were involved in the "Armer Konrad", an uprising undertaken by secret bands of peasants which were rebelling against the growing feudal exactions of their landlords and new taxes imposed by Duke Ulrich of Württemberg.⁴³ The Armer Konrad uprising strongly affected the countryside around Münsingen and Auingen, where forest use rights were a major issue in peasant grievances.

³⁹ On this sixteenth-century dynamism, see Scott (1996); on its decline and possible explanations for it, see Ogilvie (1996) and Ogilvie (2008).

⁴⁰ On this expansion see Ogilvie (1993).

⁴¹ Dirschka (2009), 6.

⁴² Memminger (1825), 111.

⁴³ On the Armer Konrad in Württemberg, see Schmauder (1998); Maurer (2005); Schaab (1974a), 190. The term 'Armer Konrad' literally means 'Poor Conrad' but more generally 'poor devil' or 'poor fellow'. The banners of the rebels showed the words 'Armer Conrad' above the figure of a peasant lying in front of a cross.

Although peace was agreed in 1515, ten years later the south German peasantry in general, and the Münsingen-Auingen peasantry in particular, were once again up in arms as the German Peasants' War began in 1525.⁴⁴ The peasants of Münsingen and surrounding villages such as Auingen were among the earliest in Württemberg to join the Peasants' War, revolting at the end of March 1525. As elsewhere in the Duchy of Württemberg, however, the revolt was suppressed with considerable violence and did not free the local peasants from most of their burdens. Nor did it accomplish the religious Reformation that was another of the avowed aims of the peasants. As we shall see in Section 4.4 below, the Lutheran Reformation was not introduced in Württemberg until 1534 and then only through princely initiative.⁴⁵

Indeed, the conflicts leading up to the Württemberg religious Reformation of 1534 probably played a role in the economic decline of Münsingen. In 1519 the conflictual Duke Ulrich besieged the Free Imperial City of Reutlingen, occupied it, deprived it of its urban freedoms, and declared it to be a territorial town of the duchy of Württemberg. The Swabian League (*Schwäbische Bund*), dominated by other south German Free Imperial Cities, responded by invading Württemberg. They defeated Duke Ulrich, ejected him from his realm, and in 1520 sold the duchy to the Habsburg Emperor Charles V for 220,000 Gulden. Over the ensuing 14 years, the deposed Duke Ulrich made several unsuccessful attempts to get Württemberg back, including allying militarily with the peasant side in the 1525 Peasants' War, during which he got as far as Stuttgart before being driven off by Catholic Habsburg forces. It was not until 1534 that he obtained the assistance of Landgrave Philipp I of Hesse, who defeated the Austrian governor of Württemberg at the Battle of Lauffen, resulting in the Treaty of Kaaden which restored Württemberg to Duke Ulrich. Rich patricians of Münsingen (the Beltz, Auenstetter and Maugental families) were accused by Duke Ulrich of having collaborated with the Swabian League and the Habsburgs and in 1534 were forced into exile. This, it is

⁴⁴ On the Peasants' War in southwest Germany generally, see Blickle (1977); on Württemberg, see Schaab (1974a), 172.

⁴⁵ Mertens (1995), 102-10; Schaab (1974a), 172.

argued, damaged trade and industry in Münsingen and contributed to its economic and socio-political decline from the 1530s on.⁴⁶

Nonetheless, although Münsingen may have lost in importance compared to other towns in Württemberg, it seems probably that, like much of southern Germany, it – and the nearby village of Auingen – enjoyed considerable economic growth in the sixteenth century, albeit within the framework of a traditional, agricultural, and locally oriented economy. In the early sixteenth century, Auingen was actually smaller than it had been in the late fourteenth century. But the number of households in the village more than doubled between 1525 and 1598, an annual population growth of 1.54 per cent.⁴⁷ Evidently, this was a favourable economic period, even though there is no indication that the economy of either Auingen or Münsingen remained other than predominantly agricultural and locally oriented throughout the century.⁴⁸

This contrasts with the Wildberg-Ebhausen region, in which the sixteenth century was a time not just of prosperity but of economic transformation from a primarily agricultural and locally oriented economy to one that was heavily proto-industrial and export-oriented. The building history of both Wildberg and Ebhausen suggests a period of distinct prosperity from the later fifteenth century onwards, with the erection and ornamentation of a number of new private houses and public works. The second half of the fifteenth century saw the rebuilding and extension of the Ebhausen church and the construction in Wildberg of a large number of new houses, as well as considerable building on the castle, town hall, public fountains, and bridges.⁴⁹ This architectural efflorescence coincided with the rise of an export-oriented woollen-broadcloth industry in Wildberg, which by 1486 was exporting its woollens outside the region and organizing the inspection and marketing of cloths from surrounding villages

⁴⁶ Dirschka (2009), 6.

⁴⁷ Landesarchivdirektion Baden-Württemberg (1997), II:69.

⁴⁸ Maurer (1965), 455.

⁴⁹ Kläß (1987), 113-15.

(although Ebhausen is not mentioned by name).⁵⁰ The woollen-broadcloth industry continued to expand in Wildberg throughout the sixteenth century, with its own guild and fulling-mill. Then, in the 1560s, the district of Wildberg saw the rise of the worsted (New Drapery) proto-industry which, as discussed below in Section 8.1, expanded rapidly and spread to surrounding villages, notably Ebhausen.⁵¹ Unlike in Münsingen and Auingen, therefore, in Wildberg and Ebhausen the sixteenth century involved not only expansion but a fundamental and far-reaching transformation of the local economy.

It is the more striking that the Wildberg-Ebhausen region manifested such economic dynamism in the sixteenth century, given that it also experienced a tumultuous political history, at least up to 1546. During the ‘Poor Conrad’ (*Armer Konrad*) Revolt of 1514, when secret associations of peasants rebelled against the Duke of Württemberg as their feudal overlord, villages in the neighbourhood of Wildberg became directly involved in the unrest, although the town itself did not participate.⁵² In 1519, when Duke Ulrich besieged Reutlingen and was attacked in return by the Swabian League, Wildberg was briefly held by the League before rendering the oath of allegiance again to the Dukes of Württemberg. However, when the Duke demanded that Wildberg send all arms-bearing men to support him in Kirchheim, the town refused on the grounds that it needed the men for its own defence. In 1520, after Duke Ulrich was ejected, Wildberg again rendered allegiance to the Swabian League.⁵³

Only five years later, Wildberg was again involved in military events. In 1525, during the German Peasants’ War, the Black Forest Peasant Horde (*Schwarzwälder Bauernhaufen*) took the small mining community of Bulach (7.3 km away from Wildberg), destroyed the mine,

⁵⁰ On the early woollen-broadcloth industry in the Wildberg region, see Troeltsch (1897), 3, 6-8; Ogilvie (1997), 86-9; Mone (1858), 147ff.

⁵¹ For detailed accounts of the worsted proto-industry in the Nagold Valley, including Wildberg and Ebhausen, see Troeltsch (1897); and Ogilvie (1997).

⁵² Königliches statistisch-topographisches Bureau (1862), 93. More generally on the Armer Konrad in Württemberg, see Schmauder (1998) and Maurer (2005).

⁵³ Königliches statistisch-topographisches Bureau (1862), 93.

and demanded that the town of Wildberg capitulate.⁵⁴ Wildberg capitulated, the Reutin convent outside its walls was plundered, and the town was occupied by the peasants, albeit only for a single day. The townsmen paid off the peasants with money, and were forced to provide 20 men at arms and 2 musicians to accompany the peasant horde, which was shortly thereafter defeated with the loss of 4,000 men, among them three from Wildberg.⁵⁵

However, it was not until 1534 that the religious Reformation, another important concern of the peasants in the Peasants' War, was introduced in Württemberg and began to exert local effects in the region of Wildberg. In 1536, the Wildberg parish benefice was still occupied by a Catholic cleric, Christof Zörner, but in that year the Alpirsbach monk Ambrosius Blarer came to Wildberg to introduce the Reformation. Both the Catholic priest Zörner and the princely district bureaucrat (*Keller*) were dismissed by the duke, and a new Lutheran pastor was appointed. The Reutin convent lands were turned into a ducal demesne farm under an administrator, although a number of nuns remained in residence until the 1570s.⁵⁶

After Luther's death in 1546 the Catholic Emperor Charles marched against the Schmalkaldic League, a defensive alliance of Lutheran princes within the Holy Roman Empire that had been founded in 1531 to resist Imperial and Catholic pressure.⁵⁷ Duke Ulrich of Württemberg was a member of the Schmalkaldic League and in his military operations with it against Emperor Charles V in 1546 he was accompanied by the Governor (*Vogt*) of the District of Wildberg with 51 men from the district.⁵⁸ The Imperial forces defeated the Protestant forces of the Schmalkaldic League, and this brought military occupation by Imperial troops to the town and district of Wildberg for 16 weeks, as well as the obligation to pay damages.⁵⁹

Wildberg was thus fairly constantly affected by exogenous military events between 1519 and

⁵⁴ Klab (1987), 125; Königliches statistisch-topographisches Bureau (1862), 93-4. On the German Peasants' War more generally, see Blickle (1977).

⁵⁵ Klab (1987), 126.

⁵⁶ Frauer (1987), 153-9.

⁵⁷ Schaab (1974a), 172.

⁵⁸ Klab (1987), 126.

⁵⁹ Schaab (1974a), 172; Klab (1987), 126.

1546. Although Ebhausen is not mentioned in the sources, at a distance of only 8 km from Wildberg it is not improbable that the village, too, experienced repercussions from these military events – possibly even more seriously than the fortified town.

The sixteenth-century history of the three communities studied here illustrates the beginning of a socio-economic divergence which probably contributed to their diverging demographic fortunes. The older Swabian Jura communities of Münsingen and Auingen, with their longer settlement history, more deeply-rooted feudal structures, and longer history of direct monitoring by the ruler, experienced both the popular unrest and the general economic growth characteristic of southern Germany in the sixteenth century, but were not fundamentally transformed by these forces. The younger Black Forest communities of Wildberg and Ebhausen, with their much shorter settlement history, shallower feudal structures, and almost non-existent experience of direct monitoring by the central authorities, experienced considerable military and political upheaval in the first half of the sixteenth century, which inevitably imposed economic and demographic costs. Nonetheless, the Wildberg-Ebhausen region also experienced a more dynamic economic development, including a growth of two separate strands of textile proto-industry – woollen broadcloths and lighter worsteds – and an increasing involvement in extra-regional trade. The demographic implications of this medieval socio-economic divergence can be observed well into the nineteenth century.

3.3. The Thirty Years War (1618 – 1648)

The generally beneficent economic and political conditions which characterized sixteenth-century southern Germany may have slowed somewhat after about 1570. Unusually cold weather in 1573-4 led to poor harvests and economic crisis.⁶⁰ In the 1590s, most of Europe experienced economic crisis, which may be reflected in the slight demographic hiccup for

⁶⁰ Schaab (2000), 460.

Wildberg observable in Figure 1.⁶¹ Around 1600, rapid inflation became observable in most German economies.⁶² Nonetheless, the favourable economic trend for southern Germany largely continued during the first two decades of the seventeenth century, which should therefore be regarded as part of the ‘long sixteenth century’ as far as our communities are concerned. The great watershed between the German economic flowering of the sixteenth century and the long stagnation which characterized most parts of German-speaking central Europe – and certainly Württemberg – into the nineteenth century was the Thirty Years War (1618-1648).⁶³

The first impact of this war was not really felt in Württemberg – or at least in the communities studied here – until the early 1620s.⁶⁴ Even then, our communities were affected not by direct military incursions but rather by the so-called ‘Kipper- und Wipperzeit’ (1619-23), a hyperinflation caused by the efforts of princes such as the Duke of Württemberg to finance military activities by devaluing the currency. In 1623, Württemberg and a number of other German states were forced to agree by legislation to a forced devaluation of their currencies.⁶⁵ This decision can be seen in the local sources for our three communities, where the value of bonds were massively reduced, greatly decreasing the wealth of creditors.⁶⁶

Despite continuing devaluation and rising taxes, Wildberg and Ebhausen actually continued to do fairly well economically and demographically throughout the 1620s and early 1630s. The worsted proto-industry continued to expand, despite military interruptions to some of its export routes, and as Figure 1 shows the population of both communities continued to rise.

⁶¹ Clark (1985).

⁶² Schaab (2000), 461.

⁶³ On the contrast between the economic flowering of Germany in the sixteenth century and its economic stagnation up to c. 1800, see Scott (1996); Scott & Scribner (1996); Ogilvie (1996); Ogilvie (2008).

⁶⁴ Schaab (1974a), 173.

⁶⁵ Schneider (1995).

⁶⁶ See, for instance, the account-books of the Wildberg worsted-weavers’ guild, HSAS A573 Bü. 777-911, *Rechnungen des Engelsaitweber-Handwerks (1598-1647, 1666-1760)*, here esp. the booklets for the 1623-6 period.

But in 1634, the war came to Württemberg as a whole, and to Wildberg and Ebhausen in particular, with a vengeance.⁶⁷

Württemberg was on the Protestant (anti-Habsburg, anti-Imperial) side in the Thirty Years War. On 27 August 1634 the Protestant side (including Württemberg) was defeated by the Imperial armies at the Battle of Nördlingen, not far from the eastern border of Württemberg.⁶⁸ The country was promptly invaded by Imperial armies.⁶⁹ In early September, Imperial troops reached the Nagold Valley and on 10 September they burnt down the town of Calw. Calw was the capital of the neighbouring district, located only 19 km downstream from Wildberg on the Nagold River, and the seat of most of the merchants who purchased Wildberg and Ebhausen worsted textiles for onward export; around 40 per cent of Wildberg households were dependent on Calw as a marketing centre. Shortly after Calw was burnt down, on 11-12 September 1634 a large troop of 'Soldateska' (Croatian mercenaries) marched into Wildberg, murdering the town secretary (a local state official) and several other residents and occupying the town.⁷⁰ This led to months of plundering, famine and plague, and in 1635 637 people died in Wildberg, a town of only about 1400 inhabitants.⁷¹ In 1637 the town was occupied by 133 Imperial troops, and the citizenry had to pay enormous sums to support the occupying forces.⁷² In 1637-8, Wildberg put together a self-defence force under the leadership of one of its *Bürgermeister* (the three chief financial officers of the town); this probably helped defend the town against small raiding-parties although its success against larger groups of professional soldiers must be questioned.⁷³ In 1645, French and Weimar (i.e. anti-Imperial) troops occupied the town and the huge costs of this were distributed between Wildberg and the villages of the surrounding district. Later in 1645, Swedish (i.e. anti-Imperial) soldiers

⁶⁷ Klabß (1987), 117; Königliches statistisch-topographisches Bureau (1862), 94; Schaab (2000), 462.

⁶⁸ On the Thirty Years War in Württemberg, see Hippel (1978); Ogilvie (1999b); Schaab (1974a), 173-4; Vann (1984).

⁶⁹ Schaab (1974a), 173.

⁷⁰ Klabß (1987), 127.

⁷¹ Klabß (1987), 127.

⁷² Klabß (1987), 127-8.

⁷³ Klabß (1987), 128.

occupied the town of Wildberg, causing enormous damage, among which was the destruction of the first baptism register, which is the reason that our family reconstitution for Wildberg can only start in 1646.⁷⁴

The war hit the villages of Württemberg even more severely than the towns, because of their unfortified positions and poorer economies.⁷⁵ This pattern is clearly observable in the communities under analysis here. As early as 1628, the village of Ebhausen was petitioning the princely authorities for grain handouts on the grounds that

there are many people [here], and for the most part they are very poor, in addition to which the Hungarian Sickness is currently raging in Ebhausen, and many people are having to die from sheer hunger for lack of bread; it has also been a weak harvest, so that many of the arable fields have not managed to retain half of the seed-corn, and they [the villagers] once again have to pay unaffordably high taxes.⁷⁶

In 1630, the inhabitants of Ebhausen were again petitioning for grain handouts, since ‘otherwise they would almost have to die from hunger’.⁷⁷

But it was not until the Imperial invasion of 1634 that the situation in the village became truly catastrophic. By 1634-5, the inhabitants of Ebhausen were living from roots, corpses of people dead of starvation were found in the fields, and the village miller gave out grain to everyone until he had no more.⁷⁸ In 1635, Ebhausen petitioned for tax relief because those local citizens who were obliged to pay the land taxes in question ‘had for the most part died

⁷⁴ PAW Taufregister, Bd. 1.

⁷⁵ Schaab (1974a), 174.

⁷⁶ HSAS A573 Bü. 125, fol. 65r, 19.3.1628: ‘seyen der leüth vihl, unnd mehrerthails gar arm, zue dem jetziger zeit gehe zue ebhaußen die ungarische kranckhait umb, unnd müeßen uihl leüth uß mangel broths, schier hungers uergehen. seye auch ein solche schwache erndt geweßen, daß mehrerthails äckhere den halben thail sohmkorns nicht gewehrt haben. müeßen widerumb gleichsamb unerschwingliche große steür erlegen.’

⁷⁷ HSAS A573 Bü. 126, fol. 53r, 24.3.1630: ‘sonst sie fast hunger sterben miesten’.

⁷⁸ Kläß (1987), 127-8.

and the rest were all poor people'.⁷⁹ In 1636, the inhabitants of the village again petitioned for tax relief, on the grounds that:

1) they have just been wickedly burnt out; 2) too many various times totally plundered out; 3) on account of long military quartering totally ruined; 4) have nothing to cultivate, everything is lying waste and barren; 5) have neither horses nor cattle; 6) most of the inhabitants have moved away, died, or been ruined.⁸⁰

Other villages of the district of Wildberg were also deserted for periods during the 1630s because of the insecurity. Thus, for instance, in 1638, the inhabitants of Oberjettingen, a village about 8 km from Ebhausen, reported that they 'could not lie in their homes, are lying in the convent here [the Reutin Convent beside Wildberg], 30 or 40 on top of one another, just like cattle'.⁸¹

In 1639, the few surviving inhabitants of Ebhausen reported concerning

the recent plundering and invasion of Imperial troops which they have experienced, which has lasted for 8 days continuously, and the troops have taken all the grain, spelt, oats and buckets, household equipment, kettles and pans, so that no-one can even make a soup any more, they have ripped up and cut to pieces all the bedclothes, and no-one has managed to keep any clothing on his body ... until a man has brought his child and wife into security, he can no longer bring anything forward.⁸²

⁷⁹ HSAS A573 Bü. 127, fol. 109v, 2.11.1635: 'mehrernteils hinweg gestorben der vbrig lauter arme leuth.'

⁸⁰ HSAS A573 Bü. 128, fol.13v, 16.8.1636: '1. daß sie für erste ybel verbrenndt word.; 2. zuuihl vnd.schüdllich. mahl.n gantz außgeblind.t; 3. weegen lang obhabend. quartierung ganz ruinirt; 4. haben nichtz gebawen, lig. alles wiest vnd öd.; 5. haben wed. roß noch vich; 6. seyen der mehrertheils inwohner hinweg geqog. gestorben vnd verdorben.'

⁸¹ HSAS A573 Bü. 128, fol. 29v, 6.12.1638: 'könd. nit bei hauß sein, lig. im closter alhie, 30, 40, obeenand. gleich wie dz vihe'.

⁸² HSAS A573 Bü. 128, fol. 42r, 4.11.1639: 'weg. jüngsterstandener plünderung vnd überfäll von kayß: vöckern deß 8 tag gewehrt, continuè die alle früchten genommen, dinkhl. habern vnd emer haußbrath kessel vnd pfannen, dz keiner gleichsamb mehr ein suppen mach. könd. alles beth gewandt v.riss. v.zer. vschniten. keiner kein klaid an leibbehalt. ... biß einer kind vnd weib in sich.heit gebracht habe man nichz mehr fortbring. könd.'

In 1642 the Wildberg district governor (*Keller*) wrote a formal report on military quartering in the district which described Ebhausen as a half-burnt-down village.⁸³ In 1643, the inhabitants of Ebhausen petitioned against the high levels of military taxes (*Kontributionen*) on the grounds that

they are supposed to pay 105 Gulden a month, [but] have no more than 2 farmers (and the pastor farms a little), and these farmers' draught teams consist of two ploughs ... the hail has struck down almost all the winter grain and the oats ... the rest of the inhabitants consist of 11 small worsted-weavers, whose craft is not saleable and who cannot foresee being able to sell a single piece of cloth before Easter ... there is neither trade nor activity among them, a wretched half-burnt-down village ... the Mereysche soldiers took twenty-some *Wannen* of hay from them, and on account of these troops they suffered 40-some Gulden worth of costs.⁸⁴

Three years after the war, in 1651, Ebhausen was still petitioning for tax relief on the grounds that

1) they are poor burnt-out people; 2) they have experienced such damage from hail that they have only brought in a small amount of winter grain and not a single seed of summer grain for their use; 3) and because their rebuilt little huts have likewise experienced not a little damage, therefore, for the coming year they must fear another bad harvest, so unless they obtain some loan they do not trust themselves to remain honourably as householders ... if they are not mercifully granted some tax reduction they will have to leave their houses and farms.⁸⁵

⁸³ Klab (1987), 128.

⁸⁴ HSAS A573 Bü. 128, fol. 72v, 9.1.1643: 'soll monatlich. geb. 107f, haben mehr nit dann respectiue 2 pauern (vnd bawt der pfarrer ein wenig) bestehet deren zug in zway. pflüeg. ... dz hagelwetter die winterfrüchten fast alle, vnd. den habern erschlag., ... daß überige sey. 11 knäpplen, deren handtwerckh nit gängig, vnd vor osstern sich nit zuuerseh., dz sie ein einig stückhlen verkauff. könd. ... sey kein handel od. wandel nit bey ihnen, ein elend. halb verbrenter fleckh. ... mereysche vöckh. inen etlich vnd zweinzig wannen hew genommen, von denen sie etlich vnd 40f saluaquard. costen gelitten.'

⁸⁵ HSAS A573 Bü. 129, fol. 70v, 27.9.1651: '1) seyen arme uerbrannte leüth; 2) haben uom haagel wetter solchen schad. erlitten, daß sie uon winterfrucht ein geringes: uon sommerfrucht aber gleichsamb nicht ein körnlin zue nutz. gebracht; 3) und weilen die wider auffgerichte hutlin gleichfals nicht gering. schad. erlitten beneben die bawfelder unerschätzlichen schad. erlitten,

This petition is not surprising, since as late as 1652, 47 buildings in the village still lay in ashes.⁸⁶ These accounts are consistent with the population levels shown in Table 1 and Figure 1, which show Ebhausen collapsing from a thriving village of over 600 inhabitants before the Imperial invasion in 1634 to hardly a tenth of that number six years later.

A similar fate befell Münsingen and Auingen during the Thirty Years War, and with much the same timing.⁸⁷ The town of Münsingen was plundered at least four times in fifteen years – in 1631 by Count Egon von Fürstenberg with 20,000 troops, in 1638 by Dragoon Johann Wolf and 500 soldiers for three weeks, in 1643 by the Bavarian General von Werth, and in 1646 by Swedish troops.⁸⁸ In 1635, Münsingen was afflicted by plague, and it seems likely that Auingen was not spared some contagion.⁸⁹ In 1638, the Münsingen *Bürgermeister* (chief financial officers of the town) and the town council petitioned the duke (who had newly returned from exile), ‘in the name of the fundamentally ruined small town and small district of Münsingen’, which had been destroyed by a troop of dragoons to such an extent that there were only 40 citizens left in the town. This would imply a population of around 200, compared to over 1,000 before the war.⁹⁰ As late as 1654, the town’s population was still only 355, implying that the damage to urban services for Auingen was much worse than for

dahero, vff kinfftiges jahr beider widerumb ein misßjahr zuebesorg., alß getrawen sie ohne erlangend. uorlehnung nicht bey häußlich. ehren zueuerbleiben. ... weilen albereit etlich vihl burger fruchten zur winter sath kauffen mießen, da ihnen doch dz wetter größern alß den andernschaden gethon, mit keinem nachlaß gn: begegnet werd., miesten sie von hauß vnd hoff laßen’.

⁸⁶ Königliches statistisch-topographisches Bureau (1862), 94.

⁸⁷ Memminger (1825), 112.

⁸⁸ Maurer (1965), 455; Memminger (1825), 111; Dirschka (2009), 6.

⁸⁹ Dirschka (2009), 6.

⁹⁰ Königliches statistisches Landesamt (1912), 544, 549; Dirschka (2009), 6. This is based on the customary assumption that the number of ‘citizens’ (*Bürger*) approximately equals the number of households and that the mean household size is 5 persons. Analyses of early modern censuses for Württemberg indicate only 1-3 per cent of households headed by non-citizen *Beisitzer*, but also suggest a slightly lower mean household size of c. 4.5 persons per household; see, for instance, Ogilvie (1997), 54-7 (on *Beisitzer*) and 263-8 (showing a mean household size of c. 4.5 in seventeenth- and eighteenth-century Wildberg). On the view that the appropriate multiplier for calculating total population from numbers of households or citizens in Württemberg from the sixteenth century on lies between 4 and 5, but arguably closer to 4, see Schaab (2000), 493.

Wildberg and Ebhausen, where the town only lost about one-third of its population, instead of over two-thirds as in Münsingen.⁹¹

The village of Auingen suffered more than the town of Münsingen, probably because of its lack of fortifications.⁹² The village lost over half its buildings in the war, falling from 115 buildings in 1634 to only 49 in 1655.⁹³ Table 1 and Figure 1 illustrate the population losses. Whereas in 1634, the village had 87 households (implying a population of 435 souls),⁹⁴ by 1641 there were only 18 communicants (individuals over age 14, implying a population of 28),⁹⁵ and in 1645 all the inhabitants fled into Münsingen to shelter behind its fortifications, where they remained until 1647. Even as late as 1653, there were still only 81 inhabitants in the village.⁹⁶ Like Münsingen, therefore, the post-war population of Auingen was perhaps a third of its pre-war size. Immigrants from Switzerland apparently helped to resettle Münsingen and the surrounding villages after 1648.⁹⁷ Even so, like most Württemberg communities, Auingen recovered only very slowly from the effects of the Thirty Years War, and had only 49 buildings and 56 households as late as 1721 – still somewhat below the level of 1598.⁹⁸

The Thirty Years War, and particularly the period from 1634 onward, thus constituted a disastrous exogenous shock to the demography and economy of all three communities under study. The Black Forest town of Wildberg actually emerged *least* scathed by the experience, losing only about one-third of its population; but it took a century for that population to recover, and Wildberg's export-oriented worsted industry never flourished again to the same extent. The Black Forest village of Ebhausen was burnt down, repeatedly plundered, and

⁹¹ Königliches statistisches Landesamt (1912), 544.

⁹² This was the general pattern in Württemberg; see Schaab (1974a), 174.

⁹³ Landesarchivdirektion Baden-Württemberg (1997), II:66, 69.

⁹⁴ Calculation again based on customary assumption of mean household size of 5 persons.

⁹⁵ This calculation is based on the ratio of communicants to total inhabitants in Auingen at other dates in the early to mid-seventeenth century for which figures on both communicants and total inhabitants are known.

⁹⁶ Landesarchivdirektion Baden-Württemberg (1997), II:69.

⁹⁷ Dirschka (2009), 7.

⁹⁸ Landesarchivdirektion Baden-Württemberg (1997), II:69.

almost totally depopulated, emerging in the mid-1650s with less than half its pre-1634 population, and not recovering demographically until the mid-1750s. However, the glory days of its weaving proto-industry were still ahead, in the eighteenth century. The Swabian Jura village of Auingen suffered most, becoming completely depopulated for two years, emerging from the war with only one-third of its population, and also losing the benefit of urban services from nearby Münsingen, which at one point had lost some four-fifths of its own population. The demographic behaviour of all three communities for the remainder of the seventeenth century and well into the eighteenth was deeply scarred by the catastrophes of the 1630s and 1640s. Many of their responses to subsequent shocks can only be interpreted as part of the recovery process from this fundamental disaster in the mid-seventeenth century.

3.4. The Long Eighteenth Century (1648 – 1789)

For Württemberg, just as the first two to three decades of the seventeenth century can be regarded as part of the ‘long sixteenth century’, so the second half of the seventeenth century can be regarded as part of a ‘long eighteenth century’, beginning with the recovery after the Peace of Westphalia in 1648, and ending with the French Revolution in 1789. The history of Württemberg during this period, as discussed in greater detail below in Section 4.1, was marked by various manifestations of the growth of state power and its interaction with the traditional corporative institutions of the *Ständegesellschaft* – ever-rising taxation, imposition of strict Lutheran public mores, a growth in ‘social disciplining’, the granting of monopolies and economic privileges to special interest-groups, princely extravagance, conflict between crown and parliament, and repeated French invasions.⁹⁹ All three communities studied here experienced these developments in different ways, and later sections will examine their social, religious, and economic aspects in detail. This section will restrict itself to the exogenous –

⁹⁹ For English-language discussions of Württemberg history from these perspectives, see Fulbrook (1983); Vann (1984); Ogilvie (1999b). For a detailed survey of the German-language historiography, see Mertens (1995), 133-63.

mainly military – events that imposed outside shocks on the economies and populations of these three communities.

The growth of the state in France, and the expansionist foreign policies of Louis XIV, led to the War of the Palatine Succession (1688-97) and the War of the Spanish Succession (1701-14). Both of these brought repeated French incursions into the territory of Württemberg in the later seventeenth and early eighteenth century, with full-scale invasions in 1688, 1703 and 1707. The Black Forest communities of Wildberg and Ebhausen were exposed to French military incursions from the west, and suffered most strongly in the 1680s and 1690s. In 1688, French forces marched into Württemberg and plundered Calw, again a serious blow to Wildberg and Ebhausen, 30-40 per cent of whose households were worsted-weavers legally obliged to sell their output to the Calw Worsted Trading Association (for reasons discussed below in Section 8.1).¹⁰⁰ The French troops marched from Calw toward Wildberg but were drawn off by rumours of military problems elsewhere in the region.¹⁰¹ It may have been partly in view of the military threat from France that in 1688 the castle was rebuilt in Wildberg on the ruins of the previous one which had burnt down accidentally in 1618.¹⁰²

The French threat did not disappear, however, since in 1692 the French arrived in the Nagold Valley again and burnt down Calw.¹⁰³ In the autumn of 1692, the Wildberg burial register records several directly war-related deaths – a 72-year-old Wildberg worsted-weaver's widow who 'died in the unfortunately eventuating French invasion',¹⁰⁴ a four-year-old child who died as a refugee in the forest,¹⁰⁵ and a 70-year-old bag-maker from Pforzheim 'who was here as a refugee'.¹⁰⁶ Many inhabitants of Calw, including the families of a number of the wealthy proto-industrial merchants of the Calw Worsted Trading Association, took refuge in

¹⁰⁰ Troeltsch (1897); Ogilvie (1997).

¹⁰¹ Klaß (1987), 129.

¹⁰² Natale (1965), 751; Klaß (1987), 117; Königliches statistisch-topographisches Bureau (1862), 254.

¹⁰³ Klaß (1987), 129.

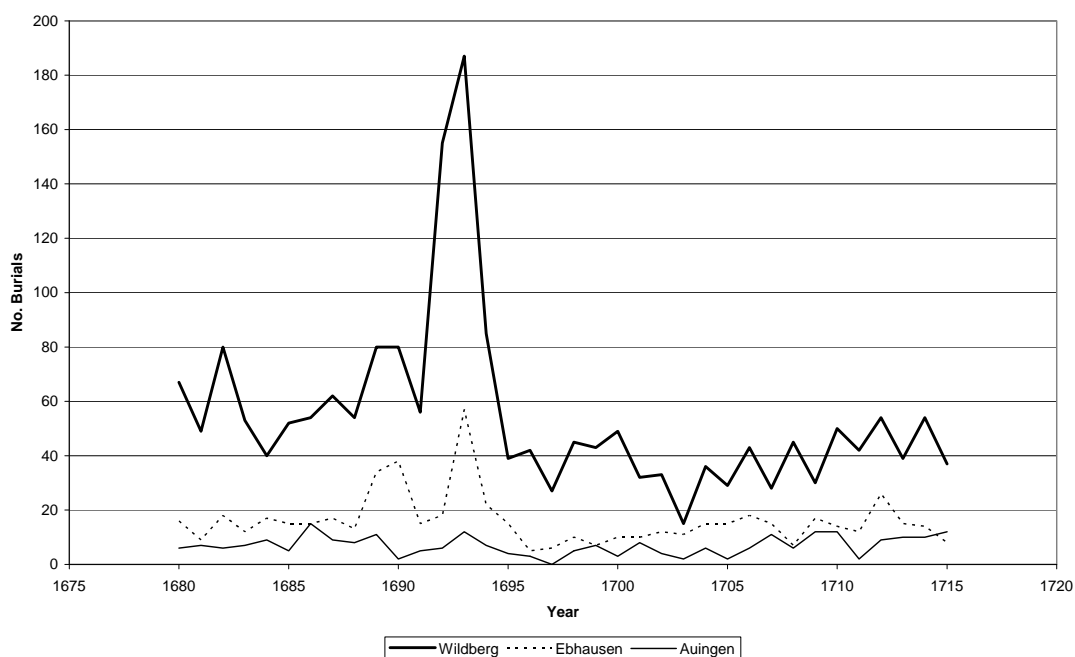
¹⁰⁴ PAW Totenbuch, 27.9.1692: 'in dem leider geschenen einfall von d. frantzosen gestorb.'

¹⁰⁵ PAW Totenbuch, 28.9.1692.

¹⁰⁶ PAW Totenbuch, 18.10.1692: 'so hier in der flucht gewessen'.

Wildberg, swelling the numbers of burials and baptisms there in 1692-3. They were not wholly safe even in Wildberg, since in August 1693 a 26-year-old Wildberg journeyman baker ‘was shot by the French’,¹⁰⁷ and April 1694 saw the burial in Wildberg of a 40-year-old worsted-weaver from Calw ‘who was still dwelling here because of the fire [in Calw] ... in great poverty’.¹⁰⁸ Many local inhabitants and refugees were recorded in the Wildberg burial registers of 1693-6 as dying ‘of starvation’, ‘wretchedly, in great poverty’, ‘in the hospital-poorhouse’, ‘as a beggar and vagrant’, or ‘in childbirth after being raped and impregnated by a soldier’.¹⁰⁹ The parish registers of Ebhausen, too, reflect the military incursions at this period, with a number of illegitimate births of children begotten by soldiers on local women.¹¹⁰

Figure 2:
Burials in Wildberg, Ebhausen, and Auingen, 1680-1715



Source: PAW, PAE, and PAA: Totenregister, 1680-1715.

¹⁰⁷ PAW Totenbuch, 1.8.1693: ‘so von d. frantzosen geschoss. word.’

¹⁰⁸ PAW Totenbuch, 29.4.1694: ‘der wegen des brands noch allhie sich auffgehalten, ... in grosser armuth ... gestorben’.

¹⁰⁹ PAW Totenbuch, 1694-6.

¹¹⁰ PAE Totenbuch, 1694-6.

The direct effect of these exogenous military events on mortality in Wildberg, but also in the village of Ebhausen, can be seen in Figure 2. In Wildberg, the annual number of burials rose from its normal level of around 60 in the 1680s, to 80 in 1689-90 after the first French invasion, briefly returned to normal in 1691, but then sky-rocketed to 155 in 1692, 187 in 1693, and 85 in 1694, before plummeting to a new average of around 40 annually, the norm for its much reduced population, from 1695 to 1715. Ebhausen exactly mirrored this development, with an average of around 15 burials annually up to 1688, shooting up to 35-40 in the invasion of 1688-9, falling again to 15-20 in 1690-1, and then peaking horribly at 57 in 1693 and 22 in 1694, before falling to a new level of 10-15 from 1695 onward, albeit with another crisis year in 1712, with 26 burials. The French military invasions of the 1680s and 1690s thus had a direct impact on mortality in the two Black Forest communities, quite apart from the indirect effects they had on nuptiality and fertility.

The situation was very different in the Swabian Jura communities of Münsingen and Auingen, which were not touched by the French Wars of the later seventeenth century. Münsingen suffered an accidental fire in 1671 (not related to military action), in which 36 dwelling-houses, 24 barns, and the church tithe-barn and storehouse were burnt to the ground – a destruction of half the town. This must again have reduced the availability of urban commercial and industrial services for surrounding villages such as Auingen, just as the district was beginning to recover from the ravages of the Thirty Years War.¹¹¹

But Münsingen and Auingen were free of military incursions until the War of Spanish Succession (1701-1714). In 1702, a battle was fought between Bavarian troops and an encampment of hussars in front of the Münsingen town walls.¹¹² In 1703, the town and district of Münsingen were plundered and burned by a French-Bavarian military division, which took the pastor and several state officials with it as hostages when it departed. The damages for the

¹¹¹ Landesarchivdirektion Baden-Württemberg (1997), II:5, 66; Memminger (1825), 112; Königliches statistisches Landesamt (1912), 542.

¹¹² Dirschka (2009), 7.

whole district – including Auingen – were assessed at 10,000 Gulden.¹¹³ In 1704, the village of Auingen was completely burnt down, with the exception of the church and 4 dwelling-houses; the damages were assessed at 17,250 Gulden.¹¹⁴ It is probably this, as well as the fact that the village was still paying off its arrears of *Kontributionen* (military taxes) from 1704, that explains why as late as 1721, Auingen still had fewer buildings than it had in 1598 (56 compared to 70).¹¹⁵

Interestingly, however, the catastrophic military events of 1703 and 1704 are not visible in the mortality figures for Auingen in this period, as can be seen in Figure 2. There were some burials in Auingen every year over this period (except in 1697), which suggests that the parish registers continued to be maintained, and that the lack of a mortality peak cannot be ascribed to a gap in registration. But it remains a puzzle that Auingen saw no remarkable peak in mortality in either of the French-Bavarian invasion years. This may be because the population again took refuge in neighbouring Münsingen and registered many (though not all) of their deaths there; or it may simply be that the inhabitants enjoyed a fortunate escape from direct mortality effects. Nonetheless, it will be important to bear in mind these exogenous military incursions, and the village fire, in analyzing fertility and mortality in early eighteenth-century Auingen.

In addition to these direct military events, it is clear that all three communities only recovered slowly from the warfare of the seventeenth and early eighteenth century. As already mentioned, it was not until about 1730 that any of the three communities reached the population levels that they had achieved before the Thirty Years War.¹¹⁶ In Auingen at least, this also applies to the level of agricultural production – it was 1730 before all the fields that

¹¹³ Memminger (1825), 112; Königliches statistisches Landesamt (1912), 549.

¹¹⁴ Maurer (1965), 455; Königliches statistisches Landesamt (1912), 572.

¹¹⁵ On the buildings, see Landesarchivdirektion Baden-Württemberg (1997), II:69.

¹¹⁶ For Württemberg more generally, demographic recovery from the Thirty Years War occurred only in the early to mid- eighteenth century; see Schaab (1974a), 175, 193; Schaab (2000), 462.

had been cultivated before the Thirty Years War were brought back into use.¹¹⁷ Even so, recovery was uneven, and Figure 1 shows clear (if relatively slight) falls in population in Auingen in 1740 and 1773.¹¹⁸ It also shows occasional abrupt falls in population in Wildberg and Ebhausen at intervals throughout the eighteenth century, despite a gentle upward trend for Wildberg and a steeper overall rise for Ebhausen. After the first decade of the eighteenth century, however, all three communities enjoyed almost a century of stability before the 1790s brought the next set of exogenous shocks, again from France. This time, however, the shocks were not only military in nature, but involved a fundamental re-equilibration of the whole territorial and constitutional framework.¹¹⁹

3.5. The Long Nineteenth Century (1789-1914)

In some ways the French Revolution changed German-speaking Central Europe more fundamentally than it changed France itself.¹²⁰ Not only were many of the military events fought on German – indeed, as we shall see, Württemberg – soil. Even more seriously, the fall-out from the Revolutionary Wars redrew the territorial boundaries of Germany and abolished its fundamental political institution – the Holy Roman Empire of the German Nation.¹²¹ Württemberg was directly involved both in the military events and in the resulting territorial redistribution in German-speaking Central Europe.

In the First Coalition War against Revolutionary France (1792-7), Württemberg sided with Austria against France. In 1795, Württemberg lost to France its territorial enclave of

¹¹⁷ Landesarchivdirektion Baden-Württemberg (1997), II:69-70.

¹¹⁸ Landesarchivdirektion Baden-Württemberg (1997), II:69.

¹¹⁹ Klab (1987), 129.

¹²⁰ This is not the same as the famous claim, ‘Am Anfang war Napoleon’ (‘In the beginning was Napoleon’), advanced in Nipperdey (1983), 1, which argues that the French Revolution was the major source of political and economic reform in nineteenth-century Germany. Here, we merely point out that the French Revolution affected German-speaking Central Europe in some fundamental ways in which it did not affect France itself, particularly by redrawing political boundaries between German states and leading to the abolition of the Imperial institutional framework.

¹²¹ On the fundamental impact of the French Revolution on Württemberg’s development in the nineteenth century, see Hippel (1992), 489-90; Schaab (1974b), 230.

Mömpelgard (Montbéliard) on the left bank of the Rhine, in what is now Franche-Comté. In 1796 Württemberg was invaded by a French Revolutionary Army and was compelled to sign the Separate Peace of Paris (*Pariser Sonderfrieden*) relinquishing all its left-Rhine possessions to France and promising to pay reparations. In the Second Coalition War against France (1799-1802), Württemberg again sided with Austria against France but in 1802, Duke Friedrich II of Württemberg gave way to the pro-French leanings of the Württemberg parliament and signed a peace treaty with France, in which he obtained financial compensation for losing Württemberg's left-Rhine possessions.¹²²

In 1803, the *Reichsdeputationshauptschluss* ('Principal Conclusion of the Extraordinary Imperial Delegation') established a major redistribution of territorial sovereignty within the Empire, to compensate German princes for territories to the west of the Rhine that had been annexed by France (such as Württemberg's former enclave of Mömpelgard). The redistribution was carried out, mainly in the period 1803-06, through secularization of ecclesiastical principalities and so-called 'mediatization' (annexation) of small secular principalities, which were transferred to larger neighbouring territories. Württemberg, as can be seen on Map 2, was rewarded by large territorial acquisitions, mostly Catholic areas to the south as well as a number of hitherto Free Imperial Cities, and the Duchy was elevated to an Electorate. The Duke formed his new acquisitions into a second, absolutistically ruled and confessionally mixed state of 'Neu-Württemberg' which he planned to rule in personal union with his existing, constitutionally ruled and confessionally Lutheran state of 'Alt-Württemberg'.¹²³

In 1805, the Treaty of Pressburg was signed between France and Austria as a consequence of the Austrian defeats by France at Ulm and Austerlitz, redistributing many Austrian territories

¹²² Schaab (1974a), 195-6.

¹²³ Schaab (1974b), 233-4.

to German princes.¹²⁴ Württemberg, by virtue of having been allied with France since 1802, obtained many of the Austrian possessions in southwest Germany (collectively known as *Vorderösterreich* or Anterior Austria), unified ‘Neu-Württemberg’ with ‘Alt-Württemberg’ (now deprived of its historical constitution), and elevated itself to the status of Kingdom.¹²⁵

Then, in 1806, Württemberg became a founding member of the Confederation of the Rhine, by which 16 German states formally left the Holy Roman Empire and joined together in a confederation with Napoleon as its ‘protector’. This led to the dissolution of the Holy Roman Empire, during which Württemberg acquired more territories in Anterior Austria and hitherto independent principalities of the Empire. Finally, in 1813 Württemberg changed sides once more, joining the Allies against Napoleonic France, with the result that the Vienna Congress in 1815 recognized the territorial integrity of Württemberg, with all its new possessions, and its status as a Kingdom.

Partly as a result of changing sides so many times, Württemberg served as a battlefield between France and the coalition of European powers against it.¹²⁶ This affected our three communities in different ways, depending on the proximity of battlegrounds and marching routes to the Black Forest and the Swabian Jura.

In most of Württemberg, the effect of the French wars after 1789 can mainly be seen in complaints about tax rises and conscription, with increasing numbers of young men from the region participating in military engagements. There was also some sympathy among educated members of Württemberg society for the ideas of the French Revolutionaries. Wildberg itself was involved in this sympathetic movement, since its archives contain a 1796 cahier (modelled on the French *cahiers de doléances*) which appears to have been drafted at a series

¹²⁴ Pressburg is now, of course, the Slovak city of Bratislava, but 1805 it was part of the Empire of the Austrian Habsburgs.

¹²⁵ On the impact of the secularization and mediatization specifically in Württemberg, see Schaab (1974b), 233-5; Erzberger (1902); Hippel (1992), 490-3; and the essays in Rudolf (2003).

¹²⁶ Landesarchivdirektion Baden-Württemberg (1997), II:46.

of conspiratorial meetings of Town Clerks (educated minor bureaucrats) throughout the Württemberg Black Forest region, and which called for sweeping republican reforms in the Duchy.¹²⁷ Although nothing ever came of these demands, the sympathies behind them may have played a minor contributory role in Württemberg's changing over to the French side in 1802, even though the main cause was probably a desire for territorial expansion.

The proximity of the Black Forest region to France meant that Wildberg and Ebhausen experienced the direct impact of French military conflicts throughout the second half of the 1790s. In the winter of 1795 part of a corps of French emigrés under the command of the Prince of Condé marched into the districts of Altensteig and Nagold (neighbouring the district of Wildberg), where they marauded, robbed and murdered; Ebhausen is only about 7 km away from both Altensteig and Nagold.¹²⁸ Then in July 1796, the Württemberg General von Hügel was driven out of his position near Freudenstadt by the French and retreated through Nagold, where on 8 July 1796 the French advance guard arrived, followed on 14 July by a troop of 600 men which skirmished in the region against Austrian forces. The damages caused by plundering and extortion were estimated at 1,034 Gulden in Wildberg, and the convent demesne farm master in Reutin had 122 Gulden stolen.¹²⁹ After a few more peaceful years, French and Austrian soldiers were again marching against one another in the region in 1799 and 1800.¹³⁰

After Württemberg allied with France in 1802, the Wildberg-Ebhausen region was free of French military incursions, and the main impact of the French Wars was felt through conscription. Thus, for instance, the alliance agreement in 1806 between King Friedrich of Württemberg and Napoleon obliged Württemberg to provide 2,000 men, of which 25 were

¹²⁷ McNeely (2004), 353, referring to Cahier (Zusammenstellung von Beschwerden) und Instruktion für den Landtagsdeputierten von Stadt und Amt Wildberg, HStAS A 573 Bü 5377.

¹²⁸ Königliches statistisch-topographisches Bureau (1862), 94.

¹²⁹ Königliches statistisch-topographisches Bureau (1862), 94-5.

¹³⁰ Königliches statistisch-topographisches Bureau (1862), 95.

from the district of Wildberg.¹³¹ Large-scale military levies began in earnest in 1812/13 when Württemberg took part in Napoleon's Russia campaign, providing 15,000 Württemberg troops, among them at least two men from Wildberg.¹³² In 1813 Württemberg again had to provide troops to France, among them at least one from Wildberg.¹³³

In Münsingen and Auingen, the French wars had little impact in the 1790s, but an increasing impact after 1800, because of the proximity of the Swabian Jura to some key battles. The greatest burden was caused by the quartering of troops marching through the district, which Auingen suffered in 1800.¹³⁴ In 1800, the town of Münsingen was actually occupied by French forces, with inevitable spill-over effects on the village of Auingen only 2 km distant.¹³⁵ Auingen also suffered a heavy financial burden as a result of quartering of troops in this period.¹³⁶ In 1805 a battle was fought between Austrian and French troops at Elchingen, 55 km from Auingen. Villages of the district of Münsingen suffered from being marched through by troops, from foraging, and from the requisitioning of transport services.¹³⁷ In 1809 during the Tyrolean Uprising, individual soldiers from villages of the district of Münsingen were recruited for 'defence of the national frontiers', although none is documented specifically for Auingen.¹³⁸ In the town of Münsingen alone 33 men were recruited by the Duke of Württemberg to fight abroad between 1809 and 1814, of whom 10 fell in Napoleon's Russia campaign.¹³⁹ Even after the events of the war were no longer taking place in southern Germany, there was considerable military insecurity, so that in 1813 at least one village of the district of Münsingen (Hundersingen, 14 km from Auingen) was organizing patrols 'against the French deserters'.¹⁴⁰

¹³¹ Klab (1987), 129.

¹³² Klab (1987), 129.

¹³³ Klab (1987), 129-30.

¹³⁴ Landesarchivdirektion Baden-Württemberg (1997), II:46.

¹³⁵ Memminger (1825), 112; Königliches statistisches Landesamt (1912), 549.

¹³⁶ Landesarchivdirektion Baden-Württemberg (1997), II:46.

¹³⁷ Landesarchivdirektion Baden-Württemberg (1997), II:46.

¹³⁸ Landesarchivdirektion Baden-Württemberg (1997), II:46.

¹³⁹ Landesarchivdirektion Baden-Württemberg (1997), II:46.

¹⁴⁰ Landesarchivdirektion Baden-Württemberg (1997), II:46.

The French Wars thus had effects on our communities that were both direct and indirect. Military incursions struck Wildberg and Ebhausen (or at least areas within a few kilometres of both localities) between 1795 and 1800, and hit Auingen between 1800 and 1805. All three communities yielded up as yet unknown numbers of their young men to military service, particularly in Württemberg's participation in Napoleon's Russia campaign.

The French Wars also had more indirect effects. For one thing, they interrupted trade routes, reducing the capacity of Württemberg industries to export their wares. The result was that profits from proto-industrial exporting fell sharply, bringing about the dissolution of the centuries-old organization of the linen proto-industry of the Swabian Jura (in which Auingen was involved)¹⁴¹ and the worsted proto-industry of the Württemberg Black Forest (on which both Wildberg and Ebhausen depended).¹⁴² As discussed below in Section 8, the state-chartered merchant associations that had monopolized proto-industrial exports since the mid-seventeenth century dissolved themselves – the Urach Linen Trading Association in 1793 and the Calw Worsted Trading Association in 1797. Although the rural weavers in both regions continued to operate for another half-century, both industries were unquestionably in decline. This decline of the textile proto-industries on which many households in our communities depended was intensified by exposure to more innovative and competitive textile regions consequent upon the territorial expansion of Württemberg and its growing integration into a broader German market region, culminating in its becoming a member of the German Customs Union in 1834.

Indeed, a further indirect effect of the French Wars of the early nineteenth century was the redrawing of the territorial and constitutional framework of central Europe, which increasingly drew our three communities into wider German developments beyond the boundaries of the former Duchy. As we saw in Section 2, Württemberg was doubled in size

¹⁴¹ Medick (1996).

¹⁴² Troeltsch (1897); Ogilvie (1997).

by its territorial acquisitions during the dissolution of the Empire, which led to extensive redrawing of its own internal boundaries. The district of Münsingen was compelled to incorporate a number of Catholic villages of New Württemberg, which began to affect the structure of society even in the original Lutheran villages of Old Württemberg, such as Auingen. In the same re-drawing of administrative boundaries within Württemberg, the district of Wildberg was dissolved and attached to the neighbouring district of Nagold.

A final indirect effect of the French Wars was that the rising taxation, conscription, and military destruction combined with harvest failure to generate political unrest and economic want. In 1816-17, Württemberg experienced the notorious ‘Hunger Year’, in which harvest failure gave rise to excess mortality from starvation and vulnerability to infections, but above all triggered the beginning of mass emigration.¹⁴³ Those two years saw a wave of emigration to Russia, although North America was a more important emigration destination throughout the nineteenth century, and especially after 1848. Consequently, as Figure 1 shows, population declined in all three of our communities – Wildberg and Ebhausen more than Auingen – over the few years after 1817. The political unrest lasted longer, most intensely in 1815-19, and ultimately issued in a constitution agreed between King William I (r. 1816–64) and the Württemberg parliament. This constitution, discussed below in Section 4.1, established a bicameral legislature and is widely described as creating the basis for Württemberg to become a centre of German liberalism in the first half of the nineteenth century. However, arguably the most important effect of the new constitution as far as micro-level demographic and economic development was concerned was the Administrative Decree (*Verwaltungsdekret*) of 1 March 1822, which entrenched and intensified the strength of communal self-government (*kommunale Selbstverwaltung*) under the new constitution.¹⁴⁴ As we shall see in Sections 4.2, 7, and 8, community institutions continued to exert an enormous

¹⁴³ Landesarchivdirektion Baden-Württemberg (1997), II:46.

¹⁴⁴ Wintterlin (1906); Speck (1997).

influence on local settlement rights, permission to marry, agricultural practice, and local crafts and industries in our three communities well into the later nineteenth century.

The liberal 'Revolutions' which took place in many German states in 1848-9 were also associated in Württemberg with a period of economic want and mass emigration. The Revolutions of 1848-9 did not give rise to any violent events in any of the three communities studied here, although the underlying determinants – especially the grain scarcity of 1847 – can be observed in local sources, which show bread prices rising rapidly alongside welfare payments to the local poor and the emigration rate to America and Russia.¹⁴⁵ The economic crisis arising from harvest failure and grain scarcity was intensified in Münsingen in 1849 by a serious flood caused by a fast thaw in January, which brought torrents of water flowing through the streets of the town, drowning cattle and overwhelming barns.¹⁴⁶ Fear of insecurity caused by the revolutionary events elsewhere can also be observed, at least on the Swabian Jura. In 1848, Auingen established citizens' defence units against incursions by the 'Revolutionaries' whom they expected to invade from France. Münsingen obtained a delivery of muskets from the royal arsenal, both to fend off the expected 'invasion' of revolutionary French workers and to prevent property attacks locally, although these measures were quickly stood down in 1849.¹⁴⁷ However, by far the most visible effect of the economic and political upheavals of 1848 in the three communities under study here was to provide an even greater impetus to mass emigration, with knock-on consequences for the entire demographic system.

The events of 1849-9 also triggered off a proliferation of local associations (*Vereine*), a movement that continued into the following decades. In Münsingen, where these associations have been more closely examined, they typically combined politics, sociability, and other

¹⁴⁵ Landesarchivdirektion Baden-Württemberg (1997), II:46-7; Naujoks (1982), 1778.

¹⁴⁶ Dirschka (2009), 8-9.

¹⁴⁷ In Landesarchivdirektion Baden-Württemberg (1997), II:47, it states that 1000 muskets were delivered to Münsingen, but according to Dr Roland Deigendesch (personal communication, 2008), it was actually 1000 *flints* for muskets, and the total number of muskets themselves was probably no more than 20.

interests (shooting, industry, gymnastics) in a set of multi-stranded relationships strongly reminiscent of what modern political scientists have termed ‘social capital’.¹⁴⁸ In the district of Münsingen, at least, these associations appear to have been initially restricted to the town itself, and did not extend to the villages, but since Auingen was only 2 km from the town, its inhabitants may have participated in this associative life.¹⁴⁹

A final set of exogenous events which affected local life in the three communities studied here was the establishment, in 1871, of a unified German Empire which included the Kingdom of Württemberg. German unification itself did not have a direct and visible impact in these communities. However, all three were affected by institutional changes undertaken by Württemberg in the 1860s as it prepared to become part of a unified country with more standardized legal structures. The changes most relevant for this study include the abolition of the Württemberg guilds in 1862 (discussed below in Section 4.3), the weakening of marriage restrictions from 1864 on, and the outright abolition of marriage restrictions 1870 (discussed below in Section 4.2).¹⁵⁰ German unification also provided a certain amount of encouragement to the building of railways in Württemberg, which took place very late by German standards. As discussed below in Section 5.6, the rail network reached the Wildberg-Ebhausen region in 1872, although it did not reach the area of Münsingen and Auingen until 1893. Arguably the most important factor in opening up Münsingen and Auingen to the wider world was the foundation of a military encampment on the Münsinger Hart in 1895, whose effects are discussed in several later sections of this paper. The impact of German unification in opening up the closed Württemberg communities to economic, demographic or social influences from the wider world must therefore not be over-estimated.

The impact of the historical events of the ‘long nineteenth century’ on the three communities studied here can thus be seen as a microcosm of their effects on Württemberg more widely.

¹⁴⁸ Landesarchivdirektion Baden-Württemberg (1997), II:47-8.

¹⁴⁹ Landesarchivdirektion Baden-Württemberg (1997), II:58.

¹⁵⁰ On guilds, see Hofmann (1905); Raiser (1978); on marriage legislation, see Matz (1980).

Württemberg did not play a major role in the huge economic growth of the new German Empire between 1871 and 1914. In 1871, the Württemberg economy was already poorer than that of most other parts of western Germany, although richer than German regions east of the Elbe, and it continued to grow relatively slowly in the final quarter of the nineteenth century and the early years of the twentieth. As late as 1913, average per capita income in Württemberg was only 88 per cent of the average for Germany as a whole.¹⁵¹ Württemberg also remained heavily agricultural, and as late as 1895, half the population was still working in agriculture.¹⁵² Factory industrialization spread quite slowly, and in 1875 Württemberg had only 45 factories with more than 200 workers.¹⁵³ Even as factories did gradually arise over the final quarter of the nineteenth century, they were distributed across the entire country rather than being concentrated in a few industrial centres, and most industrial activity continued to be carried out on small workshops, often in by-employment with agriculture.¹⁵⁴ Section 8.3 below shows that this was precisely the pattern of factory industrialization experienced in the three communities under study here. Urbanization also advanced very slowly in Württemberg, and in 1910 only about 20 per cent of the population was living in towns over 20,000 inhabitants, compared to 33 per cent in Germany more widely.¹⁵⁵ The inhabitants of Wildberg, Ebhausen and Auingen thus lived in a small-town or village context that was very characteristic of Württemberg, and in fact still quite typical for Germany as a whole. Indeed, as we shall see in later sections of this paper, the three communities studied here also manifest in microcosm the wider development of the Württemberg economy up to 1914 – the continuing importance of agriculture, the central role of small craft workshops, and the slow and late factory industrialization.

¹⁵¹ Mann (2006), 216.

¹⁵² Hippel (1992), 641, 662.

¹⁵³ Englisch (2006), 114.

¹⁵⁴ Englisch (2006), 114.

¹⁵⁵ Mann (2006), 216.

4. Social Institutions

Demographic behaviour can be profoundly affected by social institutions – the collective structure of humanly devised rules and practices constraining individual decisions. In modern developed economies, the main institutions that influence demographic decisions are the market and the state. But in less developed economies, among which we must count Württemberg during most of the period under analysis here, a wide array of additional institutions play an important role. In particular, Württemberg society had very strong communal, guild, and religious institutions. This section examines these institutions both in Württemberg in general and in their concrete manifestations in the three communities under analysis.

4.1. State Institutions

The first set of institutions affecting demographic behaviour were the legislative and executive rules imposed by the central political authorities which – at the risk of slight anachronism – we shall call ‘the state’. As already discussed, our communities were part of the territory of Württemberg, which was in turn part of the Holy Roman Empire of the German Nation until it contributed to the dissolution of that empire in 1806.

The historiography on the development of the German state up to 1806 emphasises the profound and enduring importance of the Imperial framework to the internal politics of most German territorial states, with the partial exception of Prussia and Austria.¹⁵⁶ The Imperial framework did not simply preserve the liberties of the German territorial princes; it also upheld the privileges of corporate interests – nobility, local communities, guilds, mercantile interest groups, religious bodies – *within* these princes’ territories. Most studies of internal opposition to rulers in early

¹⁵⁶ For an English-language overview of an extensive German historiography, see Ogilvie (1992); Ogilvie (1999b).

modern German territories emphasize the way in which all parties involved increasingly appealed to Imperial institutions: dissatisfied subjects for redress of grievances against their prince, dissatisfied rulers for Imperial backing against unreasonable opposition. Particularly in medium-sized German states such as Württemberg, rulers could not afford to offend local privileges too much, for fear of providing an excuse for other states of the Empire (or the Habsburgs themselves) to use Imperial institutions to interfere in their domestic affairs with every appearance of legal propriety.¹⁵⁷

Württemberg's basic 'constitution' – sometimes called its 'Magna Carta' – was the Tübinger Vertrag, signed in 1514, in which the parliamentary estates supported the duke against the rebellious peasants in the Armer Konrad rebellion and took over the ducal debts, in return for a formal guarantee of their right to grant taxes, to veto alienation of territory, to participate in declaring war and making peace, to be guaranteed legal security in criminal cases, to enjoy the right of free emigration, and to have a say in legislation.¹⁵⁸ As a result, from the sixteenth through to the nineteenth century, the Württemberg 'state' consisted of three central bodies – the prince (the duke and his court (*Hof*)), the privy council (*Geheimer Rat*), and the parliamentary estates (*Landschaft*).¹⁵⁹

In turn, each of these bodies routinely appealed to institutions of the Empire for support, and Imperial intervention (or even just the threat of such intervention) played a crucial role in almost every critical juncture in the evolution of the Württemberg state. For one thing, the Imperial structure was more than indirectly responsible for the long period of stagnation in *princely* – though not *state* – power in Württemberg in the seventeenth century. The Thirty Years War itself

¹⁵⁷ The discussion here, as in the remainder of this section, is based primarily on the arguments in Ogilvie (1999b), which provides an extensive survey of the German-language historiography. For English works on the Württemberg state, which are consistent with the exposition in this section, Fulbrook (1983); Vann (1984); and Wilson (1995). For more recent German work on this issue, see, for instance, Mertens (1995), as well as the essays in Amend et al. (2007) and Baumann et al. (2005). On the key importance of the Imperial framework to the preconditions for the nineteenth-century industrialization of Württemberg, see Hippel (1992), 481.

¹⁵⁸ Schaab (1974a), 191.

¹⁵⁹ Vann (1984); Schaab (1974a), 193; Ogilvie (1999b).

was partly caused by a struggle for control of the Imperial framework.¹⁶⁰ Württemberg's disastrous alliance with the Swedes shortly before the Battle of Nördlingen in 1634 – leading to defeat, occupation of the Duchy, and exile for the prince, as well as to the economic and demographic catastrophes experienced in our three communities – strengthened the parliamentary estates and the bureaucracy relative to the prince. Between 1634 and 1638, Württemberg was governed by the victor of Nördlingen, the future Emperor Ferdinand III, who used Imperial law (in the form of the new Edict of Restitution) to alienate almost one-half of the land area of the Duchy, mainly by restoring the fourteen former abbey possessions to Catholic religious orders, which then declared their new territories *Reichsunmittelbar* (subject immediately to the Emperor), a state of affairs not revoked until 1650. The Reutin Convent just outside Wildberg, which had been part of the town since the Reformation, was among these former abbey possessions.

The 'civil war' within the Empire also greatly increased the fiscal dependence of the Württemberg central state on the parliamentary estates (and through them on the local corporate districts or *Ämter*, discussed below in Section 4.2) for many decades. Thus the Thirty Years War not only laid the basis for absolutism in Württemberg, as in other German states. It also created a resilient system of local constraints on that absolutism, by forcing many German rulers – including the dukes of Württemberg – to grant favours to corporate groups within their own societies in order to be able to tax, conscript and regulate their territories to the degree necessary to survive the war. We will examine this process in greater detail below, in Sections 4.2 and 4.3, when we look at the institutional powers of local communities and guilds.

But the Empire was important to the Württemberg state even more directly, because it provided institutional mechanisms through which elements within the Duchy, faced with a political crisis, could appeal to a legitimate alternative authority. In 1677, for instance, a struggle within the Württemberg ducal family for control of the regency was only resolved by the intervention of

¹⁶⁰ For the argument behind this analysis, see Ogilvie (1992).

Emperor Leopold, who determined that the privy council should be joint regent. This was the crucial factor prolonging bureaucratic and parliamentary ascendancy inside the Württemberg state to the end of the seventeenth century. Throughout the regency, appeals to the Emperor by all parties became almost a matter of routine, on at least three occasions determining the future direction in which the Württemberg state would evolve – in 1683 (when an appeal to the Emperor prevented the regent from raising an army and entering a military alliance with France), in 1689-91 (when the Emperor supported the regent against privy council and estates in raising finance for fortifications and troops *against* France), and again in 1693 (when an appeal to the Emperor resulted in the dismissal of the regent).¹⁶¹

Imperial intervention did not end with the regency. Even the ‘absolutist’ Eberhard Ludwig was perpetually compelled to keep an eye out for Imperial intervention. On the eve of Eberhard Ludwig’s forty-year dissolution of the parliament in 1699, the Württemberg parliamentary estates were preparing to appeal to the Emperor. They were only prevented from doing so by district officials sent out by the prince to intimidate the leaders of the local corporate communities into withdrawing support for their representatives in the estates. Temporarily, the Imperial framework supported the absolutist ambitions of the prince of Württemberg. Thus in the decade that followed 1699, Eberhard Ludwig was able to finance his government without summoning a meeting of the parliament (*Landtag*) because the Emperor was willing to pay for a Württemberg standing army during the War of the Spanish Succession.

However, even in this period, Imperial intervention in Württemberg was not invariably exercised in support of the prince: in 1708, the privy council and the parliamentary estates successfully compelled the duke to abandon his morganatic (and bigamous) marriage plans, by threatening to request the Margrave of Baden-Durlach to appeal to the Empire on their behalf. Similarly, Eberhard Ludwig’s practice of continuing to consult the Select Committee of the estates about taxation, while refusing to summon a meeting of the entire estates (*Landtag*), arose at least partly

¹⁶¹ For a detailed narrative of these events, see Mertens (1995), 142-7; Vann (1984), 149-61.

from his fear that if he offended against the Württemberg constitutional privileges which placed the right of taxation firmly in the hands of the estates, the Emperor would intervene. Indeed, the privy council explicitly pointed out to Eberhard Ludwig in 1714 that emergency fiscal measures which violated Württemberg constitutional privileges would not be countenanced by Imperial law.

But it was after 1733 that Imperial intervention played its most important role in the evolution of the Württemberg state – particularly during the reigns of the Catholic princes Carl Alexander (1733-7) and Carl Eugen (1744-93). As soon as a Catholic prince came to the throne, the privy council, led by Georg Bernhard Bilfinger (a leading member of the Württemberg *Ehrbarkeit*, the local communal ‘notability’ whose key role in the Württemberg institutional framework is discussed below in Section 4.2), began to make systematic use of Imperial institutions to secure the established Lutheran church in Württemberg and the control of the bureaucracy over it. In 1735 Bilfinger prevailed on the Protestant delegation (*corpus evangelicorum*) of the Imperial Diet (*Reichstag*) to confirm these privileges, and in 1742 managed to secure two further external confirmations of Württemberg’s internal constitution: first, a guarantee of the Duchy’s religious settlement, from Prussia, England and Denmark (which became known as the ‘guarantor states’); and second, official recognition by the Emperor of all Württemberg’s laws, going back to the Württemberg ‘constitution’ of 1514 (the *Tübinger Vertrag*).

These Imperial and international guarantees of their right to share in government strengthened the parliamentary estates and the bureaucracy in opposing Duke Carl Eugen’s attempts to limit their powers after he attained his majority in 1744. Although for the duration of the Seven Years War (1756-63), the Emperor, requiring Carl Eugen’s military support, refused to intervene against the duke’s ‘unconstitutional’ tax-raising and local conscription, as soon as the Treaty of Hubertusburg was signed in 1763, the Emperor and Frederick the Great of Prussia encouraged the Württemberg parliamentary estates to file a formal complaint against their prince before the Imperial Aulic Council (*Reichshofrat*). In 1770 the Imperial Aulic Council decided in favour of

the Württemberg parliamentary estates, and negotiated a final settlement, the *Erbvergleich*, which represented a confirmation of constitutional privileges and a setback – if not an unequivocal defeat – for Württemberg princely absolutism.

There was thus hardly an important juncture in the development of the Württemberg state up to 1806 which was not influenced by the availability, to all domestic parties, of Imperial institutions to which to appeal, and the Empire's very real powers of intervention in domestic affairs. After the abolition of the Empire, this initially changed, as the new King Friedrich I sought to govern as an absolute monarch. This attempted move toward absolutism was slowed by the strong resistance of the parliamentary estates and the corporate towns and districts, and was cut short by Friedrich I's death in 1816.

The new King Wilhelm I who came to the throne in 1816 was more aware of the need for compromise – although again pressure from outside, now from the German Confederation as the successor to the Old Empire, played a major role. In 1819, the king responded by summoning the parliament and agreed to the issuing of a new constitution, turning Württemberg into a constitutional monarchy – the first in Germany. The new bicameral legislature was organized into two chambers. The upper chamber consisted of the princes of the royal house, the noble representatives (from the New Württemberg possessions), and nominees of the king. The lower chamber consisted of 70 elected representatives of the 63 administrative districts and the 7 'good towns' (Stuttgart, Ludwigsburg, Tübingen, Ellwangen, Ulm, Heilbronn and Reutlingen), with the addition of 23 so-called 'Privileged Representatives' (namely 13 representatives of the knightly nobility, 6 Protestant clerics, 3 Catholic clerics, and the Chancellor of the University of Tübingen).

The new Württemberg constitution endured, despite the rise of party politics in the 1830s and the liberal 'revolutions' of 1848-9. It was slightly revised in 1868, but the basic lineaments even survived Württemberg's becoming part of the united German Empire in 1870. Indeed, the

Württemberg constitution was not fundamentally change until 1906. The basic constitutional framework of the nineteenth-century Württemberg state thus incorporated major components of the traditional corporative structure of Württemberg society reaching back into the sixteenth century.¹⁶²

This alerts us to a central feature of Württemberg society which survived all the changes in the central governmental structures between the sixteenth and the early twentieth century. This is the fact that the crown, the bureaucracy and the parliamentary estates merely formed a superstructure; their power was dependent on the operation of a dense network of corporate groups and institutions on the local level. The struggles for control at the centre, even when amplified by the Imperial framework or by outside alliances with France, Austria or Prussia, were not what determined the ‘strength’ of the Württemberg state; they simply decided who would enjoy the spoils. The gradually intensifying extraction of these spoils – the ‘growth’ of the state – was not greatly affected by the competition at the centre, for it was carried out through local mechanisms that were stable and highly resistant to interference.

Without mechanisms by which new taxes and regulations could be enforced on the local population, the conflicts among policy-makers at the centre had little impact on the size of the public sector, the efficiency with which the society was governed, or the nature and range of activities which the state could regulate. What gave each European state its particular shape and ‘strengths’ between 1500 and 1914 were the social arrangements by which it extended government to the local economy and society, for it was here that taxes were gathered, soldiers were recruited, and – even more importantly – where regulation and redistribution took place.¹⁶³

One distinctive characteristic of local institutional arrangements in Württemberg, compared to other parts of Germany or most of Europe more widely, was that the indigenous nobility had

¹⁶² Schaab (1974b), 235-7.

¹⁶³ A more detailed exposition of the argument and its empirical basis is provided in Ogilvie (1999b).

declared itself *Reichsunmittelbar* (subject directly to the Emperor) in 1519. This meant that throughout the remainder of the early modern period the prince and church were the only 'landlords' in Württemberg. This hardly changed with the 'New Württemberg' acquisitions after 1803, because the institutional privileges of noble landlords were almost immediately either abolished or seriously weakened. The resulting absence of corporate privileges for noble landlords meant that in Württemberg, throughout the entirety of its post-medieval history, the corporate privileges of local communities and guilds exerted considerable influence. The local elite which dominated the communities and the guilds, the so-called *Ehrbarkeit* or 'notability', adopted the role within the Württemberg 'ruling orders' which in other territories was occupied by the landlords.¹⁶⁴ Thus the major institutions which determined how authority would be exercised and economic decisions would be regulated on the local level in Württemberg consisted of the local corporate communities, the guilds and other occupational associations, and the church. It is to these that we now turn.

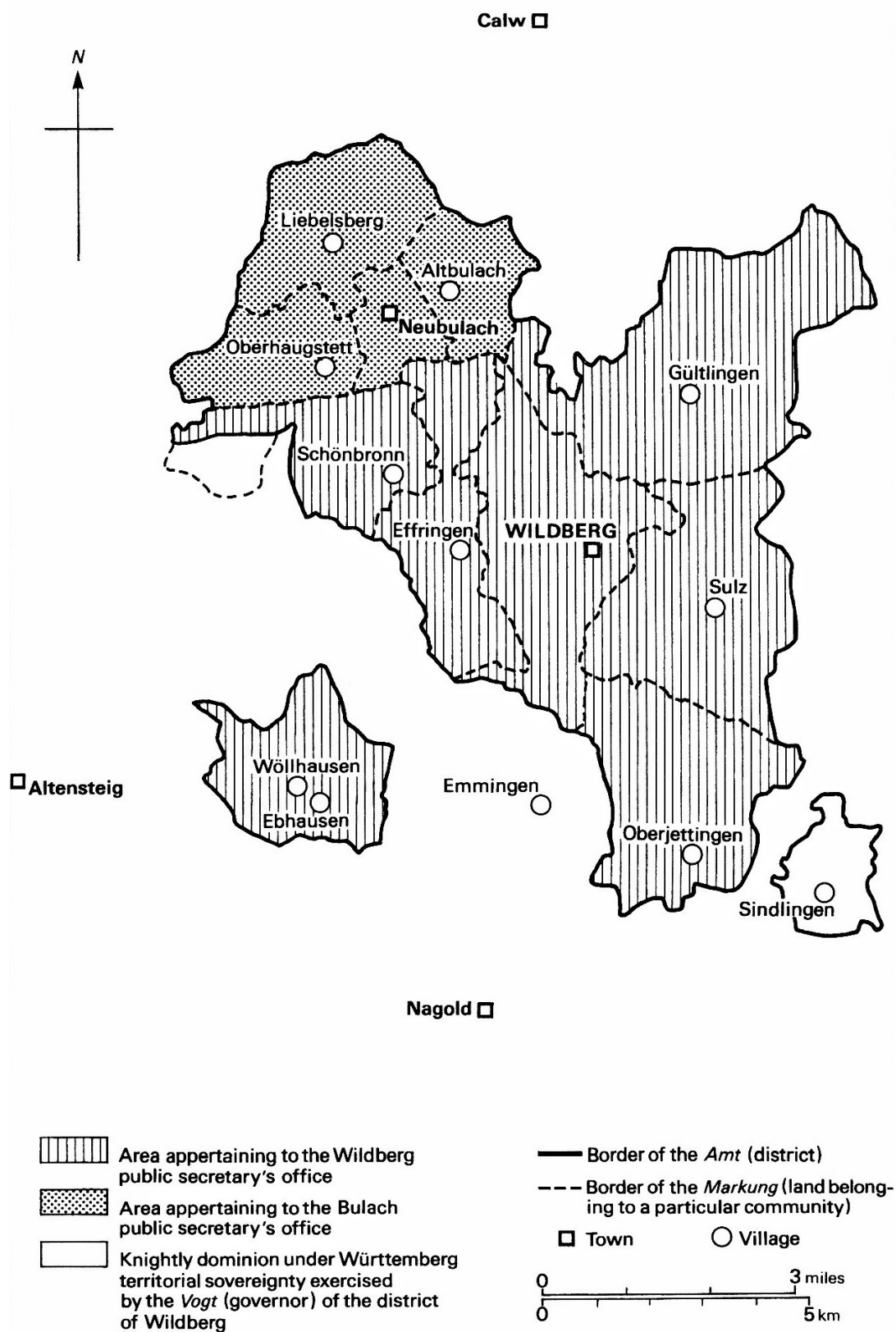
4.2. Community Institutions

The institutional organization of Württemberg, like that of many other early modern German states, was much less 'top-down' than that of England or France. The importance of local groups and institutions in the operation of the Württemberg state is reflected in James Allen Vann's formulation: 'the central government stopped at the gates of the towns'.¹⁶⁵ The actual situation was even more complex: Württemberg was governed by means of a frequently very conflictual amalgam between communal self-government on the one hand and intervention by various organs of the central administration on the other.

¹⁶⁴ The way in which the Württemberg *Ehrbarkeit* acted as part of the 'ruling orders' rather than as representatives of the 'common man' is well-enunciated, for instance, in Wilson (1995), 52-3, 57-9, 281.

¹⁶⁵ Vann (1984), 295.

Map 3:
The District of Wildberg in the Eighteenth Century



Source: Klab (1987), p. 62. Drawn by J. Knayer according to a sketch by W. Grube.

Württemberg was divided into approximately sixty *Ämter* (administrative districts), legally constituted as *Körperschaften* or ‘corporate groups’, which could enter into binding undertakings, like any other corporate group. Each district (*Amt*) consisted of a small town (*Amtsstadt*) which acted as district capital and administered a variable number of subordinate villages (*Amsdörfer*).

The district of Wildberg, in which both the small town of Wildberg and the village of Ebhausen were located, consisted of about one-dozen communities, whose location and dimensions are shown in Map 3. From the medieval period until 1807, the small town of Wildberg was the capital of the district of Wildberg, and Ebhausen (8.6 km away) was one of the approximately one-dozen villages of its district.¹⁶⁶

In 1807 the district of Wildberg was dissolved, partly because of the poverty of the town once the local worsted textile industry collapsed in the 1790s and partly because of the territorial re-organization of Württemberg during the dissolution of the Holy Roman Empire, in which a number of previous micro-territories subject directly to the Emperor were made part of Württemberg.¹⁶⁷ From 1807 onward, Wildberg and Ebhausen became part of an enlarged district administered by Nagold, a town located on an acute bend on the Nagold river 7 km downstream from Ebhausen and 11 km upstream from Wildberg.¹⁶⁸ The location and dimensions of Wildberg and Ebhausen in the new district of Nagold after 1807 are shown on Map 4. However, Wildberg continued to operate as the notarial office for the surrounding villages as late as 1862, although Ebhausen used the notarial office in the town of Altensteig, which was slightly closer.¹⁶⁹

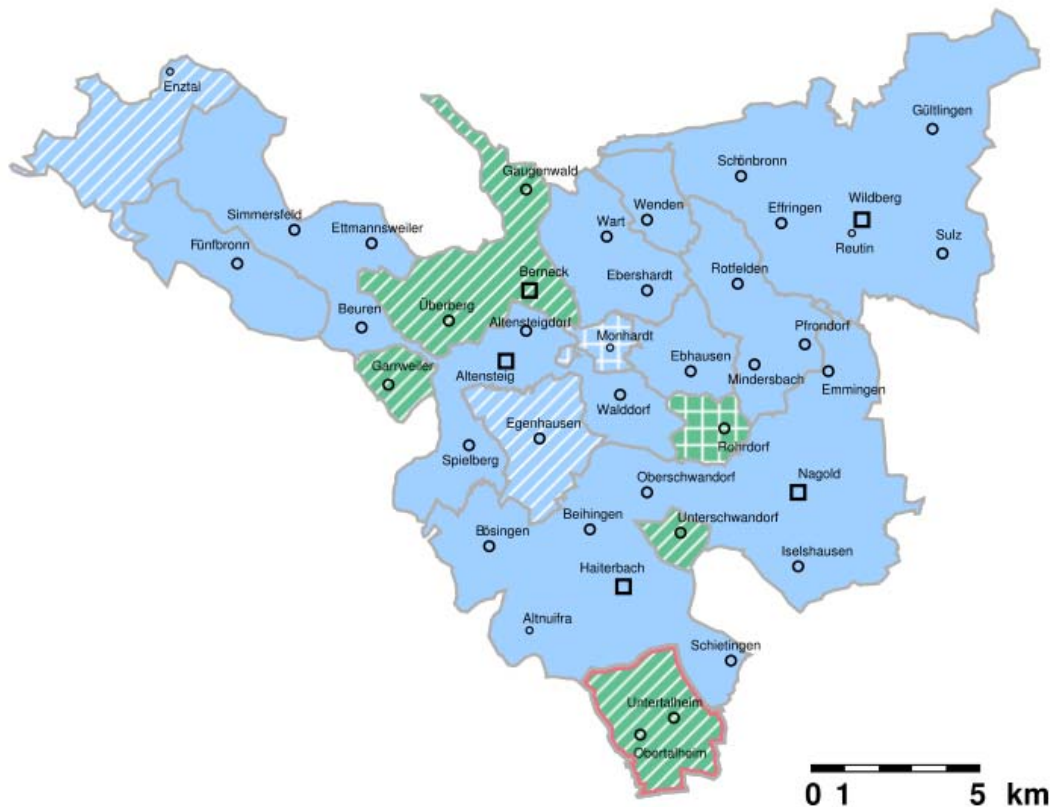
¹⁶⁶ Königliches statistisch-topographisches Bureau (1862), 2, 91.

¹⁶⁷ Klab (1987), 138.

¹⁶⁸ Königliches statistisch-topographisches Bureau (1862), 2.

¹⁶⁹ Königliches statistisch-topographisches Bureau (1862), 79.

Map 4:
The District of Nagold in the Nineteenth Century



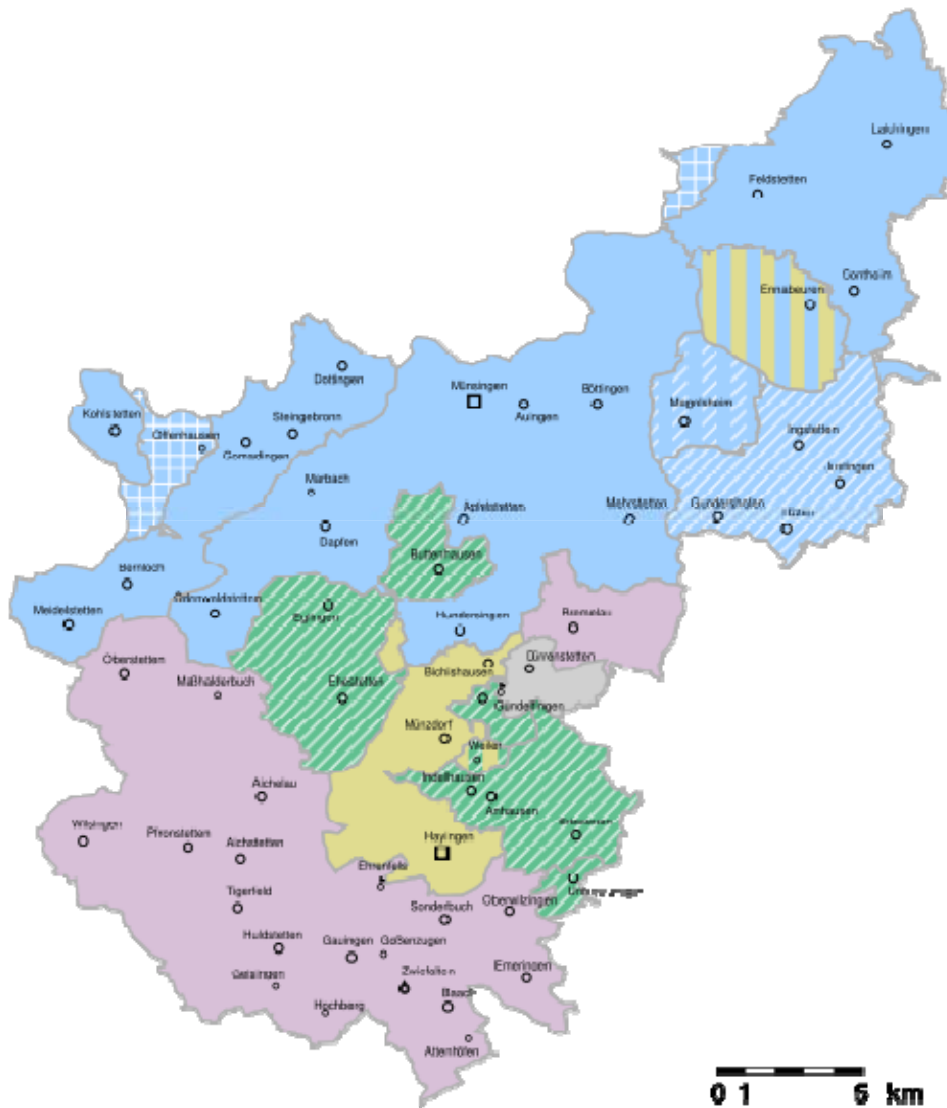
Source: The map and accompanying text as published in Wikipedia Commons by Author: Franzpaul, at http://commons.wikimedia.org/wiki/File:HkDE-wt_Nagold_1800.svg#file (accessed 26 February 2009) are licensed respectively under the the Creative Commons Attribution ShareAlike 2.5 License <http://creativecommons.org/licenses/by-sa/2.5/> and GNU Free Documentation License <http://www.gnu.org/copyleft/fdl.html>.

The district of Münsingen, in which the village of Auingen was located, is shown on Map 5, in its nineteenth-century dimensions, after the acquisition of a large number of neighbouring territories with the dissolution of the empire. Münsingen, although among the smallest district towns in Württemberg, is the only town on the Swabian Jura proper.¹⁷⁰ From the medieval period until the mid-seventeenth century Münsingen was the capital of its own sub-district (*Unteramt*), subordinated to the superior district (*Oberamt*) of Urach, 14 km away. But in 1654, after considerable conflict with Urach – during which the Urachers wrote of the Münsingers that ‘nothing can be organized with them; they do what they feel like but nothing

¹⁷⁰ Memminger (1825), 105.

Map 5:

The District of Münsingen in the Nineteenth Century



Source: The map and accompanying text as published in Wikipedia Commons by Author: Franzpaul, at http://commons.wikimedia.org/wiki/File:HkDE-wt_Muensingen_1800.svg#file (accessed 20 February 2009) are licensed respectively under the the Creative Commons Attribution ShareAlike 2.5 License <http://creativecommons.org/licenses/by-sa/2.5/> and GNU Free Documentation License <http://www.gnu.org/copyleft/fdl.html>.

more' – Münsingen was hived off and became a small but autonomous district (*Oberamt*), administering Auingen and a handful of other villages and, by virtue of its new status, having

its own seat and vote in meetings of the parliamentary estates.¹⁷¹ Then, after the dissolution of the Empire in 1806, Münsingen was assigned three new sub-districts of its own in 1808-09 (Laichingen and Steingebronn from the district of Urach and Justingen from the district of Eningen), and in 1810 also received a number of villages from the newly dissolved temporary district of Zwiefalten that had previously been an Imperial Benedictine Abbey and was confessionally Catholic.¹⁷² In the seventeenth and eighteenth centuries, however, the district of Münsingen consisted only of the half-dozen villages closest to the town, among which was Auingen.

The Württemberg administrative districts, as already mentioned, were institutionally organized as ‘corporate groups’ and enjoyed a pronounced degree of self-government, most of which was devolved to their constituent local communities, as we shall see. The central authorities did begin to try to bring the districts under control from the mid-sixteenth century on, when the prince installed his own paid agents on the local level. Each district was assigned an *Amtmann* (district governor, usually called a *Vogt* in larger districts and a *Keller* in smaller ones) and a *Stadtschreiber* (town secretary), who were appointed through the privy council. Pastors, deacons and schoolmasters were also appointed centrally by the *Kirchenrat* (church council) in Stuttgart, which in turn reported to the privy council. The district governor presided over the dense network of local courts, the town secretary kept the records, and between them they inspected local accounts, and formed the conduit through which central edicts passed to the localities and local petitions passed to the centre. The pastor and the district governor also presided over the *Kirchenkonvente* (church courts) established in 1642 (discussed below in Section 4.4), although the corporative element in all law-giving in Württemberg is illustrated by the fact that the remaining membership of this court (as of all other local and district law-courts) consisted of members of the local community council.

¹⁷¹ Dirschka (2009), 7; Memminger (1825), 10, 107 (quotation, dated 1648).

¹⁷² Maurer (1965), 455; Landesarchivdirektion Baden-Württemberg (1997), II:67.

From the sixteenth century on, therefore, the Württemberg state had a potentially powerful tool in the form of a paid local bureaucracy which was highly informed about local life but owed its livelihood to the centre, although its social allegiance lay more with the privy council than with the court or the prince. However, the mere existence of a paid local bureaucracy was not enough for the state to impose its will on local institutions. These officials were not numerous, and the local pressures on them were considerable. They would not have been able to achieve the substantial success they did in implementing central regulations (or at least a subset of such regulations) if they had not formed alliances with important local interests. This made them into agents of the localities at the centre, at least to the same degree as they were agents of the state in the localities. In Württemberg, these local interests with which they contended were expressed through the local communities – the small, closely-knit district towns and the even smaller and even more closely-knit villages.

A district town or *Amtstadt* acted as the administrative centre of each district. Both Wildberg and Münsingen are typical of these small district towns, which were seldom larger than five thousand inhabitants, on average less than two thousand – as we have seen, Wildberg had about 1,500 inhabitants during most of the period under analysis and Münsingen around 1,100. These small district towns operated from very early on as the undisputed centres of local government. They were governed by an upper council of twelve male householders, the *Gericht*, which also judged civil cases and constituted the first court of appeal for the villages of the district; and a lower council of six, the *Rat*, which assisted in administration. In addition, there was a plethora of community officials, mainly inspectors over various economic activities – so many that in 1717 in the small district town of Wildberg, with only about 1,300 inhabitants, as many as one-fifth of male household heads held community office.¹⁷³ Members of both councils and holders of other offices were co-opted by existing office-holders; the prince's district officials, even if present at the election, had no vote.

¹⁷³ Ogilvie (1997), 60.

In villages such as Ebhausen and Auingen, the prince's officials had even less say over community affairs. The *Schultheiß* (village headman or chief administrative officer) had by the late sixteenth century ceased to be appointed by the prince's officials, and was instead elected by the village council (*Dorfgericht*) which consisted of twelve male citizens of the village and which collectively filled vacancies in its own ranks through co-option by the existing membership. Most civil and administrative cases were also dealt with by this *Dorfgericht*, which was a communal law-court as well as a communal council. Villages, like towns, managed their own affairs through appointing a plethora of communal officials. Thus, for instance, in 1752 the village of Gültlingen in the district of Wildberg, with a population of 860, filled 51 community offices: the *Schultheiß* (village headman) who was 'appointed through commission'; twelve members of the *Gericht*, four members of the *Rat*, four building and field inspectors, one secretary to the *Gericht*, six church court members, three inventory makers, two bread inspectors, two inspectors of horses and cattle, two wine-assessors, one customs and excise collector, four fire inspectors, two church administrators, one sexton, one hay inspector, one corvée official, and four tax assessors.¹⁷⁴ If the communal council or communal officers of a Württemberg village could not resolve an issue, the first (and in the vast majority of cases final) court of appeal was the *Gericht* (court or council) in the district town – Wildberg was the court of appeal for Ebhausen, Münsingen for Auingen. Insofar as a Württemberg village was subject to outside control, it was through the district town, whose own officials regulated an increasing number of activities, especially the apportioning of taxation and the operation of markets in agricultural and industrial products, both crucial for the functioning of the economy.

The families that held community office in the small towns had, by the sixteenth century, used their considerable autonomy in the towns, and their role in helping to administer the villages, to turn themselves into a powerful and largely self-perpetuating elite. This was the famous *Ehrbarkeit*, the 'notability', which has been shown by Decker-Hauff and subsequent historians to

¹⁷⁴ HSAS A573 Bü 101, 13 Jan. 1752, fol. 20r-20v.

have dominated both central and communal institutions in Württemberg.¹⁷⁵ During the sixteenth century, this group consolidated its dominance over the *Amtsversammlung*, the local assembly of representatives of all communities in the district, which elected the delegates from that district to the parliamentary assembly (*Landtag*). Although the Thirty Years War brought greater participation of the villages in district affairs, and greater influence of the *Amtsversammlung* over the election of delegates to the parliament, only citizens of the district town could actually be elected as delegates. In the eighteenth century, although the prince encouraged villagers to participate more in politics in the hope that this would circumvent the power of the urban ‘notability’, inhabitants of village communities were slow to do so. A new community ordinance promulgated in 1702 enhanced village representation in the general assemblies of the districts, and under Duke Carl Alexander the ruler’s agents engaged in considerable lobbying and intimidation of village representatives in order to undermine the ‘notability’-dominated parliamentary estates. However, voting practices continued to be determined by local custom, and this gave dominance to the urban ‘notability’ until well into the nineteenth century. In 1799, despite the fact that three-quarters of Württemberg’s population lived in villages, only 10 of the 86 votes in the parliament were cast by delegates from villages, and this was only because these 10 districts did not contain any town. Thus the control exercised by the municipal corporation of ‘notables’ over the district locally turned them into the main counterweight to the prince’s power nationally.

As a consequence of this pronounced degree of local self-government, the Württemberg central administration found it difficult to monitor and regulate the localities. Instead, community institutions exercised extensive regulation and control over most aspects of economic and demographic decision-making well into the nineteenth century. As mentioned, each Württemberg community had its own autonomous *Gericht* – a cross between a community council and a community court – which was manned by 12 male householders and took

¹⁷⁵ Decker-Hauff (1946); for an exploration of the activities of this *Ehrbarkeit* in a Württemberg village, and its increasing importance for demographic and economic decision-making, see Sabean (1990).

administrative, regulatory and juridical decisions. In district towns, such as Wildberg or Münsingen, the town *Gericht* was chaired by the local princely district official (*Keller* or *Vogt*) and functioned as first court of appeal against the decisions of village courts in the district. In district villages, such as Ebhausen or Auingen, the village *Gericht* was chaired by the village headman (*Schultheiß*) who was basically selected by the village and approved by the state.¹⁷⁶ From 1642-4 onward, each Württemberg community also had a communal church court (*Kirchenkonvent*) which was chaired by the local pastor and manned by 3-6 members of the community court.

The villages and tiny towns of rural Württemberg operated their own powerful community courts, appointed a myriad of community officials, and met in regular face-to-face community assemblies. This gave rise to a dense network of multi-stranded interactions among local inhabitants, generating shared norms, swift transmission of information about deviations from these norms, severe sanctions on violations, and effective collective action. This ‘social capital’ enabled communities to exercise intense surveillance and control over factor markets, product markets, demographic decisions, education, work, leisure, and consumption.¹⁷⁷

Micro-studies of a number of Württemberg communities, including for Wildberg and Ebhausen, have shown the effectiveness and operation of communal institutions in regulating individuals’ economic and demographic activities. This had benefits such as the systematic provision of public goods such as fire protection and poor relief, but also costs such as the regulation of markets in the interests of communal elites, which reduced efficiency, redistributed resources from poor to rich, and encouraged corruption and rent-seeking.¹⁷⁸

¹⁷⁶ This communal organization continued in force from the early sixteenth into the later nineteenth century; see, for instance, the description for Ebhausen in Königliches statistisch-topographisches Bureau (1862), 80; for Auingen in Landesarchivdirektion Baden-Württemberg (1997), II:68. For details of how this worked out in practice, with particularly reference to Wildberg and Ebhausen, see Ogilvie (1986); Ogilvie (1997), 42-72; and Ogilvie (2003).

¹⁷⁷ Ogilvie (1986); Ogilvie (1997), 42-72; Ogilvie (2003); Sabeian (1990), 106, 109, 148, 160-1; Warde (2002), esp. 22.

¹⁷⁸ For discussion and examples, see Ogilvie (1997), esp. ch. 3; Ogilvie (2003), with particular reference to women; also Staudenmeyer (1972), e.g. 111ff.

Community institutions in Württemberg affected demographic decision-making *indirectly* through their regulation of the local economy, determining the size of the local resource pool and who enjoyed access to it. But they also affected demographic decision-making *directly*. Württemberg communities had the right to decide who could live and work locally, privileges which were restricted solely to those holding ‘citizenship’ (*Bürgerrecht*) or ‘by-settler’ rights (*Beisitzrecht*) in the community.¹⁷⁹ The distinction between ‘citizens’ and ‘by-settlers’ continued into the nineteenth century, with laws such as the Administrative Edict (*Verwaltungsedikt*) of 1822 restricting the electoral rights of ‘by-settlers’.¹⁸⁰ The gap in status and rights between community ‘citizens’ and ‘by-settlers’ did gradually narrow after c. 1812, but took most of the nineteenth century to disappear completely.¹⁸¹

In practice, Württemberg communities strictly rationed the admission of outsiders to *either* kind of local settlement right, reserving them to existing citizens, their offspring, and a few carefully vetted incomers who satisfied requirements of wealth, occupation, religion, ethnicity, legitimate birth, freedom (or manumission) from serfdom, and good reputation as attested by written certification from their previous community.¹⁸² These restrictions endured into the nineteenth century, and were even strengthened through state legislation in 1833 and 1852 which confirmed and reinforced the right of Württemberg communities to demand sufficient property and livelihood before admitting new residents or allowing existing ones to marry and form families.¹⁸³

Fertility and family size could constitute a direct reason for exclusion from admission to communal citizenship, as in 1740 when one village council in the district of Wildberg rejected the application for by-settler rights of a widow with six children explicitly because ‘this hamlet cannot be expected to take in such a large family, which must have a prospect only of

¹⁷⁹ Hoffmann-Martinot (2004), 3-4; Ogilvie (1997), ch. 3; Schaab (2000), 496, 508.

¹⁸⁰ Hoffmann-Martinot (2004), 3-4, 6-8; Klein (1933), 22-6.

¹⁸¹ Klein (1933), 22ff.

¹⁸² Hoffmann-Martinot (2004), 3-4; Ogilvie (1997), 44-52.

¹⁸³ Hippel (1992), 593.

its own ruin'.¹⁸⁴ Such community regulations created incentives to restrict family size, as in the case of a journeyman who wanted to marry a Wildberg worsted-weaver's daughter in 1740, and sought to make his application for settlement rights more acceptable by saying that they intended 'not at all to be burdened with children in future', to which end they promised to dwell separately until they had saved enough to support a family; the community council nonetheless rejected their application.¹⁸⁵ Communal institutions permitted 'by-settlers', unmarried labourers, and servants to reside in the community temporarily, as long as their labour was required and they did not annoy existing citizens, but in hard times the communal council had the right to expel them, and often did so.¹⁸⁶ Württemberg communities also regulated the treatment of illegitimate fertility, penalizing unwed mothers (often by expelling them from the community) and generally refusing to admit illegitimately born individuals to citizenship in adulthood.¹⁸⁷

From the eighteenth century on, communities in Württemberg, as in many other parts of central Europe, also regulated permission to marry, even for their own citizens, requiring them to obtain marriage permits from the princely government, monitoring whether they had done so, and lobbying the government to deny permits to undesired applicants.¹⁸⁸ Although the full apparatus of the *politische Ehekonsens* (political control of marriages) developed only after 1800, communities were already controlling marriage much earlier in many parts of Austria and southern Germany, including Württemberg.¹⁸⁹ This can be observed in the local documents for the Württemberg villages under study here. Ebhausen, for instance, was

¹⁸⁴ HSAS A573 Bü. 7133, petition of 20.5.1740, fol. 1r: 'daß diesem Fleckhen nicht wohl zuzumuthen, eine solche starckhe familie einzunehmen, die nichts als ihr verderben vor augen sehen muß'.

¹⁸⁵ HSAS A573 Bü. 7133, petition to Wildberg council, May 1740 (exact date not given), fol. 1v: 'sich die Rechnung machen, nimmer mit Kinder beladen zu werden'.

¹⁸⁶ For examples of these rights being exercised in practice, in both Wildberg and Ebhausen, see Ogilvie (2003), ch. 6.

¹⁸⁷ For examples of these regulations being imposed in practice in the communities under study here, see Ogilvie (1986); Ogilvie (1997), ch. 3.

¹⁸⁸ See Ehmer (1991) on marriage regulation in Europe in general; Ogilvie (1995) on German-speaking central Europe; Knodel (1967) on nineteenth-century Germany; Mantl (1997) on Austria; and Fischer and Weißbach (1992), 15, on Württemberg.

¹⁸⁹ Knodel (1967), 279-80; Matz (1980); Ogilvie (1997), 61-3; Sabean (1991), 106, 109 (with note 134), 161 (with notes 54 and 55); Maisch (1997); 72-5, 78-80, 82-3.

exercising such controls on marriage at latest from the seventeenth century onward, mainly through controlling admission to village citizenship. In 1625, for example, a young man who had been apprenticed as a baker in Schorndorf and then spent nine years tramping as a journeyman and serving as a soldier promised marriage to an Ebhausen girl, ‘on condition that if he be admitted here as a citizen he will get wedded to her’, but ‘was rejected by the village headman and community court [on the grounds that] the *Handwerk* [craft or guild] is over-filled and the citizenry altogether too large’.¹⁹⁰ In 1654, the Ebhausen village headman ‘asked each member of the village court and council in turn whether Marttin Kleiner’s future son-in-law should be admitted as a fellow-citizen, and the court’s collective decision was that insofar as he ... can provide a pledge of 50 Gulden, he will be accepted for one year, although only on condition of good behaviour’.¹⁹¹

By the early eighteenth century, the Ebhausen church court was demanding that young people display marriage permits from the government, as in 1718 when one young man was reported for having ‘entered into the married state without ... having shown anyone at all his marriage permit’; he was ordered to present it to the court at once.¹⁹² Couples settling in the community and claiming to be married could be challenged to prove it, as in 1746 when a 20-year-old worsted-weaver from Wildberg and a 28-year-old worsted-weaver’s daughter from Ebhausen were reported to the Ebhausen village church court because ‘they have been dwelling here for the last eight days, claiming that they have married one another, [but] the vicarage knows of no calling of the bans for these two’.¹⁹³

¹⁹⁰ HSAS A573 Bü. 124, fol. 61r, 23.4.1625: ‘solch. mas. verheürath, dz wann er, bürg.lich alhie einkomme, er hochzeit mit ihro hallten wölle’; ‘werde er vonn s: vnnd gericht abgewis., daß handtwerkh seye übersezt vnd die burgerschafft allzugroß’.

¹⁹¹ PAW, KKP Vol. I, Zettel between fols. 125v and 126r, 2.2.1654: ‘bey Burgermeister Gericht vnd Raht, Eine vmbfrag gethonn, wegen des Marttin Kleiners Künfftigen dochtermans, ob man ihn wölle Zu Einem mit burger An Nemmen, ist der Richterliche beschaidt ins gemein, so fehr Er ... Kön füffzig guld. verbürgen, so wöll man ihne Auff Ein iahrlang, doch Vff sein wolhalten, An Nammen’.

¹⁹² PAE KKP, Vol. III, p. 52, 8.5.1718: ‘ist in ehestand getretten ohne ... daß er hätte einen einigen menschen sein Eheschein gezeigt’; ‘ist ihm beditten worden Er solle seinen Ehschein so bald möglich auffweisen’.

¹⁹³ PAE KKP Vol. IV, fol. 33r, 6.12.1746: ‘halten sich seit 8 tagen alhier auf, unter dem Vorwand, daß Sie einander geehlichtet hatten ... nun das PfarrAmt von Keiner Ausrufung Ihrer beyder wußte’.

Community courts also influenced whether a marriage permit would be granted at all. The Ebhausen communal church court refused permits on grounds of poverty, as in 1743 when it forbade Jerg Rauschenberger from Monhardt (an isolated hamlet 2 km from Ebhausen) to marry the daughter of an Ebhausen village citizen on the grounds that

all circumstances show absolutely clearly that both Godly commandments and temporal ordinances permit no marriage here, and furthermore both parties are serfs [*Leibeigen*], Rauschenberger is not a citizen [of Ebhausen] and neither can nor will be accepted as such, and the latest instructions from the district authorities relating to the many princely decrees and to the princely marriage ordinance totally prohibit recognition of such marriages any longer, and on both sides there is nothing but pure poverty present.¹⁹⁴

Having forbidden a marriage locally, the communal church court would then seek to prevent the couple from wedding elsewhere by refusing to issue their birth certificates, as in 1748 when the Ebhausen court first refused to issue a marriage permit for Anna Catharina Rups to marry the worsted-weaver Jacob Hiller until they ‘properly established where they will settle as householders’. When Anna Catharina threatened to get married in Berneck (6 km from Ebhausen), Ebhausen refused to issue her with her birth certificate, which would have been necessary for her marriage to take place.¹⁹⁵ The Ebhausen communal court opposed the marriages even of some well-off couples, as in 1749 when Magdalena Renz, who had just inherited a ‘free’ peasant farm from her citizen father, applied for permission ‘to have the banns called and to be wedded’ to a 31-year-old man from another district. Although the man presented a certificate proving that he owned sufficient property and ‘there was no other obstacle to the marriage’, the village council protested to the princely government ‘against his admission as citizen, firstly because there are in any case already enough people here, and

¹⁹⁴ PAE KKP Vol. IV, fol. 10v, 26.4.1743: ‘da nun alle umstand so clar u: deutl., daß das gottl. gepoten, u: die welt: ordnung hierin keine Ehe Erlaubt, dazu noch gekomm., daß beede leibaig., d. rausch.berger kein burger, auch zu keinen burger könn. noch woll. angenomm. werd., u: das lestere oberamtl.: außschreiben welches sich auff frstl.: vile Rescript, u: Eheordnung. beziehet, durchauß v.bietet keine solche Ehen Mehr zu erkenn., u: beederseits eine pure armuth Vorhand.’

¹⁹⁵ PAE KKP Vol. IV, fol. 59r, 20.11.1748: ‘in Richtigkeit zu bringen wo sie sich häüßlich niederlassen wollen’.

secondly because if this happened there would be too many free peasants who would not have to share both advantages and burdens with the [rest of the] village'.¹⁹⁶ By the later eighteenth century, the Ebhausen communal court assumed that young people would incorporate calculations about marriage permits into their marriage strategies, as in 1770 when it asked an illegitimately pregnant young woman 'why she entered into a marriage promise with [this young man], since she knew in advance that the authorities would not let them come together [in marriage]?'¹⁹⁷

As the eighteenth century passed, Württemberg communities were increasingly supported in this marriage regulation by the central state, giving rise, after c. 1800, to one of the more severe manifestations of the well-known German 'political control of marriages'.¹⁹⁸ Although there was a slight liberalization after 1818, the institutional control of marriage was confirmed by a series of citizenship ordinances in first half of the nineteenth century, which confirmed the rights of local communities to control who could reside locally, enabling them to regulate marriage indirectly.¹⁹⁹ The Württemberg communities spent most of the first half of the nineteenth century effectively resisting any government attempt to liberalize access to marriage, and in the citizenship law of 1828 and the revised citizenship law of 1833 sought to guarantee their control over access to marriage by economically less well-off individuals indirectly. The economic crisis of the 1840s enabled the Württemberg communities to achieve their aim of making the controls on marriage more severe on grounds of 'pauperization'. As part of the conservative reaction after the revolutions of 1848, they were able to pass a very strict law on 5 May 1852 which imposed much more severe conditions: to marry, one had to demonstrate community citizenship or settlement rights, a minimum age of 25 years,

¹⁹⁶ PAE KKP Vol. IV, fol. 63r, 12.9.1749: 'begehret proclamirt u. copulirt zu werden'; 'ist auch sonst Keine Hindernuß vorhanden, als daß Hies. Gericht u. Rath wieder seine Annehmung Zum burger protestiren. 1. Weilen ohnehin leute genug hier. 2. Weilen auf diese weise der freyen bauren zu viel würden, die nicht mit dem flecken heben u. legen wollen'.

¹⁹⁷ PAE KKP Vol. V, p. 299, 1.6.1770: 'Warum sie sich mit ihm in einen Ehverspruch eingelassen, da sie zum Voraus gewußt, daß man sie von Obrigkeits wegen nicht zusammen lasse?'.

¹⁹⁸ For a discussion of the *politische Ehekonsens* and its demographic and socio-economic ramifications, including the Württemberg context, see Ehmer (1991); Ogilvie (1995); Matz (1980); Guinnane (2003).

¹⁹⁹ Hippel (1992), 512.

‘sufficient livelihood’, a minimum property of 150-200 Gulden, ‘a proper occupation’, and the required equipment to practise it.²⁰⁰ It was 1864 before this joint control of marriage by communities and state began to be liberalized. It was only abolished in 1870 with Württemberg’s entry into the unified German Empire, in which Prussian freedom of marriage dominated.

This is not to say that the marriage regulations were perfectly enforced. Matz, for instance, found that on the basis of the restrictive Württemberg marriage legislation of 1852/63 some 6 per cent of all couples applying to marry were rejected, although this of course does not measure the number of couples who knew they would not be granted a marriage permit and therefore did not apply.²⁰¹ The nineteenth-century marriage registers for Württemberg communities – including the three communities studied here – contain information on the license or other permit according to which each marriage took place, and it is clear that some couples obtained dispensations from the strict letter of the law. Other couples used illegitimate pregnancies to put pressure on community, church or state to grant them such dispensations. Still other couples, denied permission to marry, set up stable extra-marital unions and begot a whole series of children who were legally ‘illegitimate’, although such offspring were sometimes legitimized if the couple subsequently managed to obtain a marriage permit. The marriage regulations thus did not wholly prevent poor couples from marrying, and even when they did the regulations did not prevent such couples from having children. However, it seems likely that the regulations increased the costs and risks of marriage and childbearing for members of poorer social strata, and affected the demographic decisions taken by the marginal individual by intensifying incentives to delay marriage, form extra-marital unions, have illegitimate offspring, or emigrate.

²⁰⁰ Matz (1980), 201-3, 231-3, 267; Hippel (1992), 513.

²⁰¹ Matz (1980), 201-3, 231-5, 267; Hippel (1992), 512-13; Kaschuba / Lipp (1982), 363-5.

Certainly, Ehmer and others have argued persuasively that such institutional controls on marriage contributed to a distinctive demographic pattern. Marriage age and celibacy rose in many parts of German-speaking central Europe during the eighteenth and early nineteenth centuries, a period during which they were falling in other parts of central and western Europe, and fell significantly once the marriage laws began to be repealed in the 1860s. Even in their 'liberalized' interpretation between 1864 and 1870, the Württemberg marriage controls appear to have been a binding constraint, judging by the peak in the Württemberg marriage rate in 1871, after abolition of the controls.²⁰² German, Austrian, and Swiss territories with less liberal marriage laws had higher marriage ages, higher celibacy rates, and higher rates of illegitimate fertility. These controls on marriage, it is argued, may also have contributed to the high emigration rates from southern Germany.²⁰³

All these forms of direct demographic regulation by Württemberg communities were manifestations of the tacit – indeed, sometimes explicit – political alliance that underlay the entire Württemberg institutional system, whereby the state secured local collaboration with its efforts to increase taxation, public borrowing, and conscription, in return for granting legislative favours and executive support to influential interest-groups in the corporate communities.²⁰⁴ The direct demographic regulations were initiated by the local communal 'notability' – the office-holding elite – and the majority of respectable house-owning citizens who regarded such regulations as essential not just in protecting communal resources from being overburdened, but in maintaining their own control over the allocation of these resources.²⁰⁵ The demographic development of the three communities under study here cannot be analysed without an awareness of this fundamental institutional alliance underlying Württemberg society well into the nineteenth century.

²⁰² See Matz (1980), 231 (Table 13 on legislation), 238 (showing peak in marriage rate).

²⁰³ Ehmer (1991), Ogilvie (1995); Mantl (1997); Knodel (1967).

²⁰⁴ Hippel (1992), 591-3; Ogilvie (1999b).

²⁰⁵ For the classic elaboration of this hypotheses and supporting evidence, see Ehmer (1991).

4.3. Guilds and Merchant Associations

Guilds and other corporative occupational associations comprised a third major type of institution which played an important role in the economy and demography of Württemberg up to 1862. Württemberg law granted extremely wide-ranging powers to craft guilds from the sixteenth into the nineteenth century.²⁰⁶ From the later sixteenth century on, the Württemberg state also granted monopolies and other legal privileges in the textile and mining sectors to associations of merchants and industrialists.²⁰⁷ Both guilds and privileged associations remained central institutions in Württemberg economy and society throughout much of the nineteenth century.

The first references to guilds in Württemberg date to the thirteenth century at latest, and guilds were widespread in most industrial and commercial activities from the late medieval period on.²⁰⁸ By the sixteenth century, the Württemberg state was increasingly granting guilds formal recognition and national ordinances confirming their privileges and right to regulate ‘their’ sector.²⁰⁹ Guilds in Württemberg were not urban but ‘regional’. This meant that each guild was organized into a *Laden* (guild lodge), whether for a particular district or for a larger group of districts, and this guild lodge regulated all matters pertaining to that occupation across a whole region – in small towns and villages without distinction.²¹⁰ So thoroughly did guilds pervade the Württemberg economy that the word ‘Zunft’ (guild) was rarely used before the later eighteenth century; the guild was simply called ‘das Handwerk’ (the craft), an illustration of the conceptual identity of the economic activity and the corporate group.²¹¹

²⁰⁶ See, for instance, Hoffmann (1905); Raiser (1978)

²⁰⁷ Schaab (2000), 461.

²⁰⁸ Schaab (2000), 507.

²⁰⁹ Schaab (2000), 507-08; Raiser (1905); Ogilvie (1997), ch. 3.

²¹⁰ ‘Zweite Landesordnung’ (10 Apr. 1515), in Reyscher (1828ff), vol. 12, 17-35, here 30; ‘Siebente und neueste Landes-Ordnung’ (11 Nov. 1621), in *Ibid.*, vol. 12, 717-885, here 797-8, tit. LV, art. 7; ‘Allgemeine Gewerbe-Ordnung’ (22 Apr. 1828), in *Ibid.*, vol. 15.2, 593-4; ‘Revidirte allgemeine Gewerbe-Ordnung’ (5 Aug. 1836), in *Ibid.*, 1231-74, here art. 2. For a discussion of this development, see Schaab (2000), 551.

²¹¹ Raiser (1978), 5-6; Schaab (2000), 507.

In Württemberg, not just mainstream crafts but many other activities were legally regulated by guilds until 1828. These included (but were not limited to) herding sheep, growing wine grapes, fishing, working as a sailor, making music, painting and wood-carving, chimney-sweeping, keeping a public bath, practising as a barber-surgeon, serving as a public executioner, and working as a proto-industrial worsted- or linen-weaver.²¹² The ‘commerce ordinances’ of 1601, 1650, 1661, 1680, and 1728 required anyone operating a merchant’s business, keeping a public shop, or trading in a long list of ‘merchants’ wares’ to obtain membership in the merchants’ and shopkeepers’ guild, either through proper apprenticeship and journeymanhood, or through ‘buying himself in’ with a large ‘concession fee’ (and guild approval). The list of ‘merchants’ wares’ changed from one commerce ordinance to the next, but included certain textiles, exotic skins and hides, leather and cloth garments, spices, dyes, chemicals, metals, small metal wares, and imported fish, oils and fruits.²¹³

Württemberg law did not begin to weaken the privileges of guilds until well after 1800. New guild ordinances were issued until the end of the eighteenth century: at least seventeen occupations were issued with their first national guild ordinance after 1700, some as late as the 1780s.²¹⁴ Even early nineteenth-century Württemberg legislation only nibbled at the immense edifice of guild privileges, abolishing journeyman’s guild lodges in 1805 (politically straightforward since it was supported by many masters),²¹⁵ and exhorting guild masters in 1810 to ‘modernize their wares’.²¹⁶ The idea of abolishing the guilds in general was discussed in

²¹² Hoffmann (1905), 10-1; ‘Allgemeine Gewerbe-Ordnung’ (22 Apr. 1828), in Reyscher (1828ff), vol. 15.2, 593-4; ‘Zusatz-Gesetz zu der allgemeinen Gewerbe-Ordnung’ (22 Apr. 1828), in *Ibid.*, 594-6; ‘Revidirte allgemeine Gewerbe-Ordnung’ (5 Aug. 1836), 1231-74. Specifically on the legislation surrounding the Württemberg shepherd’s guilds, see Raiser (1978), 151-3.

²¹³ ‘Erste Handlungs-Ordnung’ (20 Jul. 1601), in Reyscher (1828ff), vol. 12, 547-84; ‘Zweite Handelsordnung’ (20 Jan. 1650), in *Ibid.*, vol. 13, 75; ‘Dritte Handelsordnung’ (15 Feb. 1661), in *Ibid.*, vol. 13, 436; ‘Vierte Handelsordnung’ (20 Oct. 1680), in *Ibid.*, vol. 13, 563-70; ‘Fünfte Handels-Ordnung’ (11 Nov. 1728), in *Ibid.*, vol. 14, 20-44; see the discussion in Raiser (1978), 159-61.

²¹⁴ *Ibid.*, xxiii-xxv.

²¹⁵ ‘Generalrescript, betr. die Aufhebung der Gesellen-Laden bei den Handwerkszünften’ (17 Jan. 1805), in Reyscher (1828ff), vol. 14, 1263-5.

²¹⁶ ‘Rescript, betr. die Ausstattung der Gewerbewaaren’ (28 Feb. 1810), in *Ibid.*, vol. 15.1, 475-6: ‘ihre Fabrikate zu modernisieren’.

internal ministerial discussions in 1811 and 1817, but was not even mentioned publicly.²¹⁷ Instead, legislation supporting guild privileges continued to be promulgated: a law of 1817 restricted state dispensations from guild requirements,²¹⁸ a law of 1824 prohibited such dispensations unless local guild foremen and community officials agreed,²¹⁹ and a law of 1825 explicitly confirmed guilds' independent jurisdictional powers.²²⁰

The great industrial ordinance (*Gewerbeordnung*) of 1828, confirmed in revised form in 1836, represented only a modest beginning at loosening the guild regulation of the Württemberg economy.²²¹ It sought to standardize guild regulations across the country, clarified the legal status of the 'factory' (*Fabrik*) as a form of enterprise, and removed a few guild restrictions such as limits on the number of employees, ceilings on the output capacity of masters' workshops, and prohibitions on marketing beyond guild jurisdictions.²²² It also abolished guilds for 13 (mostly non-craft) activities such as sheep-herding, wine-growing, fishing, sailing, and so on. But it explicitly confirmed exclusive guild privileges over 44 mainstream occupations, including most crafts, proto-industrial worsted-weaving and linen-weaving, keeping a shop, and trading as a merchant.²²³

These guild privileges remained in place for the next generation, with state *Konzessionen* (special licenses) as the sole way of circumventing guild regulations in most branches of Württemberg industry. In the 1845-55 economic crisis, there were even significant attempts

²¹⁷ Hippel (1992), 572.

²¹⁸ 'Bekanntmachung einige den Königl. Oberämtern zur Erledigung zu überlassende Geschäftsgegenstände betreffend' (2 Jan. 1817), in *Ibid.*, vol. 15.1, 852-3; 'Erlaß, die Dispensationen in Handwerkssachen betr.' (28 Jun. 1817), in *Ibid.*, 937.

²¹⁹ 'Instruction für die K. Oberämter, die Behandlung der Dispensationen von Vorschriften der Handwerks-Ordnungen betr.' (19 Jan. 1824), in *Ibid.*, vol. 15.2, 323-4.

²²⁰ 'Erlaß des Ministeriums des Innern an die Kreis-Regierungen, betreffend den Bezug der von den gemeinschaftlichen Oberämtern, von den Kirchen-Conventen und bei den Handwerkszünften angesetzten Geldstrafen' (18 Apr. 1825), in *Ibid.*, vol. 15.2, 412-3.

²²¹ The modesty of this beginning is acknowledged in Kollmer (1994), 60-1.

²²² Hippel (1992), 572.

²²³ 'Allgemeine Gewerbe-Ordnung' (22 Apr. 1828), in *Ibid.*, vol. 15.2, 593-4; 'Zusatz-Gesetz zu der allgemeinen Gewerbe-Ordnung' (22 Apr. 1828), in *Ibid.*, 594-6; 'Revidirte allgemeine Gewerbe-Ordnung' (5 Aug. 1836), 1231-74.

from Württemberg's craftsmen to strengthen the position of the guilds.²²⁴ Württemberg's guilds were only abolished, after long negotiation and debate, on 12 February 1862.²²⁵

In recent years some historians have sought to rehabilitate guilds, arguing that guilds were unable to enforce their entry restrictions or even that their monopolies were positively beneficial, whether for product quality, craft training, or technological transmission. Such views are not, however, supported by the empirical findings on guilds in Württemberg.²²⁶

Guild privileges in Württemberg were not merely paper tigers. Rather, as is copiously documented in local archival sources for Wildberg and Ebhausen, they were enforced in practice on the local level. Thus, for instance, in 1716 a Wildberg cartwright complained that a neighbour was encroaching into his craft, by making ladders for dung-carts; the community court supported him.²²⁷ In 1785, a Wildberg woollen-weaver complained that Jews were peddling in the district, thereby encroaching on his and other crafts; the court responded by threatening a 20-Reichstaler fine for anyone who traded with Jews.²²⁸ That same year, a Wildberg linen-weaver complained that the guild foremen were demanding excessive certification for apprentices; the communal court supported the guild foremen, merely restricting the fees charged by the rural foreman if he was not involved in certifying a particular case.²²⁹ In 1793, a Wildberg linen-weaver complained that a young man whose masterpiece was inadequate was allowed to become a master anyway; the communal court physically inspected two cloths and took copious oral evidence before declaring the work 'meisterhaft' (fitting to a master).²³⁰

²²⁴ Hippel (1992), 573.

²²⁵ 'Neue Gewerbe-Ordnung vom 22. Februar 1862', *Regierungsblatt für das Königreich Württemberg* (1862), 67. See the discussion in Hippel (1992), 572-3.

²²⁶ For considerations of the 'rehabilitation' arguments in the light of evidence for Europe in general and Württemberg in particular, see Ogilvie (1997), 308-63; Ogilvie (2004); Ogilvie (2007).

²²⁷ HSAS A573 Bü 94, 29 Jan. 1716, fol. 6r.

²²⁸ HSAS A573 Bü 99, 1785 (date illegible), fol. 67v.

²²⁹ HSAS A573 Bü 99, 1785, fol. 69r.

²³⁰ HSAS A573 Bü 100, 8-30 Jan. 1793, fol. 22v-23r.

Enforcement of guild privileges restricted occupational mobility and circumscribed the demographic and economic options of ordinary people. In 1731, for instance, a Wildberg tanner complained that a worsted-weaver was buying up lamb's wool 'away from him'; the communal court forbade all 'buying-up' except what the worsted-weaver needed for his own craft.²³¹ In 1742, a Wildberg nailsmith complained that the Bulach nailsmith was peddling in Wildberg, a soldier woman from Effringen was trading in foreign nails, and a worsted-weaver from Gültlingen was doing the same, all of which contravened the nailsmiths' ordinance and damaged him in his craft; the communal court responded by punishing the offenders.²³² In 1764, a Wildberg tanner urged that buying-up of sheepskins should be forbidden to the worsted-weavers; the communal court threatened confiscation and other penalties for any future offenders against the tanner's guild privileges.²³³ In 1785, a Wildberg tanner again complained that the butchers and worsted-weavers were practising 'a buying-up and regrating' with calves' and sheep's hides, counter to his guild privileges; the communal court forbade the practice.²³⁴

The jurisdiction enjoyed by Württemberg guilds over villages as well as small towns, too, can be observed in practice. Guild 'honour' mattered to rural masters; the guild lodge penalized offences in villages as well as small towns; villagers held guild offices for long periods; and guild account-books record rural masters paying mastership fees, registering apprentices, paying guild dues, attending guild gatherings, and participating in guild lobbying. In 1752, for instance, a guilded butcher in the village of Gültlingen in the district of Wildberg complained that the former village headman had called him a churl in the Wildberg town-hall and had shaken his fist in front of his mouth, which defamation he could let rest upon him because it occurred in front of 'the other butchers'.²³⁵ In 1765, the district of Wildberg butchers' guild fined a

²³¹ HSAS A573 Bü 95, 23 Feb. 1731, fol. 5r.

²³² HSAS A573 Bü 95, 25 Jan. 1742, fol. 6v.

²³³ HSAS A573 Bü 95, 17 Dec. 1764, fol. 17v.

²³⁴ HSAS A573 Bü 99, 1785, fol. 61r.

²³⁵ HSAS A573 Bü 101, 13 Jan. 1752, fol. 16r.

member for improper slaughtering, counter to guild regulations, in the village of Ebhausen.²³⁶ In 1779, a villager from Liebelsberg in the district of Wildberg was elected foreman of the district linen-weavers' guild and was still in office six years later.²³⁷ Careful analysis of the annual account-books of the worsted-weavers' guild in the district of Wildberg shows that the guild regulated village weavers with the same degree of intensity as they applied to weavers in the small town of Wildberg.²³⁸

Guild regulation over non-craft activities such as herding sheep was also visibly enforced in practice. Thus, for instance, in 1739, the Wildberg district governor reported financial difficulties in the shepherds' guild lodge, and proposed remedies for lightening the burden on the mastership in the district.²³⁹ In 1791, a man newly admitted as shepherd in a neighbouring district applied for dispensation to be written-in and written-out in the apprenticeship lists of the guild at the same time, and to be accepted as a master by the Wildberg shepherd's guild.²⁴⁰

The monopoly over trade and retailing enjoyed by guilded merchants and shopkeepers was also actively defended before community courts. Thus, for instance, in 1738, a Wildberg merchant complained that a local braid-maker was 'encroaching' on him and another merchant in 'their commerce' (the range of business over which their guild privileges gave them a monopoly) by buying up all sorts of wares. The communal court responded by ordering the braid-makers to point out in their guild ordinance what wares they were allowed to deal in.²⁴¹ In 1784, a Wildberg merchant complained that Jews and wandering rural shopkeepers were causing great impairment to the merchants through prohibited peddling in the town and in the villages of the district. In the same year, a Wildberg shopkeeper demanded the abolition of the increasing peddling of Jews and rural shopkeepers. The communal court responded by ordering ordinary

²³⁶ HSAS A573 Bü 43, 18 Oct. 1765, fol. 68v, 70r.

²³⁷ HSAS A573 Bü 99, 1785, fol. 68v-69r.

²³⁸ Ogilvie (1997), chapter 9.

²³⁹ HSAS A573 Bü 38, 18 Aug. 1739, fol. 215r.

²⁴⁰ HSAS A573 Bü 6948, petition of 27 Jun. 1791.

²⁴¹ HSAS A573 Bü 95, 16 Jan. 1738, fol. 16v.

citizens, the customs-collector, and village officials to watch out for Jews and peddlers and report them to the ducal officials.²⁴² These cases illustrate the ways in which every aspect of guild privileges were zealously monitored by ordinary citizens, and offenders penalized by community and state officials.

Trade in Württemberg was additionally regulated by state privileges granted to merchant associations. These merchant associations were often called ‘Handlungskompagnien’ (‘trading companies’), but should not be confused with ‘companies’ in the sense of firms. Rather, they were associations of merchants who enjoyed the exclusive right to trade in particular goods or branches of exports. Counter to theoretical claims in the secondary literature, that proto-industrialization broke down corporate privileges and saw the emergence of capitalistic industrial entrepreneurs, every Württemberg proto-industry was monopolized until the 1790s by a merchant association enjoying wide-ranging privileges from the state. The first of these companies to be established was the Calw Worsted Trading Association (*Calwer Zeughandlungskompagnie*), founded in 1650 with a guild-like organization and an array of privileges over the proto-industrial worsted trade (including in Wildberg and Ebhausen); it enjoyed these legal privileges until its dissolution in 1797. Its foundation document expressed the view which the Württemberg government was to hold consistently into the nineteenth century, that ‘it is much more useful and better to conduct commerce out of one hand than out of many dissimilar separate hands’.²⁴³

Over the next ninety years, three other merchant companies were granted exclusive privileges over the emerging linen proto-industries of different Württemberg districts: the Urach Linen Trading Association (*Uracher Leinwandhandlungs-Compagnie*) which between 1662 and 1793 monopolized the trade in linen cloths produced on the Swabian Jura, including in the village of Auingen; the Blaubeuren Linen Trading Association (*Blaubeurener Leinwandhandlungs-*

²⁴² HSAS A573 Bü 95, 2 Jan. 1784, fol. 6r-v.

²⁴³ ‘Rezess’ (2 Sep. 1650), reprinted in Troeltsch (1897), 454: ‘In ansehung vihl nutzlicher vnd Besser ain handlung auss einer: alls vihlen ohngleichen zertrenten händen zueführen’.

Compagnie) which had similar privileges over its own region from 1726 to 1797; and the Heidenheim Linen Trading Association (*Heidenheimer Leinwandhandlungs-Compagnie*), with similar privileges over a different Württemberg region from 1736 to 1808.²⁴⁴

In many other industrial sectors, as well, the Württemberg state granted *Fabrik* (manufactory) privileges to associations of merchants. Few *Fabriken* survived for long and even fewer were profitable, but they continued to secure state monopolies, subsidies and other legislative favours well into the nineteenth century.²⁴⁵ So ubiquitous were merchant associations in Württemberg that in 1793 the Göttingen professor Christoph Meiners, in his description of a journey through the duchy, described how external trade there ‘is constantly made more difficult by the form which it has taken for a long time. The greatest share of trade and manufactures are in the hands of closed and for the most part privileged associations.’²⁴⁶

The corporate organization of industry and commerce in Württemberg profoundly affected the three communities studied here. As discussed in detail in Section 8.1, from 1650 to 1797 the Calw Worsted Trading Association and the worsted-weavers’ guilds in the surrounding Black Forest districts – including the one into which the weavers of Wildberg and Ebhausen were organized – were tied together by a network of interlinked privileges and obligations called the *Calwer Moderation*, which obliged all weavers in the region to sell their worsteds exclusively to the Calw Association, at prices fixed by the latter, which also had the exclusive right to dye, finish, and export them.²⁴⁷ This institutional arrangement was enforced by local community institutions and state officials, and exerted wide-ranging demographic, economic and social

²⁴⁴ See the discussion of these companies in Flik (1990), 96-108; Gysin (1989), 108-9.

²⁴⁵ For a detailed discussion of these ‘manufactories’ and the associated merchant companies, see Gysin (1989), 30, 43-7, 76-83, 130, 139-40, 164-5, 170-1, 223, 225, 227. For examples of their legal privileges see ‘Privilegium für Einrichtung einer Seidenfabrik und Gewinnung der Seide’ (4 Apr. 1721) in Reyscher (1828ff), vol. 13, 1217; ‘Privilegium für die Seiden- und Castor-Commerzien- und Manufacturen-Compagnie zu Stuttgart’ (15 Aug. 1735), in *Ibid.*, vol. 14, 162; ‘Privilegium für eine Seiden-Fabrik’ (26 May 1751), in *Ibid.*, 370; ‘Privilegien für eine Porzellan-Fabrik zu Calw’ (4 Aug. 1751), in *Ibid.*.

²⁴⁶ Meiners (1794), 292: ‘würde doch immer durch die Form erschwert worden, die er seit langer Zeit angenommen hat. Handel und Fabriken sind dem größten Teil nach in Händen von geschlossenen, und meistens privilegierten Gesellschaften’.

²⁴⁷ The region subjected to the ‘Calwer Moderation’ is shown in Map 11 below.

effects. A case of 1784 provides an illustration of how the Calw merchant association, the weavers' guilds, the local community, and the state bureaucrats reinforced each other's powers and constrained the demographic and economic decisions of individuals. In 1784, a worsted-weaver from a nearby non-Württemberg community appeared before the Wildberg community court to say that if he could be granted 'either citizenship or by-settler rights in the town here', he would like to marry a Wildberg worsted-weaver's daughter and thereby 'bring this citizen's daughter here into honour, and create a future provision for her children'. The court decided, however, that 'because the petitioner, as a worsted-weaver, does not stand under the *Calwer Moderation*, and hence is not in a situation to provide for wife and children with the craft he is trained in, his petition cannot be granted for as long as he is not accepted into the *Moderation*'.²⁴⁸ Into the last decades of its existence, this proto-industry, along with the marriage and labour decisions of its members, continued to be constrained by the privileges of occupational corporations.

From the seventeenth century on, the Württemberg state increasingly regulated local guilds, but also supported them to a greater extent than previously. Guilds began to be obliged to keep proper accounts, which were written up for them by the town secretary and inspected each year by the prince's district official and the council of the district town.²⁴⁹ The account-books

²⁴⁸ HSAS A573 Bü 49, 14 Oct. 1784, fol. 176r-v: 'damit diese hiesige burgerstochter zu Ehren zu bringen, und denen Kindern ihren Künfftigen Unterhalt zu verschaffen'; 'ihn als burger oder beysizer in hisige Stadt aufzunehmen'; 'Weil Implorant als ein Zeugmacher nicht unter der Calwer moderation stehet, also [c.o.: sein] [ins.: mit] seinem erlernten Handwerck [c.o.: keine] nicht Weib und Kinder zu versorgen im Stande ist, so Kan sein Petikum solange nicht statt finden als er in die moderation nicht aufgenommen seyn wird'.

²⁴⁹ Official yearly account books began to be kept for guilds in the district of Wildberg between 1598 and 1612, although all guilds (except that of the new proto-industrial worsted weavers, who only obtained their ordinance and guild organization in 1597) had already been in existence for a long time. The annual account books of the worsted weavers' guild in the district of Wildberg survive from the guild's establishment in 1598 until 1647; and again from 1666 until 1760, after which the account-books do not survive because they were not archived, although copious additional local documentation shows that the guild continued to be very active; these account-books are held in HSAS A573 Bü 777 911, Rechnungen des Engelsaitweber-(Zeugmacher-) Handwerks, 1598-1647 & 1666-1760. The accounts of the guild of the *Tuchmacher* (woollen-weavers) in the district of Wildberg survive from 1612 only to 1644, even though the extensive system of rents and interest-drawing loans revealed in the first surviving account book point to a long-standing financial history, and the guild survived until 1862: HSAS A573 Bü 912 948 1612-1644 (Kerzen- und Walken-Rechnungen des Tucherhandwerks). Similarly, the account-books of the bakers' guild survive from 1607 to 1777, even though the guild had existed in Wildberg at least since the 1560s (as is shown by the fact that it paid rents into the

recorded incoming and outgoing apprentices, incoming masters, fines collected for offences against the ordinance, expenses incurred in lobbying the Stuttgart bureaucracy and the estates, and lists of practising masters and widows paying their annual guild dues. These records reveal that the guilds were becoming more, not less, powerful and efficient at market regulation in the course of the seventeenth, eighteenth and early nineteenth centuries. Their high degree of internal cohesiveness and external exclusiveness were only possible because the guilds enjoyed extensive support from both community and the prince's officials in the localities.²⁵⁰

Local court records reveal that infringements by outsiders against the guild monopoly were often pursued by community officials and the prince's district-level bureaucrats, as well as by the guild officers and ordinary guild members. Bureaucratic and community assistance gave the proto-industrial worsted-weavers' guild in the district of Wildberg, for example, the power it exercised to confiscate unsealed cloths or illicitly spun yarn with the whole weight of the local judicial machinery behind it, even in relatively distant villages such as Ebhausen.²⁵¹ Offences against guild regulations were frequently punished twice: a small fine was levied by the guild itself (recorded in the account-books), and a much higher fine was levied by the prince's district official in the district town court, supplemented by brief incarceration for more serious offences.

This mutual support between local bureaucracy on the one hand, and community and guild corporatism on the other, is not surprising, since local records reveal that guild members dominated the local community councils. The guild domination of the community councils of

Heiligenrechnungen (accounts of the local ecclesiastical administration) from the beginning of their survival in that decade: HSAS A573 Bü 2828ff), began having its accounts checked by the ducal bureaucrats a year earlier, in 1606, and continued to exist until 1862: HSAS A573 Bü 949 1018 (Rechnungen des Bäckerhandwerks), 1607 1777. There is also one account-book for the butchers' guild, which survives for 1665-6, although clearly this guild existed for more than one year: HSAS A573 Bü 1019 (Rechnung des Metzgerzunft), 1665-6. The beginning of surviving account-books for the worsted-weavers, the woollen-weavers and the bakers in the district archive in Wildberg between 1598 and 1608 may reflect the well-known intensification of state efforts, under Duke Friedrich, to establish a state industrial policy in the grand style and bring more sectors of the economy under state control, as discussed, for instance, in Troeltsch (1897), 15-17. Unfortunately, no guild account-books appear to have survived for the district of Münsingen.

²⁵⁰ See the detailed discussion of these findings in Ogilvie (1997), esp. chapters 5-7, 9-10.

²⁵¹ Ogilvie (1997), chapter 9.

Württemberg district towns has long been known.²⁵² Less well-known, and arguably even more significant, is that it could also be true in villages, especially when these developed significant crafts or proto-industries. Thus, for instance, in 1711 in the village of Sulz in the district of Wildberg, six members of the twelve-man village council were members of the guild of the proto-industrial worsted-weavers, even though only just over one-quarter of the village's households were headed by worsted-weavers in that year.²⁵³

In understanding why guilds in Württemberg were so tenacious in their ability to regulate local economic and demographic decisions, it is important also to recognize their impressive capacity to influence decisions taken in Stuttgart, at both the Chancellory and the parliamentary estates. This influence resulted from their ability to extract resources from their members, not just through mastership and apprenticeship fees and fines, but also through regular guild dues. For instance, beginning in the 1660s the Wildberg proto-industrial worsted-weavers' guild began to collect annually the equivalent of a day's earnings from each master and practising widow in the town and the villages. These funds, which amounted to more than the value of a modest house every year, were used to lobby the bureaucracy and the estates in Stuttgart to pass industrial legislation favourable to the guild, and to counter similar initiatives on the part of the privileged merchant association. The worsted-weavers' guilds of the districts of Wildberg, Calw, Nagold, and Herrenberg also frequently mobilized the support of their district town councils and district governors to write to Stuttgart on the weavers' behalf.²⁵⁴ With both state and community institutions behind them, guilds in Württemberg disposed of an impressive ability to influence economic policy, which in turn explains their long survival and wide influence.

²⁵² Vann (1984), describes this well-known characteristic of the small district towns (*Amtsstädte*).

²⁵³ See HSAS A573 Bü 863 (Apr 1710 - Apr 1711).

²⁵⁴ For an analysis of the lobbying campaigns of the worsted-weavers' guild of the district of Wildberg, and the resources such political activity consumed, see Ogilvie (1997), chapter 10.

4.4. Religious Institutions

The established religion in the territory of Württemberg throughout the entire period analyzed here was Lutheranism, despite the fact that two Dukes of Württemberg in the eighteenth century were Catholics, and despite the incorporation of a large number of predominantly Catholic territories into the new Kingdom of Württemberg after 1806. Thus the religious institutions that predominantly affected demographic life in the three communities studied here were those that arose within the Lutheran confession, whether imposed by the orthodox Lutheran national church (discussed in Sections 4.4.1 and 4.4.2) or arising spontaneously as inner-Lutheran ‘separatist’ movements such as Pietism (discussed in Section 4.4.3).

4.4.1. Confessional Affiliation

The Reformation was introduced into Württemberg in 1534-5, after which all three of the communities under study here became and remained almost exclusively Lutheran.²⁵⁵ Lutheranism in Württemberg was strictly administered. Non-Lutherans – even members of other Protestant confessions such as Calvinists – found it very difficult to obtain the right to reside in Württemberg communities, even as ‘by-settlers’, let alone as community citizens with full rights. Up to 1806, Württemberg laws prohibited immigrants from Calvinist and Catholic territories from being admitted as citizens or by-settlers in Württemberg communities unless they converted to Lutheranism or obtained princely dispensations.²⁵⁶ We can observe these confessional requirements being imposed in practice, as for instance in 1657 when a Catholic man and his wife who had been cowherds in a village in the district of Wildberg for the preceding 8 years were refused citizenship rights by that village even when they expressed a desire to convert to Lutheranism, and were forced to petition the ducal

²⁵⁵ Lehmann (1972); Mertens (1995), 102-10; Schaab (1974a), 172.

²⁵⁶ ‘Generalrescript, wegen Aufnahme fremder Religionsverwandten ins Bürgerrecht’ (10.1.1650), in Reyscher (1828ff), vol. XIII, 74; ‘Commun-Ordnung’ (1.6.1758), in Reyscher (1828ff), Vol. 14, 537-777, here 582, article 10.

government for ‘dispensation’; the result of their petition is not recorded.²⁵⁷ Württemberg communities only tolerated non-Lutherans if they were servants or if they possessed unusual professional skills of which no Lutheran practitioner could be found. Thus for instance in 1727, the Wildberg fuller and his family were Catholics, although the man was fined when he sought to take his son with him to attend Mass in Rohrdorf.²⁵⁸

After their formal ejection in 1498, Jews were not permitted to live permanently or work in the territory of the Duchy of Württemberg at all.²⁵⁹ As a result, there were practically no Jews in Württemberg until the acquisition of slightly more tolerant territories after 1806, at which point Württemberg acquired an estimated 8,000 Jews, almost all of whom lived in towns. Even then, according to a survey of 1817/18, there were only 8,257 Jews in Württemberg, making up 0.6 per cent of the population.²⁶⁰ Legislation of 1828 somewhat relaxed the restrictions on the economic and social position of Jews in Württemberg, but the Citizenship Law of the same year confirmed the right of Württemberg communities to exclude Jews from community citizenship and even from being granted by-settler rights.²⁶¹ In 1836, Jews began to be allowed to hold citizenship and be represented on the communal council in a few designated ‘Jew-villages’ (*Judendörfer*) in Württemberg.²⁶² Nonetheless, Jews continued to be subject to restrictions on occupation and residence, and were attacked in popular demonstrations (e.g. in 1849). It was not until 1861 that Württemberg passed legislation granting Jews equality in *state* citizenship; and even then they continued to be discriminated against as far as *community* citizenship was concerned.²⁶³

The religious heterogeneity which appeared in Württemberg as a whole after 1806 as a result of the new territorial acquisitions remained restricted to the regions of New Württemberg for

²⁵⁷ HSAS A573 Bü. 129b, fol. 22v, 28.3.1657.

²⁵⁸ PAW KKP vol. IV, 8.8.1727, fol. 412v.

²⁵⁹ Schaab (2000), 525-7.

²⁶⁰ Hippel (1992), 589.

²⁶¹ Hippel (1992), 591.

²⁶² Hippel (1992), 590-1.

²⁶³ Hippel (1992), 590.

a long time. It took several generations even to begin to translate into any sort of religious pluralism in the strongly Lutheran communities of Old Württemberg, among them the communities analysed here. Even in the capital city, Stuttgart, the proportion of Catholics in the population rose only very slowly, from 0.6 per cent in 1807, to 3.6 per cent by 1831, to 8.7 per cent in 1862, and 13.8 per cent in 1895.²⁶⁴

In the three communities under study here, which were also parts of Old Württemberg, almost the entire population was Lutheran and remained so to the end of the nineteenth century. In Wildberg, there was a brief period at the time of the building of the railway through the town in the early 1870s, when the large temporary population of railway workers created a Catholic sub-group in the locality, which was even permitted to make use of the Lutheran church for their religious services. However, this did not happen in Ebhausen, where the railway did not reach until 1891 when, as discussed below, a narrow-gauge branch line was built from Nagold to Altensteig.²⁶⁵ It was also a purely temporary phenomenon in Wildberg itself, since the Catholic workers moved on with the railway itself. As late as 1895, only 2.4 per cent of the population of Wildberg and 0.5 per cent of the population of Ebhausen was non-Lutheran, almost all of them Catholic.

The district of Münsingen was also predominantly Lutheran until 1806. However, it was characterized by greater confessional heterogeneity than many other districts of Old Württemberg (including the district of Wildberg), because it had two villages, Magolsheim and Ennabeuren which, as a result of being divided between two lords, were partly Catholic and partly Lutheran; in addition, from 1787 the Münsingen village of Buttenhausen had a substantial resident Jewish community. Then, in 1806, as we saw in Section 4.2, the district of Münsingen was expanded through the addition of a number of Catholic villages from Württemberg's new territorial acquisitions. As a consequence of the incorporation of these

²⁶⁴ Hoffmann-Martinot (2004), 7-8.

²⁶⁵ Reule / Schwarz (1993).

Catholic communities, the proportion of Catholics in the district rose from nearly zero in 1806 to 19.3 per cent in 1834, 16.7 per cent in 1871, and 17 per cent in 1905.²⁶⁶

But even within the small district of Münsingen, there was very little confessional mixing between the Lutheran and Catholic communities. The Old Württemberg village of Auingen, for example, remained almost purely Lutheran until the final decade of the nineteenth century.²⁶⁷ It was only with the building of the railway through Münsingen in 1893, the establishment of a military encampment just north of Auingen in 1895, and the foundation of the first factory (a cement plant) in Münsingen in 1897, that a number of Catholic workers and soldiers migrated into both Münsingen and, increasingly, Auingen. By 1905 there were 100 Catholics in Auingen, making up 10 per cent of the population;²⁶⁸ around 1910 there were about 180 Catholics in Münsingen.²⁶⁹

The pastoral care and demographic registration of the growing Catholic population in Auingen as well as the Catholic soldiers in the military encampment just north of the village was undertaken by the Catholic pastor in Magolsheim, 7 km to the west, a village divided between Lutheran Württemberg and a Catholic Imperial Knight from 1595 until it passed wholly into Württemberg possession in 1743.²⁷⁰ Religious provision for the new Catholic inhabitants of Münsingen and Auingen was enhanced with the setting up of a Catholic 'prayer-hall' (*Betsaal*) in Münsingen in the previous princely grain-store in the castle courtyard in 1893.²⁷¹ But the predominant religious institutions that regulated the inhabitants of Auingen remained those of the established Lutheran church.

²⁶⁶ Landesarchivdirektion Baden-Württemberg (1997), II:27.

²⁶⁷ Landesarchivdirektion Baden-Württemberg (1997), II:27.

²⁶⁸ Landesarchivdirektion Baden-Württemberg (1997), II:27.

²⁶⁹ Sigel (1910ff), 542.

²⁷⁰ Landesarchivdirektion Baden-Württemberg (1997), II:55.

²⁷¹ Landesarchivdirektion Baden-Württemberg (1997), II:55.

4.4.2. Church Administration and Jurisdiction

After the Reformation, the Württemberg Lutheran church was organized into a system of deaconries (*Dekanate*), many of which incorporated more than one temporal administrative district (*Amt*). Inside each deaconry, religious administration was carried out through a system of parishes (*Pfarreien*). Each district town constituted its own parish and was ministered to by a town pastor (*Dekan, Spezial, Stadtpfarrer*), assisted by a curate (*Diaconus, Helfer*), who also often ministered to any branch-parishes (*Filialen*) in smaller neighbouring communities. A larger village – such as Ebhausen – would also constitute its own parish, and have its own village pastor (*Pfarrer, Dorfpfarrer*), who was subordinate in the first instance to the authority of the pastor in the district town. A smaller village – such as Auingen – would be treated as a branch-parish (*Filial*) ministered to either by the curate (*Diaconus, Helfer*) of the district town or by the pastor of a nearby larger village.

The way this religious administration worked for Wildberg and Ebhausen was that the Synodal Ordinance of 1547 created a Deaconry (*Dekanat*) which included the three political districts of Wildberg, Nagold and Calw, and endowed the town pastor of Wildberg with the rank of *Dekan*.²⁷² In 1557, Wildberg appointed a curate (*Diaconus*) to assist the town pastor, and also to minister to the two nearby branch parishes in the villages of Effringen and Schönbronn.²⁷³ However, Wildberg and Effringen-Schönbronn had separate parish registers from the beginning, rather than (as sometimes happened) the sub-parishes sharing registers with the main parish. Wildberg began keeping marriage registers on 3 October 1558, around the time of the earliest surviving baptism registers for Württemberg communities. Since Württemberg actually mandated baptism registers even before marriage registers, it is probable that Wildberg's original first baptism register also started in 1558, but the Swedish military occupation destroyed it in 1645 so the first surviving baptism register starts on 1

²⁷² Königliches statistisch-topographisches Bureau (1862), 92.

²⁷³ Königliches statistisch-topographisches Bureau (1862), 268.

January 1646. The Wildberg burial register starts on 21 July 1615. The village of Effringen remained a branch parish of Wildberg into the eighteenth century, it maintained separate parish registers, although it was sometimes included in the counts of ‘souls’ undertaken in the annual church visitations, and this may account for otherwise inexplicable fluctuations in total numbers of ‘souls’ recorded in Wildberg during some periods (e.g. the second half of the 1720s).

In 1577, the district of Calw was separated from the Deaconry, which was renamed the Deaconry of Wildberg, whose town pastor retained the rank of *Dekan*. Until 1807, the Deaconry of Wildberg included Wildberg, Ebhausen, and 19 other towns and villages.²⁷⁴ In 1810, perhaps in recognition of the rapid decline of Wildberg consequent upon the collapse of its worsted industry, the Deaconry of Wildberg was transferred to the Generalcy of Tübingen. In 1814 the position of the Wildberg curate (*Diaconus*) was abolished, and in 1821 the seat of the Deaconry was transferred from Wildberg to Nagold.²⁷⁵

Wildberg had its own parish church from shortly after the town’s establishment in around 1230. Initially, the Wildberg church was a daughter-church of the much richer ‘mother-church’ in the neighbouring village of Sulz, which had the right of appointment of the Wildberg parish priest. Then in 1377 the right to appoint the Wildberg priest was transferred to the Reutin convent just outside the town. In 1392, the Wildberg church was legally separated from the Sulz mother-church although Reutin retained the right to appoint the town priest.

The church building in Wildberg dates from 1467, as part of the rebuilding of the town after the fire of 1464. It was built by the well-known late Gothic Württemberg church architect Aberlin Jörg (builder of the three famous churches in the centre of Stuttgart, the national

²⁷⁴ Königliches statistisch-topographisches Bureau (1862), 92-3.

²⁷⁵ Königliches statistisch-topographisches Bureau (1862), 93, 268; <http://maja.bsz-bw.de/kloester-bw/klostertexte.php>

capital), and testifies to the prosperity of Wildberg in this period, discussed above in Section 3.2. The Wildberg church was subsequently extended and renovated, most fundamentally in 1609 and 1772-3, but its late Gothic origins can still be seen in the choir.

Wildberg was also, as already mentioned, the seat of the Maria Reutin convent. Reutin was located immediately across from the town on a specially cleared riverbank terrace on the right side of the Nagold, with a courtyard of buildings and a garden of 5 Morgen (c. 1.5 hectares or 4 acres) surrounded by walls.²⁷⁶ The first surviving documentary reference to the convent dates from 1252, and in 1277 Count Burkhard III of Hohenberg transferred agricultural rents appertaining to the parish church of Oberjettingen (one of the villages of the district of Wildberg) to support the convent.²⁷⁷ From 1280 onward, a community of nuns is definitively documented in Reutin. In 1284, the convent appears to have undergone significant rebuilding and extension, and was designated the 'family convent' and official burial place of the Counts of Hohenberg.²⁷⁸ Around that date the convent took on the Dominican rule (at that time still the Augustinian rule).²⁷⁹ In 1363, governorship over the convent was transferred by the Counts of Hohenberg partly to the Palatinate and partly to Württemberg. The convent came fully into Württemberg possession in 1440 along with the Dominion of Wildberg.²⁸⁰ In the late medieval period, the Reutin convent, under the leadership of its own prioresses, experienced a notable upswing, and the c. 240 nuns whose identities are known included members of the house of Hohenberg, affiliates of the regional nobility, and daughters of the notable families of surrounding towns.²⁸¹

²⁷⁶ Natale (1965), 752; Königliches statistisch-topographisches Bureau (1862), 268.

²⁷⁷ Frauer (1987), 158-9; Natale (1965), 752; <http://maja.bsz-bw.de/kloester-bw/klostertexte.php>.

²⁷⁸ <http://maja.bsz-bw.de/kloester-bw/klostertexte.php>

²⁷⁹ <http://maja.bsz-bw.de/kloester-bw/klostertexte.php>

²⁸⁰ Natale (1965), 752.

²⁸¹ <http://maja.bsz-bw.de/kloester-bw/klostertexte.php>

In the Peasants' War of 1525 the convent was plundered and ruined, but the nuns were not ejected even after the Württemberg Reformation in 1534.²⁸² In 1535 and again in 1556 the convent refused to accept the Reformation, but in 1559 entered into an agreement with the Duke and his ecclesiastical councillors, according to which the nuns would be allowed to remain with the old religion until c. 1580. The convent was dissolved in the late sixteenth century.²⁸³ From that time on, the convent lands were administered as a demesne farm of the Dukes of Württemberg under the administration of a ducal demesne-master (*Klosterhofmeister*) and the economic management of the convent-demesne-manager (*Klostermeier*); the *Hofmeister's* position was not abolished in 1807, when he was replaced with a cameral administrator (*Kameralverwalter*).²⁸⁴ From the later sixteenth century on, the former convent buildings were inhabited by citizens of Wildberg alongside the demesne-farm-manager and his family, and 'Kloster Reutin' was listed as a separate quarter of the town in censuses and tax registers.²⁸⁵ The original convent church and most of the convent buildings burnt down in 1824, but they were partially rebuilt and are in use to this day as forestry offices.²⁸⁶

Ebhausen, too, had its own parish church, which served both parts of the village: Ebhausen on the hill above the river and Wöllhausen down in the valley on both sides of the Nagold. The two parts of the village grew together very early on, and the inhabitants of Wöllhausen attended the Ebhausen church as far back as the records go.²⁸⁷ The parish registers did not consistently designate inhabitants of 'Wöllhausen' separately at any time, and wholly ceased to do so around 1842.²⁸⁸ The oldest bell in the Ebhausen church is believed to date from between 1230 and 1250, although the first documentary reference to the church (and indeed

²⁸² Natale (1965), 752; Königliches statistisch-topographisches Bureau (1862), 270-1.

²⁸³ <http://maja.bsz-bw.de/kloester-bw/klostertexte.php>; Königliches statistisch-topographisches Bureau (1862), 271-2.

²⁸⁴ Königliches statistisch-topographisches Bureau (1862), 91, 269.

²⁸⁵ See, e.g. HSAS A573 Bü 6965 (Seelenregister 1717).

²⁸⁶ Natale (1965), 752.

²⁸⁷ Oertel (2006), 5.

²⁸⁸ Oertel (2006), 5.

the village) of Ebhausen dates from 1275.²⁸⁹ The original church was built in the Romanesque style, and thus probably dates from the twelfth century, although the earliest date discernible in the building is on the lowest storey of the tower where there is an inscription 1455 over the entry.²⁹⁰ In 1689, on account of the ‘daily growing congregation’, an elevated wooden gallery (*Borkirche*) was built within the Ebhausen village church to accommodate additional attendance.²⁹¹ The church was extensively renovated in 1696-1700, with further building work in 1715, 1725, and 1738.²⁹² A thoroughgoing renovation was then undertaken in 1860-1.²⁹³

Ebhausen had its own separate parish registers from the beginning, with the first burial registered on 1 March 1559, the first baptism on 3 April 1559, and the first marriage also on 3 April 1559. Two small hamlets called Pfrondorf (8.3 km from Ebhausen) and Rohrdorf (2.5 km) were sub-parishes of the Ebhausen church from the sixteenth to the early nineteenth century.²⁹⁴ Pfrondorf inhabitants were frequently registered in the Ebhausen parish registers between c. 1570 and c. 1807 (although in a separate section of the register from 1800); from 1808 onward there were no further entries from Pfrondorf in the Ebhausen registers.²⁹⁵ Pfrondorf only became part of Württemberg in 1603, and did not build its own church until 1728-9, when it set one up in an old pilgrimage chapel. Pfrondorf also buried its dead in Ebhausen until its own graveyard was set up in 1802. Although Pfrondorf got its own parish registers in 1808, it was not until 1825 that it ceased to be a sub-parish of Ebhausen, instead

²⁸⁹ Schmidt-Ebhausen (1955), 131-5.

²⁹⁰ Königliches statistisch-topographisches Bureau (1862), 151; Schmidt-Ebhausen (1955), 131-5. As already mentioned in Section 2.1, the village suffered a serious fire sometime between 1452 and 1495, in which the church was badly damaged and underwent extensive rebuilding; it is possible that the rebuilding was carried out in 1455, the year of the inscription.

²⁹¹ Schmidt-Ebhausen (1955), 134.

²⁹² Schmidt-Ebhausen (1955), 134.

²⁹³ Königliches statistisch-topographisches Bureau (1862), 151.

²⁹⁴ On the earlier status of Pfrondorf and Rohrdorf as sub-parishes of Ebhausen, see Königliches statistisch-topographisches Bureau (1862), 155.

²⁹⁵ On the inclusion of Pfrondorf inhabitants in the Ebhausen parish registers from c. 1570 to 1807, their separate entering in a distinct section of the Ebhausen register, 1800-07, and their disappearance after 1808, see Oertel (2006), 2. 11.

being put together with Emmingen and Mindersbach into a separate parish with its seat in Pfrondorf.²⁹⁶

Throughout the period under analysis, there were also sporadic entries from Rohrdorf and Mindersbach in the Ebhausen parish registers.²⁹⁷ Rohrdorf was initially a sub-parish of Walddorf until 1690, then became a sub-parish of Ebhausen, and finally became an independent parish in 1854. The Catholic Order of St John (*Johanniterorden*) held property and feudal rights in the village from the medieval period onward, and although the Reformation turned the village mainly Lutheran after the mid-sixteenth century, a Catholic cleric continued to provide religious services to the few Catholics there and in surrounding communities throughout most of the early modern period.²⁹⁸

The church administration for Auingen illustrates the Württemberg parish system in a slightly different way, since Auingen was itself a sub-parish of Münsingen. Even before the Reformation, the parish of Münsingen incorporated Auingen as well.²⁹⁹ After the Reformation, according to the 1547 Synodal Ordinance (*Synodalverordnung*), Münsingen and its district were incorporated into the Deaconry of Urach, the capital of the political district of which they were then a part.³⁰⁰ Even after Münsingen was permitted to form an independent political district in 1654, it remained part of the Deaconry of Urach for ecclesiastical purposes until 1686 when it was shifted over to the Deaconry of Blaubeuren.³⁰¹ It was not until 1818 that an independent Deaconry of Münsingen was established.³⁰² Thus just at the same time as Wildberg was *ceasing* to be the seat of its own Deaconry, Münsingen was *becoming* one – another illustration of the contrasting fortunes of the two district towns.

²⁹⁶ Königliches statistisch-topographisches Bureau (1862), 203, 205.

²⁹⁷ On the sporadic inclusion of entries for Rohrdorf and Mindersbach, see Oertel (2006), 2. From Dec 1740 to Apr. 1742 there were 17 baptisms and 5 burials from Rohrdorf entered into the Ebhausen baptism register; see Oertel (2006), 11.

²⁹⁸ Königliches statistisch-topographisches Bureau (1862), 211-13.

²⁹⁹ Königliches statistisches Landesamt (1912), 548.

³⁰⁰ Memminger (1825), 12

³⁰¹ Memminger (1825), 12; Königliches statistisches Landesamt (1912), 548.

³⁰² Memminger (1825), 12.

The St Martin's church in Münsingen is first mentioned in 804,³⁰³ but there is no mention of a church in Auingen until the beginning of its written records in 1360/70 when it is recorded as possessing its own village chapel of St Pancratius.³⁰⁴ The introduction of the Reformation in Württemberg 1534 brought a decrease in the number of clerics in Münsingen, which fell from six to only two – a pastor and a curate.³⁰⁵ In 1535 the first Lutheran sermon was preached in the Münsingen church by the new Lutheran town pastor, and Auingen began to be cared for by the curate (*Diaconus*) of the parish of Münsingen, with a church service every two weeks.³⁰⁶ In 1537, the Duke of Württemberg decided that no images were to be permitted in the newly Lutheran churches of his realm, which triggered an iconoclasm in Münsingen in which the St Martin's church and a recently established convent were plundered.³⁰⁷

The Reformation also brought the beginning of parish registers to Württemberg. Münsingen began keeping baptism registers in 1558 and marriage registers in 1574; the date of its first burial register is unknown since it appears to have been destroyed in the Thirty Years War, with the first surviving register dating only from 1631.³⁰⁸ Auingen appears to have had its own parish registers from the beginning, with the baptism register starting in 1581, the marriage register in 1586, and the burial register in 1591.³⁰⁹

The church in Auingen was rebuilt in 1600, by including parts of its Romanesque predecessor building.³¹⁰ Then, in the eighteenth century, the Auingen church-tower was equipped with an eight-sided addition with a pavilion-style roof.³¹¹ The hall-like nave was later modernized,

³⁰³ Dirschka (2009), 1.

³⁰⁴ Landesarchivdirektion Baden-Württemberg (1997), II:68; Königliches statistisches Landesamt (1912), 571-2.

³⁰⁵ Königliches statistisches Landesamt (1912), 548; Sigel (1910ff), 535-9.

³⁰⁶ Landesarchivdirektion Baden-Württemberg (1997), II:55, 68; Sigel (1910ff), 538-9.

³⁰⁷ Dirschka (2009), 6.

³⁰⁸ Sigel (1910ff), 535-6.

³⁰⁹ Landesarchivdirektion Baden-Württemberg (1997), II:55.

³¹⁰ Landesarchivdirektion Baden-Württemberg (1997), II:15.

³¹¹ Landesarchivdirektion Baden-Württemberg (1997), II:15.

retaining only the organ of 1811.³¹² Church services in Auingen continued to be provided by the Münsingen curate until 1891, when the curacy was elevated to the position of ‘Second Town Pastor’. As late as 1910, however, Auingen continued to be served by the second town cleric from Münsingen rather than having its own resident clergyman.³¹³

It was not just through the system of deaconries, parishes and sub-parishes that the established Lutheran church in Württemberg ensured religious services and regulation on the local level. The central church authorities in Stuttgart also offered two additional institutional mechanisms. From 1553 onward, church matters in Württemberg were controlled jointly by the Consistory (*Konsistorium*) for spiritual matters and the Church Council (*Kirchenrat*) for administrative issues; the two were then separated in 1698.³¹⁴ The Church Council was in charge of the system of deaconries and parishes. But the Church Consistory obtained information from the localities and exercised control over them independently in two ways. First, it conducted a system of church inspections (*Synodalvisitationen*), which were carried out almost annually from 1653 to 1822, and which provide detailed information not only on the religious condition of each parish, but also on its school attendance and the size of the local population; these provide most of the data on total population figures underlying Table 1 and Figure 1.

The Stuttgart consistory also provided the ultimate organizational inspiration and spiritual authority for Württemberg’s communal church courts (*Kirchenkonvente*). Until the 1640s, offences and conflicts relating to matters of religion were regulated either by the communal courts (if the offence was minor) or by the consistorial court in Stuttgart (for matters of major significance). But in 1642 (in towns) and 1644 (in villages), Württemberg established its well-known system of communal church courts, based on the Calvinist church courts of Geneva. The man responsible for introducing these communal church courts in Württemberg was

³¹² Landesarchivdirektion Baden-Württemberg (1997), II:15.

³¹³ Sigel (1910ff), 543.

³¹⁴ Honecker (1968), 20.

Johann Valentin Andreae (1586-1654), who had served from 1620 to 1638 as pastor in Calw, the neighbouring district town to Wildberg, before becoming ducal court preacher (*Hofprediger*) in Stuttgart. From the mid-1640s until 1887 (in some cases 1892), the Württemberg communal courts regulated all aspects of spiritual, moral, sexual and familial life, and enabled the local pastors and the communal elites of Württemberg's small towns and villages to impose a far-reaching social control and disciplining with all the spiritual authority of the established religion behind them.³¹⁵ The minutes of these communal church courts survive for Wildberg from 1644, for Ebhausen from 1674, and for Auingen from 1693, and contain valuable evidence on many aspects of socio-economic, cultural and demographic behaviour.³¹⁶

4.4.3. Pietism

The established Lutheran church in Württemberg was not tolerant of religious dissent and, as we have seen, did not permit the practice of Catholicism, Calvinism, or Judaism in the country until after 1806. Even after 1806, the civil rights of those practising Judaism remained significantly restricted until 1861. The Lutheran church itself, however, was the source of the most important source of religious deviance in Württemberg society – an ascetic Lutheran sect called Pietism which arose in the 1690s and survives to this day. Pietists focussed on the individual's emotional connection with the deity, rejected worldly and outward forms of observance, strongly supported education and literacy, and valued the individual soul to an extent sometimes seen as implying a high status for women.³¹⁷ Pietism existed in a number of

³¹⁵ On the *Kirchenkonventsprotokolle* (church court minutes), see Fink (2006); Popkin (1996); Dehlinger (1951), 281ff. According to Fink, the *Kirchenkonvente* were abolished in 1887 and replaced by a new institution called the *Kirchengemeinderat*. However, so-called *Kirchenkonventsprotokolle* (church court minutes) continued to be kept in some Württemberg communities after 1887, e.g. in Auingen, Pfarrarchiv Auingen, Archivinventar Nr. 15, 1693-1892. For an exploration of how these courts were used to regulate work and the position of women, see Ogilvie (2003).

³¹⁶ The minutes of the *Kirchenkonvente* for Wildberg and Ebhausen are exploited for analysing gender-specific work patterns in Ogilvie (2003).

³¹⁷ Parkerson & Parkerson (1988); Gestrich (2002), 349, 355-6.

parts of German-speaking central Europe, but was most important in Württemberg and Brandenburg-Prussia.³¹⁸

Both the Nagold Valley and the Swabian Jura had high concentrations of Pietists. The Pietists of the Nagold Valley was even adduced by Max Weber as an illustration of his theory about the relationship between Protestantism and capitalism – in this case the export-oriented worsted proto-industry of the Nagold Valley, centred around the Calw Worsteds Trading Association (Calwer Zeughandlungskompagnie), through which the weavers of Wildberg and Ebhausen were legally obliged to export their worsted textiles.³¹⁹ Thus in his first, 1905 article on ‘The Protestant Ethic and the Spirit of Capitalism’, Weber wrote that

It is sufficiently well known that ultimately for the Pietists the combination of an intensive piousness with an equally strongly developed business sense and business success was as important [as it was for the Calvinists]: one need only remember the situation in the Rhineland and in Calw.³²⁰

Certainly in the early eighteenth century, several members of the Calw Worsteds Trading Association were such strong Pietists that they separated themselves from the town church and conducted ‘conventicles’ of their own, ultimately attracting a ducal commission of inquiry in 1713.³²¹

Pietism can also be observed directly in Wildberg and, to an even greater extent, in Ebhausen. In the early eighteenth century, the minutes of the Ebhausen church court (*Kirchenkonvent*) record people holding and attending Pietist ‘conventicles’ and ‘separating’ themselves from the village church.³²² Thus, for instance, in August 1707, ‘Young Michel Dingler’ was

³¹⁸ Lehmann (1972); Gestrich (2002).

³¹⁹ For a thoroughgoing and ultimately sceptical exploration of the Weberian thesis for the Calwer Zeughandlungskompagnie, see Lehmann (1972).

³²⁰ Quoted in Lehmann (1972), 249.

³²¹ These Pietist leanings and their relationship with the commercial activities of the Calwer Zeughandlungskompagnie are carefully explored in Lehmann (1972).

³²² On conventicles or ‘development hours’ (*Erbauungsstunden*) as the central organizational form of Pietism, see Gestrich (2002), 342, 345.

questioned by the Ebhausen church court about why he was conducting ‘nocturnal conventicles’ in his house. When Dingler denied the accusation in somewhat evasive terms, the communal church court threatened him with punishment if he continued to hold such meetings.³²³ A month later, in September 1707, the Ebhausen church court questioned Anna Barbara Riethmüllerin for repeatedly, counter to prohibition, attending ‘instruction’ at the house of a tailor in Altensteig (8 km away), an accusation which she self-contradictorily

answered with denials, regarding it as a trivial matter to go for instruction to the tailor. In addition to this, as is her custom, she gives instruction to the pastor about how he should set up his sermons, namely not to forbid anyone the so-called Pietism or Sartorism, additionally not to persecute his auditors, as if they were not or could not be perfect, counter to the commandment.³²⁴

Anna Barbara evidently paid no heed to the warnings of the village church court, since two months later the court minutes recorded that

the Separatists Regina and Anna Barbara Riethmüllerin were summoned on account of their separation from church and communion, and after long and diligent negotiation with them, they were faithfully warned to stand down from their error and henceforth to attend sermons and Holy Communion diligently.

When the women refused to follow these warnings, the communal church court decided to report them to the central authorities.³²⁵ A similar flurry of concern about Pietists arose in

³²³ Pfarrarchiv Ebhausen, KKP Vol. II (1699-1716), fol. 39v, 24.8.1707: ‘IV. J. Michel dingler ist zured gestellt worden, warumb er wie die reden gehet, Nächtliche Zusammen Kunfften in seinem hauß hege[?], dardurch allerhand Verdächtigkeit enspringe unter den Luthen? Antwortet: Er möcht den Mann sehen, der solches auf ihn bringe; In Ermanglung deßen aber, so sage er nein darzu. Conclusum: Ist ihme auferlegt, Er solle dergleicher Conventicula nicht duld., oder auf befindenden dinge, sträfflich angesehen werd.’

³²⁴ Pfarrarchiv Ebhausen, KKP Vol. II (1699-1716), fol. 40v, 21.9.1707: ‘Anna barbara riethmüllerin ist zured gestellt worden, warumb sie vor 14. tag. bey dem Altenstaiger Schneider zu Altenstaig wider das Verbott wid. eingekehrt habe? Sie verantwortet sich mit leugnen, und achtet es für gering bey dem Schneider zur Information zugehn. Gibt über das dem Pfarrer nach ihrer Gewonheit Information wie er seine Predigten einrichten sollen, nemlich niemand den so genannten Pietismum u. Sartorismum Zuverbieten, item die zuhörer nicht dahin zu persecu.iren, als ob die wider Geleuth[?] [Bebuckh?] nicht Vollkommen wären, od. seyn könnte. Ist zur besserung angewisen worden.’

³²⁵ Pfarrarchiv Ebhausen, KKP Vol. II (1699-1716), fol. 42r, 13.11.1707: ‘Seind die Separatisten Regina und Anna [ins.: Barbara] Rathmüllerin wegen ihrer Separation von Kirchen u. Nachtmal fürgefördert worden, und nach langer und fleißiger handlung mit ihnen, hat man sie treulich vermahnet von ihrem Irrthumb abzustehen, und sich hinfüro fleißig bei d. Predigt u. h. Abendmal einzustellen.

Ebhausen a generation later, in 1736, when a long case appeared before the village church court concerning inhabitants of one of the Ebhausen mills and the neighbouring hamlet of Ebershart, who had been attending Pietist conventicles in Nagold (a district town 7 km from Ebhausen) over the New Year.³²⁶

Although Wildberg does not appear to have been such a hotbed of Pietism as Ebhausen, in May 1710 the town pastor Johann Philipp Zeller submitted a list of spiritual and regulatory concerns to the annual assembly of the citizenry (*Vogt-Rüg-Gericht*), in which he complained about 'several citizens' houses in which conventicles are being held, and especially the encroaching custom of the so-called evening assembly [*Abendgang*]'.³²⁷ We have independent evidence that Johann Philipp Zeller was a particularly zealous opponent of all manifestations of Pietism, on grounds of both theology and church politics. Later in that very year, 1710, Zeller became *Dekan* in Calw, where his orthodox theological and ecclesiastical views brought him into open conflict with the Pietists among the merchants of the Calw Worsted Tracing Association, ultimately giving rise to the 1713 ducal commission of inquiry mentioned above.³²⁸ This raises the question of whether Zeller's hypersensitivity had exaggerated the importance of Pietism in Wildberg. Certainly there is no further evidence of Pietism in the eighteenth-century Wildberg church court minutes. However, the neighbouring village of Sulz (2 km distant) was known to be a hotbed of Pietism, and any Wildberg inhabitants with such leanings could easily have attended Pietist conventicles there.³²⁹

The attitude of the Württemberg state toward Pietism became more severe after 1800. The orthodox church introduced a new regime incorporating Enlightenment views and practices,

Haben sich beede erklärt, weder [sic] bey der Predigt noch Nachtmal sich hierfür mehr ein zu stellen. Concl. Ist für rathsam erachtet word., solches durch Unth.gst Klag für Ihre hfrstl. drchl. gelangen zu lassen.'

³²⁶ Pfarrarchiv Ebhausen KKP, Vol. III (1716-1742), fol. 189r, 22.1.1736.

³²⁷ HSAS A573 Bü. 94, Vogt-Rueg-Gericht, 8.5.1710, Zettel between fol. 8 and 9, dated 8 May 1710, signed 'Specialis und StatPfaffer, M. Joh. Philipp[?] Zeller: 'Etlicher Burger häuser, darinnen Conventicule gehalten werden: sonderl. die eingerissener gewohnheit der so genannten Abendgangs'.

³²⁸ Lehmann (1972), here esp. 261-2.

³²⁹ Klab (1987), 157.

and threatened penalties for those who did not conform. In reaction, large numbers of Württemberg Pietists decided to emigrate. After the accession in 1816 of King Wilhelm I, a monarch of more liberal views, Pietist leaders persuaded the new government to grant a restricted freedom of religion in the interests of preventing Pietists from emigrating. In 1819, the King granted Pietists the right to settle and practise their religion freely in Korntal, a small territory previously belonging to an Imperial Knight which had just been taken over by Württemberg. In the course of that year, 68 Pietist families moved to Korntal and formed the 'Brüdergemeinde Korntal' (Korntal Community of Brothers) with a Pietist community constitution.³³⁰ However, requests in ensuing years to establish additional Pietist settlements were rejected by the authorities. The one exception was granted in 1826 to the Korntal community, which was permitted to establish a daughter community on a recently drained marshy area of Catholic Upper Swabia about 20 km from Ravensburg. In gratitude for royal patronage and finance, the new settlement was named Wilhelmsdorf. It survived the nineteenth century despite constant economic difficulties caused by poor soil and lack of agricultural knowledge on the part of the new settlers, and exists to this day.³³¹

After 1816, Pietists gradually came to enjoy more toleration within the mainstream Württemberg church and exercised greater public influence. In Wildberg, sufficient sympathy for Pietism existed that the renowned Pietist-influenced theologian Ernst Philipp Paulus (1809-78) was able to encourage the foundation there in 1864 of the 'Haus der Barmherzigkeit' as a home for the elderly and invalids.³³² Pietist leanings survived in Wildberg throughout the twentieth century. From the First World War onward there was an 'Old Pietist Congregation' in the town, and from 1926 at least until 1987, the 'New Pietist' South German Union for Evangelization and Communal Care (*Süddeutsche Vereinigung für*

³³⁰ Roth (1994); Fritz (2003).

³³¹ Bühler (1999); Fritz (2003), 247-54.

³³² http://www.bbkl.de/p/paulus_e_p.shtml.

Evangelisation und Gemeinschaftspflege) maintained a house (the ‘Haus Saron’) in Wildberg which they developed into one of their network of leisure and instruction centres.³³³

The Swabian Jura was also a stronghold of Württemberg Pietism.³³⁴ Pietists were sufficiently numerous in the district of Auingen after 1800 that their persecution by the established Lutheran church is thought to have underlain the first wave of mass emigration from the district in the second decade of the nineteenth century.³³⁵ In 1825, a contemporary wrote of the district of Münsingen that

a characteristic occurrence is Pietism, which is prevalent in the Protestant parts of the district. There is almost no locality in which one or two private convocations are not held; in Münsingen itself there are as many as four.³³⁶

The Münsingen Lutheran church saw the formation of a number of lay Pietist groups in the first half of the nineteenth century. Then in 1843 a noted Pietist, Sixt Karl Kapff, became *Dekan* in Münsingen and during the four years of his tenure supported Pietism vigorously throughout the district, including holding Pietist ‘hours’ (*Stunden*) for sympathizers.³³⁷

Exploration of the local church court minutes for Münsingen and Auingen might well bring to light earlier manifestations of Pietism reaching back into the eighteenth century, as in Wildberg and Ebhausen.

Historical demographers have associated various aspects of Pietism – its individualism, its value for women’s spiritual leadership, and its value for child ‘quality’ – with the lower fertility observed among strongly Pietist communities in the USA in the nineteenth and twentieth centuries.³³⁸ Württemberg Pietists themselves also held specific beliefs which at least had the potential to influence demographic behaviour. For one thing, some Württemberg

³³³ Klab (1987), 157.

³³⁴ Landesarchivdirektion Baden-Württemberg (1997), II:55.

³³⁵ Landesarchivdirektion Baden-Württemberg (1997), II:21.

³³⁶ Memminger (1825), 61, 107.

³³⁷ Landesarchivdirektion Baden-Württemberg (1997), II:55-6.

³³⁸ Gestrich (2002), 352; Parkerson & Parkerson (1988).

Pietists valued lifelong celibacy and advocated refraining from marriage altogether, which (if acted upon) could have lowered marriage and fertility rates in communities with such beliefs.³³⁹ Second, some Württemberg Pietists advocated sexual abstinence within marriage, which could have reduced marital fertility in centres of strict Pietism.³⁴⁰ Third, Pietists are believed to have valued the ‘early capitalist’ virtue of prudence which some scholars argue was then also applied to reproduction, leading to lower fertility.³⁴¹ Fourth, countervailing against the preceding three hypotheses, many Pietists rejected material consumption; if economic agents trade off between children and consumer goods (as economists argue), then reducing consumption of goods should increase one’s ‘consumption’ of children, thereby increasing fertility.³⁴² Fifth, some Württemberg Pietists deliberately engaged in geographical exogamy but religious endogamy, by marrying outside their home communities so as to find partners who were also Pietists; this could have influenced demographic behaviour by delaying marriage or encouraging migration.³⁴³ Sixth, Württemberg Pietists are believed to have formed social networks with their own ‘social capital’, distinct from the surrounding community, which may have created distinctive social norms relating to fertility, whether high or low.³⁴⁴ Finally, persecution by the established Württemberg church created an incentive for Pietists to emigrate, which could also have altered their demographic behaviour.³⁴⁵ One aim of the present project is thus to identify periods in which Pietism was more intensely practised in the communities under analysis, and if possible which individuals or families espoused these beliefs. This would make it possible to test claims that Pietist religious beliefs gave rise to distinctive demographic behaviour.

³³⁹ Gestrich (2002), 352.

³⁴⁰ Gestrich (2002), 352.

³⁴¹ Lehmann (1972), 249-50, 274-7.

³⁴² Gestrich (2002), 349-52, 356.

³⁴³ Gestrich (2002), 351-2.

³⁴⁴ Lehmann (1972), 276; Gestrich (2002), 355-6.

³⁴⁵ Landesarchivdirektion Baden-Württemberg (1997), II:21.

4.5. Educational Institutions

Education, particularly for females, is widely regarded as a major determinant of fertility in modern developing economies.³⁴⁶ However, the association between female education and low fertility suffers from an identification problem, in the sense that more education may be associated with higher income, higher marriage age, better labour market opportunities, greater efficiency in using family planning technologies (especially relatively ineffective methods, such as those in use during the nineteenth-century fertility transition), and differences in tastes. These variables have not always been controlled for in studies of the effect of education on fertility; until they are, it cannot be said that female education significantly affects fertility independently of other characteristics of more highly educated women.

To explore whether female education contributed to the European fertility transition, therefore, this project will incorporate information about education levels of individual parents, while also controlling for other characteristics that may be associated with education as well as fertility. Education is partly a matter of individuals' investment in their own 'human capital', but it is also influenced by the availability of educational institutions and by educational norms in the surrounding community. It is therefore important to know as much as possible about educational institutions and outcomes in the three communities under analysis.

Württemberg, like other European Lutheran territories, particularly in Germany and Scandinavia, developed an extensive system of church schools after the Reformation. Duke Christoph laid the basis for a Lutheran educational system in Württemberg with his 'Great Church and School Ordinance' (*Große Kirchen- und Schulordnung*) of 1559, which was

³⁴⁶ This view has been basic to economic demography for some decades; on this, see Birdsall (1988), 514-5.

subsequently copied by many other German Lutheran states. In Württemberg itself, this ordinance triggered off the foundation and expansion of primary schools during the second half of the sixteenth century.

The Württemberg Lutheran elite regarded the Thirty Years War (1618-48) as having led to moral and educational decline throughout the country, especially after the Imperial invasion of 1634. When the Duke returned from exile in 1638, he appointed as his court preacher Johann Valentin Andreae, the same former Calw pastor who was responsible for establishing the communal church courts discussed above. In 1639, Andreae published a book summarizing all of the Württemberg legislation on religious and educational matters. Half a century later, in 1687, it was expanded and reissued as an administrative handbook for Württemberg bureaucrats. In 1729, its provisions were confirmed and widened by a 'Renewed Ordinance for the German-Language Schools'. The central purpose of all this educational legislation in Württemberg was to mandate an elementary school in every community of the kingdom, with compulsory attendance by both males and females between the ages of 7 and 14.

We can trace educational provision in Wildberg more easily than in the other two communities, because as a town it was better documented and probably also better provided with schooling. Wildberg had a schoolmaster as early as the fourteenth century, and schoolmasters are regularly named in Wildberg records, including the marriage of a schoolmaster in 1560 in the first marriage register.³⁴⁷ By 1708 the Wildberg *Praeceptor* (senior schoolmaster) was teaching boys only, but the *Provisor* (his junior colleague) was teaching a mixed-sex class.³⁴⁸ As late as 1768, more than half the Wildberg *Provisor*'s class was female. In 1769 growing pupil numbers spurred a reorganization, whereby the *Praeceptor* henceforth devoted all his attention to the small and exclusively male Latin

³⁴⁷ Königliches statistisch-topographisches Bureau (1862), 256; PAW Ehebuch Bd. 1, 16.12.1560.

³⁴⁸ HSAS A281, Bü. 1580, 27.4.1708.

school, two *Provisoren* taught the German school in sexually segregated classes of girls and boys, and a third *Provisor* was appointed to teach the beginners in a mixed-sex class.³⁴⁹ In 1789 Wildberg build a new schoolhouse, a three-storey building containing three classrooms for the German school, a classroom for the Latin school, and a dwelling for the *Praeceptor* and his family.³⁵⁰ Then, in 1799, four classes were created – all co-educational.³⁵¹

The nineteenth century saw this fairly standard Württemberg educational infrastructure in Wildberg expanded by the addition of a number of specialist institutions. In 1838, a private school for mentally deficient children was established in the building formerly occupied by the Public Secretary's Office (*Stadt- und Amtsschreibereigebäude*).³⁵² In 1856, the municipality purchased that building from the government and used it to house a new weaving-school (*Webschule*) containing 21 looms, in which poor children received instruction in weaving and opportunities to earn money doing so.³⁵³ By 1862, educational provision in Wildberg consisted of a Latin school with one teacher and ten pupils; a German-language elementary school (*Volksschule*) with two schoolmasters and a sub-teacher; an institute of industrial further education (*Gewerbliche Fortbildungsschule*) with twenty pupils; an industrial school (*Industrieschule*) in which two female teachers taught sewing and knitting year-round; and a kindergarten (*Kleinkinderschule*).³⁵⁴

Wildberg's relatively generous educational provision was underpinned financially by a number of foundations (*Stiftungen*) endowed with funds over the centuries by local individuals, families, and organizations. Thus in 1862, Wildberg had a total foundation fund of 13,000 Gulden provided by 8 individual foundations, much of it earmarked for education. The Dengler Fund consisted of 100 Gulden whose interest payments went to the school fund.

³⁴⁹ See the discussion in Ogilvie (2003), 81-2.

³⁵⁰ Königliches statistisch-topographisches Bureau (1862), 256.

³⁵¹ PAW KKP Vol. VIII< fols. 113r-114v, 18.9.1799.

³⁵² Königliches statistisch-topographisches Bureau (1862), 258.

³⁵³ Königliches statistisch-topographisches Bureau (1862), 258.

³⁵⁴ Königliches statistisch-topographisches Bureau (1862), 81-2, 256.

The Göttsheim Fund consisted of 40 Gulden, whose interest payments also went to the school fund. The Sonnenwirth Schweikhardt Fund consisted of 200 Gulden, whose interest payments also went to the school fund. The Christoph Schauber Company Members of Calw Fund (*Christoph Schauber Comp.-Verwandten von Calw*) consisted of 200 Gulden whose interest payments alternated annually between buying school-books for poor children and providing bread for poor persons. The Gfrörer Fund consisted of 250 Gulden whose interest payments paid school fees for poor, legitimately born children. The Special-Superintendent M. David Jonathan Cleß Fund consisted of 2,135 Gulden to be used for the best interest of the town schools. The Käuffelin Family Fund consisted of 1250 Gulden, to be allocated primarily to support Käuffelin descendants at university. Only the eighth foundation, the Bartholomäus Reichert Industrial Fund of 1843, was not at least partially earmarked for educational purposes, consisting instead of 500 Gulden for the support of public industrial enterprises to benefit the inhabitants of Wildberg collectively.³⁵⁵

In villages, even large ones such as Ebhausen, schools, teachers, and charitable funds to support education were much less generously provided. Ebhausen certainly had a school as early as the first surviving church inspection report (*Visitationsbericht*) of 1601, which recorded 20 children attending the village school that year. Subsequent church inspection reports make clear that no village in the entire district of Wildberg, even large ones such as Ebhausen, had more than one schoolmaster before the end of the eighteenth century.³⁵⁶ At some point in the first few decades of the nineteenth century, the teaching personnel in Ebhausen expanded to four, but it was not until 1840 that a new, three-storey schoolhouse containing four separate classrooms was built at a cost of c. 7,000 Gulden.³⁵⁷ In 1862, this school building was described as also containing 3 small apartments to house the assistant personnel (two junior teachers and a teaching assistant), while the schoolmaster himself lived

³⁵⁵ Königliches statistisch-topographisches Bureau (1862), 265.

³⁵⁶ See the school inspection reports for the villages of the district of Wildberg in HSAS A281, Bü. 1581-97, 1602-3, 1605, 1609-10, 1614.

³⁵⁷ Königliches statistisch-topographisches Bureau (1862), 151.

in a separate schoolhouse belonging to the community.³⁵⁸ In that year, the educational establishments in Ebhausen also included an industrial school in which sewing and knitting was taught, although only in the wintertime.³⁵⁹

Educational provision in Auingen resembled Ebhausen more than Wildberg. The village certainly had a school before the Thirty Years War, but during the war all educational activity in the village ceased.³⁶⁰ After the war ended in 1648, school-teaching relied on the initiative of individual citizens, as testified by an archival source of 1661.³⁶¹ At some point thereafter, the village must have obtained its own schoolmaster again, for in 1721 a school-house is recorded as being part of the real estate owned by the community.³⁶² Then, in 1778 a new village hall was built and part of it was turned into a school.³⁶³ Finally, Auingen got a dedicated school building in 1911.³⁶⁴

What were the educational outcomes of all these school inputs? Church court records show that communities at least *tried* to make all children aged 7-14 attend school. We find church court prosecutions for non-attendance in Wildberg in the second half of the seventeenth century and in Ebhausen at latest by the first decade of the eighteenth. Thus in 1679 the Wildberg pastor demanded a new list ‘of the number and ages of children of each citizen, so as to see whether they are being diligently sent to school’,³⁶⁵ and in 1699 the Wildberg church court issued the schoolmaster with a list of ‘which children should be sent to school’ and ordered him to report absentees.³⁶⁶ Around 1700, both the Ebhausen and the Wildberg church courts began to monitor the school attendance of truanting children, regularly inflicting

³⁵⁸ Königliches statistisch-topographisches Bureau (1862), 151.

³⁵⁹ Königliches statistisch-topographisches Bureau (1862), 81-2.

³⁶⁰ Landesarchivdirektion Baden-Württemberg (1997), II:68.

³⁶¹ Landesarchivdirektion Baden-Württemberg (1997), II:68.

³⁶² Landesarchivdirektion Baden-Württemberg (1997), II:68.

³⁶³ Landesarchivdirektion Baden-Württemberg (1997), II:6-87.

³⁶⁴ Landesarchivdirektion Baden-Württemberg (1997), II:56.

³⁶⁵ PAW KKP Vol. IV, fol. 159r, 17.12.1679: ‘waß jeder burger alhie vor Kinder vnd wie alt selbige worauß Zue erkhenen ob selbige auch fleißig in die Schuel ... geschickt werden’.

³⁶⁶ PAW KKP Vol. V, fol. 203v, 24.11.1699: ‘waß vor Kinder sollen in the Schuel gesant werden’.

Table 2:**Number of Children Attending School in the Town of Wildberg, by Sex, 1676-1802**

Date	Advanced				Beginners				Total				Attendance	
	Latin + German boys	German girls	Both sexes	% girls	Boys	Girls	sexes	% girls	Boys	Girls	sexes	% girls	No. catechists	Scholars as % catechists
Jun.1676 ^a	--	--	--	--	--	--	--	--	73	52	125	41.6	327	38.2
May 1676 ^a	--	--	--	--	--	--	--	--	74	38	112	33.9	367	30.5
Mar.1692 ^a	--	--	--	--	--	--	--	--	72	44	116	37.9	268	43.3
Apr. 1703 ^a	--	--	--	--	--	--	--	--	62	49	111	44.1	248	44.8
Apr. 1706 ^a	--	--	--	--	--	--	--	--	78	86	164	52.4	245	66.9
Apr. 1708 ^a	--	--	--	--	--	--	--	--	67	62	129	48.1	267	48.3
May 1726 ^a	--	--	--	--	--	--	--	--	72	70	142	49.3	241	58.9
Jul. 1731 ^a	--	--	--	--	--	--	--	--	62	51	113	45.1	147	76.9
May 1732 ^a	--	--	--	--	--	--	--	--	83	36	119	30.3	130	91.5
Apr. 1741 ^a	--	--	--	--	--	--	--	--	78	53	131	40.5	188	69.7
Apr. 1742 ^a	--	--	--	--	--	--	--	--	69	56	125	44.8	180	69.4
Mar.1743 ^a	--	--	--	--	--	--	--	--	63	64	127	50.4	138	92.0
May 1763 ^a	--	--	--	--	--	--	--	--	--	--	159	--	190	83.7
Jun. 1768 ^a	--	--	--	--	--	--	--	--	97	174	271	64.2	228	118.9
Jun. 1773 ^a	86	85	171	49.7	18	22	40	55.0	104	107	211	50.7	235	89.8
Apr. 1779 ^a	87	74	161	46.0	--	--	--	--	--	--	213	--	251	84.9
Jun. 1783 ^a	72	60	132	45.5	--	--	--	--	--	--	201	--	217	92.6
May 1784 ^a	67	63	130	48.5	--	--	--	--	--	--	212	--	208	101.9
May 1785 ^a	72	67	139	48.2	--	--	--	--	--	--	215	--	203	105.9
Jun. 1786 ^a	71	61	132	46.2	--	--	--	--	--	--	196	--	196	100.0
May 1787 ^a	81	85	166	51.2	--	--	--	--	--	--	231	--	229	100.9
Jul. 1788 ^a	87	92	179	51.4	--	--	--	--	--	--	242	--	234	103.4
Jun. 1789 ^a	86	81	167	48.5	--	--	--	--	--	--	241	--	226	106.6
Jun. 1790 ^a	86	73	159	45.9	--	--	--	--	--	--	220	--	202	108.9
Dec. 1790 ^b	84	71	155	45.8	43	41	84	48.8	127	112	239	46.9	202	118.3
May 1791 ^a	92	84	176	47.7	--	--	--	--	--	--	258	--	211	122.3
May 1792 ^a	81	80	161	49.7	--	--	--	--	--	--	246	--	212	116.0
Jun. 1793 ^a	79	78	157	49.7	--	--	--	--	--	--	249	--	249	100.0
Nov. 1793 ^b	77	76	153	49.7	--	--	--	--	--	--	248	--	249	99.6
Apr. 1794 ^b	75	77	152	50.7	--	--	--	--	--	--	252	--	240	105.0
Nov. 1794 ^b	70	84	154	54.5	--	--	--	--	--	--	222	--	240	92.5
Apr. 1795 ^b	75	83	158	52.5	--	--	--	--	--	--	230	--	231	99.6
May 1795 ^a	78	82	160	51.3	--	--	--	--	--	--	230	--	231	99.6
Nov. 1795 ^b	74	81	155	52.3	--	--	--	--	--	--	215	--	231	93.1
Apr. 1796 ^b	74	82	156	52.6	--	--	--	--	--	--	223	--	235	94.9
Nov. 1796 ^b	77	88	165	53.3	--	--	--	--	--	--	229	--	235	97.4
May 1797 ^a	78	91	169	53.8	--	--	--	--	--	--	245	--	240	102.1
Nov. 1798 ^b	--	--	--	--	--	--	--	--	--	--	222	--	240	92.5
Apr. 1799 ^b	73	75	148	50.7	--	--	--	--	--	--	236	--	240	98.3
Nov. 1799 ^b	--	--	--	--	--	--	--	--	--	--	224	--	240	93.3
Jul. 1802 ^a	82	89	171	52.0	35	28	63	44.4	117	117	234	50.0	241	97.1
1650-1699	--	--	--	--	--	--	--	--	219	134	353	38.0	962	36.7
1700-1749	--	--	--	--	--	--	--	--	634	527	1161	45.4	1784	65.1
1750-1802	1964	1962	3926	50.0	96	91	187	48.7	445	510	955	53.4	6586	100.4

Sources: HSAS A281 Bü. 1580 (Visitationsprotokolle Wildberg). PAW KKP Vol. VII, fol. 207r-v (3.12.1790); PAW KKP Vol. VIII, fol. 28r, (18.11.1793); *ibid.*, fol. 33r (14.4.1794); *ibid.*, fol. 42r (10.11.1794); *ibid.*, fol. 46v (22.4.1795); *ibid.*, fol. 54v (12.11.1795); *ibid.*, fol. 65r (18.4.1796); *ibid.*, fol. 73r (17.11.1796); *ibid.*, fol. 99r (23.11.1798); *ibid.*, fol. 110r (17.4.1799); *ibid.*, fol. 119v (13.11.1799).

summonses, warnings, fines, and even gaol sentences on parents of absentees.³⁶⁷ In April 1707, when only seven children turned up to the first day of the summer school term, the Ebhausen church court ordered that ‘no one shall be kept away from school unless the school inspectors find him to be sufficiently qualified’.³⁶⁸

Church visitation reports suggest that, despite these prescriptions, the proportion of 7- to 14-year-olds actually attending school remained quite low until the early eighteenth century. Table 2 shows the surviving school attendance figures for Wildberg from 1676 to 1802, indicating that still only just over one-third of children in the relevant age-group (7 to 14 years) were attending in the second half of the seventeenth century, rising to two-thirds in the first half of the eighteenth century. The proportion of Wildberg children in the relevant age-group attending school approached one hundred per cent only in the period after 1750.³⁶⁹

The figures for Ebhausen, shown in Table 3, display a slightly different pattern. Although they fluctuate considerably from year to year, on average they suggest better school attendance in Ebhausen than in Wildberg in the seventeenth century, but less rapid improvement during the eighteenth. Just under 50 per cent of the village’s 7- to-14-year-olds were attending school in the first and second halves of the seventeenth century, a rate higher than in Wildberg. But then in the first half of the eighteenth century, Ebhausen school attendance rose only to about 61 per cent (compared to 65 per cent in Wildberg) and after 1750 to only 82 per cent (compared to 100 per cent in the town).

Ebhausen may have been an exception, however, since its school attendance appears to surpassed the average for the villages of the district as a whole, shown in Table 4.

³⁶⁷ See the cases referred to on Ogilvie (2003), 81.

³⁶⁸ PAE KKP Vol. II, fol. 36r, 27.4.1707: ‘Keiner von der Schul abgehalten werden, es seye dann derselbe von d. Schulvisitatorb. genugsam qualificirt gefund.’

³⁶⁹ The terms ‘advanced’ and ‘beginners’ are derived from the *Kirchenvisitationsberichte* (church inspection reports) from which the numbers were extracted; their precise meaning in terms of what the children were taught changed over time and requires detailed micro-level research.

Table 3:
Number of Children Attending School in the Village of Ebhausen, by Sex, 1601-1802

Year	Locality	All schools, summer, boys	All schools, summer, girls	All schools, summer, both sexes	All schools, winter, boys	All schools, winter, girls	All schools, winter, both sexes	All school boys	All school girls	All school children	% female	No. catechists	Scholars as % catechists
1601	Ebhausen + Pfrondorf									22	ng	50	44.0
1602	Ebhausen + Pfrondorf									25	ng	50	50.0
1603	Ebhausen + Wöllhausen + Pfrondorf									30	ng	60	50.0
1605	Ebhausen + Wöllhausen + Pfrondorf									20	ng	40	50.0
1654	Ebhausen + Pfrondorf							28	15	43	34.9	66	65.2
1676	Ebhausen + Pfrondorf							12	15	27	55.6	85	31.8
1684	Ebhausen + Pfrondorf							29	24	53	45.3	78	67.9
1692	Ebhausen + Wöllhausen + Pfrondorf							34	26	60	43.3	150	40.0
1699	Ebhausen + Wöllhausen + Pfrondorf	15	12	27	27	29	56	27	29	56	51.8	115	48.7
1703	Ebhausen + Wöllhausen	16	14	30	20	24	44	20	24	44	54.5	233	18.9
1706	Ebhausen + Wöllhausen + Mindersbach	19	17	36	26	20	46	26	20	46	43.5	77	59.7
1708	Ebhausen + Wöllhausen + Mindersbach	18	14	32	34	29	63	34	29	63	46.0	105	60.0
1726	Ebhausen + Wöllhausen			50			97			97	ng	101	96.0
1731	Ebhausen + Wöllhausen			80			100			100	ng	88	113.6
1741	Ebhausen + Wöllhausen	40	30	70	47	42	89	47	42	89	47.2	127	70.1
1742	Ebhausen + Wöllhausen	21	27	48	39	60	99	39	60	99	60.6	136	72.8
1743	Ebhausen + Wöllhausen	21	24	45	46	52	98	46	52	98	53.1	180	54.4
1763	Ebhausen	48	44	92	52	52	104	52	52	104	50.0	114	91.2
1768	Ebhausen	52	41	93	60	50	110	60	50	110	45.5	132	83.3
1773	Ebhausen	62	54	116	66	55	121	66	55	121	45.5	144	84.0
1779	Ebhausen	78	67	145	82	71	153	82	71	153	46.4	213	71.8
1783	Ebhausen	76	56	132	82	60	142	82	60	142	42.3	204	69.6
1784	Ebhausen	86	53	139	96	55	151	96	55	151	36.4	133	113.5
1785	Ebhausen	85	51	136	89	56	145	89	56	145	38.6	210	69.0
1786	Ebhausen	85	57	142	96	62	158	96	62	158	39.2	213	74.2
1787	Ebhausen	80	58	138	90	66	156	90	66	156	42.3	204	76.5
1788	Ebhausen	84	68	152	95	76	171	95	76	171	44.4	211	81.0
1789	Ebhausen	88	73	161	93	79	172	93	79	172	45.9	223	77.1
1790	Ebhausen	82	72	154	91	79	170	91	79	170	46.5	224	75.9
1791	Ebhausen	77	73	150	89	79	168	89	79	168	47.0	160	105.0
1792	Ebhausen	76	66	142	85	75	160	85	75	160	46.9	230	69.6
1793	Ebhausen	75	74	149	89	86	175	89	86	175	49.1	175	100.0
1795	Ebhausen	74	70	144	88	79	167	88	79	167	47.3	166	100.6
1797	Ebhausen	74	67	141	87	73	160	87	73	160	45.6	205	78.0
1802	Ebhausen	80	73	153	90	82	172	90	82	172	47.7	216	79.6
1600-49													48.5
1650-99													48.4
1700-49													60.7
1750-99													81.6

Source: HSAS A281, Bü. 1581-97, 1602 (Visitationsprotokolle Dekanat Wildberg).

Table 4:
Number of Children Attending School in the Villages of the District of Wildberg, by Sex,
1601-1802

Year	Total scholar numbers				Total scholars for which sex recorded			
	Number of villages recording numbers	Number of catechists	Number of scholars	Scholars as % catechists	Number of villages recording numbers	Number of scholars	Number of girls	Girls as % scholars
1601	4	650	92	14.2	1	30	0	0.0
1602	5	546	118	21.6	1	20	0	0.0
1603	5	550	148	26.9	ng	ng	ng	ng
1605	5	440	146	30.9	2	60	0	0.0
1654	7	436	236	54.1	6	236	74	31.4
1676	7	488	224	45.9	7	224	81	36.2
1684	6	515	289	56.1	6	289	123	42.6
1692	10	774	409	52.8	10	409	160	39.1
1699	10	623	375	60.2	10	375	156	41.6
1703	11	720	378	52.5	11	378	189	50.0
1706	11	552	403	73.0	11	403	179	44.4
1708	11	613	421	68.7	10	415	206	49.6
1726	11	747	610	81.7	0	ng	ng	ng
1731	11	720	645	89.6	0	ng	ng	ng
1741	11	773	614	79.4	11	614	316	51.5
1742	11	815	611	75.0	11	611	325	53.2
1743	11	926	625	67.5	11	625	323	51.7
1763	11	862	764	88.6	11	764	376	49.2
1768	11	836	755	90.3	11	755	382	50.6
1773	11	822	750	91.2	11	750	355	47.3
1779	7	765	582	76.1	7	582	283	48.6
1783	11	1006	830	82.5	11	830	410	49.4
1784	11	932	827	88.7	11	827	398	48.1
1785	11	992	842	84.9	11	842	401	47.6
1786	11	1037	898	86.6	11	898	429	47.8
1787	11	994	932	93.8	11	932	451	48.4
1788	7	815	739	90.7	6	636	312	49.1
1789	7	823	747	90.8	7	747	369	49.4
1790	11	1017	959	94.3	11	959	476	49.6
1791	11	911	945	103.7	11	945	474	50.2
1792	11	979	938	95.8	11	938	477	50.9
1793	11	939	974	103.7	11	947	486	51.3
1795	11	881	944	107.2	11	944	479	50.7
1797	11	959	951	99.2	11	951	501	52.7
1802	11	1085	1051	96.9	11	1051	558	53.1
1600-1649	n/a	2186	504	23.1	n/a	110	0	0.0
1650-1699	n/a	2836	1533	54.1	n/a	1533	594	38.8
1700-1749	n/a	5866	4307	73.4	n/a	3046	1538	50.5
1750-1802	n/a	16655	15428	92.6	n/a	15298	7617	49.8

Sources: HSAS A281, Bü. 1581-97, 1602-3, 1605, 1609-10, 1614 (Visitationsprotokolle Dekanat Wildberg).

Notes: The villages are: Ebhausen (18 observations), Ebhausen + Wöllhausen (6), Ebhausen + Pfrondorf (5), Ebhausen + Wöllhausen + Pfrondorf (4), Ebhausen + Wöllhausen + Mindersbach (2), Pfrondorf (26), Sulz (35), Effringen (30), Effringen + Schönbronn (4), Gültlingen (28), Gültlingen + Holzbronn (4), Gültlingen + Holzbronn + Haselstaller Hof (3), Schönbronn (30), Neubulach (25), Neubulach + Altbulach + Liebelsberg + Haugstett + Taeler (2), Neubulach + Altbulach + Liebelsberg + Haugstett (2), Altbulach (25), Haugstett (25), Liebelsberg (25), Oberjettingen (20), Oberjettingen + Sindlingen (14).

Comparable figures are not yet available for Auingen, but these rates for Wildberg and Ebhausen indicate an impressive degree of rural school attendance – which, as Tables 2 and 3 both demonstrate, included attendance by girls as well as boys.

An even better indicator of educational outcomes is literacy, but quantitative information on it is hard to obtain. For Württemberg, however, we are fortunate in possessing dense archival holdings of personal inventories of property, written up at marriage and death.³⁷⁰ From the later seventeenth century on, the bride and the groom were expected to sign the inventory of their goods when they married. As a result, literacy rates can be calculated from the proportion of newly married individuals able to sign their names when their goods were inventoried. Since a high proportion of the population were inventoried, these figures carry some weight.³⁷¹

Such figures are available only for Wildberg among the three communities studied here, but they suggest that by the mid-eighteenth century, all this compulsory schooling was having some success. Thus Table 5 shows that from 1740 to 1770, about 85 per cent of Wildberg grooms and just over half of Wildberg brides signed; from 1770 to 1790, about 97 per cent of grooms and three-quarters of brides signed; and from 1790 to 1800, 99 per cent of grooms and 94 per cent of brides signed.

³⁷⁰ The marriage and death inventories for Wildberg and Auingen are the basis of the ongoing project, mentioned above, on ‘Human Well-Being and the “Industrious Revolution”: Consumption, Gender and Social Capital in a German Developing Economy, 1600-1900’ (<http://www.econ.cam.ac.uk/faculty/ogilvie/ESRC-project-English.pdf>) supported by the Economic and Social Research Council (JES Reference ES/F004893/1, ESRC Reference RES-062-23-0759). Signatures of brides and grooms become frequent (though not universal) in marriage inventories in the small town of Wildberg from the 1670s on.

³⁷¹ For the Württemberg village of Laichingen between 1766 and 1799, Medick (1996) 614-5, found marriage inventories for over 94 per cent of fully reconstituted families (and over 85 per cent of partially reconstituted ones) in his family reconstitution. For Wildberg, the number of surviving inventories listed in the archival repertoria equals c. 60 per cent of the number of marriages plus the number of adult deaths (of individuals over age 21) in the parish registers, for a sample of 14 scattered years between the early seventeenth and the early nineteenth century (1617, 1651, 1661, 1671, 1681, 1691, 1701, 1711, 1721, 1741, 1761, 1781, 1801, and 1825).

Table 5:
Ability to Sign Name, by Sex, in Wildberg and Various Other Württemberg Communities, 1690-1840

DECADE			1720-30	1740-49	1750-59	1760-69	1770-79	1780-89	1790-99	1830-39		
Wildberg (town)	n grooms % brides %			59 85 34	109 85 56	66 88 41	93 97 73	99 99 78	95 99 94			
Bissingen (town)	n grooms % brides %				29 97 72	43 95 79	44 98 89	47 98 91	21 100 95			
Nürtingen (town)	n women %		40 58				40 90			40 100		
PERIOD		1690-1724		1725-59			1760-94		1795-1829			
Bondorf (village)	n grooms % brides %	16 81 13		144 100 22			192 99 71		215 99 92			
Gruorn (village)	n grooms % brides %	33 70 6		45 93 13			94 92 70		24 92 96			
Gebersheim (village)	n grooms % brides %	19 95 11		42 100 50			56 98 82		61 100 95			
DATE							1770		1800	1830	1870	1900
Central Europe	both sexes %						15		25	40	75	90

Sources: Wildberg: Schad (2002), 80-1, Tables 8a-8b (marriage inventories in which both partners are marrying for the first time). Nürtingen: Benschmidt (1985), 45 (craftsmen's marriage and death inventories). Bondorf, Gruorn, and Gebersheim: Maisch (1992), 378 (marriage inventories in which both partners are marrying for the first time). Central Europe: Schenda (1977), 444.

In this, Wildberg was on the low end compared to other Württemberg communities, as Table 5 shows. Over 90 per cent of grooms were signing in Nürtingen after 1770, in Bissingen after 1750, in Bondorf and Gruorn after 1725, and in Gebersheim after 1690. Brides in Bissingen, Nürtingen and Gebersheim also signed in greater proportions at an earlier date than those in Wildberg. In fact, brides in the town of Wildberg resembled those in the villages of Bondorf and Gruorn more than those in the towns of Bissingen and Nürtingen, at least in their ability to sign their names at marriage. Only after 1790 did female signing rates rise above 90 per cent in all communities in Table 5. But although Wildberg literacy was nothing special by Württemberg standards, it was high compared to other parts of Central Europe, where literacy is estimated to have been c. 15 per cent in 1770, 25 per cent in 1800, 40 per cent in 1840, 75 per cent in 1870, and 90 per cent in 1900.³⁷²

These figures show that in Wildberg, as in the other Württemberg communities that have been studied, female education lagged behind male, as it does in most less developed economies. Nonetheless, the levels of literacy were much higher than in present-day developing economies, and the gap between men and women relatively narrow. By the last quarter of the eighteenth century in Württemberg, four-fifths of women marrying could sign their names, and almost all men marrying could do so. Further analysis of the inventories of the project communities, and matching of inventory information to fertility histories, will be necessary in order to investigate whether female education was associated with fertility decline in this society as it is in many modern developing economies.³⁷³

³⁷² For sources and discussion of all these figures, see Benschmidt (1985), 45; Schad (2002), 80-1 (Tables 8a-8b); Maisch (1992), 378; Schenda (1977), 444.

³⁷³ This analysis is planned in the framework of our ongoing research project on household inventories for Wildberg and Auingen (<http://www.econ.cam.ac.uk/faculty/ogilvie/ESRC-project-English.pdf>) supported by the Economic and Social Research Council (JES Reference ES/F004893/1, ESRC Reference RES-062-23-0759).

4.6. Welfare Institutions

A final social institution which is widely hypothesized to exercise an important influence on demographic behaviour is the welfare system. Even before the European fertility transition of the nineteenth century, the ‘Western European Marriage Pattern’ was characterized by late marriage and high lifetime celibacy for women. This meant that more than one-third of women’s fertile life-spans remained untapped, giving rise to much lower ‘natural’ fertility rates than in societies in which female marriage was early and universal. One key institutional foundation of the Western European Marriage Pattern was the existence of non-family-based welfare institutions, reducing the incentives to marry universally and have numerous children for insurance purposes.³⁷⁴

In Württemberg, although the family did provide support in orphanhood, illness and old age, much welfare support was also dispensed through community institutions.³⁷⁵ Each town or village had a communal poor fund (*Armenkasten*), whose revenues derived primarily from weekly poor-rate contributions by citizens, though also sometimes from charitable donations, rents on pieces of land, and other miscellaneous endowments. These revenues were used to provide ‘out-relief’ – money, food, clothing, and other support in their own dwellings to community members who had fallen on hard times. This should not lead to the conclusion that pre-modern Württemberg communities possessed a fully developed welfare system. The poor relief provided by Württemberg communities was very sparing, and much of it was granted only to those – such as widows and orphans – who did not have families that could have supported them.

Nonetheless, local records from the district of Wildberg show that by the seventeenth century at latest, communal welfare institutions had become as important as familial provision in a

³⁷⁴ For a discussion, see Ogilvie (2003), 49-51, 74; Laslett (1988).

³⁷⁵ Schaab (2000), 515-22.

wide variety of situations. An indigent person had a legal claim for support on only a narrow circle of kin, and then often only if inheritance or formal debts were involved.³⁷⁶ All the community could do to elicit assistance from more distant family members was to investigate whether they owed any debts or had any inheritance expectations of the indigent person. Thus, for instance, in 1602, two brothers of a sick and elderly man in Wildberg had to be instructed by the communal court to pay him sums of money periodically from the yearly installments on debts they owed him.³⁷⁷ Likewise, in 1715, a 65-year-old woman asked for community alms to pay medical expenses, but her adult son, a worsted-weaver, denied any responsibility because he did not owe his mother anything on the house which he had purchased from her.³⁷⁸ If family members refused support, the community was responsible, even when the indigent individual had non-destitute adult relatives resident locally. So in 1740 an unmarried woman in Wildberg who was unable to earn anything was granted two pounds of bread weekly from the communal poor fund, despite having a married brother resident as a citizen in the community.³⁷⁹

To secure lodging and care for an indigent person, the community had to offer payment from public funds, even to quite close kin of the beneficiary. Thus in 1707 the stepmother of two Wildberg orphans who had no property left refused to go on supporting them unless she was given something from the community, so the communal poor fund made a weekly grant to induce the stepmother to keep one child with her somewhat longer.³⁸⁰ In 1718, the Wildberg communal church court ordered the adult offspring of a former *Bürgermeister* (chief financial officer) who was no longer able to earn a living to look after him, each in turn, in exchange for a weekly grant of cash from the communal poor fund.³⁸¹ In the absence of inheritance or debt, support without community recompense was apparently owed only by parents to children, and then only if they themselves were not destitute. Thus in the village of Sulz near Wildberg, the

³⁷⁶ See Sabean (1991), 416, for the same finding in the village of Neckarhausen.

³⁷⁷ HSAS A573 Bü 24, 5 Aug. 1602, fol. 17r.

³⁷⁸ PAW KKP, vol. IV, 26 Sep. 1715, fol. 322r.

³⁷⁹ PAW KKP, vol. IV, 18 Mar. 1740, fol. 461r.

³⁸⁰ PAW KKP, vol. IV, 28 Jan. 1707, fol. 262r-262v.

³⁸¹ PAW KKP, vol. IV, 1 Jul. 1718, fol. 348r-348v.

village headman (*Schultheiß*) certified in 1797 that the parents of a blind and unemployed Wildberg citizen no longer had sufficient resources to support him, so the poor fund in Wildberg agreed to make him a weekly grant of 12 Kreuzer.³⁸²

A community was held responsible for its citizens until death, even if they lived elsewhere. Thus, for instance, in 1711 a linen-weaver from Calw who had lived in Wildberg for 19 years but who had become too old to get by independently was 'sent back to his citizenship' in Calw.³⁸³ In 1739, a Wildberg worsted-weaver's widowed daughter died, leaving two orphans, and the Wildberg community council demanded that her former husband's community pay an annual sum for their support, or else Wildberg would send the children back to where their father had held community citizenship.³⁸⁴ Well into the nineteenth century, communities were obliged to pay for the costs of illness and poor relief for their citizens even when the latter were living elsewhere. Thus, for instance, if a craft journeyman fell ill while 'on the tramp' in a strange town, the hospital-poorhouse (*Spital*) there would send the bill to the community in which he held citizenship. These far-reaching welfare responsibilities created strong incentives for Württemberg communities to regulate the demographic and economic decisions of their citizens.

Conversely, the community was *not* responsible for those who were not its citizens, which created serious problems for those without clear community citizenship.³⁸⁵ Thus, for instance, in 1731 the community of Wildberg refused poor relief for the Wildberg-born daughter of a former official, who was not a community citizen in Wildberg, on the grounds that her father did not die in Wildberg.³⁸⁶ In 1783, a 37-year-old woman who gave birth to an illegitimate child in the house of her cousin, the Ebhausen shepherd, was kicked out the village a few days after giving birth by the communal church court, which required her before she went

³⁸² HSAS A573 Bü 63, 2 Oct. 1797, fol. 155r.

³⁸³ PAW KKP, vol. IV, 25 Sep. 1711, fol. 284v.

³⁸⁴ HSAS A573 Bü 38, 16 Jul. 1739, fol. 214r-v.

³⁸⁵ On this pattern in southwest Germany more widely, see Schaab (2000), 515-20.

³⁸⁶ PAW KKP, vol. IV, 4 Apr. 1731, fol. 423r.

to declare clearly that her child should not and could not, over the short term or the long term, make any claim on the locality here as its birthplace, and thus in the name of her child to formally release the locality here from any obligation to take its part at any time in any way, which declaration was not only written into the minutes but also she was required to place her signature to it.³⁸⁷

The communally-based welfare institutions in Württemberg thus created very strong incentives for communities to demarcate membership clearly, carefully regulate the economic and demographic decisions of its members, and treat non-members with consistent ruthlessness.³⁸⁸

Although the communal poor-fund was the central and universal institution in the Württemberg welfare system, in some localities it was buttressed by other organizations deriving from donations by individuals, corporate groups such as medieval fraternities or guilds, and religious foundations. Thus, for instance, it was not uncommon (though also not universal) for a district town to have a hospital-poorhouse (*Spital*) which provided residential space and sometimes food to ill or extremely indigent individuals (mainly women and children) who were unable to live independently.³⁸⁹ Wildberg had such a hospital-poorhouse, founded in 1501 in a building in the lower town below the castle-hill by Hans Kissenpfenning and his daughter Margaretha, who also endowed it with funds for its operation.³⁹⁰ At some point after 1501, this hospital-poorhouse moved to a different building (one erected in 1470), but it continued to offer the same type of welfare services into the later nineteenth century. In the Wildberg census of 1717, of the total town population of 1,328, 18 lived in the hospital-

³⁸⁷ PAE, KKP, Vol. VI, fol. 159v, 20.4.1783: 'sich auch hiemit klerlich erkläre, daß ihr Kind, weder ueber Kurz noch lang, irgend eine Ansprache, an das hiesige Ort, als s. Geburts Ort machen solle, oder solle machen Können, und also im Namen ihres Kinds den hiesigen Ort Von aller Verbindlichkeit, sich seiner jemals, auf irgend eine Weise, anzunehmen, aufs kündigste loos sage. Welche Erklärung man nicht alleins ins Protokoll hat nehmen, sondern auch vor ihr [gstr. hat] wollen unterschreiben laßen'.

³⁸⁸ It would be interesting to compare this attitude to charity with those of Catholic communities, which might be expected to pursue the Catholic ideal of 'caritas'; however, micro-level research of actual charitable behaviour and the functioning of each welfare system in everyday life would be necessary to test such hypotheses.

³⁸⁹ Schaab (2000), 515-18.

³⁹⁰ Königliches statistisch-topographisches Bureau (1862), 257-8; on the late medieval and early modern surge in foundations of hospital-poorhouses in Württemberg, see Schaab (2000), 516-17.

poorhouse (1.4 per cent of the community's inhabitants). The inmates consisted of six widows (one with three children, one with two children, two with each one child, and one childless), five unmarried women in their late forties or early fifties, and one 15-year-old female orphan. Of the 18 inmates, only three were male – boys aged 11-13 living with their widowed mothers, just below the age at which they would become productive enough to obtain a job as a servant in someone else's household.³⁹¹ As late as 1862, the Wildberg hospital-poorhouse was still providing free accommodation for poor members of the community (ten of whom were dwelling there in that year), together with cooking arrangements financed by the communal foundation fund (*Stiftungspflege*) for feeding persons without means.³⁹²

In normal times the Wildberg hospital-poorhouse predominantly held inmates who had some connection with the town itself, less frequently indigent poor from villages of the district. In this respect it followed the pattern of hospital-poorhouses in early modern southwest Germany more widely, which tended to restrict welfare support to community members and exclude outsiders.³⁹³ In very serious crisis periods, however, the Wildberg hospital-poorhouse somewhat relaxed its admissions policies, as shown by the fact that during the French invasion of the early 1690s it also provided shelter to refugees from outside the district.

Compared to Wildberg and Ebhausen, Münsingen and Auingen were comparatively poorly equipped with welfare institutions, other than the usual community-based poor rate levies, collected from the congregation after the Sunday service. Thus, unlike Wildberg and most other Württemberg district towns, Münsingen did not have a hospital-poorhouse for the use of the sick poor of the district. This probably resulted from the fact that in 1480 Count Eberhard V set up a *Spital* in Urach for the entire district of Urach which until 1654 also included Münsingen and Auingen. Since Urach was located only 14 km away from Münsingen and

³⁹¹ HSAS A573 Bü. 6965 (Seelenregister 1717).

³⁹² Königliches statistisch-topographisches Bureau (1862), 257-8

³⁹³ On this general pattern, see Schaab (2000), 516-17.

Auingen, its hospital-poorhouse was not out of reach of their citizens.³⁹⁴ Because Münsingen was not an independent administrative district in the period c. 1500 when it was common for hospital-poorhouses to be founded in Württemberg towns, it went into the early modern period unequipped with this basic institution and had to rely on the one in Urach.

Another ancillary component of the local welfare system in Württemberg consisted of foundations endowed by fraternities and guilds (in the medieval period) and private individuals (in the early modern period). At the time of the Reformation, the Wildberg poor chest (*Armenkasten*) incorporated the *Präsenz zu Wildberg*; the St. Martinspflege in Wildberg; the hospital-poorhouse in Wildberg; the leper's house in Wildberg; the St Sebastian's Fraternity in Wildberg; the St Sebastian's Fraternity in Effringen; the Woollen-Weavers' Fraternity; the St Diepold's Wardship (*Pflegschaft*) in Wildberg; the Fraternity of Our Lady (*Unser Frauen Bruderschaft*) in Wildberg and Effringen; the Shoemakers' Fraternity in Wildberg; and the donated alms of the prince (*die Spendalmosen der Herrschaft*).³⁹⁵ The hospital-poorhouse was later provided with a separate administration.³⁹⁶

In 1862, Wildberg was described as having a total foundation fund of 13,000 Gulden provided by 8 individual foundations. Although many of the funds were earmarked for educational purposes, as we saw in Section 4.5, some also served for poor relief. Thus the 'Christoph Schauber Company Members of Calw Fund' consisted of 200 Gulden whose interest payments were to be used in alternate years to buy bread for poor persons. Even some of the foundation moneys earmarked for educational purposes can be regarded as part of the welfare system, as with the Gfrörer Fund, the interest from whose 250 Gulden was to be used to pay the school fees of poor, legitimately born children. And the Bartholomäus Reichert Industrial Fund, set up in 1843, consisted of 500 Gulden for the support of public industrial enterprises,

³⁹⁴ Memminger (1825), 108. On the late medieval wave of hospital-poorhouse foundations in Württemberg, see Schaab (2000), 516-17.

³⁹⁵ Königliches statistisch-topographisches Bureau (1862), 266.

³⁹⁶ Königliches statistisch-topographisches Bureau (1862), 266.

which were to be made in the interest of the collective inhabitants of Wildberg.³⁹⁷ In 1862, administered separately from the Foundation Fund of the town (*Stiftungspflege*) there was the so-called Franziska Foundation, consisting of 500 Gulden, whose interest payments were distributed every year to the most needy and worthy families.³⁹⁸ This sum was gifted to the duke by the town and district on the occasion of the marriage of Duke Karl with his consort Franziska, and was then given back by the duke to the community.³⁹⁹

The extent to which inhabitants of Ebhausen, as a village of the district of Wildberg, benefited from any of these foundation moneys is unclear. Even if they did so, it would have been to a lesser extent than inhabitants of Wildberg. The differential availability of such supplementary welfare support to townsmen and villagers must therefore be taken into account analysing the potential demographic impact of welfare provision in Württemberg. Another salient characteristic is that a number of the foundations providing ancillary welfare support in Wildberg itself only came into being in the course of the eighteenth century or even the nineteenth, and thus would only have begun to exercise a demographic impact at that period.

As already remarked, Münsingen and Auingen were less well provided with welfare institutions than the Wildberg and Ebhausen region. Its two late medieval fraternities – the Fraternity of All Faithful Souls in Münsingen (mentioned in 1496) and the Tailors' Fraternity (mentioned in 1525) – appear to have used their wealth mainly to endow religious services and priests.⁴⁰⁰ Furthermore, as already remarked, Münsingen did not have a hospital-poorhouse at all, unlike most Württemberg district towns. However, it did have a lepers' house (*Siechenhaus*) which was mentioned in 1558 and appears to have been located on the road between Münsingen and Auingen.⁴⁰¹

³⁹⁷ Königliches statistisch-topographisches Bureau (1862), 265.

³⁹⁸ Königliches statistisch-topographisches Bureau (1862), 265.

³⁹⁹ Königliches statistisch-topographisches Bureau (1862), 265-6.

⁴⁰⁰ Königliches statistisches Landesamt (1912), 547.

⁴⁰¹ Königliches statistisches Landesamt (1912), 549.

Sometime between the mid-sixteenth and the eighteenth century, Münsingen obtained an institution termed an *Armen- und Krankenhaus* (poorhouse-hospital). This consisted only of a building in which poor and sick people could shelter, with no further provision for them.⁴⁰² In 1825, welfare provision in Münsingen was described as ‘consisting of a few insignificant foundations for distribution among the poor, a poorhouse or so-called “beggars’ house”, and a hospital established in 1822’.⁴⁰³ An assessment of welfare provision in the district of Münsingen as a whole at that period admitted that the general wealth level in the district was ‘low on average’, but ‘nonetheless probably in all localities the citizens’ benefactions in the form of wood-donations, communal lands, etc. mean that even the poorest worker is secured at least his necessary subsistence’.⁴⁰⁴ It may justifiably be questioned whether this assessment was not over-optimistic.

Even in the later nineteenth century, Münsingen (let alone Auingen) were not richly provided with supplementary welfare funds, over and above communal poor rates. When the Württemberg guilds were abolished in 1862, those of Münsingen put their wealth into foundations to finance a *Realschule*, a fire-brigade, and for charitable organizations in the country more widely.⁴⁰⁵ In 1912, Münsingen was described as having foundations and welfare institutions of the following value: 1,560 marks in the small children’s school fund; 1,100 marks in the school fund; 1,186 marks for local poor relief; 16,360 marks for the Protestant church congregation; and 2,895 marks in the Catholic church chest. The total value of the ancillary welfare support available from foundations in Münsingen was thus much lower than in Wildberg. Moreover, it is not clear the extent to which the inhabitants of the village Auingen would have shared in this meagre provision in any case.⁴⁰⁶

⁴⁰² Personal communication from Dr Roland Deigendesch 2008.

⁴⁰³ Memminger (1825), 108.

⁴⁰⁴ Memminger (1825), 65.

⁴⁰⁵ Königliches statistisches Landesamt (1912), 546 n. 1.

⁴⁰⁶ Königliches statistisches Landesamt (1912), 553.

Not only was Wildberg better supplied with welfare funds from foundations set up before 1800, but the nineteenth century also saw the establishment locally of several charitable institutions of a completely new type. In 1837, the town pastor Karl Georg Haldenwang established the ‘Rescue Organization for Mentally Deficient Children’ (*Rettungsanstalt für schwachsinnige Kinder*), which is said to have been the first such organization in Germany. This initially took the form of having 29 children taught in Haldenwang’s own dwelling by one of the town school-teachers, who instructed them in bodily care, swimming, walking, games, and work skills. In an affiliated ‘industrial school’, boys were taught how to make straw mats and shoes from leftover cloths and girls were taught sewing and knitting.⁴⁰⁷ In 1838 the Rescue Organization purchased the building which had previously housed the town secretary’s office at a price of 1500 Gulden, which was donated by the crown of Württemberg.⁴⁰⁸ A private teaching seminar was set up, and small children were looked after in a sort of Kindergarten.⁴⁰⁹ Haldenwang also set up a private poor relief fund (*Privat-Almosenkasse*) with the aim of alleviating vagrancy, begging, and ‘moral neglect’.⁴¹⁰ However, Haldenwang’s foundations did not last long in Wildberg. In 1845, he moved away from the town for health reasons and 2 years later the Rescue Organization was closed and the children sent to a similar home on the Swabian Jura.⁴¹¹ Nonetheless, between the mid-1840s and the mid-1860s, the Wildberg town accounts mention a variety of private welfare initiatives, including a private poor relief association (*Privat-Armenverein*) in 1846/7, a soup-kitchen operated by the poor relief association (1846-7), an ‘industry fund’ (1836-45), an industrial home (1843-6), and a children’s industrial-work-class (1843-63).⁴¹²

Another, longer-lasting welfare enterprise was set up in Wildberg in the 1860s. In 1864 the well-known Pietist-influenced theologian Ernst Philipp Paulus (1809-78) from Ludwigsburg

⁴⁰⁷ Klab (1987), 169.

⁴⁰⁸ Klab (1987), 169.

⁴⁰⁹ Klab (1987), 169.

⁴¹⁰ Klab (1987), 169.

⁴¹¹ Klab (1987), 170.

⁴¹² Klab (1987), 169-70.

used resources provided by the queen of Württemberg to purchase the former town secretary's office building (which had previously housed Haldenwang's institution for mentally deficient children) from the town for 3,000 Gulden to set up a 'House of Mercifulness' (*Haus der Baumherzigkeit*) under royal patronage.⁴¹³ Revenue sources for the institution were to be donations, gifts, bequests, boarding fees, and use of the labour power of the elderly inmates.⁴¹⁴ Rich charitable donations flowed in, e.g. at the time of dedication over 2,051 Gulden.⁴¹⁵ The Stuttgart town pastor became chairman of the 6-member administrative council, and the Wildberg town pastor acted as chairman of the 9-member local committee.⁴¹⁶ The statutes of the home provided for the shelter of old, poor persons who were incapable of earning anything and were Württemberg subjects, without imposing any confessional requirements.⁴¹⁷ The director of the home initially took in 21 elderly 'nurslings', 11 men and 10 women, two of them from Wildberg, and soon all 50 places were filled.⁴¹⁸ The burials of the inmates of this house, recorded in the Wildberg burial registers, show that most of them were not from the town itself, indicating that the institution was breaking away from the strictly community-based pattern otherwise dominant in the Württemberg welfare system.⁴¹⁹ The institution was copied soon in Esslingen, and continued to exist in Wildberg into the twentieth century. In 1939 the 'House of Mercifulness' was rechristened as an 'Old People's Home' (*Altenheim*); it was renovated after the Second World War and again in the 1970s and 1980s.⁴²⁰

We can summarize welfare provision in our three communities as follows. First, the core institution was the communal poor fund which was funded by weekly donations from citizens and through endowments from foundations. The generosity of the local welfare system thus

⁴¹³ Klab (1987), 171.

⁴¹⁴ Klab (1987), 173.

⁴¹⁵ Klab (1987), 173.

⁴¹⁶ Klab (1987), 171.

⁴¹⁷ Klab (1987), 173.

⁴¹⁸ Klab (1987), 173.

⁴¹⁹ PAW Totenbuch, 1864ff.

⁴²⁰ Klab (1987), 173.

depended on the wealth of the community at any given time (which determined the size of donations), its past wealth (which determined foundation income), and the attitudes of the local office-holding 'notability' (who dominated communal welfare decisions). This communal provision was enhanced by private and corporative foundations which contributed to welfare relief independently of the communal poor fund. The welfare activities of such foundations greatly accelerated after the first third of the nineteenth century.

Of the three communities studied here, Wildberg had unquestionably the best equipped welfare system, both because townsmen were richer than villagers and hence better able to make weekly donations, and because Wildberg's early proto-industrialization in the sixteenth and seventeenth centuries meant it had a longer history of wealthy donors to endow its foundations. Of the two villages, Ebhausen probably had better welfare funding than Auingen until the nineteenth-century decline of its worsted proto-industry, both because it had an expanding worsted proto-industry and because it may have enjoyed some overspill from welfare institutions in its district town of Wildberg. Auingen, by contrast, was predominantly agricultural and its district town of Münsingen was much less richly endowed with charitable foundations. In the nineteenth century, however, Wildberg and Ebhausen became wretchedly impoverished while Auingen mildly prospered, and welfare provision probably became more generous in the flourishing Swabian Jura village than in the collapsing proto-industrial region in the Black Forest. Since the functioning of communal welfare institutions based on weekly donations from local citizens was thus fundamentally influenced by the dynamism of the local economy, let us now turn our attention to the functioning of that economy.

5. Natural Endowments and Infrastructure

Natural and geographical factors affect demographic behaviour in a variety of ways. Altitude, geology, soil, climate, and water supply strongly influence agricultural productivity, which in turn strongly affects the resources available to support human existence in a particular

locality. Geographical factors also affect the viability of industry, through location relative to major roads and centres of consumer demand, availability of water power, access to river transportation, and proximity to raw materials; industry in turn provides additional and different resources for human beings to live from. Natural factors also create particular disease environments: water scarcity encourages water-borne gastro-intestinal infections; standing water encourages malaria; cold and damp climate fosters respiratory illnesses; iodine-deficient mountain soils cause goitre and mental deficiency. Predominance of natural resources with poorly defined property rights (such as common woods, pastures, and water) relative to resources with easily-defined property rights (such as arable fields) may create incentives for early household formation or high fertility in order to obtain access rights, depending on institutional rules. Location far from urban centres will increase the costs of migration and trade, and reduce the exposure of local inhabitants to new economic techniques (such as agricultural innovations) or social practices (such as family limitation). For all these reasons, the natural and geographical characteristics of communities form part of the constraint structure within which their inhabitants make demographic decisions.

5.1. Location and Altitude

Superficially it might seem that all three communities under analysis enjoy favourable locations in a densely settled region of central Europe, well equipped with rivers and with good access to trading partners. Wildberg and Ebhausen are only 45-54 km southwest of the capital city, Stuttgart, and even Auingen is only 60 km southeast of the capital. Nowadays, this distance can be easily travelled in an hour. But in most of the period under analysis here, these distances had to be travelled on foot, or at best by cart or horse. This meant that these localities were quite remote from larger centres of population and thus from access to the wider world. Even Stuttgart, as the population figures in Table 1 show, was hardly a great urban centre before the later nineteenth century. Auingen actually lay closer to the Free Imperial City of Ulm (only 51 km distant) than to Stuttgart. Although at a pinch one could

walk to Stuttgart from Wildberg or Ebhausen in a day, and from Auingen in a day and a half, in practice contemporaries appear to have taken the journey more slowly. Thus, for instance, in July 1689, when the worsted-weavers' guild of the district of Wildberg sent a delegation of 26 members to march to Stuttgart with other district guild delegations to demonstrate at the ducal chancellory against the Calw merchant association, they spent three days on the journey.⁴²¹ Before the advent of good roads and railways, therefore, all three of our communities had geographical locations that impeded frequent interactions with large centres of population.

Altitude may have contributed even more than poor roads and primarily pedestrian or equestrian transportation to the remoteness of our three communities. Wildberg and Ebhausen are located in the Württemberg section of the range of forested hills known as the Black Forest (Schwarzwald), and Auingen is located in the Swabian Jura (Schwäbische Alb), a medium-sized mountainous plateau in south-eastern Württemberg. Consequently, all three communities have an elevation which is well over the average for Württemberg. Stuttgart, the national capital, lies at 260 m above sea level. By contrast, most of the old town of Wildberg (including the castle, town hall, church and market) sits on a cliff above the Nagold river-valley at about 360 m above sea level, with only the suburb (*Vorstadt*) and former Reutin Convent lying in the valley of the Nagold River at an elevation of 311 m.⁴²² Ebhausen lies 150-200 m higher than Wildberg, with the upper part of the village, Ebhausen proper, at 509 m and the lower part, Wöllhausen, at 451 m.⁴²³ The altitude of Auingen, as befits its location on the Swabian Jura, is more than twice that of Wildberg, lying at 741 m above sea level, although still not at the highest point of the Swabian Jura, which lies further to the southwest

⁴²¹ HSAS A573 Bü 842 (Oct. 1688 - Oct. 1689) fol. 99.

⁴²² Klab (1987), 13.

⁴²³ <http://www.fallingrain.com/world/GM/1/Ebhausen.html>; <http://www.fallingrain.com/world/GM/1/Wollhausen.html>

at 900-1,000 m.⁴²⁴ Nonetheless, the Münsingen-Auingen area was described in 1825 as being ‘very hilly ... so that a regular level area can seldom be found’.⁴²⁵

As we shall see in Section 7 where we examine agricultural development, the relatively high altitude of all three communities imposed constraints on their agricultural productivity, in Auingen even more than in Wildberg or Ebhausen. Nevertheless, the occupational structure of the three communities throughout most of their history (discussed in Section 6) should warn against any sort of geographical determinism, since Wildberg had the lowest elevation and (as we shall see) in other ways the best geographical conditions for agriculture of all three communities, yet it was predominantly proto-industrial until the early nineteenth century, while Auingen had the highest elevation and the worst natural conditions for farming yet remained predominantly agricultural throughout most of its history. Geography affected economic activity, with knock-on effects on demographic patterns, but not in a straightforward way.

5.2. Geology and Soil

The three communities analyzed here also had very different geological endowments. Wildberg and Ebhausen are located in the sandstone Nagold Valley, which belongs geographically to the Black Forest, although the valley’s limestone cliffs make it part of the eastern foreland of the Black Forest which is called the ‘Hecken- und Schlehengäu’ or the ‘Oberen Gäu’.⁴²⁶ Ebhausen lies directly on the geological boundary between the sandstone of the Black Forest proper (to the south and west) and the shell limestone of the eastern foreland of the Black Forest (to the north and east).⁴²⁷ The Nagold Valley, although deeply cut, is somewhat broader than the narrow valleys of the Black Forest proper, and its slopes can be

⁴²⁴ <http://www.muensingen.de/servlet/PB/menu/1212308/index.html>; the altitude given in Königliches statistisches Landesamt (1912), 570, is 734.64 meters above sea level.

⁴²⁵ Memminger (1825), 20.

⁴²⁶ Klab (1987), 13; Königliches statistisch-topographisches Bureau (1862), 20.

⁴²⁷ Königliches statistisch-topographisches Bureau (1862), 3-6.

naturally or artificially terraced and used for arable agriculture, albeit with some difficulty.⁴²⁸

The eastern margin of the Black Forest, where Wildberg and Ebhausen are located, is characterized by meagre soils, lacking in nutrients for arable cultivation.⁴²⁹ The sandstone soil of the Black Forest requires a great deal of fertilization to be productive, and at the point at which (as in Wildberg and Ebhausen) it gives way to shell limestone, the disruptive encounter between the two geological formations gives rise to ‘quite an infertile, heavy, somewhat wet and cold soil’.⁴³⁰

The geology of the Black Forest region affected the demography of Wildberg and Ebhausen *indirectly* in a number of ways, primarily through agricultural productivity, as we shall see in Section 7. But geology also affected the demography of the two communities *directly*, through the absence of naturally occurring iodine. Insufficient local iodine in populations mainly dependent upon locally grown food leads to thyroid deficiency, which can give rise to goitre, delay in bone maturation and puberty, reduced or non-existent ovulation, and infertility. The 1862 Royal Statistical Bureau survey of what was by that time the district of Nagold stressed the high levels of endemic goitre and ‘cretinism’ (i.e. cognitive damage) observable in the inhabitants of the district’s towns, among them Wildberg. The inhabitants of Wildberg itself were described as being ‘in general of small, unhandsome physique, bent over as a consequence of the arduous work on the steep hills and the carrying of heaving burdens’, and being as much given to goitre and ‘cretinism’, especially in the older generation.⁴³¹ Alone among the villages, Ebhausen was singled out for the prevalence of goitre and ‘cretinism’: it had by far the highest levels in both absolute and relative terms (15 sufferers in a village population of 1,356, compared to only 4 in Wildberg with a population of 1,694).⁴³² High levels of goitre and associated cognitive damage were widespread throughout the Black Forest region before the twentieth century, and are now known to have been caused by iodine

⁴²⁸ Königliches statistisch-topographisches Bureau (1862), 4, 10-11.

⁴²⁹ Klab (1987), 13.

⁴³⁰ Königliches statistisch-topographisches Bureau (1862), 15-16.

⁴³¹ Königliches statistisch-topographisches Bureau (1862), 260.

⁴³² Königliches statistisch-topographisches Bureau (1862), 44, 152.

deficiency. It seems likely that both Ebhausen and Wildberg had particularly low levels of natural iodine in the soil and water, even by Black Forest standards.⁴³³ In iodine-deficient regions of Europe, it was not until the later nineteenth century, when the variety of food sources increased and rural populations became less completely dependent on locally grown food, that thyroid deficiency and its associated medical difficulties began to disappear.

The geological features of Auingen differ fundamentally from those of Wildberg and Ebhausen because it is located in the Swabian Jura (Schwäbische Alb), the largest karst landscape in Germany. The Swabian Jura is a high plateau 40-70 km wide extending 220 km from southwest to northeast, bounded by the Danube River in the south and the upper Neckar River in the north, and gradually falling away from east to west. It is a karst landscape by virtue of consisting of three layers of different types of limestone stacked on top of one another, one of these layers (white jura) being nearly pure (99 per cent) calcium carbonate. Limestone dissolves in water, so the Swabian Jura is gradually dissolving, at the rate of 5 cm a year, and has hardly any surface water in the form of rivers or lakes. Instead, precipitation seeps through cracks everywhere in the limestone layers, forming subterranean rivers which flow through a large system of c. 2,000 caves until they emerge on the surface of the side of the Swabian Jura as springs, sometimes with great violence. Only a thin layer of humus – often as shallow as 10 cm – lies on top of the limestone and the surface is covered with innumerable small limestone pebbles. Consequently, the soil is not very fertile for agriculture.⁴³⁴ The Münsingen-Auingen area is somewhat less water-permeable than some other parts of the Swabian Jura because of the movement of a certain amount of volcanic rock toward the area from the direction of Urach.⁴³⁵ Nonetheless, Münsingen and Auingen lie

⁴³³ Königliches statistisch-topographisches Bureau (1862), 44-5; Stanbury & Hetzel (1980); Rengel et al. (1999), 36.

⁴³⁴ http://en.wikipedia.org/wiki/Swabian_Alb; [http://www.s-line.de/homepages/ebener/KarteII-1\(Geologie\).htm](http://www.s-line.de/homepages/ebener/KarteII-1(Geologie).htm)

⁴³⁵ Landesarchivdirektion Baden-Württemberg (1997), II:2.

directly on what has long been called, because of its harsh geological and climatic characteristics, ‘the Raw Jura’ (‘der Rauhe Alb’).⁴³⁶

5.3. Weather and Climate

Württemberg enjoys a temperate climate, which becomes colder in its higher regions, among them the Württemberg Black Forest and the Swabian Jura. The mean annual temperature of Württemberg varies between 6 and 10°C, and all three of our communities lie at the cold end of this spectrum. In addition, the abundant forests of Württemberg induce much rain, most of which falls in the summer. Since our three communities were in the more forested regions of the country, their precipitation was higher than average. Furthermore, for much of the period under analysis Europe was undergoing the so-called ‘Little Ice Age’, a phase of lower than average temperatures and higher than average precipitation in the Northern Hemisphere, which is thought to have lasted from the mid-sixteenth to the early nineteenth century, with particularly cold periods from 1570 to 1630 and from 1675 to 1715.⁴³⁷

The Wildberg-Ebhausen area lies in the rain-shadow of the Black Forest, and shares the cold and snowy climate of that region. Although our two communities are not so cold and snowy as higher parts of the Black Forest further westwards and southwards in what is now Baden, by Württemberg standards they have quite a harsh climate.⁴³⁸ Weather observations for Wildberg for 1950-69 show an average annual temperature of 6.2°C, much lower than the average of 8.4-10°C in the capital city of Stuttgart, and near the low end of the spectrum for Württemberg as a whole. During this sampling period, Wildberg’s average annual precipitation was 690 mm which is slightly higher than the 664 mm in Stuttgart, but not high by the standards of other parts of Württemberg, such as the Swabian Jura, as we shall see

⁴³⁶ Memminger (1825), 27, 105.

⁴³⁷ Behringer / Lehmann / Pfister (2005); Schaab (2000), 460, 462.

⁴³⁸ Königliches statistisch-topographisches Bureau (1862), 16.

from the precipitation figures for Auingen.⁴³⁹ The climate in Wildberg is somewhat milder than that in Ebhausen, and capable of growing some soft fruits, and in good years even occasionally ripening grapes.⁴⁴⁰ But in general the spring vegetation in the Wildberg-Ebhausen area lies 8-14 days behind that in the lowland areas of Württemberg, and spring frosts and cold fogs often damage fruit blossom and finer crops.⁴⁴¹ The area is characterized by severe storms in winter and the snow stays deep on the high ground even once it has melted in the Nagold Valley itself.⁴⁴² In the past, the heavy winter snows in the area could lead to serious transportation problems.⁴⁴³

The climate of the Swabian Jura, on which Münsingen and Auingen lie, was described in 1825 as ‘indisputably among the rawest in the land’, being characterized by

a sharp and strongly agitated air, frequent storms, cool and often cold summer nights, long-lasting and severe winters, and unsettled and abrupt changes in temperature in spring-time ... Winter starts early, the snow disappears late, fogs and mists last well into summer, there are very few months in which heating is not necessary, and often during the hay harvest the mowers find ice on the grass.⁴⁴⁴

Modern climatological measurements confirm that the entire Swabian Jura is much colder than most of the rest of the country. The climate in Münsingen and Auingen is similar in average temperature to that in Wildberg and Ebhausen, with a mean annual temperature of 6.5°C, much lower than the lowland temperatures of 8.4-10°C in the capital Stuttgart, or even than Urach at 7.5°C.⁴⁴⁵ But Münsingen and Auingen are much wetter than Wildberg and Ebhausen (or Stuttgart), with average precipitation 50 per cent higher, at 962 mm annually.⁴⁴⁶

In summary, the Münsingen-Auingen area shares the climate of the bleak Swabian Jura,

⁴³⁹ On Wildberg, see Klab (1987), 21-2; on Stuttgart, see http://www.stadtklima-stuttgart.de/stadtklima_filestorage/download/Flyer-The-climate-of-Stuttgart.pdf

⁴⁴⁰ Königliches statistisch-topographisches Bureau (1862), 16.

⁴⁴¹ Königliches statistisch-topographisches Bureau (1862), 16.

⁴⁴² Königliches statistisch-topographisches Bureau (1862), 16.

⁴⁴³ Königliches statistisch-topographisches Bureau (1862), 16.

⁴⁴⁴ Memminger (1825), 49.

⁴⁴⁵ On Urach, see Kazmaier (1978), 7; on Stuttgart, see http://www.stadtklima-stuttgart.de/stadtklima_filestorage/download/Flyer-The-climate-of-Stuttgart.pdf

⁴⁴⁶ <http://www.klimadiagramme.de/Deutschland/muensingen.html>

which is often windy, snowy in winter, and colder than average for Württemberg.⁴⁴⁷ The impact of these climatic conditions on agricultural productivity are discussed in detail in Section 7.

5.4. Water Sources

Water supply affects demographic behaviour in a variety of ways, both directly (through mortality) and indirectly (through its impact on agricultural productivity). The availability and quality of local water affects human mortality through waterborne gastro-intestinal illnesses and stagnant water as a breeding ground for malarial mosquitoes. It affects cattle mortality through water supplies, which affect bovine tuberculosis rates. Water supplies affect agricultural and industrial productivity through the watering of pastures (which help determine how frequently they can be mown), water energy to drive mills for industry, and water transport to provide low-cost access to markets for agriculture or industry.

The entire district of Wildberg is well provided with springs. This ensured year-round high-quality water supplies, described in 1862 as being ‘in general good, fresh, often (especially in the valleys) very good, and nearly completely pure’.⁴⁴⁸ In addition, Wildberg and Ebhausen are located directly on the Nagold River, which ensured plentiful water for human consumption, livestock watering, industry, and even to some extent transportation.⁴⁴⁹

Although Württemberg in general suffered from a lack of larger waterways for mass transport, Wildberg and Ebhausen at least had access, via the Nagold, to the largest Württemberg river, namely the Neckar.⁴⁵⁰ The Nagold arises in the Black Forest at Urnagold (just over the border in the territory of Baden) but flows immediately into Württemberg and runs for a total length of 92 km, first south-easterly (passing through Ebhausen) and then

⁴⁴⁷ http://en.wikipedia.org/wiki/Swabian_Alz

⁴⁴⁸ Königliches statistisch-topographisches Bureau (1862), 7.

⁴⁴⁹ Königliches statistisch-topographisches Bureau (1862), 43.

⁴⁵⁰ On the lack of larger waterways for transportation in Württemberg, see Hippel (1992), 486-7.

northerly (passing through Wildberg), ultimately reaching the Baden town of Pforzheim where it joins the River Enz. The Enz drains into the Neckar, and the Neckar into the Rhine.⁴⁵¹

The Nagold is a strong and fast river and historically drove a large number of mills and (in later periods) manufactories and factories.⁴⁵² However, it is not one of the large rivers of central Europe, at only about 10-30 metres wide and 1.5-3 metres deep (except in a few places), so it is navigable only for watercraft with a very shallow draft.⁴⁵³ Nonetheless, it was suitable for rafting, and from the medieval period to the nineteenth century, forestry products such as timber and pitch were rafted down the Nagold River through Ebhausen and Wildberg to Pforzheim, where they were bound into much larger wood-rafts. From there, they were floated further along the Enz, into the Neckar, then into the Rhine, and ultimately to destinations such as the Netherlands to be used in shipbuilding.

Forestry did not become a major livelihood for inhabitants of the upper Nagold Valley communities such as Wildberg and Ebhausen until the end of the seventeenth century.⁴⁵⁴ However, it grew in importance in the course of the eighteenth century, and particularly in the nineteenth with the decline of the local textile industry. It still played a major role as late as 1862, when the Wildberg-Ebhausen region was described as deriving high revenues from wood-rafting.⁴⁵⁵ Two of the main binding-in places for raft-wood in 1862 were at the Mohnhardter Stube (2.5 km away from Ebhausen) and at Wildberg itself. By that time the wood was no longer going as far afield as the Netherlands: the firewood was being sent down to Stuttgart and Herrenberg, and the long timber was going to Mannheim (the city at the confluence of the rivers Neckar and Rhine).⁴⁵⁶ The wood-rafts on the Nagold were described

⁴⁵¹ Königliches statistisch-topographisches Bureau (1862), 9-10.

⁴⁵² Königliches statistisch-topographisches Bureau (1862), 9.

⁴⁵³ Königliches statistisch-topographisches Bureau (1862), 9.

⁴⁵⁴ Flik (1985), 168.

⁴⁵⁵ Königliches statistisch-topographisches Bureau (1862), 53, 71-2.

⁴⁵⁶ Königliches statistisch-topographisches Bureau (1862), 64-5.

in 1862 as being 230-290 m long, up to 7 m wide, and being rafted by 6 men each. This bears witness to the navigability of the Nagold by quite large watercraft, so long as they had a shallow draft.⁴⁵⁷

Wildberg itself is located on a high sandstone cliff above a U-bend on the Nagold, although the town spread in the medieval and early modern periods to encompass much of the left bank of the Nagold and a small part of the right bank around the buildings of the former Reutin Convent. The town has always been well provided with drinking-water, with 10 running fountains inside the town itself, fed from two different springs, as well as a number of springs in the farmlands around the town. The market fountain had four pipes and the Spieß fountain three; only in the upper parts of the town did the fountains sometimes run dry in very dry summers.⁴⁵⁸ Perhaps as a consequence of this rich provision with natural springs, piped water was not introduced in Wildberg until 1904.⁴⁵⁹

The Nagold river not only flowed around the town of Wildberg itself, but also for a stretch of 1 1/2 hours around the farmlands belonging to the town. It was therefore sufficient to drive the Convent Mill with four pairs of grinding-stones and a tanning-wheel, the Middle Mill with 4 pairs of grinding-stones and a tanning-wheel, the Lower Mill together with the Fulling Mill with 3 pairs of grinding-stones and a tanning-wheel, and a saw-mill outside the town.⁴⁶⁰ The town also has a stream called the Fischbach which flows into the Nagold a quarter of an hour downstream from the town, and which by the nineteenth century was driving an oil-mill with a hemp-press, a fulling-mill, a saw- and tanning-mill, and an additional tanning-mill.⁴⁶¹

Ebhausen lies 11 km further upstream on the Nagold River from Wildberg, with the Wöllhausen part of the village spanning both sides of the river in the valley bottom, while the

⁴⁵⁷ Königliches statistisch-topographisches Bureau (1862), 72.

⁴⁵⁸ Königliches statistisch-topographisches Bureau (1862), 256.

⁴⁵⁹ Klab (1987), 121.

⁴⁶⁰ Königliches statistisch-topographisches Bureau (1862), 76, 259.

⁴⁶¹ Königliches statistisch-topographisches Bureau (1862), 259.

Ebhausen part is located on a steep hill above the left bank.⁴⁶² In addition, the village has a stream called the Mühlbach which flows into the Nagold river next to the village bridge.⁴⁶³ At some time in its history, there was also a pond, judging by the local name ‘Weiherwiesen’ (Pond Pasture) for the land beside where the nineteenth-century brickworks lay.⁴⁶⁴ In 1862, the village was described as being ‘sufficiently provided with good drinking water’, with four running springs, principal among them the Market Fountain which was equipped with three pipes.⁴⁶⁵ The river water was also clean enough for fish, since the Ebhausen inhabitants were described in 1862 as carrying out a lot of fishing and selling the catch in considerable volumes as far afield as the town of Wildbad (31 km distant).⁴⁶⁶ As far back as the records go (into the sixteenth century) Ebhausen had at least one grain-mill in the village itself, and in 1862 it had two mills, the Upper Mill with 3 pairs of grinding-stones, a tanning-wheel, and a hemp-press; and the Lower Mill with 3 pairs of grinding-stones and a tanning-wheel.⁴⁶⁷ Near the lower grain-mill there was also a fulling-mill.⁴⁶⁸

One demographic benefit of the nature of the water sources in the Wildberg-Ebhausen region was an absence of malaria. In 1862 the Royal Statistical Bureau described the district of Nagold as ‘in general having a remarkable salubrity, to which partly the configuration of the area and partly the occupations and way of life of the inhabitants significantly contribute’.⁴⁶⁹ It placed particular emphasis on the absence of malaria in the district, compared to other parts of Württemberg, ascribing this to the strong flow of the Nagold and its tributaries, reducing the occurrence of pools of standing water.⁴⁷⁰ Nonetheless, there were pockets of insalubrity, among them Ebhausen, which in 1862 suffered from the highest mortality in the district of Nagold, at a rate of 58 per 1000, compared to figures around 20 per 1000 for the lowest-

⁴⁶² Königliches statistisch-topographisches Bureau (1862), 150; Oertel (2006), 5.

⁴⁶³ Königliches statistisch-topographisches Bureau (1862), 152.

⁴⁶⁴ Königliches statistisch-topographisches Bureau (1862), 152.

⁴⁶⁵ Königliches statistisch-topographisches Bureau (1862), 152.

⁴⁶⁶ Königliches statistisch-topographisches Bureau (1862), 152.

⁴⁶⁷ Königliches statistisch-topographisches Bureau (1862), 76, 153.

⁴⁶⁸ Königliches statistisch-topographisches Bureau (1862), 153.

⁴⁶⁹ Königliches statistisch-topographisches Bureau (1862), 43.

⁴⁷⁰ Königliches statistisch-topographisches Bureau (1862), 44.

mortality villages of the district.⁴⁷¹ The causes of this comparatively high mortality in nineteenth-century Ebhausen represent an open question to be addressed in the present project.

In diametrical contrast to water-rich Wildberg and Ebhausen, Münsingen and Auingen suffered from quite serious water-scarcity. The Swabian Jura, as already mentioned, consists of permeable limestone which permits hardly any surface water to form as streams, rivers or lakes, despite the fact that the mean annual precipitation is very high, at 800-1000 mm annually for the Swabian Jura as a whole and (as already mentioned) 962 mm in Münsingen. Settlements on the Swabian Jura historically arose in locations where there was at least some access to water.⁴⁷²

Despite this, there was not a single lake, apart from a few small ponds, in the entire historical district of Münsingen.⁴⁷³ At the village of Seeburg, about 14 km from Münsingen and Auingen, the geologically determined lack of surface water on the Swabian Jura was relieved by the existence of three lakes – hence the name of the village (‘See’ meaning ‘lake’). However, the history of these lakes illustrates the scarcity and artificiality of surface water in the region. One lake (in the Seetal) was probably created artificially on common lands by damming a stream sometime before 1514. The second lake (the so-called ‘lower lake’) was drained shortly after 1555 and the land sold as pastures to local inhabitants. The third and most famous lake was a natural lake in the Fischburgtal, but in 1618 on the command of Duke Johann Friedrich it was made artificially drainable by the construction of a 525-metre long tunnel. The initial purpose was to facilitate fishing, but from the mid-eighteenth century on the dammed-up water was also used for wood-rafting, whereby fuel-wood was brought via iron or wooden slides from the heights of the Swabian Jura into the valley and then thrown into the Erms river. From 1821 onward, this lake remained permanently emptied of its water

⁴⁷¹ Königliches statistisch-topographisches Bureau (1862), 36.

⁴⁷² Kazmaier (1978), 4-5.

⁴⁷³ Memminger (1825), 40.

and is nowadays no longer visible.⁴⁷⁴ The history of the lakes of Seeburg illustrates the contingent and artificial nature of surface water even in those areas of the Swabian Jura most richly endowed with it.

No such wealth of surface water was to be found up on the 'Raw Alb' where Münsingen and Auingen were located. Auingen was totally lacking in the amenities provided in Wildberg and Ebhausen by the Nagold river. Underneath Münsingen (on the Hungerberg, a hill just north of the town) runs the karst watershed between the Rhine and the Danube, but the above-ground watershed lies further toward the ridge of the Swabian Jura.⁴⁷⁵ Münsingen and Auingen are located up on the Jura plateau itself, 6-8 km north of the Lauter, a 35-km-long river which flows south-easterly and drains into the Danube, and 6-8 km southeast of the Erms, a 31-km-long river which flows north-westerly and drains to the Neckar. The nearest community to Münsingen and Auingen on the Lauter River is Bottenhausen (8.1 km distant), but the Lauter River is at no point navigable, even with small boats. The Erms is a slightly stronger and deeper river, but also falls very steeply toward the Neckar, and thus also hardly navigable in the section closest to Münsingen and Auingen, at Seeburg. From the seventeenth century on, as already mentioned, the Erms was used for rafting wood, a practice facilitated by the fact that the lake at Seeburg could be regulated by draining it out through the artificial tunnel described above. However, the only kind of wood that was rafted was firewood, and thus the small amount of rafting on the Erms River cannot remotely be compared to that in the Black Forest where rafting of entire logs on rivers such as the Nagold was an important livelihood source.

Lacking its own river, Auingen did not have a grain-mill of its own, but nearby Münsingen had what was probably the only water-mill on the Swabian Jura plateau, fed by the

⁴⁷⁴ Landesarchivdirektion Baden-Württemberg (1997), I: 525.

⁴⁷⁵ Memminger (1825), 21; Landesarchivdirektion Baden-Württemberg (1997), II:3; Memminger (1825), 46.

Hungerberg spring which also fed the five town wells (discussed below).⁴⁷⁶ However, there were mills in the valleys leading down from Münsingen and Auingen to the Lauter River and toward the Erms River, because of subterranean water sources which welled up in them strongly enough to drive the mill-wheels.⁴⁷⁷ The inhabitants of Auingen were originally legally required to patronize the two lower mills in the Seeburger Tal (a valley of the upper reaches of the Erms river), 8 km away, but after lengthy negotiations they were permitted in 1593 to pay a sum of money to free themselves from that mill-compulsion, on condition that they continue to patronize only Württemberg mills.⁴⁷⁸

Münsingen and Auingen were thus located in a region seriously lacking in surface water, either lakes or streams.⁴⁷⁹ Münsingen was fortunate by the standards of the water-poor Swabian Jura in being provided with a rich water-source from a spring on the Hungerberg which was probably already in human use in the early medieval period, judging by the discovery of seventh-century graves on the Hungerberg, indicating the existence of a settlement there. By the early modern period, the Hungerberg spring was feeding a market-fountain in Münsingen with four running pipes – a ‘great and precious rarity on the Swabian Jura’ – which exists to this day.⁴⁸⁰

Most of the Swabian Jura villages, in contrast to Münsingen, faced a constant problem of water supplies, even for human consumption let alone for agricultural or industrial uses.⁴⁸¹ Auingen was more fortunate than most of the other villages in the region in having a local spring, although the water-yield of this spring varied and increasingly did not suffice to cover the needs of the local inhabitants, particularly with the growth in human and animal

⁴⁷⁶ Landesarchivdirektion Baden-Württemberg (1997), II:53.

⁴⁷⁷ Landesarchivdirektion Baden-Württemberg (1997), II:3, 31.

⁴⁷⁸ Königliches statistisches Landesamt (1912), 571; Landesarchivdirektion Baden-Württemberg (1997), II:70.

⁴⁷⁹ Memminger (1825), 38-9, 106, 120.

⁴⁸⁰ Landesarchivdirektion Baden-Württemberg (1997), II:5; Königliches statistisches Landesamt (1912), 539 (quotation).

⁴⁸¹ Naujoks (1982), 167-9; Memminger (1825), 38-9.

population after c. 1800.⁴⁸² In 1912, the spring-water in Auingen was described as having ‘earlier sufficed for the needs of that time’.⁴⁸³ Unlike most villages of the Swabian Jura, Auingen also had a stream which flowed from Egelstein toward Münsingen, but (like so many small streams in a karst landscape) disappeared very soon, on Auingen land.⁴⁸⁴ In drought periods, Auingen may also have been able to share in the comparatively rich drinking-water supplies in Münsingen from the Hungerberg spring.⁴⁸⁵

But until the later nineteenth century, Auingen probably responded to times in which its own spring ran dry and there was little to spare in neighbouring Münsingen, by using the traditional techniques of the water-scarce villages of the Swabian Jura – collecting rain-water from roofs in cisterns (cylinders 15-20 feet deep, equipped at the top with a rectangular surround of dressed stone) for human consumption, and in so-called *Hülen* or *Hülben* (artificial ponds caulked with clay) for animal consumption.⁴⁸⁶ Auingen possessed two *Hülen*, a lower one in the village centre and an upper one on the road out of the village in the direction of Böttingen; in addition, it had a *Wette* (an approximately synonymous term) which was located beside the village tithe-barn not far from the *Hüle* in the centre of the village. A *Hülbe* is mentioned for Auingen as early as 1454, probably the one in the village centre since at that date the village probably did not reach as far as the second *Hüle* on the Böttingen Road.⁴⁸⁷

The water collected in *Hülben* was very unhygienic, since these ponds functioned as fire-ponds, cattle-drinking-ponds, and in emergencies also for cooking-water. In 1825, the *Hülben* ponds of the Swabian Jura were described as ‘generally containing a very impure, stinking and disgusting water and look like large dung-holes because all sorts of refuse flows into

⁴⁸² Landesarchivdirektion Baden-Württemberg (1997), II: 52-3.

⁴⁸³ Königliches statistisches Landesamt (1912), 571.

⁴⁸⁴ Königliches statistisches Landesamt (1912), 571.

⁴⁸⁵ Landesarchivdirektion Baden-Württemberg (1997), II:53.

⁴⁸⁶ Memminger (1825), 39.

⁴⁸⁷ Naujoks (1982), 168-9; Landesarchivdirektion Baden-Württemberg (1997), II:66; Dr Roland Deigendesch (personal communication, 2008).

them'.⁴⁸⁸ Cisterns were somewhat cleaner than *Hülben*, but the water nonetheless was typically collected via the flow of rain from roofs, and then protected from putrescence and insects by the addition of salt, its otherwise unpleasant taste and smell being partially counteracted by having pieces of birch-wood thrown into it.⁴⁸⁹ A contemporary account describes the condition of the water in local cisterns as follows:

Woe to the stranger who finds himself requiring a glass of water in one of the primitive villages of the Swabian Jura where straw-thatched roofs predominate and one relies solely on rainwater. ... The water, which runs down from the straw-thatched roofs, is coloured anything between straw-yellow and coffee-brown, and only someone who has been accustomed from youth to the appearance of this water can set a glass to his lips without disgust.⁴⁹⁰

It is calculated that inhabitants of the Swabian Jura had to rely on 124 days of rain each year, from which 52 days of snow had to be subtracted; some of the remaining rainy days coincided with the 113 days of ice each year, which prevented the gathering of rain-water.⁴⁹¹ This meant that in drought years – which occurred quite frequently, as shown by the mid-nineteenth-century series of droughts in 1842, 1846, 1852, and 1865 – there would be no water left on the heights of the Swabian Jura. In such years, even villages such as Auingen with their own spring had to fetch water by cart from the valley 150-300 meters below, a distance of 2-12 km via steep tracks.⁴⁹² Between September 1865 and January 1866, three villages in the district of Münsingen had to fetch water from the village of Hütten by means of 190 cart-journeys daily,

⁴⁸⁸ Memminger (1825), 39: 'Sie haben gemeinlich ein sehr unreines, stinkendes und eckelhaftes Wasser, und sehen wie große Mistlachen aus, weil aller Unrath darein fließt'.

⁴⁸⁹ Memminger (1825),

⁴⁹⁰ Fraas (1873), [no page given], quoted in Müller (1995), [no page given].

[<http://de.wikipedia.org/wiki/Albwasserversorgung>]: 'Wehe dem Fremden, den in einem der primitiven Albdörfer, wo die Strohdächer überwiegen und man rein auf Regenwasser angewiesen ist, ein Bedürfnis anwandelt nach einem Glase Wasser. (...) Strohgelb bis Kaffeebraun hat sich das Wasser gefärbt, das von den Strohdächern niederrinnt, nur wer von Jugend auf an den Anblick dieses Wassers sich gewöhnt hat, vermag ohne Abscheu das Glas an die Lippen zu setzen.'

⁴⁹¹ Naujoks (1982), 169.

⁴⁹² Naujoks (1982), 169.

with each cart journey only able to bring 2-3 barrels of water.⁴⁹³ Even in the mid-twentieth century, in especially dry summer months farmers of the Swabian Jura had to drive their cattle down into the valleys to drink and pasture.⁴⁹⁴

Attempts were made in the seventeenth and eighteenth centuries to provide water to the water-scarce Swabian Jura settlements by means of pressure pipes. But these projects only delivered to one or two specific locations to serve a wealthy elite rather than ordinary villagers. Adequate techniques for pumping, and for casting pipes that could withstand prolonged water pressure, were only devised in the nineteenth century. These technical advances led in the 1830s to a number of water-bores being undertaken on the plateau of the Swabian Jura. Even then, however, only three out of ten attempts at 43-67-meter-deep bores found any water, and not in quantities sufficient to cover demand, which would have required bores 200 meters deep.⁴⁹⁵

It was not until the 1870s that the water scarcity on the Swabian Jura began to be addressed systematically, by the construction of the Swabian Jura Water Supply (*Albwasserversorgung*). This was the name given to a pioneering work of hydraulic engineering which provided the inhabitants of the Swabian Jura with reliable sources of clean drinking-water for the first time. In 1866 a 39-year-old Württemberg engineer called Karl Ehmann, who had experience in hydraulic engineering from working in England and the USA, submitted plans for 8 pumping works which would pump water from the great karst sources in the deep river valleys through pressure pipes to elevated tanks on the Swabian Jura, and would save costs by providing water to large groups of communities simultaneously (60 were initially envisaged) via hydrants and house connections. The Württemberg state supported this plan, but did not provide more than token funding, and the villages of the Swabian Jura initially rejected the project as unrealistic or too costly. Only when it was supported by one pioneering village

⁴⁹³ Naujoks (1982), 169.

⁴⁹⁴ Naujoks (1982), 169.

⁴⁹⁵ Müller (1995).

Map 6:
The Swabian Jura Water Supply (*Albwasserversorgung*), 1871 – 1881



Source: The map and accompanying text as published in Wikipedia Commons by Author: Karl Ehmann at http://commons.wikimedia.org/wiki/File:Albwasserversorgung_1881.jpg#file (accessed 26 February 2009) are in the public domain because their copyright has expired.

headman in Justingen (14 km west of Auingen), who was also a veterinarian and acutely conscious of the relationship between impure water and various human and animal illnesses, did it actually get built, beginning in May 1870. On 18 February 1871, ‘amid true festive jubilation by the population, the most exquisite water flowed out of a number of handsome artesian wells’.⁴⁹⁶

⁴⁹⁶ Cited in Wagner (1959), 195: ‘unter wahrem Festjubil der Bevölkerung das herrlichste Wasser aus einer Zahl von stattlichen Brunnenröhren’.

After this success, additional communities flocked to join the new water network, as can be seen in Map 6. By 1876 five supply units were already finished, and by 1881 a much larger group had been added. The effects of being connected to improved water supplies via the Swabian Jura Water Supply were soon visible in a decline in typhus-related mortality for humans and bovine tuberculosis for cattle. The Swabian Jura Water Supply was internationally admired and became a major theme in 1873 at the World Fair in Vienna and the International Sanitation Exhibition in Brussels.

But as Map 6 shows, Auingen and Münsingen were not connected to the network of the Swabian Jura Water Supply even in 1881. In fact, they did not join the network until 1896/7, probably because they possessed natural springs, even though these proved inadequate (at least in Auingen) in drought years. Indeed, Auingen's connection to the Swabian Jura Water Supply in 1896 only came about because a military encampment was set up just north of Auingen in 1895, and not only required a more regular water-supply but was also willing to take over some of the costs of connecting Münsingen and Auingen to the system.⁴⁹⁷

Auingen, therefore, was short of water by comparison with Wildberg and Ebhausen, although better equipped than a majority of villages on the Swabian Jura. Its good fortune in having a natural (though increasingly inadequate) spring of its own, however, led it to delay connecting to the Swabian Jura Water Supply to a very late date. Moreover, Auingen still did not have flowing water available nearby and thus remained distant from any forms of manufacturing that required water power and any forms of trade that required cheap river transportation.⁴⁹⁸

⁴⁹⁷ Landesarchivdirektion Baden-Württemberg (1997), II:53; Deigendesch (1998), 79-80; Königliches statistisches Landesamt (1912), 571.

⁴⁹⁸ Landesarchivdirektion Baden-Württemberg (1997), II:11.

5.5. Roads

Pre-modern Württemberg in general suffered from below-average road provision because its landscape was characterized by large changes in altitude which meant that building highways was difficult and slow.⁴⁹⁹ The remote and hilly location of all three communities under analysis here, and the bitter winter weather of the Black Forest and the Swabian Jura, increased the costs of providing good-quality road links with the wider world.

The Black Forest location of Wildberg and Ebhausen meant that they were located ‘far away from the main stretches of freight and passenger travel’ well into the nineteenth century.⁵⁰⁰ Until 1852-4, Wildberg itself could only be reached by a road that went over the hills. In that year the government built a highway that ran along the Valley of the Nagold river from Nagold to Calw, passing through Wildberg along the way.⁵⁰¹ In 1862, in addition to this major valley road, Wildberg had smaller neighbouring roads running toward Gültlingen, Sulz, Oberjettingen, Efringen and Schönbronn – all the old villages of the former Wildberg administrative district.⁵⁰²

Ebhausen was mainly served by small side-roads until the mid-nineteenth century. In 1851, a state highway was built between the towns of Nagold and Altensteig, which passed through Wöllhausen (the valley half of Ebhausen-Wöllhausen).⁵⁰³ Smaller neighbouring roads also ran from Ebhausen in the direction of Mohnhardt, Rothfelden, and via Ebershardt to Warth.⁵⁰⁴ In 1862, the Royal Statistical Bureau reported that there were three state-maintained roads in the

⁴⁹⁹ Hippel (1992), 486-7; Rauch (1916).

⁵⁰⁰ Flik (1985), 168.

⁵⁰¹ Klab (1987), 121; Königliches statistisch-topographisches Bureau (1862), 264.

⁵⁰² Königliches statistisch-topographisches Bureau (1862), 264.

⁵⁰³ Königliches statistisch-topographisches Bureau (1862), 151-2.

⁵⁰⁴ Königliches statistisch-topographisches Bureau (1862), 152.

district of Nagold, one of which served Ebhausen, running from Herrenberg through Nagold, Ebhausen, and Altensteig in the direction of Freudenstadt.⁵⁰⁵

Münsingen and Auingen were much more dependent on road transport than Wildberg and Ebhausen because they were located 6-8 km away from either the Lauter or the Erms River, and in any case neither river was seriously navigable.⁵⁰⁶ A Roman road (the so-called 'Alblimes') passed through Münsingen, and probably played a role in the foundation of the town in the medieval period. In addition, Münsingen was located at a crossing-place of highways on the Swabian Jura. It can thus be said that Münsingen was a communications junction, at least in a small way.

Yet here, too, road provision was relatively poor until the first half of the nineteenth century. The main road eastwards through Münsingen and Auingen before 1810 was the old highway towards Ulm via Blaubeuren, which passed through both Münsingen and Auingen.⁵⁰⁷ This highway was important for the east-west trade in southern central Europe, as shown by the fact that in the sixteenth century a legal case in Münsingen mentioned a fairly large quantity of oxen being driven for slaughter from Hungary across the Swabian Jura on this highway.⁵⁰⁸ In 1810 a new post-road between Münsingen and Ehingen was built, which provided a higher-quality substitute in the same easterly direction, and was described in 1825 as 'bringing not indiscernible advantages to livelihoods in this small town'.⁵⁰⁹ Toward the north, the road to Bad Urach was quite low-quality until 1819 when a new carriageway was constructed on the ascent road to the Swabian Jura at Seeburg. Since this was the shortest way from Stuttgart to Upper Swabia, the improved road enabled a supra-regional passenger traffic

⁵⁰⁵ Königliches statistisch-topographisches Bureau (1862), 83.

⁵⁰⁶ For a detailed description of the roads in the district of Münsingen in 1825, see Memminger (1825), 98-100.

⁵⁰⁷ Landesarchivdirektion Baden-Württemberg (1997), II:32.

⁵⁰⁸ Personal communication from Dr Roland Deigendesch (2008).

⁵⁰⁹ Memminger (1825), 98, 108 (quotation); Landesarchivdirektion Baden-Württemberg (1997), II:32.

to develop.⁵¹⁰ By 1844 a Münsingen innkeeper called Bosch had set up a regular omnibus route from Münsingen to Ehingen, Biberach, and Friedrichshafen toward the south and east, and toward Stuttgart to the west.⁵¹¹ In 1846, the ‘Hartstrasse’ was built, the first direct connection between Münsingen and outlying parts of its own administrative district, the communities of Feldstetten and Laichingen.⁵¹² Between Münsingen and Bad Urach, carting traffic became quite significant from 1846 on, and increased even more after the Ermstal railway reached Urach in 1873.⁵¹³ But the transport situation for Auingen was actually made less favourable by the building of the first Württemberg railways in the 1870s in surrounding districts, especially the railway between Stuttgart and Friedrichshafen via Ulm, because these by-passed the district of Münsingen, reducing transit traffic by road.⁵¹⁴

Another development that harmed road transport for Auingen was the establishment of a military encampment on the Münsinger Hart in 1895, because it closed the ‘Hartstraße’, the road which had been built in 1846 to link Münsingen with outlying parts of its administrative district.⁵¹⁵ The military drill-ground occupied the entire area of the Münsinger Hart, requiring the evacuation and abandonment of one village (Gruorn) and the closing of the entire area to trespassers of any kind. Consequently no non-military traffic could pass through the Hart and all transportation had to go around it. In setting up the military drill-ground in 1895, the government agreed to build a replacement road to substitute for the old Hartstraße, but the new road still involved a longer distance than before, increasing transport costs and evoking demands from outlying villages to secede from the district of Münsingen and be attached to the district of Blaubeuren.⁵¹⁶ For Auingen, therefore, as for Wildberg and Ebhausen, road transport beyond the local district was poor before the early to mid-nineteenth century, and still suffered from serious disadvantages into the final years of the century.

⁵¹⁰ Landesarchivdirektion Baden-Württemberg (1997), II:32.

⁵¹¹ Landesarchivdirektion Baden-Württemberg (1997), II:32.

⁵¹² Landesarchivdirektion Baden-Württemberg (1997), II:32.

⁵¹³ Landesarchivdirektion Baden-Württemberg (1997), II:32.

⁵¹⁴ Landesarchivdirektion Baden-Württemberg (1997), II:32.

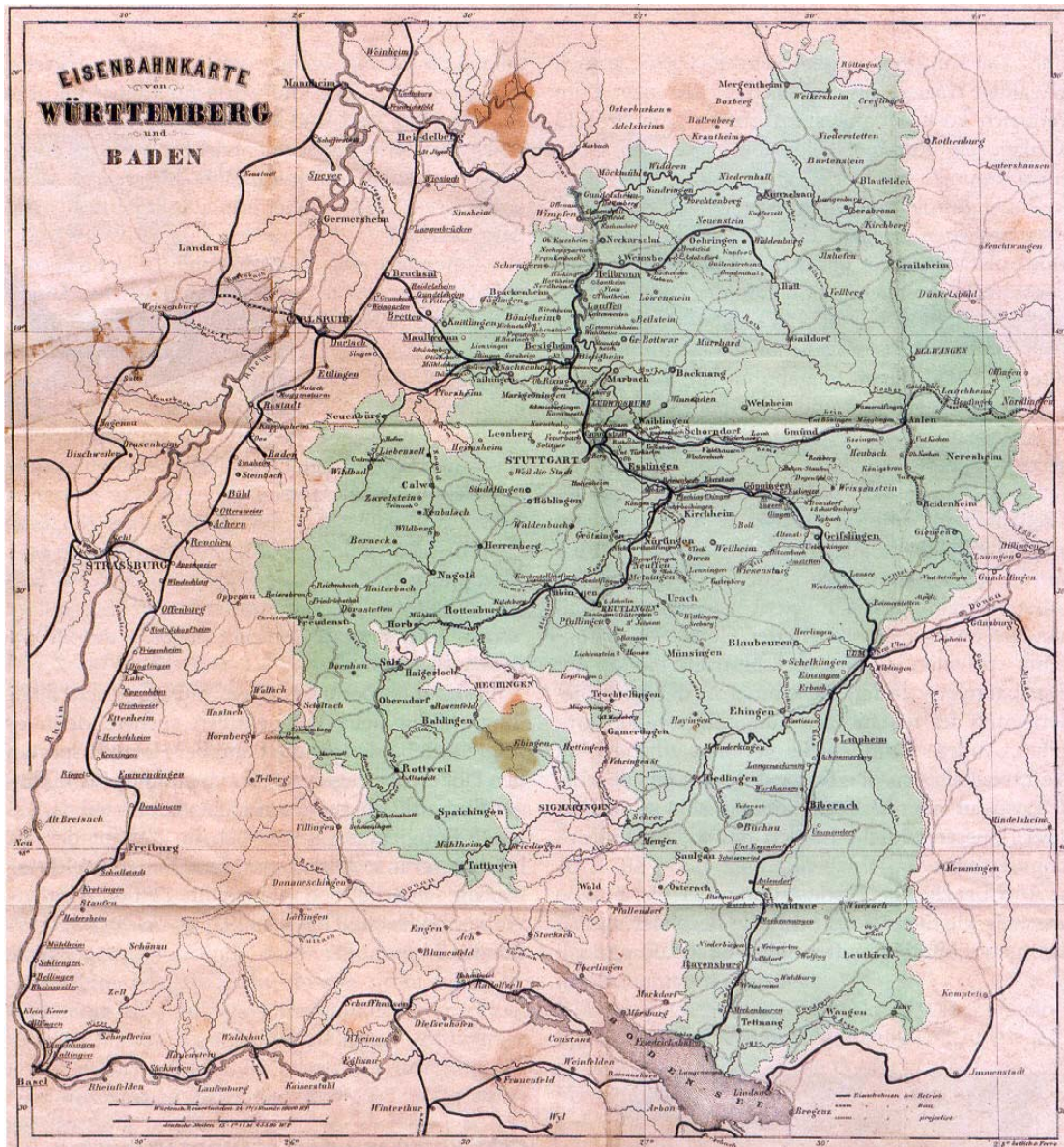
⁵¹⁵ Landesarchivdirektion Baden-Württemberg (1997), II:32; Deigendesch (1998), 80-2.

⁵¹⁶ Deigendesch (1998), 80-2

5.6. Railways

One of the factors adduced as a cause for Württemberg's late industrialization is the belated building of its railway system and its late connection with the emerging German rail network, preventing the transport of coal to industrial locations or heavy industrial products to

**Map 7:
The Württemberg Railway Network before 1867**



Source: The map and accompanying text as published in Wikipedia Commons at http://commons.wikimedia.org/wiki/File:Eisenbahnkarte_W%C3%BCrttemberg_1867.jpg#file (accessed 26 February 2009) are in the public domain because their copyright has expired.

markets.⁵¹⁷ The Württemberg state rejected private-sector applications for railway-building permits in the 1830s and only decided to build state railways in the 1840s. It opened the first stretch of railway in 1845, but this was very limited in extent. The government then allowed railway-building to be delayed further by the economic crisis of the late 1840s and early 1850s.⁵¹⁸

Even once railway building resumed in Württemberg after the crisis, it took place very gradually and was initially limited to short stretches around Stuttgart. As late as 1867, as Map 7 shows, Württemberg was very sparsely equipped with rail links. The Black Forest region around Wildberg and Ebhausen and the Swabian Jura region around Münsingen were still remote from the nearest railway station. In fact, the Wildberg-Ebhausen region did not obtain a rail connection until the 1870s, and the Münsingen-Auingen region not until the 1890s.

In the 1870s Wildberg was connected to the railway system via the Nagold Valley Railway (Nagoldtalbahn), a one-track railway stretch which was intended to run from Pforzheim to Horb, passing through Wildberg on the way. The ultimate route of this railway can be seen on Map 8.⁵¹⁹ The stretch between Calw and Nagold which included Wildberg was opened on 20 June 1872, as part of the Württemberg Black Forest Railway (Württembergische Schwarzwaldbahn) to connect Stuttgart with Calw. The Wildberg parish registers of the period record the marriages, baptisms and deaths of the population of railway labourers who were temporarily resident locally while the railway went through the town. It was not until June 1874 that the railway extended beyond Nagold to Horb, thereby giving Wildberg a rail link southwards.

⁵¹⁷ Naujoks (1982), 172-3; Schaab (1974b), 239.

⁵¹⁸ Naujoks (1982), 172-3.

⁵¹⁹ Klab (1987), 121; <http://de.wikipedia.org/wiki/Nagoldtalbahn>

Map 8:

The Nagold Valley Railway (Nagoldtalbahn)



Source: The map and accompanying text as published in Wikipedia Commons by Author: lenzer, at http://commons.wikimedia.org/wiki/File:Verlaufskarte_Nagoldtalbahn.png#file (accessed 20 February 2009) are licensed under the Creative Commons Attribution ShareAlike 3.0 License <http://creativecommons.org/licenses/by-sa/3.0/>.

Ebhausen, by contrast, was largely excluded from the benefits of the Nagold Valley Railway, because the train line bypassed the bend in the Nagold on which Ebhausen was located. As a result, the village's nearest rail links remained Wildberg (8.6 km away), Nagold (7.3 km), and Emmingen (8.9 km). It was not until nearly a generation later, in 1891, that the first narrow-gauge railway of the Württemberg state railway system, the 15-km-long 'Altensteigerle', was built between Nagold and Altensteig, passing through Ebhausen at approximately its halfway-point, as can be seen on Map 9. Up to 1914 this branch line was fairly heavily used for transporting wood out of the Black Forest, as well as for passenger traffic, but after the First World War it lost importance and was ultimately closed down in 1967.⁵²⁰

By contrast with Wildberg, but like Ebhausen, Münsingen and Auingen were not connected with the railway network until the 1890s. In fact, Münsingen was the last district capital in the Kingdom of Württemberg to be equipped with a rail connection, with the completion of the line from Münsingen westwards toward Reutlingen in 1893 and eastwards toward Schelklingen in 1901.⁵²¹

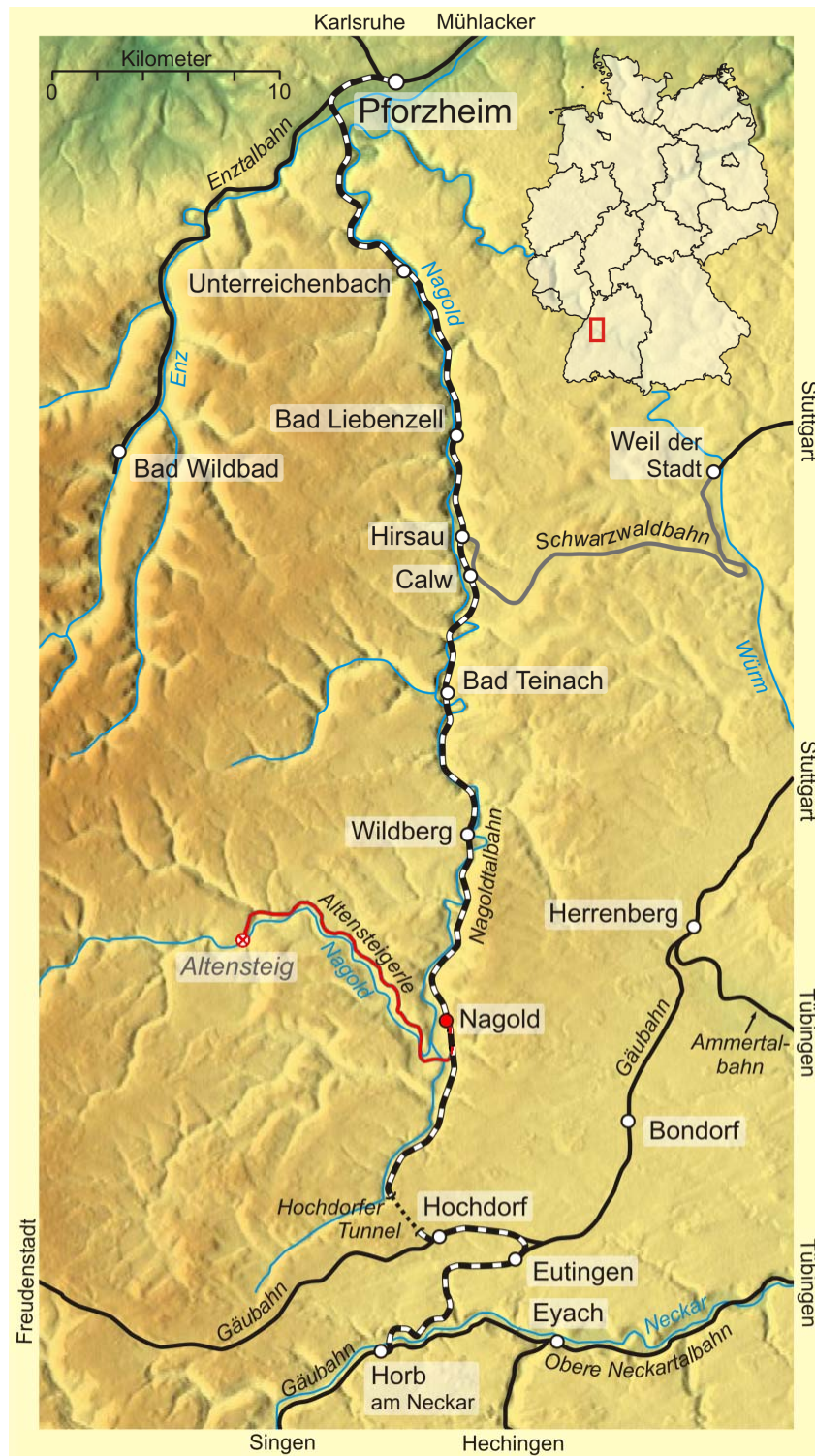
The building of railways not only potentially influenced demographic behaviour indirectly, by introducing new ideas, reducing the costs of trade, and making it more possible to travel. It also influenced demography directly through immigration. Thus there was a first wave of immigration to Münsingen and Auingen in 1892-3 with the building of the railway between Honau and Münsingen, in which 111 persons migrated into Münsingen, many of them railway workers.⁵²² These immigrants not only connected Münsingen and Auingen with the wider world but, as we saw in Section 4.4.1, brought significant religious heterogeneity to these communities for the first time.

⁵²⁰ Reule / Schwarz (1993).

⁵²¹ Deigendesch (1998), 77; Landesarchivdirektion Baden-Württemberg (1997), II:32; Dirschka (2009), 9; Landesarchivdirektion Baden-Württemberg (1997), II:4; http://www.bahnhof-muensingen.de/cms/index.php?article_id=44

⁵²² Landesarchivdirektion Baden-Württemberg (1997), II:22.

Map 9:
The 'Altensteigerle' Narrow-Gauge Railway through Ebhausen



Source: The map and accompanying text as published in Wikipedia Commons by Author: not given (but probably lenzer), at http://commons.wikimedia.org/wiki/File:Verlaufskarte_Altsteigerle.png#file (accessed 26 February 2009) are licensed under the Creative Commons Attribution ShareAlike 3.0 License <http://creativecommons.org/licenses/by-sa/3.0/>.

5.7. Post, Telegraph, Telephone, and Newspapers

Access to information can affect demographic behaviour *directly* by making people aware of new medical technologies (such as vaccination or contraception) and new fertility norms (such as later marriage or fertility limitation). It can also influenced demographic behaviour *indirectly* by transmitting knowledge of technological innovations that affect people's economic options. In most economies until the twentieth century, the main vector for information transfer – at least in terms of 'current' information – was the movement of human beings, who carried that information in their heads in 'embodied' form. Books, of course, also conveyed information, but only to a literate sub-group and generally with some delay. The advent of new forms of transmission of 'current' information, by post, telegraph, telephone, or newspaper, can thus potentially play an important role in influencing demographic behaviour, particularly in smaller or more remote settlements such as the localities under analysis here.

Postal provision in Württemberg before the nineteenth century was largely limited to official purposes (through official messengers called *Amtsboten*) or better-off individuals (who could afford to pay postal charges, which were relatively high). Occasionally, poorer individuals sent letters, usually by the hands of acquaintances or relatives. In the Wildberg-Ebhausen region, postal provision appears to have improved greatly in the course of the nineteenth century, mainly as a result of the improvements in road connections discussed above. In 1862, there was a post office in the town of Nagold (7.3 km from Ebhausen, 11.3 from Wildberg), but also a sub-post-office (*Postexpedition*) in Wildberg itself.⁵²³ In that year, the post went twice a day between Nagold and Altensteig (passing through Ebhausen on the way) and from Nagold westwards toward Freudenstadt; it also went once a day from Nagold in the direction of Wildberg and Calw.⁵²⁴ The villages of the district of Nagold in 1862 were also linked to the

⁵²³ Königliches statistisch-topographisches Bureau (1862), 82, 252.

⁵²⁴ Königliches statistisch-topographisches Bureau (1862), 82.

district capital by official messengers (*Amtsboten*) which went regularly at least two times a week.⁵²⁵

In the spring of 1862, a telegraph connection was set up, running from Herrenberg through Nagold and Altensteig toward Freudenstadt, and thus Wildberg and Ebhausen were within about 11 km of a telegraph connection from the early 1860s on.⁵²⁶ When the railway reached Wildberg in 1872, the town paid a supplement for a telegraph connection to be set up in the town railway station.⁵²⁷ Telephone lines were not requested for Wildberg until 1904/05.⁵²⁸

Neither Wildberg nor Ebhausen appear ever to have had a local newspaper, probably because Wildberg lost its administrative and economic importance in the early nineteenth century, before the relaxation of press censorship in 1831.⁵²⁹ As a result, in Wildberg and Ebhausen, transmission of 'current' information about local affairs was restricted to individual contacts and official statements.

Postal provision in the Münsingen-Auingen area also improved rapidly in the nineteenth century along with the roads. In 1810, with the building of the new road up onto the Swabian Jura at Seeburg and the post-road to Ehingen, a postal station was set up in Münsingen in a local inn (the *Gasthof zum Hirsch*).⁵³⁰ In 1831, press censorship was loosened by the state and all over Württemberg new newspapers were established.⁵³¹ In 1837 a Münsingen printing works began publication of a local newspaper, the *Albbote*, which still appears to this day. In this sense, the Münsingen-Auingen area was much better equipped for the transmission of 'current' information than Wildberg or Ebhausen.⁵³²

⁵²⁵ Königliches statistisch-topographisches Bureau (1862), 83.

⁵²⁶ Königliches statistisch-topographisches Bureau (1862), 83.

⁵²⁷ Klab (1987), 121.

⁵²⁸ Klab (1987), 121.

⁵²⁹ Schaab (1974b), 237.

⁵³⁰ Landesarchivdirektion Baden-Württemberg (1997), II:33.

⁵³¹ Schaab (1974b), 237.

⁵³² Königliches statistisches Landesamt (1912), 551.

On 1 October 1863 an agreement was reached between the district of Münsingen and the Württemberg Post Office, according to which the community messengers who had previously delivered the post were replaced by rural postmen making daily deliveries to the villages of the district.⁵³³

That same year, 1863, a telegraph station was projected for Münsingen on the telegraph line linking Urach-Münsingen-Laichingen-Blaubeuren.⁵³⁴ In 1895, with the establishment of the military encampment and drill-ground immediately next to Auingen, ‘telegraphic accident-notification posts’ were set up in the localities along the edge of the military land.⁵³⁵ Then in 1896, telephones were set up in the surrounding communities for the purpose of transmitting warnings about shooting on the military exercise-ground.⁵³⁶ In 1898, Münsingen and Auingen were generally connected to the telephone network, half a decade or more before Wildberg.⁵³⁷

Although deeper research is required into the actual costs and frequency of postal provision to these three communities in the period before 1800, it seems highly probable that it was only in the course of the nineteenth century that low-cost and frequent communication services came within the budget constraints of ordinary inhabitants of the Württemberg Black Forest and the Swabian Jura, and that this depended very much on improvements to the road system. Telegraph and telephone provision did not come to Wildberg and Ebhausen until the 1890s or after 1900, and to the Swabian Jura only slightly earlier.

⁵³³ Landesarchivdirektion Baden-Württemberg (1997), II:33.

⁵³⁴ Landesarchivdirektion Baden-Württemberg (1997), II:33.

⁵³⁵ Deigendesch (1998), 92.

⁵³⁶ Deigendesch (1998), 92.

⁵³⁷ Deigendesch (1998), 92; Landesarchivdirektion Baden-Württemberg (1997), II:33-4.

6. Occupational Structure

Economic activity can affect demographic behaviour in a variety of ways. Many of them operate on the individual level. A particular handicraft may require the labour of a couple rather than an individual, encouraging early marriage. A different handicraft may require inheritance of a workshop and expensive tools, delaying marriage. Farming may require inheritance of land, delaying marriage. Pastoral production or textile production may demand child labour for herding or spinning, spurring high marital fertility. Itinerant occupations such as migrant labour, fishing, soldiering, or peddling may separate spouses, leading to fertility gaps. Certain occupations may lead to higher mortality – linen-weaving may cause respiratory infections because of the moist environment necessary to keep the fibres workable; milling or building because of working in dangerous environments; labouring because of physical strain.

But economic activity also affects demographic behaviour collectively, through the occupational structure of the local community. If one's community contains a large number of farmers, there is likely to be a high demand for farm labour, creating the possibility for poor people to marry without inheriting land of their own. If the community contains a large number of weavers, this will create a demand for spinning labour, increasing unmarried women's earning opportunities, thereby potentially delaying female marriage (through a substitution effect) or accelerating it (through an income effect). A dense concentration of any occupation which produces for markets outside the region may create economies of scale in knowledge or marketing, thereby creating an incentive for new entrants to the labour market to pursue that occupation, increasing their ability to form families and have children. A dense concentration of any occupation may also lead to the formation among its practitioners of collective organizations such as guilds or other occupational associations, which in turn may set up institutional barriers to entry, decreasing opportunities for nuptiality and fertility

locally.⁵³⁸ For all these reasons, understanding the occupational structure of a community – quite apart from the specific occupations of its inhabitants as individuals – is important for analysing its fertility.

6.1. Cross-Sectional Analysis

For two of the communities under analysis here, Wildberg and Ebhausen, we are fortunate in possessing a detailed ‘soul-table’ of 1736 which gives information about the ‘trade and livelihood’ (*Gewerbe und Nahrung*) of all independent earning-units (essentially equivalent to household units) living in those two communities.⁵³⁹ In fact, as Table 6 shows, this ‘soul-table’ covers the entire district of Wildberg in 1736, and enables us to place Wildberg and Ebhausen in a regional context.

The inhabitants of Wildberg and Ebhausen pursued a wide variety of different occupations in 1736, but the four largest occupational categories were farming, labouring, ‘proto-industry’ (in this district, export-oriented worsted production), and traditional crafts (manufacturing activities oriented to local consumption). Many households relied on multiple livelihoods, the most common being to farm a small amount land in combination with operating a craft or proto-industrial workshop.

In 1736 in the district of Wildberg as a whole, 57 per cent of households relied partly on farming their own land, 24 per cent partly on traditional craft workshops, 22 per cent partly on proto-industrial worsted-weaving, and 20 per cent partly on labouring. (These proportions do not add up to 100 per cent because of the widespread reliance on multiple livelihoods.) But

⁵³⁸ For a small selection of studies on the demographic effects of guilds and occupational associations, see Braun (1978); Hardwick (1998); Hermann (2005); Lee (1999); Ogilvie (1997, 2003); Taylor (1994). For a critical review of claims that guilds did not create barriers to entry and instead had a positive effect on economic development, see Ogilvie (2007) on the wider historiography and Ogilvie (2004) for the Württemberg evidence.

⁵³⁹ HSAS A573 Bü. 6967 (Seelentabelle Stadt und Amt Wildberg, 1736).

Table 6:
Dependence on Different Economic Activities, by Community, District of Wildberg, 1736

Community	Proto-industry		Farming own land		Traditional craft		Labouring		Total no.
	no.	%	no.	%	no.	%	no.	%	
Wildberg	126	35	105	29	98	27	46	13	357
Ebhausen	48	34	100	71	31	22	23	16	140
Sulz	28	25	90	80	20	18	22	19	113
Effringen	16	24	52	78	9	13	18	27	67
Gültlingen	14	10	75	55	38	28	34	25	137
Schönbronn	5	10	36	69	10	19	12	23	52
Altbulach	5	6	51	66	22	29	18	23	77
Oberjettingen	1	1	73	76	20	21	23	24	96
Liebelsberg	0	0	31	70	5	11	8	18	44
Haugstett	0	0	26	58	15	33	17	38	45
Total	243	22	639	57	268	24	221	20	1128

Source: HStAS A573 Bü. 6967 (1736).

Notes: Includes the 1128 independent 'earning units' in the 10 communities of the district of Wildberg headed by ever-married persons who could in principle have been household heads. It excludes 96 units headed by unmarried person who must have been living as lodgers or coresident kin, since never-married individuals could not and did not head households in Württemberg rural society. Percentages do not add up to 100 because many units had multiple livelihoods.

occupational structure differed widely across the settlements of the district, which fall into two main groups – four densely proto-industrial settlements (Wildberg, Ebhausen, Sulz and Effringen); and six more traditionally structured settlements whose inhabitants relied mainly on farming and agricultural labouring.

The two communities under analysis here were the densest centres of proto-industry in the district in 1736, with over one-third of their households depending wholly or partly on export-oriented worsted-weaving for a living. But they differed in other respects, particularly their different dependence on agriculture: only 29 per cent of households in Wildberg still relied partly on farming their own land, compared to 71 per cent in Ebhausen. Even a highly industrialized small town such as Wildberg could therefore still be surprisingly heavily dependent on agriculture, with nearly a third of its households still farming their own land, and many of its labourers probably also working in agriculture. But ‘proto-industrialization’ could evidently take very different forms in pre-industrial Württemberg – the Wildberg path corresponded more closely to the classic proto-industrial case of ‘proletarianization’, while the Ebhausen path involved a continuing close association with land-owning and agriculture. Indeed, there was no statistically significant difference in reliance on farming one’s own land between Ebhausen’s weavers (75 per cent) and its non-weavers (70 per cent).⁵⁴⁰ In Wildberg, by contrast, the difference was significant: 21 per cent for weavers compared to 34 per cent for non-weavers.⁵⁴¹

By the later eighteenth century, the shift away from agriculture in the town of Wildberg appears to have progressed even further. In 1788, a report from the Wildberg communal authorities to the former princely Poor Commissioner (*Armencommissär-Oberamtmann*) stated that

⁵⁴⁰ Not significant even at the 10% level.

⁵⁴¹ Significant at the 2% level.

the inhabitants of Wildberg earn their livelihoods primarily from worsted-weaving, so that with this occupation they are mainly dependent on the so-called *Moderation* in Calw, and for this reason can only earn 8-18 Kreuzer daily. Also, only 12 inhabitants live from agriculture and the fields are for the most part in the hands of outsiders.⁵⁴²

The ‘so-called *Moderation*’, as already mentioned, was the edifice of institutional privileges according to which all worsted-weavers in the region around Calw (including Wildberg and Ebhausen) were legally obliged to sell their output exclusively to the Calwer Worsteds Trading Association, the guild-like merchant association discussed above in Section 4.3.⁵⁴³ It must, however, be remembered that this letter of 1788 served rhetorical as well as factual purposes. The 12 inhabitants it described as living from agriculture probably comprised only the full-time farmers living *wholly* from agriculture, rather than the 29 per cent of the town’s householders who in 1736 had lived at least *partly* from their own land.

In fact, the 1736 ‘soul-table’ is a nearly unique document of the era, in listing not just the formal *occupational designation* of each household but its (often multiple) *sources of livelihood*. Hitherto it has proved impossible to find such a list for Wildberg and Ebhausen for any other date than 1736, or for Auingen for any date. However, further cross-sectional information on occupational structure will be obtained at a later stage of the project from property lists and tax registers, many of which record occupations and other livelihood sources, although tax-lists do not survive for all three communities in precisely the same years.

⁵⁴² Quoted in Königliches statistisch-topographisches Bureau (1862), 261: ‘daß die Einwohner von Wildberg sich vorzugsweise von der Zeugmacherei nähren, daß sie mit dieser Beschäftigung hauptsächlich von der sog. Moderation in Calw abhängig seyen und deshalb täglich nur 8-18 kr. verdienen können. Auch beschäftigen sich nur 12 Einwohner mit der Landwirthschaft und die Felder seyen größtentheils in fremden Händen’.

⁵⁴³ The region subjected to the ‘Calwer Moderation’ is shown in Map 11 below.

6.2. Longitudinal Analysis

A different approach is to compare all three communities continuously over time by analysing the occupational designations recorded in longitudinal sources such as parish registers. This approach has two potential disadvantages. First, such occupational designations are derived from recording of demographic events, so if practitioners of particular occupations got married, baptised children, or died more or less often than others, the frequencies with which these occupations are recorded will not reflect the underlying occupational structure of the population. Second, the approach relies on formal occupational designations, which means we cannot examine the (often multiple) livelihoods from which an individual or family actually survived. Since in Württemberg much farming was carried out in combination with industrial and service occupations, and those occupations were often the ones that were reported, this approach can examine agriculture only insofar as it was pursued by full-time farmers. Nonetheless, in the absence of alternative sources, this approach can be used with care to shed light on aspects of the development of occupational structure in these three communities over time which would otherwise remain a mystery. In particular, the approach enables us to follow the importance and development of full-time farming, labouring (most of it in agriculture), worsted-weaving (the proto-industry in Wildberg and Ebhausen), and linen-weaving (the proto-industry in Auingen).

A first step is to establish the date at which occupations begin to be recorded more-or-less reliably in the parish registers of each community under analysis. Table 7 traces the development of occupational recording in the parish registers for our three communities. For grooms at marriage and fathers at children's baptisms, the decisive transition was taken to be the decade in which over half of all entries recorded occupation. This occurred as a sudden jump rather than a gradual increase in almost all cases – in Wildberg around 1670, in Ebhausen around 1690-1700, and in Auingen around 1710. At burial, occupations were recorded much less frequently: half of all deceased persons were female (who did often have

Table 7:
Development of Occupational Recording in Parish Registers,
Wildberg, Ebhausen, and Auingen, 1558-1914

decade	Marriage register (% of grooms whose occupation is recorded)			Baptism register (% of fathers whose occupation is recorded)			Burial register (% of dead persons whose occupation is recorded)		
	Wildberg	Ebhausen	Auingen	Wildberg	Ebhausen	Auingen	Wildberg	Ebhausen	Auingen
1558-1559	10	0	n/a	n/a	0	n/a	n/a	0	n/a
1560-1569	3	0	n/a	n/a	4	n/a	n/a	n/a	n/a
1570-1579	8	n/a	n/a	n/a	6	n/a	n/a	0	n/a
1580-1589	3	n/a	0	n/a	3	2	n/a	n/a	n/a
1590-1599	3	n/a	5	n/a	2	2	n/a	0	3
1600-1609	1	0	0	n/a	5	1	n/a	0	5
1610-1619	8	0	0	n/a	2	0	5	2	0
1620-1629	6	0	4	n/a	2	3	6	0	0
1630-1639	18	13	12	n/a	6	16	8	0	0
1640-1649	7	0	0	20	6	4	6	1	0
1650-1659	16	5	0	14	5	3	7	4	0
1660-1669	28	0	15	27	9	4	11	5	0
1670-1679	70	13	6	50	6	0	13	7	5
1680-1689	72	36	5	78	20	4	12	13	5
1690-1699	70	69	10	82	43	10	20	17	4
1700-1709	98	67	17	76	66	14	14	9	7
1710-1719	82	52	54	87	23	62	14	9	5
1720-1729	64	86	65	55	75	78	9	15	6
1730-1739	96	92	45	80	59	90	19	16	21
1740-1749	91	84	63	97	66	72	15	15	17
1750-1759	94	81	64	97	98	78	15	16	18
1760-1769	100	93	80	98	97	82	15	15	11
1770-1779	96	78	81	99	95	94	16	18	17
1780-1789	97	88	83	97	94	94	16	14	8
1790-1799	99	88	75	97	94	93	14	12	10
1800-1809	100	97	92	94	95	88	20	16	8
1810-1819	99	99	100	92	93	91	15	32	16
1820-1829	99	99	78	86	94	89	19	19	12
1830-1839	99	99	97	90	92	85	18	18	16
1840-1849	96	97	100	88	86	86	18	14	13
1850-1859	99	99	93	79	80	81	19	16	16
1860-1869	99	100	99	74	87	89	19	14	13
1870-1879	99	100	93	83	87	88	17	21	17
1880-1889	100	99	100	86	85	88	21	23	17
1890-1899	99	98	100	85	78	87	29	22	18
1900-1909	100	100	99	91	91	86	23	25	27
1910-1914	100	100	100	89	93	92	29	34	28
Register starts	3 Oct 1558	3 Apr 1559	4 Dec 1586	1 Jan 1646	3 Apr 1559	19 Feb 1581	21 Jul 1615	1 Mar 1559	11 Nov 1591

Sources: PAW, PAE, and PAA: Ehregister, Taufregister, and Totenregister, 1670-1914.

Notes: n/a = register has not yet started or has a gap in entries. bold = decade in which occupational recording passes benchmark (50% for marriages and baptisms, 10% for burials).

occupations, but seldom had them recorded);⁵⁴⁴ one-third of all deceased males were infants under the age of one year; and another unknown share of deceased males were children and adolescents without recorded occupations. In view of these facts, the decisive transition was taken to be the decade in which over 10 per cent of burials recorded an occupation for the deceased individual. Again, this occurred as a sudden jump in most cases – in Wildberg around 1660, Ebhausen around 1680, and Auingen around 1730. These were therefore the decades selected as the starting-point for the analyses of the four most important occupations in these communities: full-time farming, labouring, worsted-weaving, and linen-weaving.

The changing importance of full-time farming in these communities – at least as reflected in occupations reported for grooms, fathers of baptised children, and deceased males – is shown in Table 8. The table illustrates the reason for only beginning the analysis when occupational recording becomes very frequent, since neither Ebhausen nor Auingen record any farmer grooms in the first decade of occupational recording, even though the following decade shows significant percentages of farmer grooms. It seems likely that in the time-period before occupational recording became universal, ‘farmer’ (‘Bauer’) was an occupation which was seldom if ever specifically recorded.

However, after this first, under-recorded decade, the differential frequency of farming occupations in the three sets of parish registers illustrates a major difference in occupational structure across the three communities: Wildberg and Ebhausen had very few full-time farmers, whereas Auingen had a very significant group of them. Over the whole period, full-time farmers comprised only about 2 per cent of all occupations recorded in Wildberg and 3-5 per cent for Ebhausen, but between one-quarter and one-third of all occupations recorded for Auingen. In the first half of the eighteenth century, Wildberg had only about 1 per cent full-time farmers, compared to 7-11 per cent in Ebhausen and 20-28 per cent in Auingen. In the

⁵⁴⁴ For a detailed analysis of female occupations in pre-industrial Wildberg and Ebhausen, see Ogilvie (2003).

Table 8:
Full-Time Farmer (*Bauer*) as an Occupational Designation,
Wildberg, Ebhausen and Auingen, 1670-1914

decade	Groom is farmer (% of all grooms with a given occupation)			Baptised child's father is farmer (% of all fathers with a given occupation)			Dead person is farmer (% of all dead persons with a given occupation)		
	Wildberg	Ebhausen	Auingen	Wildberg	Ebhausen	Auingen	Wildberg	Ebhausen	Auingen
1660-1669							0.0		
1670-1679	0.9			1.0			0.0		
1680-1689	0.0			0.6			1.4	8.7	
1690-1699	0.0	0.0		1.9			1.1	2.9	
1700-1709	0.0	9.7		2.0	6.8		0.0	7.1	
1710-1719	0.0	3.4	0.0	0.9	1.8	27.8	2.4	6.7	
1720-1729	1.0	11.3	19.2	0.6	7.7	20.1	0.0	15.2	
1730-1739	0.8	10.7	25.0	0.0	10.2	28.6	0.8	9.5	21.7
1740-1749	0.0	1.8	16.7	1.8	7.1	39.4	1.2	10.5	30.4
1750-1759	1.3	1.5	11.5	1.9	7.4	30.8	2.2	4.9	33.3
1760-1769	0.7	3.8	29.2	0.9	4.0	30.6	1.8	10.2	43.8
1770-1779	1.5	6.2	16.1	1.3	7.0	31.9	0.0	9.5	16.7
1780-1789	1.8	3.8	4.0	1.7	5.5	28.8	1.0	7.3	20.0
1790-1799	0.6	1.9	14.3	2.6	7.6	33.2	2.9	7.5	25.9
1800-1809	0.6	8.0	14.3	2.6	8.1	26.2	0.7	7.6	26.7
1810-1819	2.2	1.6	28.6	0.9	2.7	26.6	2.8	4.1	19.4
1820-1829	1.7	1.1	17.1	1.8	1.3	23.7	0.0	4.2	24.0
1830-1839	1.6	1.6	16.7	2.7	0.3	23.2	2.2	0.0	16.7
1840-1849	1.8	3.8	21.7	0.9	1.4	28.4	0.0	1.4	27.3
1850-1859	3.9	4.5	43.9	3.6	3.4	37.8	0.9	0.0	15.9
1860-1869	4.5	2.0	31.0	4.8	3.9	51.3	4.0	3.0	30.0
1870-1879	3.0	2.5	28.1	4.3	3.2	40.0	4.5	1.7	23.7
1880-1889	3.6	3.7	37.3	4.8	3.0	33.4	2.8	0.0	29.3
1890-1899	6.9	2.9	33.8	5.9	4.4	40.5	2.9	5.7	15.6
1900-1909	5.8	4.4	19.8	8.2	4.4	23.7	7.6	8.0	22.6
1910-1914	4.3	2.2	20.8	9.1	5.4	20.6	5.7	2.9	20.8
1670-1699	0.3			1.2			0.9		
1700-1749	0.4	7.6	20.0	1.1	7.6	28.2	1.0	10.6	26.1
1750-1799	1.2	3.4	14.9	1.7	6.3	31.0	1.6	8.1	27.0
1800-1849	1.6	3.0	20.2	1.8	2.6	25.8	1.2	3.2	22.1
1850-1914	4.3	3.1	30.1	5.3	3.8	36.4	3.8	2.8	22.2
Whole period	1.9	3.5	24.4	2.4	4.4	31.6	1.9	4.7	23.4

Sources: PAW, PAE, and PAA: Ehregister, Taufregister, and Totenregister, 1670-1914.

Notes: Analysis starts in decade in which occupational recording passes benchmark (50% for marriages and baptisms, 10% for burials). Sub-periods include only those decades that are recorded.

second half of the eighteenth century, farming became very slightly more important in Wildberg (1-2 per cent), became slightly *less* important in Ebhausen (3-8 per cent), but remained stable in Auingen (only 15 per cent of grooms, although still 27-31 per cent of fathers and dying males). In the first half of the nineteenth century, full-time farmers

remained rare in Wildberg (1-3 per cent), continued to decline in Ebhausen (to 3 per cent), and remained fairly stable in Auingen (20-26 per cent). The second half of the nineteenth century shows a resurgence of full-time farming in Wildberg (4-6 per cent), where it actually became more important than in Ebhausen (2-4 per cent), and a slight increase in Auingen (30-36 per cent of grooms and fathers, although only 22 per cent of dying males).

The results of this analysis, and particularly the resurgence of full-time farming in Wildberg in the second half of the nineteenth century, are consistent with the impressions recorded by contemporaries. In 1862, the Royal Statistical Bureau described how in Wildberg in earlier generations, 'worsted-weaving and cottage industry in general were still more common, whereas agriculture was wholly minor'.⁵⁴⁵ But now, it declared, 'agriculture and industry are pursued with equal intensity'.⁵⁴⁶ This evidently did not refer to full-time farming, which was still the occupation recorded for only about 5 per cent of grooms and fathers in Wildberg; it must primarily have referred to the age-old practice of combining crafts and other kinds of work with part-time farming. Even then, the Royal Statistical Bureau acknowledged in 1862 that both Wildberg and Ebhausen remained chiefly dependent on various forms of industry, and named those two localities as two of the four most industrial localities in the entire district of Nagold, out of a total of 38 localities (the other two being the towns of Nagold and Altensteig).⁵⁴⁷

The picture of the importance of full-time farming which emerges from the parish registers is also consistent with the small amount of cross-sectional information we have about occupational structure in Auingen toward the end of the nineteenth century. In 1895, 70 per cent of the population of Auingen still lived primarily from agriculture, and only 26 per cent from industry and trading.⁵⁴⁸ In the 1890s, the village's parish registers show full-time

⁵⁴⁵ Königliches statistisch-topographisches Bureau (1862), 260.

⁵⁴⁶ Königliches statistisch-topographisches Bureau (1862), 45.

⁵⁴⁷ Königliches statistisch-topographisches Bureau (1862), 53.

⁵⁴⁸ Königliches statistisches Landesamt (1912), 572.

farmers comprising 34 per cent of grooms, 41 per cent of fathers of children being baptised, though only 16 per cent of dying males. This shows that even in Auingen, much agriculture was practised in combination with other occupations, which were then most often the ones recorded for by-employed farmers in the parish registers. According to an occupational census of 1907, Auingen was one of only three communities in the district in which less than half of economically active people (45 per cent) were working in the primary sector.⁵⁴⁹ In this decade, c. 21 per cent of grooms, baptising fathers, and dying males were recorded as full-time farmers, indicating that there were another 20-25 per cent who were working in agriculture (or other primary-sector activities) on a part-time basis.

Our three communities thus provide a good framework for analysing the demographic effects of full-time farming. Here we have one small town where full-time farming started out unimportant, remained insignificant for centuries, but ultimately experienced a resurgence in the later nineteenth century, making it possible to examine the effect of full-time agriculture in an era of overall fertility decline. We have a second village in which full-time farming comprised as much as 10 per cent of occupations in the seventeenth century, but fell to only about 3 per cent from then to the early twentieth century, making it possible to examine how village location and non-agricultural occupational structure interacted in their effect on fertility. And finally, we have a more typically agricultural village, in which full-time farmers remained an important and reasonable stable component of the local economy, at one-quarter to one-third of all occupations recorded, enabling us to investigate how a stable farming community – albeit one which also had other livelihood sources – reacted to new demographic impulses.

A second major occupation which was closely related to full-time farming was day-labouring. Although some day-labourers worked outside agriculture, this was rare because of guild regulations. As we saw in Section 4.3 above, the majority of secondary and tertiary activities

⁵⁴⁹ Landesarchivdirektion Baden-Württemberg (1997), II:23.

Table 9:
Day-Labourer (Tagelöhner) as an Occupational Designation,
Wildberg, Ebhausen and Auingen, 1670-1914

decade	Groom is day-labourer (% of all grooms with a given occupation)			Baptised child's father is day-labourer (% of all fathers with a given occupation)			Dead person is day-labourer (% of all dead persons with a given occupation)		
	Wildberg	Ebhausen	Auingen	Wildberg	Ebhausen	Auingen	Wildberg	Ebhausen	Auingen
1660-1669							2.4		
1670-1679	0.0			1.0			0.0		
1680-1689	0.9			2.9			4.2	4.4	
1690-1699	2.4	0.0		2.8			1.1	2.9	
1700-1709	1.0	3.2		4.8	6.1		1.6	7.1	
1710-1719	0.0	6.9	7.7	3.2	1.8	4.1	2.4	0.0	
1720-1729	0.0	0.0	15.4	1.7	3.3	18.2	6.0	12.1	
1730-1739	0.0	3.6	12.5	1.3	2.6	19.5	2.5	4.8	39.1
1740-1749	0.9	7.3	0.0	0.6	8.0	11.0	3.6	7.9	13.0
1750-1759	1.3	7.4	15.4	1.7	8.4	11.5	4.3	9.8	5.6
1760-1769	0.0	1.3	12.5	0.9	3.1	8.2	2.7	4.1	6.3
1770-1779	0.0	1.2	6.5	0.3	5.2	3.6	3.1	10.8	20.8
1780-1789	0.0	2.5	4.0	0.8	6.6	4.4	0.0	7.3	20.0
1790-1799	0.6	5.8	3.6	0.3	4.9	6.1	0.0	11.3	11.1
1800-1809	1.1	5.8	0.0	1.6	5.5	2.9	4.2	10.6	26.7
1810-1819	1.6	4.8	6.1	2.2	7.6	1.5	0.0	7.3	3.2
1820-1829	2.9	5.4	12.2	3.7	6.5	8.8	2.8	5.6	4.0
1830-1839	2.2	3.2	8.3	3.7	4.5	2.8	0.7	8.8	2.8
1840-1849	1.8	1.5	2.2	3.9	1.4	0.8	1.8	1.4	6.1
1850-1859	1.3	3.7	12.3	2.9	1.4	6.5	6.1	6.4	4.5
1860-1869	4.0	1.0	6.9	4.8	1.6	7.3	4.0	4.5	13.3
1870-1879	0.8	3.0	10.1	4.3	3.2	8.1	3.6	2.6	15.8
1880-1889	3.6	1.9	0.0	5.6	2.1	0.7	6.5	2.6	9.8
1890-1899	6.9	9.7	4.6	7.5	3.0	5.1	18.8	5.7	6.7
1900-1909	2.9	3.5	4.9	3.7	4.9	7.6	8.7	4.6	3.8
1910-1914	0.0	0.0	2.1	2.3	2.2	4.4	9.4	5.9	8.3
1670-1699	1.0			2.4			1.5		
1700-1749	0.4	4.0	10.0	2.3	4.8	14.4	3.0	7.0	26.1
1750-1799	0.4	3.6	8.2	0.8	5.5	6.3	2.0	8.8	13.0
1800-1849	1.9	4.2	5.4	2.9	4.9	3.3	2.0	6.9	6.4
1850-1914	2.7	3.2	6.3	4.6	2.6	5.7	8.4	4.3	8.4
Whole period	1.5	3.7	6.5	2.6	4.3	6.3	3.9	6.2	10.2

Sources: PAW, PAE, and PAA: Ehregister, Taufregister, and Totenregister, 1670-1914.

Notes: Analysis starts in decade in which occupational recording passes benchmark (50% for marriages and baptisms, 10% for burials). Sub-periods include only those decades that are recorded.

in Württemberg were regulated by guilds until 1862. Employers in guilded occupations were prohibited from hiring day-labourers for most tasks, instead being obliged to employ guild-trained apprentices and journeymen. As a consequence, most day-labourers worked in non-guilded activities, and by far the most important such activity was agriculture. Day-labouring

is therefore a good way to examine the impact on the local labour market of full-time farming, or at least farming on a scale larger than could be covered wholly by family labour.

The changing frequency of day-labouring as an occupational designation in these three communities is shown in Table 9. In examining day-labourers, however, their occurrence among grooms and fathers must be considered separately from their occurrence among dying males. This is because demographic activity varies with wealth. Day-labourers were the poorest settled stratum in the Württemberg economy, which meant that prudential as well as institutional controls on marriage (and thus on fertility) hit them much more severely. It seems likely that the occupations given for dying males are a more accurate reflection of the importance of day-labouring than those given for grooms marrying or fathers baptising children, since each man can only die once but a richer man can marry (or remarry) more than once and at an earlier average age, and therefore beget more children for baptism.

This consideration is confirmed by a glance at Table 9, where over the whole period of analysis in Wildberg day-labourers make up only about 2 per cent of grooms and fathers, but nearly 4 per cent of dying males. Ebhausen shows the same pattern, with day-labourers making up only about 4 per cent of grooms and fathers, but over 6 per cent of dying males. But it is particularly striking in Auingen, where day-labourers made up only about 6.5 per cent of grooms and fathers, but over 10 per cent of dying males. It seems sensible, therefore, to focus on the occupations of dying males as the most accurate reflection of the importance of day-labouring, although it must be remembered that it reflects its importance over the preceding generation or so, rather than in the decade in which death was recorded.

The prevalence of day-labouring as an occupation recorded for dying males again illustrates a basic difference among the three communities. Over the whole period of analysis, day-labouring was most important in Auingen, at over 10 per cent of all occupations recorded at death, compared to only 6 per cent in Ebhausen and 4 per cent in Wildberg. But the most

interesting result comes from examining the changing importance of day-labouring over time. In Wildberg, less than 3 per cent of dying males recorded that occupation for most of the later seventeenth, eighteenth and early nineteenth centuries, but the proportion rose to a striking 8.4 per cent in the second half of the nineteenth century, just at the time when full-time farming experienced a resurgence in the locality. The resurgence of labouring may also have been a result of the severe proto-industrial collapse in Wildberg in this period, which will be discussed shortly. In Ebhausen, by contrast, 7-9 per cent of dying males were day-labourers up to c. 1850, falling to only 4 per cent in the second half of the century. This is consistent with the unimportance of full-time farming in the village, even in the period of proto-industrial collapse.

Auingen also shows a remarkable decline in the importance of day-labouring, with 26 per cent of all dying males recording that occupation in the first half of the eighteenth century, falling to only 13 per cent in the second half of the century, and only 6-8 per cent in the nineteenth century. This precipitous decline in the importance of day-labouring in the village took place in parallel with an overall stability in the importance of full-time farming, which made up 26-27 per cent of occupations of dying males in the eighteenth century and 22 per cent in the nineteenth century. The cause of this decline may reside in some change in the scale of full-time farming, which may have contracted to the point where the labour needs of local farms could be covered by family labour. Alternatively, the decline in day-labouring in Auingen may have resulted from the rise of the linen proto-industry in the village from 1750 onward, so that poor men who would previously have been described as day-labourers (and might still have been working partly at that occupation) began to be designated as linen-weavers at death. This is certainly consistent with the development of the Auingen linen-industry, which we will examine shortly.

These changing trajectories of the importance of day-labouring in the three communities provide an interesting context for analyzing fertility behaviour for the poorest settled social

group in this economy, and particularly for examining the extent and timing of their adoption of fertility limitation in the later nineteenth century.

The third major component of the occupational structure of these communities was proto-industry – dense, export-oriented cottage manufacturing, similar to handicrafts in being conducted in people’s households rather than in centralized factories, but differing from crafts in being oriented to markets outside the region and hence being more densely agglomerated than craft occupations which had to rely solely on local demand.⁵⁵⁰ All three communities were partly reliant on proto-industry, Wildberg and Ebhausen on the weaving of worsteds (light cloths made of long-stranded combed wool) and Auingen on the weaving of linen from flax. As already mentioned, and as will be discussed in detail in Section 8.1, export-oriented worsted production arose in the Württemberg Black Forest in the 1560s, reached Wildberg at latest by c. 1580, and spread to many of the villages of the district of Wildberg, including Ebhausen, shortly after 1600. It survived in both Wildberg and Ebhausen until the first half of the nineteenth century. On the Swabian Jura, by contrast, worsted production was only ever undertaken for local markets and the occupation was practised only by scattered individuals. Export-oriented linen production, by contrast, was never important in the Black Forest region, except a small amount for purely local consumption, but was densely practised as an export-oriented proto-industry on the Swabian Jura in some centres from the 1670s, and in Auingen from about 1750 onward, as we shall see.

Turning first to the worsted proto-industry of the Württemberg Black Forest, we can trace its development in occupational designations for our three communities in Table 10. The results are gratifyingly consistent with cross-sectional sources, providing confirmation of the reliability of analysing occupational structure based on designations in parish registers. In 1736, as we saw in Table 6, 35 per cent of households in Wildberg and 34 per cent in Ebhausen depended at least partly on worsted-weaving. This corresponds almost exactly with

⁵⁵⁰ For a survey of the literature on proto-industrialization, see Ogilvie / Cerman (1996).

the findings from the marriage registers of the 1730s in which 33 per cent of grooms in Wildberg and 32 per cent of grooms in Ebhausen were recorded with this occupation.

Unfortunately, the consistent reporting of occupations in parish registers does not begin for Wildberg until 1670 and Ebhausen until 1700, so we cannot use them to trace the development of the worsted proto-industry in the sixteenth and seventeenth centuries. But by the time reliable occupational recording starts, we see that both communities were heavily proto-industrial. Wildberg had 36-38 per cent worsted-weavers among grooms, baptising fathers, and dying males in the last three decades of seventeenth century, and only a slightly lower proportion (28-35 per cent) in the first half of the eighteenth. Ebhausen was slightly less densely proto-industrial than Wildberg in this period, with 25-30 per cent worsted-weavers in its occupational designations in the first half of the eighteenth century.

But it is clear that the worsted industry was already gradually declining in importance – or at least in its dominance of the local occupational structure – from the later seventeenth century on. Among Wildberg grooms marrying, it declined from 38 per cent in the later seventeenth century, to 35 per cent in the first half of the eighteenth, to 30 per cent in the second half of the eighteenth century, before falling catastrophically to 10 per cent in the first half of the nineteenth century and nearly zero after 1850. In Ebhausen, the decline occurred half a century later, from 30 per cent among grooms in the first half of the eighteenth century, to 28 per cent in the second half, still 25 per cent in the first half of the nineteenth century (when in Wildberg it had fallen to only 10 per cent), and then less than 6 per cent in the second half of the nineteenth century. The same timing is reflected in occupations of fathers baptising their children and adult males dying.

Table 10:
Worsted-Weaver (Zeugmacher) as an Occupational Designation, Wildberg, Ebhausen
and Auingen, 1670-1914

decade	Groom is worsted-weaver (% of all grooms with a given occupation)			Baptised child's father is worsted-weaver (% of all fathers with a given occupation)			Dead person is worsted-weaver (% of all dead persons with a given occupation)		
	Wildberg	Ebhausen	Auingen	Wildberg	Ebhausen	Auingen	Wildberg	Ebhausen	Auingen
1660-1669							33.3		
1670-1679	38.6			36.8			37.6		
1680-1689	46.3			41.9			41.7	17.4	
1690-1699	26.2	30.4		29.2			36.0	55.9	
1700-1709	47.1	35.5		29.0			34.4	28.6	
1710-1719	33.3	17.2	0.0	26.4	12.5	0.0	32.9	26.7	
1720-1729	30.5	28.3	0.0	21.3	28.2	0.0	28.0	12.1	
1730-1739	32.8	32.1	0.0	29.3	23.0	0.0	24.4	33.3	0.0
1740-1749	30.4	32.7	0.0	30.3	37.5	0.0	37.3	26.3	0.0
1750-1759	36.8	25.0	0.0	28.0	29.4	0.0	31.2	31.7	0.0
1760-1769	35.6	44.3	0.0	29.5	30.9	0.0	28.2	32.7	0.0
1770-1779	29.0	22.2	0.0	25.8	33.4	0.0	29.9	35.1	0.0
1780-1789	25.4	17.5	0.0	21.5	27.7	0.0	28.8	29.1	0.0
1790-1799	21.9	28.8	0.0	19.4	19.3	0.0	27.5	24.5	0.0
1800-1809	19.3	21.9	0.0	16.5	21.0	0.0	26.6	25.8	0.0
1810-1819	13.1	20.8	3.6	16.0	24.5	0.0	24.8	38.2	0.0
1820-1829	5.7	31.0	0.0	9.5	23.0	0.0	23.6	25.0	0.0
1830-1839	5.9	28.4	0.0	5.3	34.4	0.0	14.9	31.4	0.0
1840-1849	7.3	19.8	0.0	4.8	31.9	0.0	8.8	31.5	0.0
1850-1859	1.9	13.4	0.0	3.1	24.3	0.0	10.5	23.4	0.0
1860-1869	1.8	6.0	0.0	1.9	13.5	0.0	5.6	18.2	0.0
1870-1879	0.0	5.0	0.0	0.5	10.8	0.0	2.7	22.6	0.0
1880-1889	0.0	5.6	0.0	0.4	10.7	0.0	4.6	18.1	0.0
1890-1899	0.0	1.9	0.0	0.0	1.9	0.0	0.7	14.8	0.0
1900-1909	0.0	0.9	0.0	0.0	0.0	0.0	1.1	6.9	0.0
1910-1914	0.0	4.3	0.0	0.0	0.5	0.0	0.0	5.9	0.0
1670-1699	37.9			36.1			37.6		
1700-1749	34.7	29.9	0.0	27.6	26.8	0.0	30.9	25.4	0.0
1750-1799	29.5	27.7	0.0	24.7	27.7	0.0	29.1	30.9	0.0
1800-1849	10.3	25.2	0.4	10.7	27.5	0.0	19.8	31.4	0.0
1850-1914	0.8	5.6	0.0	1.0	10.0	0.0	3.9	17.0	0.0
Whole period	18.3	18.4	0.1	17.4	21.5	0.0	21.1	24.8	0.0

Sources: PAW, PAE, and PAA: Ehregister, Taufregister, and Totenregister, 1670-1914.

Notes: Analysis starts in decade in which occupational recording passes benchmark (50% for marriages and baptisms, 10% for burials). Sub-periods include only those decades that are recorded.

The central role played by worsted-weaving in the communities of Ebhausen and Wildberg, and the very long trajectory of its decline, provide an excellent framework within which to explore the long-term effects of dense proto-industry on demographic decision-making.

An additional, and quite different, proto-industrial trajectory is illustrated by the rise and fall of rural linen-weaving in our third project community, Auingen, illustrated in Table 11. In Wildberg and Ebhausen, it is clear, linen-weaving was practised by scattered producers as a locally-oriented craft rather than in dense agglomerations as an export-oriented proto-industry: it comprised only 1-2 per cent of occupations in the Wildberg parish registers over the whole period, about 3 per cent in the Ebhausen registers, but around 20 per cent in the Auingen registers.

Table 11 enables us to establish the chronological rise and fall of the linen proto-industry in Auingen far more exactly than is possible from surviving cross-sectional sources. In the first half of the eighteenth century, only 5 per cent of grooms and 8 per cent of baptising fathers in the village were linen-weavers. There were no linen-weavers yet among dying adult males, indicating that linen-weaving had not yet been widespread locally for long enough to establish itself within the cohort of men dying before 1750. In fact, the decadal values enable us to locate the rise of the linen industry in Auingen even more exactly – it was already being practised by a small agglomeration of grooms and baptising fathers (5-10 per cent of the population) between 1710 and 1749, but the decisive leap came in the 1750s (when it rose to 15 per cent) and the 1760s (when it doubled to c. 30 per cent, at least among grooms). The high period of linen-weaving in Auingen lay almost exactly between 1750 and 1850, with 34-36 per cent of grooms recorded as linen-weavers in that period. After 1850, the decline was fast, falling to 19 per cent in the 1850s, 15 per cent in the 1860s and 1870s, and only about 5 per cent thereafter. In the second half of the nineteenth century, linen weaving was hardly more important in Auingen than it had been in the first half of the eighteenth.

Table 11:
Linen-Weaver (*Leinweber*) as an Occupational Designation,
Wildberg, Ebhausen and Auingen, 1670-1914

decade	Groom is linen-weaver (% of all grooms with a given occupation)			Baptised child's father is linen-weaver (% of all fathers with a given occupation)			Dead person is linen-weaver (% of all dead persons with a given occupation)		
	Wildberg	Ebhausen	Auingen	Wildberg	Ebhausen	Auingen	Wildberg	Ebhausen	Auingen
1660-1669							0.0		
1670-1679	0.9			1.0			1.2		
1680-1689	0.9			0.4			0.0	0.0	
1690-1699	1.2	0.0		0.2			1.7	0.0	
1700-1709	1.0	0.0		1.1	0.0		0.0	0.0	
1710-1719	0.0	6.9	15.4	0.4	1.8	9.3	2.4	0.0	
1720-1729	0.0	3.8	7.7	0.9	4.3	13.6	0.0	0.0	
1730-1739	0.0	3.6	0.0	1.3	1.0	3.2	1.7	0.0	0.0
1740-1749	0.9	1.8	5.6	0.0	0.9	7.3	0.0	2.6	0.0
1750-1759	2.6	10.3	15.4	1.1	6.2	14.6	1.1	2.4	11.1
1760-1769	1.5	3.8	29.2	1.0	6.4	21.6	2.7	10.2	12.5
1770-1779	0.8	9.9	32.3	1.0	7.3	28.3	2.1	0.0	16.7
1780-1789	2.4	7.5	48.0	1.3	3.2	22.3	1.9	5.5	13.3
1790-1799	1.3	2.9	53.6	2.2	4.7	30.8	1.0	11.3	25.9
1800-1809	1.7	5.8	42.9	1.9	5.5	37.9	0.0	3.0	26.7
1810-1819	3.8	5.6	28.6	1.3	3.8	41.7	2.8	4.1	22.6
1820-1829	3.4	1.6	26.8	3.3	3.4	31.6	0.9	2.8	24.0
1830-1839	2.7	1.1	41.7	2.9	2.1	44.5	0.7	2.0	38.9
1840-1849	1.8	0.8	32.6	1.6	0.9	42.4	4.4	4.1	30.3
1850-1859	1.9	2.2	19.3	0.2	0.7	31.3	2.6	3.2	25.0
1860-1869	1.8	2.5	14.9	0.6	2.3	10.3	0.8	0.0	16.7
1870-1879	1.3	2.5	14.6	1.6	3.1	18.6	2.7	0.9	31.6
1880-1889	0.0	0.9	5.9	1.4	0.0	8.9	2.8	1.7	22.0
1890-1899	0.0	2.9	1.5	1.1	0.8	1.2	0.7	1.1	22.2
1900-1909	0.0	0.0	0.0	0.5	0.9	0.0	2.2	3.4	3.8
1910-1914	0.0	4.3	0.0	0.6	1.1	0.0	1.9	0.0	12.5
1670-1699	1.0			0.5			1.2		
1700-1749	0.4	3.1	5.0	0.7	1.7	8.4	1.0	0.7	0.0
1750-1799	1.8	6.6	35.8	1.3	5.4	24.3	1.8	5.5	17.0
1800-1849	2.7	2.7	34.3	2.2	3.0	39.7	1.7	3.2	29.3
1850-1914	1.1	2.1	8.6	0.9	1.4	10.4	1.9	1.7	18.9
Whole period	1.5	3.2	19.7	1.2	3.0	20.5	1.6	2.8	19.6

Sources: PAW, PAE, and PAA: Ehregister, Taufregister, and Totenregister, 1670-1914.

Notes: Analysis starts in decade in which occupational recording passes benchmark (50% for marriages and baptisms, 10% for burials). Sub-periods include only those decades that are recorded.

The fact that we can observe Auingen before, during, and after its proto-industrial period is an unusually favourable data situation for a proto-industrial demographic study, which more commonly is restricted to examining only one or at most two of these phases. This, too, should enable us to identify and distinguish individual-level from community-level influences of proto-industry on demographic behaviour.

7. Agriculture

Agriculture plays a major role in economic development. It is the largest existing sector in almost every less-developed economy and thus represents the most substantial potential source of food, labour, capital, foreign exchange, and consumer markets for expanding industries and services. If agriculture improves its productivity, it can produce surpluses of food that will not be eaten up by the farming population itself but instead can be consumed by a growing population of industrial and service-sector producers. Agriculture may also produce industrial raw materials, particularly for textile industries – examples are raw wool and flax for linen. Rising agricultural productivity also makes it possible to reduce the share of the labour force that has to engage in full-time farming just to keep the population fed. Instead, this labour can move into industry and services. An increase in agricultural productivity can also reduce the amount of capital that needs to be invested in growing food, releasing it instead for investing in industrial enterprises. A productive agricultural sector can generate profits which can be reallocated by their owners to invest directly in factories, or which can be taxed by the state to invest in infrastructure such as river improvements, roads, and railways, which in turn increases the productivity of industry and commerce. Rising agricultural productivity may also generate surpluses which can be exported abroad, generating foreign exchange which can be used to import machines and other technology from more advanced industrial economies. Finally, a rise in agricultural productivity can increase incomes for the majority of the population that lives in rural areas, thereby generating a pool of consumer demand for new industrial products and services.

Even though all these inputs into industrialization can in principle be obtained through imports, the domestic agricultural sector tends to be the largest potential source of such inputs. In addition, the transaction costs of obtaining them from the economy's own agricultural sector instead of from abroad may be lower. For all these reasons, historians and economists widely believe that a prior 'agricultural revolution' was an important precondition

for the ‘industrial revolution’ in most European economies – including German ones – in the eighteenth and nineteenth centuries.⁵⁵¹

Conversely, if a country’s agricultural sector fails to improve its productivity, it can remain very large itself, while starving the industrialization effort of food, raw materials, labour, capital, foreign exchange, and consumer demand. This appears to have been the pattern followed by the Württemberg economy until a fairly late date, as indicated by the fact that the agricultural sector remained very large and continued to absorb a majority of the Württemberg labour force until the mid-1890s. As late as 1820/30, it is estimated that about two-thirds of the Württemberg population still worked in the agricultural sector, in 1850 it was still over 60 per cent, and as late as 1895 it was still around half.⁵⁵² This was comparatively high by European standards, as can be seen in Table 12. The share of the labour force in agriculture fell below two-thirds in Britain and the Netherlands (North and South) long before 1700, in Germany and Austria-Hungary as a whole before 1750, and in Europe as a whole before 1760. By 1895, when Württemberg was still devoting half its labour force to agriculture, the proportion had fallen to 16 per cent in Britain, around 30 per cent in the Netherlands and Belgium, and around 36 per cent in Germany more widely; the European norm was around 30 per cent. By European standards, the Württemberg economy was still devoting very high proportions of its labour force to agriculture throughout the nineteenth century.

In rare cases, a high proportion of the labour force devoted to agriculture can indicate unusually high agricultural productivity, if much farm output is being exported. But in the case of most European economies in the eighteenth and nineteenth century, it indicates the

⁵⁵¹ On England, see Crafts (1985), 2, 10, 14-15, 137-40; on Europe as a whole, see Ogilvie (1999a); on Württemberg, see Hippel (1992), 514; on modern less-developed economies, see World Bank (1982) and World Bank (2008).

⁵⁵² Hippel (1992), 514.

Table 12:
Share of the Labour Force in Agriculture,
Württemberg and Other European Countries, 1750-1910

Country	Date	Agriculture, forestry, fishing	Agriculture, mining	Agriculture	Agriculture (males only)
Württemberg	1820/30 ^a			67	
Württemberg & Baden	1850 ^a			>60	
Württemberg & Baden	1895 ^a			c. 50	
Württemberg & Baden	c. 1907 ^a			c. 33	
Germany	1750 ^b			64	
Germany	1800 ^c	62			
Germany	1850 ^a			50	
Germany	1870 ^d	50			
Germany	1882 ^c	43			
Germany	1900 ^d	40		36	
Britain	1700 ^d		57		61
England	1750 ^b			45	
Britain	1760 ^d		50		53
Britain	1800 ^d		40		41
Britain	1801 ^{d,c}	36			
Britain	1840 ^d	25	25		29
Britain	1870 ^d	15	20	20	20
Britain	1890 ^d		16		15
Britain	1910 ^d		15		12
Austria/Hungary	1750 ^b			61	
Austria-Hungary	1857 ^b			54	
Austria	1870 ^d	56			58
Belgium	1500 ^b			58	
Belgium	1750 ^b			51	
Belgium	1846 ^{d,b}			51	
Belgium	1850 ^d	49			
Belgium	1880 ^c	30			
Belgium	1890 ^d	32		32	
France	1750 ^b			59	
France	1856 ^b			52	
France	1870 ^d	49			51
France	1881 ^c	39			
France	1910 ^d	42			40
Italy	1750 ^b			59	
Italy	1861/71 ^b			58	
Italy	1910 ^d	55			54
Netherlands	1500 ^b			56	
Netherlands	1750 ^b			42	
Netherlands	1750-1800 ^c	41			
Netherlands	1849 ^c	44			
Netherlands	1860 ^d	37			41
Netherlands	1900 ^d	28			34
European norm	1760 ^d		64		66
European norm	1800 ^d		62		64
European norm	1840 ^d		54		55
European norm	1870 ^d		40		40
European norm	1890 ^d		33		33
European norm	1910 ^d		29		28

Sources: ^a Hippel (1992), 514, 641, 642; ^b Allen (1998), 36, 41; ^c De Vries/Van der Woude (1997), 528; ^d Crafts (1985), 57-9, 62.

exact opposite – a very large share of the labour force being compelled to go on farming just to supply domestic needs because the agricultural sector has unusually *low* productivity.⁵⁵³ Württemberg did export grain and cattle in the nineteenth century, but this is not the main factor explaining its failure to release labour from agriculture to industry.⁵⁵⁴ Rather, the fact that Württemberg devoted such a high share of its labour force to agriculture until the 1890s resulted from its agricultural productivity having been relatively low by the standards of other German and European economies of the period.

7.1. Natural Endowments for Agriculture

One cause of Württemberg's agricultural backwardness to a relatively late date lay in nature itself. Agriculture is heavily dependent on natural endowments, even in the modern day, let alone before the advent of modern agronomic knowledge. Württemberg had relatively poor soils and, especially in its higher-altitude areas, harsh climatological conditions, as we have already seen in Section 5.

The three communities studied here certainly all had poor natural endowments for agriculture, although in slightly different ways. Their responses to these natural endowments were also different. Thus the two Black Forest communities responded by shifting away from agriculture and toward proto-industry from an early date. The Münsingen-Auingen area, by contrast, remained one of the most unambiguously agricultural regions in Württemberg almost to the end of the nineteenth century, even while (as we shall see) the productivity of this agriculture, and hence the living standards of its inhabitants, remained low.⁵⁵⁵

Wildberg and Ebhausen had poor natural conditions for agriculture because of high altitude, low temperatures, heavy snow and frost, late and short growing season, and thin and low-

⁵⁵³ Crafts (1985), 2, 10, 14-17, 43-4, 54-6, 60-1, 64, 83-4, 115-21, 126, 129, 137-40.

⁵⁵⁴ Hippel (1992), 517.

⁵⁵⁵ Deigendesch (1998), 77; Fellmeth (1998).

nutrient soils.⁵⁵⁶ Climate, geography and soil made arable cultivation in the Württemberg Black Forest especially difficult, and arable yields lay at between one-quarter and one-third the levels achievable in the good locations of the neighbouring Gäu or the Württemberg lowlands.⁵⁵⁷

The town of Wildberg itself, as we saw when examining its geological endowments, lay on the boundary between the Black Forest sandstone soils (which were particularly bad for arable cultivation), and the shell limestone soils of the Gäu, which were somewhat better.⁵⁵⁸ Because it benefitted from some shell limestone soils and had a slightly milder climate than the higher communities further to the west in the Black Forest, in 1862 Wildberg (but not Ebhausen) counted among the 9 most productive localities of the 38 in the district of Nagold for the cultivation of spelt (the main local bread grain).⁵⁵⁹ But the district of Nagold as a whole had low arable productivity by Württemberg standards, so in a wider comparative context Wildberg must still be seen as relatively unproductive in agriculture.

The town of Wildberg had an area of farmland surrounding it, as shown by the fact that a non-trivial proportion of the townsmen continued to live partly from agriculture to a fairly late date. However, most of this farmland was extremely hilly and cut through by the steep slopes of the valley of the Nagold river, as well as by several deep side-valleys.⁵⁶⁰ As late as 1862, arable cultivation was described as being poor because of the 'exceptional difficulty of cultivation on the steep slopes and on the heights which are difficult to reach, which can only be overcome by the dogged diligence of the inhabitants'.⁵⁶¹

⁵⁵⁶ Königliches statistisch-topographisches Bureau (1862), 15-18, 57-63; Flik (1985), 168.

⁵⁵⁷ Flik (1985), 168.

⁵⁵⁸ Königliches statistisch-topographisches Bureau (1862), 15-18, 57.

⁵⁵⁹ Königliches statistisch-topographisches Bureau (1862), 58, 262-3. On spelt as the main bread grain in Württemberg and most of the rest of Swabia since the fourteenth century, displacing rye, possibly under Swiss influence, see Schaab (2000), 540.

⁵⁶⁰ Königliches statistisch-topographisches Bureau (1862), 262-3.

⁵⁶¹ Königliches statistisch-topographisches Bureau (1862), 263.

Wildberg was better suited for livestock raising than arable cultivation, with some rich pastures in the Nagold Valley which yielded two or three cuttings of hay annually, although the hill-pastures only allowed a single cutting in dry summers.⁵⁶² Indeed, one indication of the low arable productivity of Wildberg is the fact that until 1828 it was the jurisdictional centre of the shepherds' guild for 22 Württemberg districts.⁵⁶³ The shepherds' guild assembly that was held there every two years in the pre-industrial period is the origin of the popular festival called the Wildberg Sheep-Run (*Wildberger Schäferlauf*) which is still held in the town every second summer.⁵⁶⁴

By national standards, Wildberg was too high and cold for fruit-growing: it could grow apples, pears, and plums, but these were often damaged by spring frosts and the town did not produce a surplus. Cherries occasionally appear in Wildberg inventories for the seventeenth century, plums less often. Even more delicate fruit such as wine-grapes could only grow on espaliered vines, and ripened only in good years.⁵⁶⁵

Ebhausen resembled Wildberg in being unfavourable for agriculture because of its altitude, lower than average temperatures, heavy snow and frost, late and short growing season, and thin and low-nutrient soils.⁵⁶⁶ Ebhausen, too, lay on the boundary between the Black Forest sandstone soils (which were particularly bad for arable cultivation), and the shell limestone soils of the Gäu (which were somewhat better); but Ebhausen had more of the sandstone soil than did Wildberg.⁵⁶⁷ As a result, it had lower productivity than Wildberg and in 1862 was not numbered among the 9 most productive localities in the district of Nagold for cultivating spelt, the main bread grain.⁵⁶⁸ Compared to Wildberg, Ebhausen did not have such a large

⁵⁶² Königliches statistisch-topographisches Bureau (1862), 61, Appendix Table II.

⁵⁶³ Natale (1965), 752.

⁵⁶⁴ Natale (1965), 752; Königliches statistisch-topographisches Bureau (1862), 41.

⁵⁶⁵ Königliches statistisch-topographisches Bureau (1862), 58, 61-2, 263-4.

⁵⁶⁶ Königliches statistisch-topographisches Bureau (1862), 15-18, 57-63.

⁵⁶⁷ Königliches statistisch-topographisches Bureau (1862), 15-18, 57.

⁵⁶⁸ Königliches statistisch-topographisches Bureau (1862), 58, 153. On spelt as the main Württemberg bread grain since the fourteenth century, see Schaab (2000), 540.

expanse of surrounding farmlands, relative to its population, and those that it had were generally uneven and difficult to cultivate.⁵⁶⁹ A large proportion of its fields lay on slopes which suffered from severe flooding when it rained.⁵⁷⁰ Like Wildberg, Ebhausen was better suited for livestock raising than for arable production, and almost all its pasture was of the twice-mown (i.e. more productive) type.⁵⁷¹ Its climate was somewhat colder even than chilly Wildberg, so that although a few finer types of fruit and vegetable could survive, they were often damaged by spring frosts and cold fog, were not produced as a marketable surplus, and never included wine-grapes.⁵⁷²

The Münsingen-Auingen area had very different geological and climatological factors limiting its agricultural productivity. With an altitude above 700 m, an average annual temperature of 6.5 degrees C, snow lasting into spring, and no rivers or streams, the higher settlements of the Swabian Jura – including Auingen, at 741 meters – offered extremely unfavourable agricultural conditions. This was undoubtedly one fact contributing to the age-old name, ‘the Raw Jura’ (‘der rauhe Alb’).⁵⁷³ The most damaging characteristic of the climate as far as agriculture was concerned was the late departure of the snow, which could destroy the winter-sowing, with the result that often entire fields had to be cultivated all over again.⁵⁷⁴ As a consequence, the harvest time for winter grain was generally in the second half of August and for summer grain in the middle of September. Often, however, the winter grain harvest extended into September and the summer grain harvest into October, and frequently the snow fell on cut and uncut grain alike.⁵⁷⁵ These climatic conditions meant that although one could grow all types of grain and even some fruit, there was absolutely no possibility of growing wine-grapes.⁵⁷⁶

⁵⁶⁹ Königliches statistisch-topographisches Bureau (1862), 153

⁵⁷⁰ Königliches statistisch-topographisches Bureau (1862), 153.

⁵⁷¹ Königliches statistisch-topographisches Bureau (1862), 58, 61-2, Appendix Table II.

⁵⁷² Königliches statistisch-topographisches Bureau (1862), 58, 61-2.

⁵⁷³ Naujoks (1982), 186; Memminger (1825), 27.

⁵⁷⁴ Memminger (1825), 49.

⁵⁷⁵ Memminger (1825), 49-50.

⁵⁷⁶ Memminger (1825), 50.

Nineteenth-century commentators described the ‘Raw Jura’ as ‘monotonous and barren’, consisting ‘only of bald pastures, stony acres and treeless fields’.⁵⁷⁷ Even where there was good soil, it seldom went very deep, and large expanses of the Raw Jura were covered with stony mounds, completely unsusceptible to any kind of cultivation.⁵⁷⁸ The Swabian Jura was wooded and hilly, but differed from the Württemberg Black Forest in that it was a karst landscape with (as already discussed) hardly any surface water in the form of rivers or lakes and only a shallow layer of humus, often covered with small limestone pebbles. The lack of water reduced pastoral productivity, starving pasture of moisture and causing high rates of bovine tuberculosis until the introduction of the Swabian Jura Water Supply from the 1880s onward (although the water system only reached Münsingen and Auingen after 1895).⁵⁷⁹ The high altitude, low temperatures, poor soil, and lack of water made both arable and pastoral agriculture very difficult.

Even though Auingen had relatively good-quality land and higher than average productivity relative to the surrounding district,⁵⁸⁰ it remains indisputable that well into the nineteenth century, the village was characterized by low agricultural productivity.⁵⁸¹ This can be seen in the cataster of 1822-5, which show a high proportion of extensively used ‘alternating fields’ (*Wechselfelder*) which were cultivated only once every 6-9 years, many wood-pastures (*Holzweisen*), and a large number of parcels of land lying barren.⁵⁸² In 1825, Auingen had 3293 Morgen of village farmlands, of which only 46 per cent were arable fields, 22 per cent were meadow, 18 per cent were forest, 5 per cent pasture, 5 per cent barren, 4 per cent alternating fields, and 1 per cent wood-pastures.⁵⁸³ Of all pasture in the village, 22 per cent was wood-pasture which could only be mowed once and was unsuitable for modern cattle-

⁵⁷⁷ Ehmann (1876), 28-33, 42-48, quoted in Naujoks (1982), 169; see also Memminger (1825), 27.

⁵⁷⁸ Memminger (1825), 47.

⁵⁷⁹ http://en.wikipedia.org/wiki/Swabian_Alz; <http://de.wikipedia.org/wiki/Alzwasserversorgung>

⁵⁸⁰ Landesarchivdirektion Baden-Württemberg (1997), II:70.

⁵⁸¹ Landesarchivdirektion Baden-Württemberg (1997), II:27

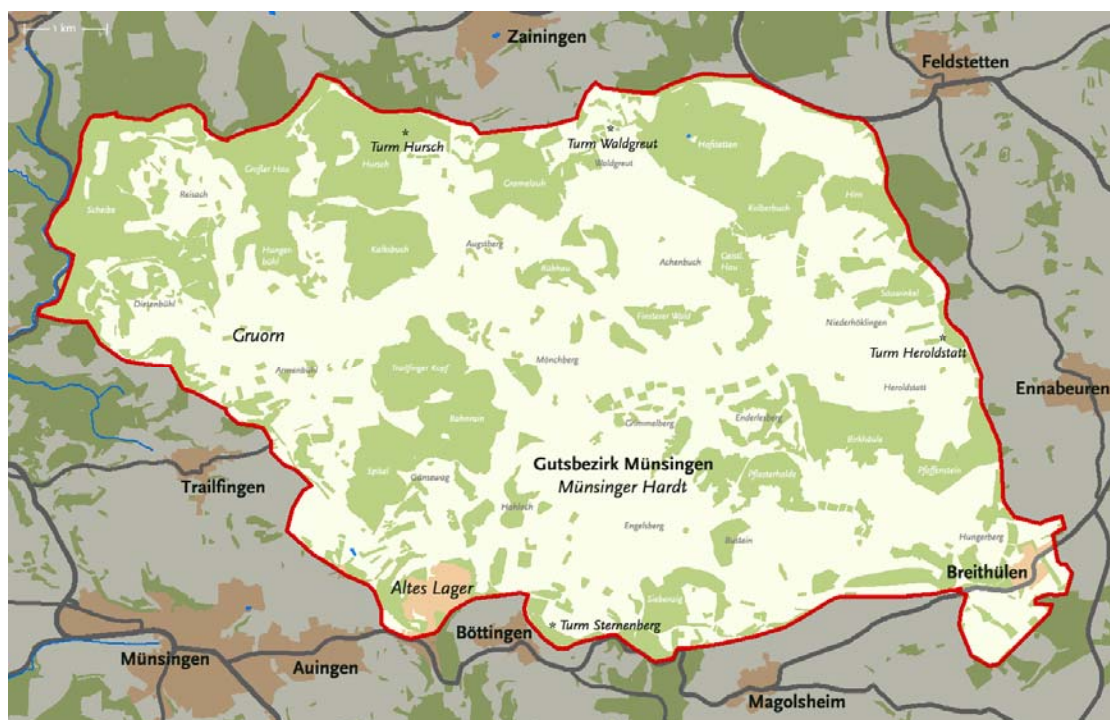
⁵⁸² Landesarchivdirektion Baden-Württemberg (1997), II:27.

⁵⁸³ Landesarchivdirektion Baden-Württemberg (1997), II:28.

raising, and of all arable in the village 7.5 per cent consisted of alternating fields which could only be periodically cultivated.⁵⁸⁴ Conditions for fruit and vegetable production were even harsher in Münsingen and Auingen than in Wildberg and Ebhausen. In 1825 it was observed that ‘wine-growing, as in the entire district of Münsingen, is not to be thought of; even fruit-growing remains insignificant, with few exceptions’.⁵⁸⁵

An additional component of the natural agricultural endowment of Auingen was that the village directly bordered on the Münsinger Hart, as can be seen from Map 10.

Map 10:
The Münsinger Hart in the Present Day



Source: The map and accompanying text as published in Wikipedia Commons by Author: Egon Hölzer (Muensi), at http://commons.wikimedia.org/wiki/Image:Muensinger_Hardt.png file (accessed 20 February 2009) are licensed under the Creative Commons Attribution 2.0 Germany License <http://creativecommons.org/licenses/by/2.0/de/deed.en>.

The Münsinger Hart was an area of ‘raw climate and unproductive soil, overgrown with woods, grazing-land and pasture’, 1495 hectares in size, which since the Middle Ages had formed a legally separate and uninhabited field-district (*Markung*). This high, undulating,

⁵⁸⁴ Landesarchivdirektion Baden-Württemberg (1997), II:27-8.

⁵⁸⁵ Memminger (1825), 23 (quotation), 75-6.

water-scarce area was partly covered with woods, but mainly with wood-pastures or meadows, and was mainly used for pasturing and for collecting fuel-wood, hazelnuts, and snails (the latter collected by children at 4 Kreuzer per hundred and exported in barrels in their millions as far afield as Munich and Vienna).⁵⁸⁶ In 1825, the Münsinger Hart was described as being ‘among the coldest and rawest areas of the entire kingdom, and has a very detrimental effect on neighbouring areas, partly because of the snow which remains lying very late and partly because of the fog that constantly arises from it’.⁵⁸⁷

Auingen was one of the four so-called Hart-villages (*Hartorte*), which neighboured on the Münsinger Hart and had usufruct rights in it, while the town of Münsingen had various jurisdictional rights and economic privileges over the area.⁵⁸⁸ The Münsinger Hart was administered by a special law-court, the *Hartgericht*, made up of the four village headmen (*Schultheißen*) of the Hart-villages plus the ducal bureaucrat (*Amtmann*) of the district of Münsingen. This special *Hartgericht* resolved conflicts over the use of the Münsinger Hart, organized the communal wood-cutting, determined the beginning and duration of the hay-harvest on the meadows, and laid down the time of open going to pasture.⁵⁸⁹ For a long time, the right of Münsingen citizens to drive cattle onto Auingen village lands was a bone of contention between the town and the village, but this was resolved in 1569 through a ducal commission which issued an agreement according to which Münsingen citizens were only to be allowed access to the Münsinger Hart along one lane, the Heuweg.⁵⁹⁰ Only in the later nineteenth century was the Münsinger Hart subjected to agricultural reforms, with its woods and pastures divided up and distributed among individual owners, reducing the size of the Hart but not abolishing it altogether.⁵⁹¹

⁵⁸⁶ Memminger (1825), 27.

⁵⁸⁷ Memminger (1825), 27.

⁵⁸⁸ Memminger (1825), 27, 119; Maurer (1965), 455; Landesarchivdirektion Baden-Württemberg (1997), II:68. The four Hart-villages were Auingen, Böttingen, Trailfingen and Gruorn.

⁵⁸⁹ Maurer (1965), 455; Memminger (1825), 27-8.

⁵⁹⁰ Landesarchivdirektion Baden-Württemberg (1997), II:68.

⁵⁹¹ Maurer (1965), 455.

In 1895 the surviving area of the Münsinger Hart was merged with neighbouring areas to form a military drill-ground and encampment, shown on Map 10 ('Altes Lager'). As the nearest village, Auingen experienced the strongest economic effects from the military encampment, both positive and negative.⁵⁹²

7.2. Technological Challenges for Agriculture

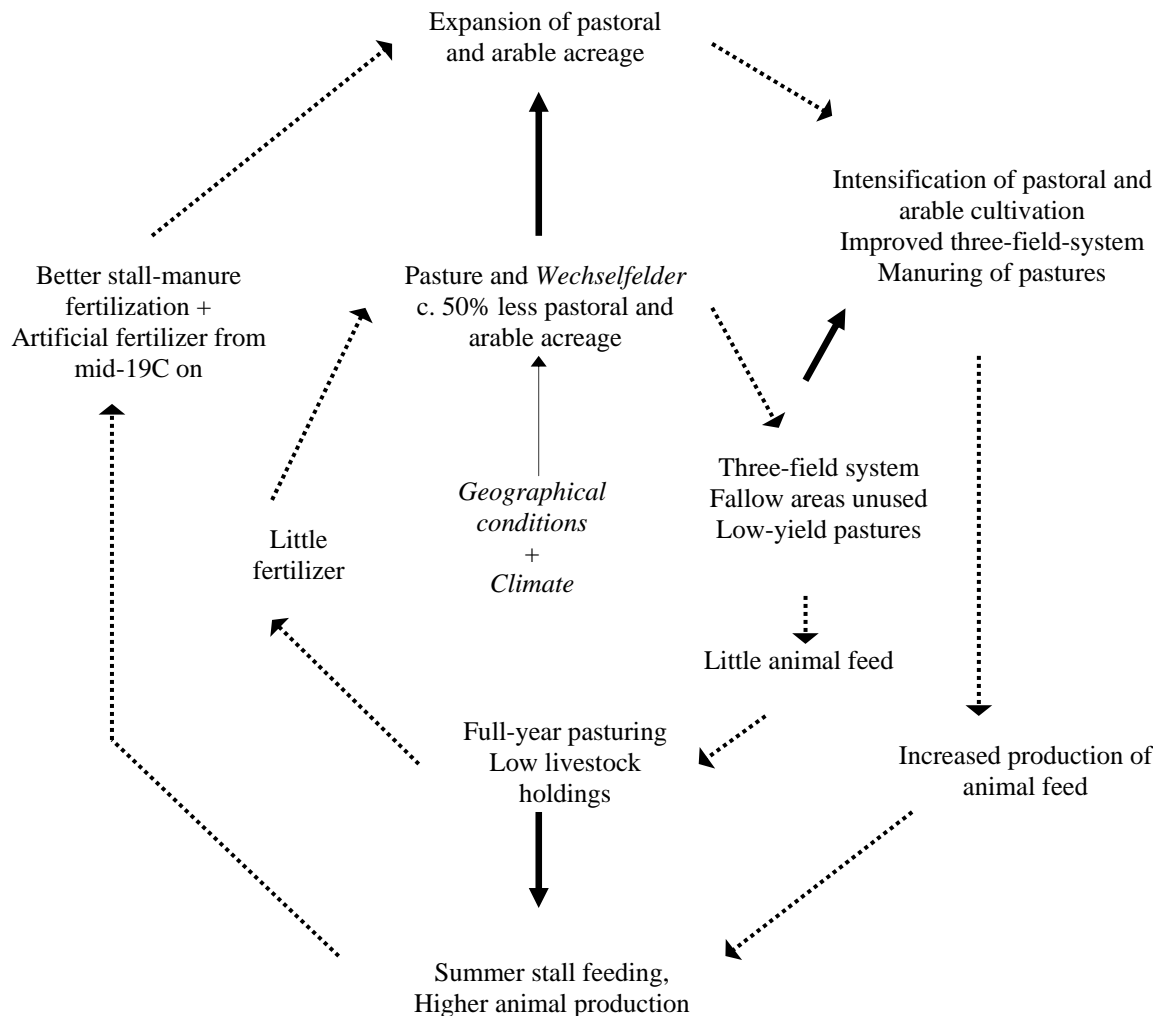
All three communities under study thus had poor natural endowments for agriculture, although Auingen was considerably more deprived than Ebhausen, and Ebhausen slightly more so than Wildberg. However, agricultural productivity depends not just on natural endowments but also on the human decisions taken about them – that is, on choice of agricultural technology.

Before the 'agricultural revolution', most European economies were caught in a vicious circle of low yields. This is shown in Figure 3, in which the inner circle represents the low-productivity state of Württemberg agriculture around 1800 and the outer circle represents the higher-productivity state toward which the agricultural reformers of the era tried to move it.⁵⁹³ In order to increase productivity, what was needed was to expand the area of land under cultivation, intensify exploitation of both pasture and arable, improve cultivation techniques, and improve livestock-raising. But in order to expand the area of arable fields and intensively exploited pastures, non-intensively exploited meadows, wood-pastures, alternating fields, fallow, wastes and forest had to have their (often institutionally regulated) uses changed and be brought under more intensive and individualized exploitation.

⁵⁹² Königliches statistisches Landesamt (1912), 572; for a very balanced and well-informed overall assessment of the effects on surrounding communities, including Auingen, see Deigendesch (1998).

⁵⁹³ This diagram, and the following discussion, is based on the exposition of the problems with reforming agriculture on the Swabian Jura, with particular reference to the immediate region of Münsingen-Auingen in the later nineteenth century, in Fellmeth (1998), 31-3. However, the analysis applies almost equally well to the Württemberg Black Forest region around Wildberg and Ebhausen.

Figure 3:
The Vicious Cycle of Agriculture and the Challenges of Reform
in Nineteenth-Century Württemberg



Source: Fellmeth (1998), 33 (Abb. 8).

Normally this would have meant further limitations on livestock-raising, since fodder, which was in any case scarce, would be further restricted by reducing the amount of land allocated to summer pasture. This required the introduction of year-round stall-feeding of livestock. In many regions of Württemberg, stall-feeding began to be introduced after c. 1800, but not in our three communities. It was not until 1860 that stall-feeding had become a matter of course throughout Württemberg.⁵⁹⁴ Stall-feeding had the advantage of gradually making meadows

⁵⁹⁴ Hippel (1992), 646.

obsolete and ensuring the collection of a significantly large quantity and quality of natural manure.⁵⁹⁵ Only through this possibility for better fertilization was it at all possible to extend the acreage allocated to intensively utilized arable fields and pastures.

On the other hand, in order to support stall-feeding, fodder had to be produced in much greater quantities than previously, because livestock now had to be provided with it year-round because of being kept in stalls. Without an increase in fodder production, therefore, it was not possible to increase livestock production.

But this need for fodder could in turn only be satisfied by a fundamental change in the cultivation of both arable and pastoral land – through manured and intensively used pastures and especially through bringing the fallow into cultivation with fodder crops. However, in order to bring about the latter, it was necessary to replace the traditional, communal organized three-field system with more innovative and individualized 7-9-year crop rotation systems, in which a much lower share of the land was lying fallow in any given year. This required both the adoption of improved agricultural implements (in particular, lighter and more flexible ploughs) and the dissolution of communal restrictions on the use of pastoral and arable land.

As Figure 3 shows, both the low-productivity state of agriculture (the inner circle of technical interdependencies) and the higher-productivity state (the outer circle) operated as self-sustaining systems. It was difficult to introduce reforms in a piecemeal way, because only by changing all components at once could the new, higher-productivity equilibrium be attained. This required changes not just in technology but in the institutional rules governing how cultivation and pasturing took place. Furthermore, every technological change affects not just the efficiency with which output can be produced, but the distribution of output among social

⁵⁹⁵ Manure was already a valued commodity in early modern Württemberg, as shown by the fact that it was listed as part of people's property in marriage and death inventories, but until animals could be kept in stalls year-round, their manure could not easily be collected. On the enduring problem of lack of manure in Württemberg agriculture well into the nineteenth century, see Hippel (1992), 516, 649.

groups. Powerful social groups that benefit from the existing distribution therefore have an incentive to resist technological change, often by mobilizing institutional mechanisms. This means that ‘agricultural revolution’, whether in Württemberg or elsewhere in early modern Europe, tended to be accompanied by social and institutional conflict.

In early modern Württemberg, the social and institutional resistance to agricultural change was quiet but long-lasting, with the result that the ‘agricultural revolution’ came comparatively late. This can be seen from the data in Table 13, which show grain yields – the volume of grain reaped per quantity sown – for various European economies at various periods since 1550. As this table shows, until well into the second half of the eighteenth century, average grain yields in Württemberg lay at around 5:1 (i.e., 5 grains reaped per grain sowed).⁵⁹⁶ This was about the average for German-speaking central Europe and Scandinavia at that period, and slightly higher than in eastern-central and eastern Europe under the ‘second serfdom’. But it was below the average for France, Spain, and Italy, which lay between 6 and 7, and significantly lower than the average yield ratio in the Netherlands and England, countries which had already achieved ratios above 7:1 in the sixteenth century and had risen above 10:1 by the later eighteenth century.

After 1800, the Württemberg agricultural sector began to grow, but still relatively slowly. This is reflected in the fact that as late as 1840, despite the high labour-intensity discussed above, the average yield ratio in Württemberg agriculture had risen to only 6:1. Nor had Württemberg’s pastoral yields achieved the German average by that date.⁵⁹⁷ This is consistent with the figures in Table 12 showing that Württemberg released labour out of agriculture only very slowly until the second half of the nineteenth century. As late as the early twentieth century, Württemberg was well-known for having a low-productivity agricultural sector.

⁵⁹⁶ Hippel (1992), 483.

⁵⁹⁷ Hippel (1992), 516.

Table 13:
Yield Ratios in Württemberg and Other European Countries, 1500-1840

Region	Date	Yield Ratio
Württemberg	late medieval ^a	5.0
Württemberg	early modern ^a	5.0
Württemberg	1750-99 ^b	5.0
Württemberg	1840 ^b	6.0
England, Low Countries	1500-49 ^c	7.4
England, Low Countries	1550-99 ^c	7.3
England, Low Countries	1600-49 ^c	6.7
England, Low Countries	1650-99 ^c	9.3
England, Low Countries	1700-49 ^c	ng
England, Low Countries	1750-99 ^c	10.1
England, Low Countries	1800-20 ^c	11.1
France, Spain, Italy	1500-49 ^c	6.7
France, Spain, Italy	1550-99 ^c	ng
France, Spain, Italy	1600-49 ^c	ng
France, Spain, Italy	1650-99 ^c	6.2
France, Spain, Italy	1700-49 ^c	6.3
France, Spain, Italy	1750-99 ^c	7.0
France, Spain, Italy	1800-20 ^c	6.2
Germany, Switzerland, Scandinavia	1500-49 ^c	4.0
Germany, Switzerland, Scandinavia	1550-99 ^c	4.4
Germany, Switzerland, Scandinavia	1600-49 ^c	4.5
Germany, Switzerland, Scandinavia	1650-99 ^c	4.1
Germany, Switzerland, Scandinavia	1700-49 ^c	4.1
Germany, Switzerland, Scandinavia	1750-99 ^c	5.1
Germany, Switzerland, Scandinavia	1800-20 ^c	5.4
Russia, Poland, Czechoslovakia, Hungary	1500-49 ^c	3.9
Russia, Poland, Czechoslovakia, Hungary	1550-99 ^c	4.3
Russia, Poland, Czechoslovakia, Hungary	1600-49 ^c	4.0
Russia, Poland, Czechoslovakia, Hungary	1650-99 ^c	3.8
Russia, Poland, Czechoslovakia, Hungary	1700-49 ^c	3.5
Russia, Poland, Czechoslovakia, Hungary	1750-99 ^c	4.7
Russia, Poland, Czechoslovakia, Hungary	1800-20 ^c	ng

Sources: ^aSchaab (2000), 540; ^bHippel (1992), 483, 516; ^cSlicher van Bath (1977), 81.

Notes: Yield ratio = seeds reaped per seed sown; ng = not given.

7.3. Efforts to Improve Agriculture by Educated Reformers

By the final decades of the eighteenth century, the low productivity of Württemberg's agriculture was stimulating agrarian reformers to press for change.⁵⁹⁸ These pressures accelerated after 1816, with the ascension to the Württemberg throne of King Wilhelm I, whose special interest in agriculture led to his being popularly christened 'King of the Agriculturalists'.⁵⁹⁹ Royal pressure and encouragement resulted in the establishment of a Chair of Agriculture at the University of Tübingen in 1817, an Agricultural College (*Landwirtschaftliche Hochschule*) at Hohenheim near Stuttgart in 1818, and an Agricultural Fair at Bad Cannstatt on the model of the Munich Oktoberfest in 1818. Over the following decades, the Württemberg state encouraged a whole array of agricultural training schools and model farms dedicated to the idea of moving Württemberg agriculture in the direction that had been followed in the Netherlands since the sixteenth century, England since the seventeenth, and more 'advanced' regions of Germany itself since the eighteenth. None of these measures resulted in any rapid or spectacular improvement in Württemberg agriculture, but they may have exercised a cumulative influence on opinion within the governing strata, gradually persuading them that it was worth incurring the substantial political costs of trying to reform rural institutions.⁶⁰⁰

In Münsingen and Auingen, elite pressures for agricultural reform started earlier and more publicly than in Wildberg and Ebhausen, probably because the Swabian Jura suffered more acutely from low agricultural productivity and was more heavily dependent on agriculture than the Württemberg Black Forest. As early as the 1780s and 1790s, educated individuals – particularly village pastors – were publishing tracts urging the improvement of agricultural practice on the Swabian Jura. The most important movement for agrarian reform, however,

⁵⁹⁸ Schaab (2000), 543.

⁵⁹⁹ Hippel (1992), 531.

⁶⁰⁰ On their failure to achieve agricultural improvement but possibility that they exercised a cumulative positive impact, see Hippel (1992), 531-2, 654-6.

came after the foundation in 1818 of the Agricultural College in Hohenheim. A number of the owners and tenants of larger agricultural estates in the area around Münsingen and Auingen studied at Hohenheim, as did many activists in the various agricultural societies that proliferated in Münsingen, as elsewhere in Württemberg, in the course of the nineteenth century.⁶⁰¹ In 1821, an Association for the Improvement of Horse-Breeding (*Verein für Veredelung der Pferdezucht*) was established in Münsingen under state protection, and in 1835 a Regional Agricultural Association (*Landwirtschaftliche Bezirks-Verein*) was set up in the town.⁶⁰² In 1841, the district of Nagold also saw the foundation of a Regional Agricultural Association whose aim was to improve local agriculture by teaching, encouraging the foundation of agricultural education institutions, obtaining better agricultural equipment, and improving the breeding of draft animals.⁶⁰³

In both the Münsingen-Auingen and the Wildberg-Ebhausen region, educated and well-off enthusiasts set up model farms in the confident belief that these would demonstrate to the 'backward' local peasantry the benefits of agricultural improvements.⁶⁰⁴ In the Münsingen-Auingen region, a number of large enclosed estates (*Gutshöfe*) were established in the 1830s by educated agricultural reformers, many of whom had studied at Hohenheim. These enclosed estates were described as 'making the reputation for the cultivability and agricultural productivity of our Jura soil well-known in broader circles for the first time'.⁶⁰⁵ In particular, a large estate called the Ludwigshöhe was put together in 1831 on the Münsinger Hart just a few kilometres from Auingen by a well-known aristocrat and agricultural reformer, the Freiherr Wilhelm Ludwig von Ellrichshausen, who was also the Director of the Agricultural Institute at Hohenheim. Ellrichshausen's explicit aim was to provide a model of how agriculture should and could be improved on the Swabian Jura.⁶⁰⁶ In the Wildberg-Ebhausen

⁶⁰¹ Winkel (1982); Winkel (1993).

⁶⁰² Memminger (1825), 79-80; Fellmeth (1998), 30-31.

⁶⁰³ Königliches statistisch-topographisches Bureau (1862), 59.

⁶⁰⁴ Fellmeth (1998), 31-39; Königliches statistisch-topographisches Bureau (1862),

⁶⁰⁵ Quoted in Fellmeth (1998), 34.

⁶⁰⁶ Fellmeth (1998), 35-9.

region, too, as late as 1862 the Royal Statistical Bureau referred to three 'larger estates, whose rational operation exercises a useful influence on the surroundings'. None of the three was actually located in Wildberg or Ebhausen, but the Bureau held the clear belief that such model estates were the key to improving agricultural practice.⁶⁰⁷

But neither large-scale model farms nor pressure by educated enthusiasts were sufficient to bring about agricultural change. Many small-scale farmers were rationally unwilling to introduce untried techniques. Others feared negative consequences if their neighbours did so, and therefore used community institutions to block changes in land use. Those who benefited from the extensive patterns of grain production on the *Wechselfelder* of the Swabian Jura, for instance, resented being adjured to replace them with intensive techniques. Communities feared that if individual farmers introduced new crops which required different cultivating patterns, they would go out to work the fields at different times of year, harming their neighbours' grain. Communities also resisted the idea of dividing up communally used pastures, meadows and woods among individual owners, since it was unclear who would gain and who would lose from such redistribution.⁶⁰⁸ The Münsinger Hart was subject to the communal institutions not just of one community but of five, and this was identified by contemporaries as another obstacle to change: 'the meadow rights hinder other forms of cultivation, and are also an enemy of forest cultivation and limit the pastures to a single mowing'.⁶⁰⁹ More importantly, even within single villages, beneficiaries of the existing distribution of property, borders between fields and villages, and field-tracks used for agricultural work feared that their well-being would be harmed if land boundaries were 'rationalized', common pastures were enclosed, farmers were allowed to cultivate the fallow with new crops, or more complicated crop rotations were introduced.⁶¹⁰

⁶⁰⁷ Königliches statistisch-topographisches Bureau (1862), 57-8.

⁶⁰⁸ See the detailed discussion of such reasons for resistance in the Münsingen-Auingen region in Fellmeth (1998), esp. 32; Memminger (1825), esp. 27-8.

⁶⁰⁹ Memminger (1825), 28.

⁶¹⁰ See the detailed discussion in Fellmeth (1998), esp. 32; Memminger (1825), esp. 27-8.

Moreover, as can be seen from Figure 3, agricultural reform seldom consisted of the piecemeal implementation of individual measures. It only became wholly effective when all the reforms were introduced simultaneously and mutually complemented one another.⁶¹¹ For this, as we shall see in Section 7.3, community obstacles to the individual decision-making of innovative farmers had to be removed. Even state intervention had little effect, as Duke Karl Eugen experienced as early as the 1790s, when he conceived an interest in improving agriculture in Württemberg and proposed to cultivate the Münsinger Hart and establish larger-scale farms on it. Even with direct ducal interest and funding, ‘the affair encountered difficulties and did not happen’.⁶¹²

Even in the decades after 1830, when large-scale model farms such as the Ludwigshöhe were set up, they did not prove very effectual in changing the behaviour of smaller-scale farmers. For one thing, the large-scale model farms were free of communal controls, and hence could undertake innovations that were closed to small farmers whose scattered fields were subject to communal agrarian regulation. Furthermore, even when the large-scale model farmers undertook innovations that could in principle also be adopted by village farmers, they failed to take into account costs and risks that were well-known to smaller operators and consequently got into economic difficulties. Even the most optimistic assessment of the Ludwigshöhe model farm near Auingen is forced to conclude that it was unprofitable: in 1860 it was earning 4.25 Gulden per Morgen, less than one-quarter of the average of 22 Gulden per Morgen in Württemberg as a whole. Furthermore, the Ludwigshöhe had progressively converged with traditional agricultural practices of the Münsingen-Auingen area in important respects, e.g. by continuing to cultivate in the three-field system. The only basis for concluding that model farms played a major role in improving Württemberg agriculture is to speculate that they provided ‘important psychological impulses’.⁶¹³ The evidence suggests that until agricultural innovations could be shown to be profitable, and institutional obstacles

⁶¹¹ Fellmeth (1998), 32.

⁶¹² Memminger (1825), 28.

⁶¹³ Fellmeth (1998), 39.

to their introduction by ordinary small-scale farmers could be relaxed, they would not be generally adopted. As a result, the agricultural technology used by the majority of Württemberg's agriculturalists – ordinary small farmers in villages – changed only very slowly, and continued to be dominated by the traditional three-field crop rotation system (*Dreizegelwirtschaft*) and large common pastures.⁶¹⁴

7.4. Institutional Preconditions for Agricultural Development

The agricultural backwardness of Württemberg was thus caused not just by infertile soils or failure to recognize the potential for technological improvement. It was widely known in Württemberg that infertile regions in other European societies had been made more productive through the introduction of better agricultural techniques – the Low Countries since the sixteenth century, England since the seventeenth, and France since the mid-eighteenth. New crop rotations, engrossing and rationalizing open fields into closed farms, enclosing and 'privatizing' common pastures, stall feeding, fodder growing, and cash crops had begun to increase agricultural productivity even in other parts of German-speaking central Europe in the later eighteenth century.⁶¹⁵ But the ability to adopt new agricultural techniques is strongly affected by institutional rules governing markets in land, labour, capital, and agricultural output, and these can often prove difficult to change.⁶¹⁶

In one way, agrarian institutions in Württemberg had been fairly advanced by European standards since the late medieval period, in the sense that they included no manorial privileges for noble landlords. This was a consequence of the institutional exodus of the regional nobility in 1519, discussed above in Section 4.1. However, the prince, church, and other organizations still enjoyed a number of 'manorial' privileges whose abolition was required before agricultural productivity could rise. Moreover, Württemberg retained other

⁶¹⁴ Landesarchivdirektion Baden-Württemberg (1997), II:46, 70.

⁶¹⁵ Ogilvie (1999a), 94-108

⁶¹⁶ World Bank (2008).

institutions – notably its partible inheritance system and its communal regulation of agriculture – which were closely integrated with pre-modern agricultural techniques. These institutions needed to be relaxed before ordinary villagers could introduce new techniques on their small landholdings. Perhaps partly because Württemberg had no clearly abusive system of ‘serfdom’ to abolish, efforts to reform these milder agrarian institutions were tentative and piecemeal. The inheritance system was left almost wholly unchanged. Even communal institutions, as we saw in Section 4.2 above, retained their control over labour, land, capital and output markets well into the second half of the nineteenth century.⁶¹⁷

7.4.1. Manorial Restrictions

Although Württemberg did not have a fully-fledged ‘manorial system’ (*Gutsherrschaft*) of the type observed in Germany east of the Elbe, nonetheless its milder system of landlordship (*Grundherrschaft*) did constitute a barrier to agricultural change at the beginning of the nineteenth century. Old Württemberg had not had a resident feudal nobility since 1519, so tithes and feudal rents on land were owed instead to the prince, the church, and various foundations.⁶¹⁸ Nonetheless, these burdens amounted to 25-30 per cent of the gross agricultural yield – 10 per cent as rents to whoever held the former manorial rights, 10 per cent as tithes to the church, and (at least) 5 per cent as taxes to the state.⁶¹⁹

The beneficiaries of this manorial system blocked agricultural change.⁶²⁰ In particular, the fact that Württemberg ‘landlords’ (whether prince, church or public foundation) received their rents, and the state church its tithe, not in cash but as a share of the crop, created incentives for these bodies to intervene in cultivation.

⁶¹⁷ On the dual role of infertile soil and institutional practices in the low agricultural productivity of Württemberg and other parts of southwest Germany, see Hippel (1992), 648.

⁶¹⁸ Königliches statistisch-topographisches Bureau (1862), 73-4

⁶¹⁹ Hippel (1992), 521.

⁶²⁰ Königliches statistisch-topographisches Bureau (1862), 75; Hippel (1992), 523-5.

Some have argued that the incentives were positive: receiving a share of the crop made Württemberg ‘landlords’ (mainly the prince) encourage farmers to maximize productivity.⁶²¹ But share rentals can also create negative incentives, as shown by modern less developed economies where share rental systems constitute obstacles to agrarian innovation, whether because the peasant receives only part of the benefits of innovation but incurs all of the costs, or because changes in cultivation harm landlords’ revenues in other transactions with peasants.⁶²² The fact that rents and burdens were paid as crop shares certainly affected agricultural change in our three communities. In the district of Wildberg in the later eighteenth century, for instance, villagers and townsmen had to petition the prince to ‘be allowed to adapt a poor arable field to a clover field’,⁶²³ or ‘to be allowed to lay down 8 Morgen of very poor arable field to grass’.⁶²⁴ This was partly because rents and tithes were denominated in terms of particular crops; if new crops could not be taxed or tithed, the collectors of such dues were reluctant to let them be cultivated. In 1780, the Wildberg district bureaucrats ordered that ‘no-one, on pain of inevitable punishment, shall take it upon themselves, without previously having obtained a gracious ducal concession, to set up a clover-field or to undertake any other *mutationem culturae*’.⁶²⁵

In Württemberg more widely, the ‘landlords’ and tithe collectors did continue to constrain land use. Nineteenth-century commentators observed that the Württemberg share rental system compelled peasants to go on cultivating the traditional crops in which rental shares were denominated, and prevented them from shifting to more profitable ones, and this finding has been confirmed by modern economic historians such as Hippel.⁶²⁶ Sabean has described how in the Württemberg village of Neckarhausen tithes and excise taxes on wine meant that ‘state

⁶²¹ Sabean (1990), 19, 26, 28, 42.

⁶²² See the detailed discussion of the relationship between share rentals and technological stagnation in Basu (1997), 227-9, 246, 251-61, 264, 286, 307.

⁶²³ HSAS A573 Bü 6947, petition of 21 Mar. 1768: ‘schlechtes Ackerfeld zu einem Kleefeld adaptiren zu dürfen’.

⁶²⁴ HSAS A573 Bü 6947, petition of 22 May 1768: ‘8 morg. sehr schlechtes akerfeld zu gras boden anlegen zu dürfen’.

⁶²⁵ HSAS A573 Bü 95, 28 Dec. 1780, fol. 26r: ‘der samtl.: Inwohnerschafft wird hiemit angekündet, daß sich bey zubefahren habender Straffe, Niemand. unterfangen solle, ohne vorherig ausgewürckte gdgste Concession einen Kleeacker anzulegen oder eine andere mutationem culturae Vorzunehmen’.

⁶²⁶ Hippel (1977), vol. I, 130.

officials forced villagers to continue to produce wine and fought against changes in cultivation for many decades'; certain innovations were permitted 'only after more or less protracted negotiations'.⁶²⁷

In the first half of the nineteenth century, the Württemberg state gradually abolished this edifice of manorial privileges. It focused on the abolition of tithes and feudal rents, in exchange for restitution payments.⁶²⁸ However, this abolition took place very gradually, in a series of piecemeal changes enshrined in at least 7 separate items of legislation promulgated over four decades – in 1817, 1818, 1820, 1836, 1848, 1849, and 1856.⁶²⁹ It was thus the middle of the nineteenth century before traditional 'manorial' obstacles to agricultural change were fully abolished.

7.4.2. Communal Regulation of Arable Cultivation

Even more deep-rooted than these 'manorial' obstacles were those arising from the communal regulation of agriculture.⁶³⁰ Local communities administered many aspects of farming in Württemberg, and it is therefore useful to divide their controls into those affecting the cultivation of arable fields (which made up about two-thirds of the land area in Württemberg around 1840), and those affecting the raising of livestock on pastures and meadows (which constituted the remaining one-third).⁶³¹

The three-field system remained overwhelmingly the most important system of cultivation in Württemberg into the second half of nineteenth century.⁶³² This system involved open fields, community regulation of cultivation (*Flurzwang*), and the requirement that everyone plant and

⁶²⁷ Sabean (1990), 43-4, 54.

⁶²⁸ Landesarchivdirektion Baden-Württemberg (1997), II:46; Hippel (1992), 520.

⁶²⁹ Königliches statistisch-topographisches Bureau (1862), 75; Hippel (1992), 523-5.

⁶³⁰ Hippel (1992), 483.

⁶³¹ Hippel (1992), 517.

⁶³² Hippel (1977), vol. I, 66; Hippel (1992), 517-18; Schaab (2000), 539-45.

harvest at the same time. These practices were carefully monitored by specially appointed field wards and field inspectors.⁶³³ In Wildberg, for instance, the introduction of root crops (an important aspect of the ‘agricultural revolution’), and even the cultivation of barley, was restricted in the eighteenth century because these required that ‘people go to the fields on several occasions outside the appointed time’, threatening damage to neighbours in the open-field system; the communal assembly therefore forbade it.⁶³⁴

A certain amount of improvement was possible within the three-field system, by permitting cultivation of fallow fields with fodder-crops. In many parts of Württemberg the first half of the nineteenth century saw a gradual shift from the ‘simple’ three-field system (in which farmers were prohibited from growing *any* new crops on the fallow, and thus one-third of the arable land was lying unproductive at all times) to the ‘improved’ three-field system (in which farmers were permitted to grow fodder or industrial crops on the fallow, which was therefore producing something even when it was not growing grain).⁶³⁵

However, the more complicated crop rotation systems that had increased arable productivity in the Netherlands and England since the sixteenth century involved abandoning the three-field system altogether and permitting farmers to introduce new crops, new rotations, new tools, and new techniques independently of one another. This ultimately required the abolition of the three-field crop system altogether. This in turn required it to be possible to form closed farms on which the individual farmer could decide on crops and technology without affecting or consulting the rest of the community. Even technological changes that benefit all bring losses to some, and these may include powerful beneficiaries of existing technological practices.⁶³⁶ The strong communal institutions that survived in nineteenth-century Württemberg enabled powerful opponents of disruptive agricultural change to block it in

⁶³³ Hippel (1992), 518.

⁶³⁴ HSAS A573 Bü 95, 10 May 1745, fol. 15r: ‘weil das ackhergehen dabey etlichmal außer der Zeit geschehe’.

⁶³⁵ Hippel (1992), 517-18; Kazmaier (1978), 39, 48.

⁶³⁶ On this phenomenon in modern LDCs, see Basu (1997), esp. chs. 9-12.

many cases, especially where the natural conditions were marginal enough to make innovation risky.

Some scholars have argued that a major reason communal agricultural regulation survived for so long in Württemberg was the partible inheritance system which, by encouraging the fragmentation of landholdings, increased the transaction costs of agreeing to redraw land boundaries so that each farmer had a closed farm on which individuated choice of crops and technology could take place.⁶³⁷ Certainly, landholding in Württemberg was very fragmented, and remained so to a very late date. A survey of 1857 showed that 90 per cent of the Württemberg population owned some land, but only one-third of all those who owned land were full-time farmers. Almost 55 per cent of landholdings were smaller than 1.6 hectares and another 20 per cent lay between 1.6 and 3.2 hectares. Only 9 per cent of holdings were larger than 9.5 hectares.⁶³⁸ As late as 1907, small and medium-sized holdings of 2-20 hectares made up 69 per cent of the agriculturally used land in Württemberg, compared to 43 per cent in the German Empire as a whole. Only 2 per cent of the land in Württemberg was held in large-scale agricultural enterprises, compared to 22 per cent in Germany as a whole.⁶³⁹

Another factor that kept landholding fragmented and prevented the formation of closed and individuated farms was that local communities controlled the alienation of private property. No land could be sold without being offered three times at the church door to community citizens.⁶⁴⁰ Each sale, mortgage and loan was recorded in community 'sales and contract registers' (*Kauf- und Kontraktbücher*), with a note of whether the community court had granted ratification (*Fertigung*). If the court refused ratification, whether to protect the seller from prodigality, to prevent an outsider from purchasing property in the community, or for any other reason, the record in the register was crossed through with the comment 'not ratified' ('nicht

⁶³⁷ Hippel (1992), 518-19.

⁶³⁸ Hippel (1992), 518-19.

⁶³⁹ Hippel (1992), 643.

⁶⁴⁰ See Sabean (1990), 72, 211, 354-6, 425.

gefertigt'), and the sale did not go through.⁶⁴¹ Until 1815, Württemberg land markets were further regulated in favour of community members by community redemption right (*Marklösung*), whereby any land sold to a non-citizen of the community could be forcibly 'redeemed' by a citizen at the original purchase-price within a year and a day of the original sale.⁶⁴² Finally, land markets were regulated by community courts in favour of those with full citizenship: a mere 'by-settler' without community citizenship who bought land in the community could lose it to any citizen who complained.⁶⁴³ Such community regulations allocated land and other property to those possessing institutional privileges, who were not necessarily those with the capital, labour, complementary landholdings, skill, knowledge, or personal incentive to make most productive use of it. Such regulation of land sales also potentially blocked the process of 'engrossment' whereby rich farmers could buy up smallholdings and put them together into large, closed farms on which they could then introduce agricultural innovations independently of their neighbours.

The intense fragmentation of landholdings, sustained both by the inheritance system and by communal regulation of land sales, made it difficult for the citizens of a Württemberg community to reach agreement about redrawing farm boundaries to create closed farms, which would have facilitated a move away from communal regulation of cultivation and hence eased the introduction of more modern crop rotation systems.⁶⁴⁴ In order for a 'Flurbereinigung' (redrawing or rationalization of landholdings) to be undertaken in a Württemberg community,

⁶⁴¹ See the records of sales, exchanges and mortgages of real estate in the Wildberg *Kauf-, Kontrakt- und Fertigungsbücher* (purchase-, contract- and ratification-books), HSAS A573 Bü 4755-4778 (1566-1812) and the accompanying *Kaufprotokolle* (minutes of purchases), HSAS A573 Bü 4779-4797 (1609-1711). For details on why *Fertigung* was refused in some cases, see, for instance, HSAS A573 Bü 23, 16 Jan. 1598, fol. 35v-36r, discussed in Ogilvie (1986), 294-5 (the Wildberg community court refuses *Fertigung* to a young man wishing to sell his house, for fear he will be prodigal with the proceeds and become unable to support himself); HSAS A573 Bü 124, 26 Mar. 1626, fol. 82r (a villager in Efringen who has inherited a second house offers it to the whole community, no-one makes him an offer for it, he sells it to an outsider, *Schultheiß* and village council refuse *Fertigung*, even though the community has reserved the *Marklösung*).

⁶⁴² 'Drittes Landrecht' (1 Jun. 1610), in Reyscher (1828ff), vol. 5, 3-358, here 203-9; 'Königliche General-Verordnung, die Aufhebung der Losungen betr.' (2 Mar. 1815), in *Ibid.*, vol. 7, 446-9. See the discussion in Sabeau (1990), 351-3.

⁶⁴³ See, for instance, HSAS A573 Bü 95, 3 Nov. 1734, fol. 11v (Wildberg cowherd, a by-settler, buys a field but citizen successfully claims right of forced purchase).

⁶⁴⁴ Sabeau (1990), 151-6.

the law required the agreement of over half of all those owning land, representing at least two-thirds of the taxable value of the land.⁶⁴⁵ The nineteenth-century Württemberg state was extremely reluctant to intervene into communal control over land-ownership and cultivation, and left it up to individual communities to decide when (and whether) to rationalize field ownership and move away from the three-field system.

Consequently, land-holding was rationalized and communal regulation of cultivation was abolished at widely differing dates in different Württemberg localities. Certain areas of Upper Swabia which only became part of 'New Württemberg' after 1800 started to rationalize landholding in the eighteenth century, which some scholars ascribe to impartible inheritance which reduced land fragmentation, or to the intervention of 'enlightened' noble landlords, by which these small territories were still being ruled. On the other end of the spectrum, many areas of 'Old Württemberg' did not rationalize landholding until late in the nineteenth century or even early in the twentieth, which scholars ascribe to the partible inheritance system which fragmented holdings, making the transaction costs of negotiating reform prohibitively high.⁶⁴⁶ Our three communities followed the latter pattern. In Wildberg, it was only after 1879 that there was any considerable rationalization of field-ownership.⁶⁴⁷ Ebhausen has yet to be fully investigated, but it is probable that it followed Wildberg. In Auingen, rationalization of field boundaries only began in 1905, much later than in the rest of the district of Münsingen, and was not completed until the 1930s.⁶⁴⁸ In all communities, rationalization always only involved one of the three large open fields (*Zelge*) or even only one strip (*Gewann*) in the three-field system at one time, and various measures were seldom carried out simultaneously.⁶⁴⁹

⁶⁴⁵ Hippel (1992), 655.

⁶⁴⁶ On the contrast between Upper Swabia and Württemberg, and the role played by impartible vs partible inheritance in the 'Flurbereinigungsverfahren', see Hippel (1992), 483.

⁶⁴⁷ Klab (1987), 138.

⁶⁴⁸ Landesarchivdirektion Baden-Württemberg (1997), II:12, 29.

⁶⁴⁹ Landesarchivdirektion Baden-Württemberg (1997), II:12, 29.

Because the Württemberg state left it up to individual communities to decide when to rationalize field ownership and move away from the three-field system, the timing and regional distribution of agricultural reform varied hugely across the country. In some regions, agricultural innovation began before 1850, while in others it cannot be observed until much later. One common indicator of agricultural intensification is the share of fallow in the total arable land. In the 1850s and 1860s, it gradually became easier for Württemberg villages to dissolve communal restrictions on land use. As such restrictions relaxed, the share of fallow declined, falling from 19 per cent in 1852 to 12 per cent in 1869 to only 2.5 per cent in 1913.⁶⁵⁰ The fallow newly released for agricultural uses began to be used for fodder-crops (helping break the vicious cycle of low nitrogenization of the soil) as well as for cash crops (increasing agricultural profits which could be used to invest in further agricultural innovations).⁶⁵¹

In our three communities, agricultural practice appears to have changed even later and more slowly than the Württemberg average. As late as 1862, according to the Royal Statistical Bureau, 97 per cent of the arable land in Wildberg and 100 per cent in Ebhausen was still being cultivated in the three-field system. This was considerably higher than in the rest of the district of Nagold, where the average proportion was 85 per cent. Free choice of cultivation (*willkürliche Wirtschaft*) was non-existent in Ebhausen and vanishingly small in Wildberg, implying that a key ingredient in the agricultural revolution – individual choice of cultivation – had still to be adopted in either community.⁶⁵² The only major improvement to arable cultivation that had taken place in the Wildberg-Ebhausen region before 1862 was a certain amount of cultivation of the fallow with fodder-crops – i.e., a partial introduction of the ‘improved’ three-field system.⁶⁵³ In Wildberg, half the fallow was under cultivation in 1862,

⁶⁵⁰ Hippel (1992), 646.

⁶⁵¹ Hippel (1992), 647.

⁶⁵² Königliches statistisch-topographisches Bureau (1862), 60, 153-4.

⁶⁵³ Königliches statistisch-topographisches Bureau (1862), 263.

with potatoes, clover, field beans, oilseed rape, and vetch,⁶⁵⁴ while in Ebhausen about three-quarters of the fallow was cultivated, with clover, potatoes, and some peas and rape; hemp, flax, and kohlrabi were still cultivated only in garden-like plots.⁶⁵⁵

In the Münsingen-Auingen region, as well, moves away from the three-field system came comparatively late. In 1825, the three-field system was the *best* cultivation system in use in Münsingen and Auingen⁶⁵⁶ In that year, a large share of the local fields were still being cultivated as so-called *Wechselfelder* (literally ‘alternating fields’), which were included in the three-field rotation only for as long as they were productive without manuring, after which they were left completely uncultivated for 9 or more years at a time.⁶⁵⁷ As a result, in the earlier part of the nineteenth century, more than half the agricultural area in the Münsingen-Auingen region was cultivated either not at all or not very intensively, and even the fields that were cultivated in the three-field system were seldom used as efficiently as was possible given contemporary agronomic knowledge.⁶⁵⁸ Not surprisingly, therefore, the productivity of agricultural land in the district of Münsingen was the lowest in all districts of Württemberg in 1825, and the farmers there were numbered among the poorest in the kingdom.⁶⁵⁹

Changes did begin to come to the district of Münsingen after c. 1850, as villages began to rationalize landholding and move away from the three-field system. Although deeper research is needed on Auingen itself, it seems likely that it moved to new cultivation patterns later than neighbouring villages because of the lateness with which it rationalized its field ownership. Nonetheless, the mid-1890s appear to have seen the growth of market-farming in the village to serve the new markets opened up by the railway link together with the building of the

⁶⁵⁴ Königliches statistisch-topographisches Bureau (1862), 263.

⁶⁵⁵ Königliches statistisch-topographisches Bureau (1862), 154.

⁶⁵⁶ Fellmeth (1998), 27-9.

⁶⁵⁷ Fellmeth (1998), 27-9.

⁶⁵⁸ Fellmeth (1998), 29; Memminger (1825), 80.

⁶⁵⁹ Fellmeth (1998), 29; Memminger (1825), 69.

military encampment in 1896.⁶⁶⁰ By the end of the nineteenth century, harvest yields in the Münsingen-Auingen region, while unimpressive by European standards, had nonetheless improved and lay more or less around the average for Württemberg as a whole.⁶⁶¹ By 1912, as a consequence both of improvements in agriculture and the influence of the military encampment, Auingen was described as having higher servants' wages than elsewhere in the district, a scarcity of agricultural labour (mainly because of better work opportunities in the encampment), and the complete disappearance of the previously customary seasonal emigration of Auingen inhabitants at harvest-time into the areas around Biberach (49 km away to the south-south-east) and Augsburg (121 km away to the west).

Fertilization practices were another component of the agricultural revolution, as we saw in Figure 3. In Württemberg as a whole, chemical fertilizers only began to be widespread in the final quarter of the nineteenth century.⁶⁶² In 1862, better fertilizing practices were beginning to be introduced in the district of Nagold 'by good example', but it appears that at that period farmers in the region were still widely using old types of fertilizer such as gypsum, salt clay, ashes, compost, wool clippings, lime and potash, and even the burning of fields.⁶⁶³ Wildberg itself is described as engaging in 1862 in manuring to improve the arable land, although the benefits were often negated by the fact that on the steep slopes strong rain swept the manure away.⁶⁶⁴ Less is known about fertilization practices in the Münsingen-Auingen region, except for the observation in 1825 that few even of the most intensively cultivated fields in the district of Münsingen were ever manured. At what date intensive manuring was introduced in Auingen region is a matter for further research, but insofar as it was interdependent with moving away from the three-field system it seems likely to have come quite late, given that village's lateness in rationalizing its field boundaries.⁶⁶⁵

⁶⁶⁰ Deigendesch (1998), 83-8; Landesarchivdirektion Baden-Württemberg (1997), II:29.

⁶⁶¹ Fellmeth (1998), 34.

⁶⁶² Hippel (1992), 649.

⁶⁶³ Königliches statistisch-topographisches Bureau (1862), 59, 153.

⁶⁶⁴ Königliches statistisch-topographisches Bureau (1862), 263.

⁶⁶⁵ Fellmeth (1998), 27-9.

A final benchmark of change in arable cultivation is the adoption of improved equipment, particularly lighter ploughs. In the district of Münsingen, around 1800 the heavy ‘Jura-plough’ still predominated, which prevented ploughing from being adapted to the characteristics of the soil, and required 3-4 draft animals and 2-3 driving-lads in addition to the ploughman, thereby keeping arable agriculture very labour-intensive and preventing the introduction of new crops needing more careful ploughing.⁶⁶⁶ By the 1860s, modernized ploughs had only just been introduced in about two-thirds of Württemberg, and that had only taken place in the teeth of ‘the 20-year-long resistance of the peasantry’.⁶⁶⁷ It seems likely that the peasantry had rational reasons for such resistance – perhaps the reflection that there was little point in investing in new pieces of capital equipment if it was not possible to introduce agricultural innovations to cover the costs. In this respect, the Wildberg-Ebhausen region appears to have been fairly advanced, since it was described as using modern improved ploughs by the 1860s.⁶⁶⁸ In 1862 the Royal Statistical Bureau described ‘improved cultivating tools, such as Flanders-, Brabant- and the new turning-ploughs, iron harrows, simple yokes, etc.’ as having become quite general in the district, including in Wildberg and Ebhausen.⁶⁶⁹

Overall, historians have tended to conclude that it was not until after 1850 that arable cultivation changed greatly in most parts of Württemberg.⁶⁷⁰ Agricultural improvement showed significant regional variations, however. Some regions produced arable surpluses: the impartible regions in the north-east and east of Upper Swabia, and the ‘New Württemberg’ areas of the Swabian Jura. But other regions – particularly in ‘Old Württemberg’, where partible inheritance dominated – were capable only of producing enough grain to feed their own populations or were even reliant on imports until quite late in the nineteenth century.⁶⁷¹

⁶⁶⁶ Fellmeth (1998), 28.

⁶⁶⁷ Quotation from Hippel (1992), 649.

⁶⁶⁸ Königliches statistisch-topographisches Bureau (1862), 263.

⁶⁶⁹ Königliches statistisch-topographisches Bureau (1862), 58-9, 153, 163.

⁶⁷⁰ Hippel (1992), 482-4, 502-04, 515-33, 641-61.

⁶⁷¹ Hippel (1992), 517.

Our three project communities were included in these zones of much lower arable productivity in which cultivation improved only relatively late.

7.4.3. Communal Regulation of Pastoral Production

One-third of the land area of Württemberg in 1840 was pastoral. How this land could be used was also affected by institutional factors, particularly the communal regulation of pasture and meadowland.⁶⁷² Community property constituted an economic ‘rent’ for citizens or particular sub-groups of citizens by virtue of their monopoly over access to it, and was defended against outsiders, whether these were ‘by-settlers’, younger citizens, remarrying widows, or members of other communities.⁶⁷³

On the one hand, community regulations could protect common resources against over-exploitation and the ‘tragedy of the commons’. On the other, such regulations could have the unintended consequence of blocking agricultural change. To give just one example from our project communities, in 1796 when the inhabitants of the village of Effringen near Wildberg petitioned for ducal permission to divide up and ‘privatize’ their common lands, the Wildberg community council sent in ‘a protest, in the name of the town, against all dividing-up of village fields, common lands, and woods’, on the grounds that Wildberg and Effringen had common

⁶⁷² According to Hippel (1977), vol. I, 66 with note 32, as late as the twentieth century in the Black Forest and Neckar region (where the district of Wildberg was located) commonlands made up between 17 and 28 per cent of the total land area.

⁶⁷³ See, for instance, HSAS A573 Bü 101, 13 Jan. 1752, fol. 4v (village citizen of Gültlingen complains publicly that village-fields should be allocated more equally, court orders that once current tenures on plots have run out, village-fields shall be redistributed); HSAS A573 Bü 95, 14 Dec. 1752, fol. 32r (Wildberg *Beisitzer* applies for plot of commonland, is refused on grounds that it will obstruct cattle-herding); HSAS A573 Bü 95, 2 Jan. 1784, fol. 7r (all young citizens are told to plant two trees on commonlands within year on pain of fining, field inspectors to monitor compliance); HSAS A573 Bü 99, 1785 (exact date illegible), fol. 30v-31r (Wildberg citizen complains that there are citizens and widows who are free of citizen’s-tax on account of poverty, who receive poor relief, or who are working as servants in neighbouring villages, but nevertheless enjoy citizens’ commonlands, the court investigates); HSAS A573 Bü 99, 1785, fol. 46r-v (young citizen married a widow four years ago complains that her plot of commonland has been taken away from him, court tells him commonland plots cannot be retained by widows on remarriage, he must wait his turn among young citizens).

pasturage rights, and it was in the interest of Wildberg ‘that the common lands in Effringen and other places shall not be changed out of their present condition’.⁶⁷⁴

Similar resistance can be observed in many other Württemberg local studies. In Metzingen, for instance, a village on the Swabian Jura about 25 km from Auingen, the eighteenth century saw continual pressure from smallholders and day-labourers for the enclosure and division of the village commons, but without success: ‘the main obstacle was the hostile attitude of the communal authorities and better-off farmers, who regarded the granting of commons-plots as “a threat to the maintenance of the common pasturing”’.⁶⁷⁵ Some commons-plots began to be enclosed and distributed between 1800 and 1820, but it was not until the mid-nineteenth century that Metzingen saw a general transition from common pasturage to enclosure of the commons and stall-feeding, measures which according to an inspection report of 1865 ‘noticeably increased harvest yields’ – testimony to the positive repercussions of pastoral reform for the arable side of the agricultural system.⁶⁷⁶

Enclosure of common pastures and their division among separate owners continued to be regarded as a particularly difficult issue by Württemberg agricultural reformers throughout the nineteenth century. Because enclosing commons was so explosive in socio-political terms, Württemberg law left it up to local communities themselves to decide whether to do it. Some communities began doing it in the later eighteenth century, while others did not do so until the later nineteenth or even the twentieth.⁶⁷⁷ It was not until 1873 that national legislation laid down the amount of restitution that had to be offered, and not until 1900 that it envisaged the abolition of common pastures altogether. As a result, common pastures remained very widespread.⁶⁷⁸ In

⁶⁷⁴ HSAS A573 Bü 62, 15 Feb. 1796, fol. 70r-v: ‘da aber die Stadt und Effringen das Jus Compascui haben und der Stadt daran zelegen, daß die Allmand zu Effringen und andere [c.o.: der] Plätze [c.o.: in] [ins.: aus] ihrem gegenwärtigen Zustand nicht gesetzt werden wird resolvirt gegen alle Austheilung [c.o.: zu] von fleken güthern, [ins.: an] Allmand und Waldungen Nahmens der Stadt Protestation einzulegen’.

⁶⁷⁵ Kazmaier (1978), 43: ‘Gefahr für die Aufrechterhaltung des allgemeinen Weidgangs’.

⁶⁷⁶ Kazmaier (1978), 45: ‘die Ernteerträge merklich zu steigern’.

⁶⁷⁷ For some examples from the later eighteenth century, see Kazmaier (1978), 40.

⁶⁷⁸ Hippel (1992), 654.

law, local communities retained almost complete autonomy over use and allocation of their common lands to the end of the nineteenth century.⁶⁷⁹

This meant that those aspects of the agricultural revolution that relied on the cultivation of fodder crops, the transition to stall-feeding of animals, and the consequent increase in the collection of manure that could be used to improve the productivity of arable cultivation, all depended on how each Württemberg community decided to regulate use of pasture.

In Münsingen and Auingen, only 5 per cent of the fallow was being cultivated with fodder-crops, vegetables, or industrial crops in 1825.⁶⁸⁰ Despite the fact that Münsingen and Auingen allocated much more of their land to pastoral than to arable cultivation, the number of livestock raised there by the second quarter of the nineteenth century was not at the level that corresponded with contemporary technology, even by Württemberg's fairly modest standards.⁶⁸¹ It was not until the mid-nineteenth century that most of the villages in the district of Münsingen began to show signs of transformation of meadows into arable fields,⁶⁸² cultivation of the fallow with fodder and industrial crops (flax, hemp, linseed, rape, potatoes),⁶⁸³ improvements in manuring,⁶⁸⁴ and stall-feeding.⁶⁸⁵ To Auingen itself, the decisive change came in 1872, with the dividing-up of the 83.5 hectares of village commons, which was described forty years later as having 'exercised a very favourable influence on the economic situation'.⁶⁸⁶ In 1906, the distributed commons in Auingen were expanded by the

⁶⁷⁹ Hippel (1992), 530-1. For illustrative legislation, see 'Erlaß des Ministeriums des Innern an die vier Kreis-Regierungen, die Vertheilung und Benützung der Allmanden betreffend' (18 Oct. 1821), in Reyscher (1828ff), vol. 15.2, 45-6; 'Revidirtes Gesetz über das Gemeinde- Bürger- und Beisitzrecht' (4 Dez 1833), in *Ibid.*, 15.2, 1064-90, here art. 53. See also the discussion in Sabeian (1990), 6, 40, 50; Kaschuba and Lipp (1979), 20-1.

⁶⁸⁰ Fellmeth (1998), 27-9.

⁶⁸¹ Fellmeth (1998), 29; Memminger (1825), 80.

⁶⁸² Landesarchivdirektion Baden-Württemberg (1997), II:28.

⁶⁸³ Landesarchivdirektion Baden-Württemberg (1997), II:28.

⁶⁸⁴ Landesarchivdirektion Baden-Württemberg (1997), II:28; Fellmeth (1998), 29.

⁶⁸⁵ Landesarchivdirektion Baden-Württemberg (1997), II:28.

⁶⁸⁶ Königliches statistisches Landesamt (1912), 572.

abolition of the communal sheep-pasturing, which brought even more land into individual cultivation.⁶⁸⁷

In the district of Nagold, including Wildberg and Ebhausen, fodder crops and stall feeding were still spotty as late as the 1860s. Fodder yields from grass pastures and clover cultivation were sufficient for stall-feeding of larger numbers of beef cattle in some localities, particularly in the valley of the Nagold River itself. However, the other localities, especially the more forested, did not have enough fodder to keep enough cattle for manuring and were still driving cows out to pasture in the old style.⁶⁸⁸ Cultivation of artificial fodder crops was described as still unimportant in the Wildberg-Ebhausen region in the 1860s.⁶⁸⁹

For Württemberg in general, it was only in the post-1850 period that widespread improvement in pastoral production began to be observed, and even then it was regionally various. Thus the lowland areas of central Württemberg ('Württembergisches Unterland') and Hohenlohe showed distinct signs of pastoral improvement as early as 1850. But these contrasted with some extremely backward regions, which included the Black Forest, the Swabian Jura, Upper Swabia, and the Odenwald.⁶⁹⁰ Our three project communities, located as they were in the Black Forest and Swabian Jura, were thus in zones of Württemberg known to have been characterized by pastoral backwardness until well after 1850. It was not until the 1870s that pastoral innovation became highly visible in these more backward zones of the country.⁶⁹¹

7.5. Potential Effects of Agriculture on Demographic Behaviour

Agriculture has a number of potential implications for demographic behaviour. For one thing, Württemberg had had a strictly partible inheritance system since the late Middle Ages.

⁶⁸⁷ Königliches statistisches Landesamt (1912), 573.

⁶⁸⁸ Königliches statistisch-topographisches Bureau (1862), 58.

⁶⁸⁹ Königliches statistisch-topographisches Bureau (1862), 58.

⁶⁹⁰ Hippel (1992), 515-16.

⁶⁹¹ Hippel (1992), 641.

Inheritance rules, enshrined in the territorial law-code, required parents' property to be divided equally among all offspring, including daughters. The typical pattern of landholding resulting from the Württemberg partible inheritance system was for a particular individual or household to own scattered plots throughout the entire village land area. A large percentage of the inhabitants owned land, but often too little of it to live wholly from agriculture. About 5 hectares is the minimum required to support a family wholly from agriculture, but in Württemberg small peasant holdings of 2-5 hectares and fragmented smallholdings of 0.5-2 hectares were typical.⁶⁹² As a result, by the end of the eighteenth century, it is estimated that about 70 per cent of all farming families in Württemberg owned too little land to live entirely from agriculture and were therefore at least partly dependent on non-agricultural by-employments.⁶⁹³

Numerous claims have been advanced about how inheritance affects fertility, but few of them have been coherently formulated as theoretical hypotheses or confronted systematically with empirical findings. It was traditionally argued that the partible practice, by which everyone inherited some land, encouraged everyone to marry and have children of their own, thereby increasing fertility.⁶⁹⁴ However, in places and periods in which permission to marry was institutionally regulated by communities or the government (as we have seen was the case in Württemberg), people who did not inherit enough land to form a family were not permitted to marry and had an incentive to emigrate.⁶⁹⁵ In such places and periods, land fragmentation might have *reduced* fertility, at least among the offspring of the poor. Furthermore, knowing that family land would have to be divided among all offspring could have created an incentive for couples in possession of a particular size of farm, that was at the optimal scale for the

⁶⁹² Naujoks (1982), 185.

⁶⁹³ Hippel (1992), 483; Henning (1969), 172.

⁶⁹⁴ One of the most well-known versions of this argument, relating specifically to Württemberg, is in List (1842). For a cogent criticism of this view for Baden, the neighbouring territory to Württemberg, see Fertig (2000).

⁶⁹⁵ For a thoughtful consideration of how partibility and impartibility affected incentives to emigrate, especially in nineteenth-century Germany, see Wegge (1999), 30-4.

prevailing technology, to marry late and limit fertility within marriage.⁶⁹⁶ A small average size of landholdings might have made it easier for a widow to continue in operation after her husband died, instead of having to remarry; this would have reduced fertility.⁶⁹⁷ After 1870, when agriculture in Württemberg became more capital-intensive, the optimal size of farm probably increased; this could have created an incentive to keep marital fertility low so as to reduce farm divisions. Diametrically opposed hypotheses have therefore been advanced concerning the effect of partible inheritance on fertility in the south-west German context, and careful empirical work will be required in order to explore these theories under the changing socio-economic conditions that prevailed between the mid-sixteenth and the early twentieth century.

Agricultural development may also lead to changes in the demand for labour from women (reducing fertility) or children (increasing it).⁶⁹⁸ However, analyses of female work for the early modern period show that Württemberg women were already very active in agriculture long before any agricultural revolution. This would suggest that any demand for female labour created by the agricultural revolution – whenever it occurred – may not have constituted any major discontinuity compared to the preceding period.⁶⁹⁹ In any case, since agricultural growth came to our three communities only in the later nineteenth century, any impact it might have on fertility would also only have set in at that period.⁷⁰⁰

A shift from labour-intensive to capital- or land-intensive agricultural techniques may decrease the demand for child labour, decreasing fertility. In the early nineteenth century, all three communities studied here were still employing very labour-intensive techniques,

⁶⁹⁶ On the theoretical effects of the inheritance system on incentives affecting age and marriage and fertility choices in nineteenth-century Germany, see Wegge (1999), 35.

⁶⁹⁷ For a discussion of how widow remarriage was less widespread on smaller landholdings, see Ogilvie / Edwards (2000).

⁶⁹⁸ Sabeian (1990).

⁶⁹⁹ See the results reported in Ogilvie (2003), 115-28, 141-52, 207-17, 228-30, 272-95, 310-24.

⁷⁰⁰ Hippel (1992), 642, 645, dates the growth of female labour force participation in agriculture in Württemberg to the period after c. 1880.

including heavy ploughs that required young herders to lead the team, and year-round pasturage which required children for herding. Not until heavy ploughs were replaced with lighter modern ones and pasturing replaced by stall-feeding would one expect demand for child labour to fall. In the three communities under analysis here, these developments only occurred after the mid-nineteenth century.

A final effect of agriculture on fertility relates to the shift from arable to pastoral production. We know that there was a general shift from arable to pastoral production in Württemberg after the 1870s because of competition from lower-priced Russian and American grain which could now be traded cheaply across much longer distances because of railroads.⁷⁰¹ Pastoral production is believed to increase the demand for child labour, unless stall-feeding is used. The relatively late coming of stall-feeding to our communities – after c. 1850 – may have sustained a demand for child labour. However, pastoral production also increases the labour productivity of females, who are more productive at caring for animals and doing dairy work than they are at the heavier labour of arable production. The female-male wage ratio for day-labourers in Münsingen and Auingen appears to have increased from 0.53 in 1884 to 0.67 in 1909, just at the period when pastoral agriculture was expanding at the expense of arable.⁷⁰² Pastoral agriculture tends to increase the opportunity cost of women's time, thereby reducing fertility both by delaying marriage and decreasing fertility inside marriage. For these reasons we should expect a shift to pastoral production in the later nineteenth century to have reduced fertility.

8. Industry

The combination of partible inheritance and low agricultural productivity in Württemberg encouraged involvement in industry from a very early date, and by the nineteenth century

⁷⁰¹ Pierenkemper / Tilly (2004), 81-6; Hippel (1992), 647.

⁷⁰² Deigendesch (1998), 88.

Württemberg was accounted to have one of the highest densities of industrial occupations per head of population of any territory in Germany. Many of the industrial occupations pursued in Württemberg were traditional crafts, carried out by scattered producers in towns and villages to address demand within a single locality or, at most, within a small local region.

Besides these locally oriented crafts, however, there were export-oriented 'proto-industries' which formed much denser agglomerations. Württemberg had two major proto-industries, and these were represented in all three of the communities studied here, as we saw in Section 6. First, there was the worsted proto-industry of the Württemberg Black Forest of which, as we have seen, Wildberg and Ebhausen were important centres. Second, there was the linen proto-industry of the Swabian Jura, which was centred around Urach and Laichingen from the later seventeenth century on, but of which Auingen became a significant centre between 1750 and 1850.

Although Württemberg was richly endowed with craft workshops and proto-industries from an early date, it was very late in developing a third type of industry – mechanized manufacturing carried out in centralized 'manufactories' or 'factories'. It was not until the second half of the nineteenth century that Württemberg began to experience factory industrialization in more than a few scattered locations. A few such centralized industrial production units did arise in or near our three communities, but only late and to a limited degree.

8.1. Wool Textiles: Woollens and Worsteds

The wool textile industry was the earliest and for a long time the most important proto-industry in Württemberg, and its epicentre lay in the Nagold Valley. Wildberg and Ebhausen developed export-oriented wool textile proto-industries in the late medieval or early modern period, as we have seen, and continued to have them well into the nineteenth century.

The early development of wool textile production in the Nagold Valley, which reaches back into the medieval period, was probably favoured by two natural endowments. First, there was the proximity of the upper Nagold Valley to the sheep-raising industry on the neighbouring Heckengäu, which provided a basic raw material for the weaving of wool textiles. This may have been important for the rise of the woollen broadcloth industry in the Nagold Valley in the late medieval period, but by the early modern period the industry had outgrown nearby sources of raw wool, and was importing it from much further afield.⁷⁰³ The second natural endowment was the Nagold River itself, which provided the energy needs and water supply for fulling mills and dyeing shops.⁷⁰⁴

As we have seen, Wildberg developed a vigorous woollen broadcloth industry in the late medieval period, followed by an even more vigorous worsted industry from the later sixteenth century on. At times in the seventeenth and eighteenth century, more than one-third of all Württemberg wool-textile-weavers are estimated to have lived in the upper Nagold Valley, and Wildberg and Ebhausen were two of the major centres of this industry.⁷⁰⁵ The only other remotely equivalent concentration of textile producers was in the linen region of the Swabian Jura, of which Auingen became a part in the later eighteenth century.⁷⁰⁶

The first export-oriented wool textile industry to arise in the Nagold Valley was the weaving of woollen broadcloths – a type of textile which was termed ‘Tuch’ in local usage. This was a heavy, relatively high-quality and long-lasting cloth, made from carded wool and fulled to produce a heavy, felted finish. A number of names of hills, lanes, and farms in and around Wildberg contain the words ‘Tuch’ (woollen cloth) and ‘Färber’ (dyer), testifying to the long

⁷⁰³ Flik (1985), 169.

⁷⁰⁴ Flik (1985), 169.

⁷⁰⁵ Flik (1985), 169.

⁷⁰⁶ Flik (1985), 170.

existence of textile industry in the town.⁷⁰⁷ At latest by 1486, the woollen-broadcloth-weavers (*Tuchmacher*) of Wildberg were issued with their own guild ordinance, and appear to have had a guild selling-room in or near the Wildberg town hall.⁷⁰⁸ By that date, Wildberg was already exporting its broadcloths outside the region, at least as far afield as periodic markets in Stuttgart. It was also organizing the inspection and marketing of cloths from surrounding villages, which may well have included Ebhausen, since the village later became the major rural weaving centre in the region.⁷⁰⁹

The woollen broadcloth industry in Wildberg continued to flourish throughout the sixteenth century and by c. 1620, there were 30-40 woollen-broadcloth weavers fulling their cloths in the Wildberg fulling-mill, accounting for perhaps 10 per cent of household heads in the town.⁷¹⁰ In 1634, before the Imperial invasion of Württemberg, there were still around 30. But by 1646, the woollen-weavers' guild numbered only 8 members, and woollen-broadcloth-weaving would never again be a significant industry in the town.⁷¹¹ Nonetheless there were always several woollen broadcloth weavers active in Wildberg throughout the eighteenth and early nineteenth centuries: one in 1668-9,⁷¹² six (with two more jointly practising woollen- and worsted-weaving) in 1711,⁷¹³ two (with three more who had learnt the craft but were working as wool-combers for the worsted craft) in 1717,⁷¹⁴ five in 1744,⁷¹⁵ fourteen in 1808,⁷¹⁶ and seventeen in 1819.⁷¹⁷ Even at its height in the early seventeenth century, however, the woollen-broadcloth proto-industry was never as important as the worsted proto-

⁷⁰⁷ Klab (1987), 133.

⁷⁰⁸ Klab (1987), 133.

⁷⁰⁹ On the early woollen-broadcloth industry in the Wildberg region, see Troeltsch (1897), 3, 6-8; Ogilvie (1997), 86-9; Mone (1858), 147ff.

⁷¹⁰ For numbers of woollen-weavers paying fulling fees in 1619 and 1620, see HSAS A573 Bü. 927, 24.6.1619-24.6.1620 (Walkrechnungen des Tucherhandwerks).

⁷¹¹ For comparison of the numbers of woollen-weavers before the invasion and in 1646, see HSAS A573 Bü. 129, 19.3.1646, fol. 8v.

⁷¹² HSAS A573 Bü. 7127 (Joseph Schütz, aged 33).

⁷¹³ HSAS A573 Bü. 5415.

⁷¹⁴ HSAS A573 Bü. 6965 (Seelenregister 1717).

⁷¹⁵ PAW, Kirchenbücher, Bd. 18 (Kommunikantenregister 1744).

⁷¹⁶ HSAS A573 Bü. 7014 (Seelentabelle 1808).

⁷¹⁷ HSAS A573 Bü. 7015 (Seelentabelle 1819).

industry which began to supplant it from the later sixteenth century on and soon far surpassed it.

It was in the 1560s or 1570s that the region around Wildberg saw the rise of new wool textiles called 'Zeuge' – worsteds or New Draperies – which were lighter than woollen broadcloths and more susceptible to being dyed and finished in a variety of ways to suit changing fashions. This industry grew much faster than the old broadcloth industry, and ultimately exported its products to markets throughout southern, eastern and central Europe.⁷¹⁸ The techniques of making worsteds were easy to learn and the set-up costs were low. Thus in the seventeenth century a normal worsted loom cost only 7 Gulden, a sum which could be earned by a weaver in just two months.⁷¹⁹ According to contemporaries, one could learn wool-combing and worsted-weaving in a few weeks.

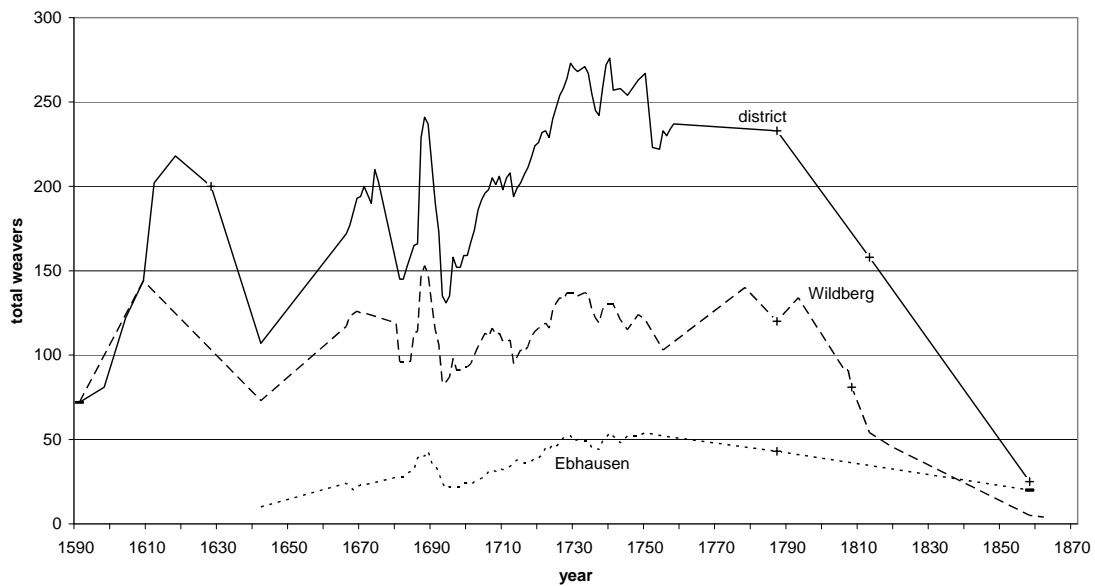
The worsted-weavers of the district of Wildberg, which already included some village weavers, formed their own guild in 1597. Low costs and rising demand meant that despite guild attempts to control entry and output, the industry continued to grow by leaps and bounds until the Thirty Years War cut off access to export markets.⁷²⁰ This is reflected in the explosive growth in weaver numbers in these early years, shown in Figure 4. By around 1630 there were over 200 weavers practising in the district of Wildberg, over 150 in the town itself. The other 50 practised in the 10 villages of the district, although no separate figures are available specifically for Ebhausen at this early date. The Imperial invasion of 1634, however, combined with other war-induced disruptions to trade routes, spelt disaster for the worsted proto-industry just as it did for the economy at large. By 1642, the number of worsted-weavers had fallen by over 50 per cent, with only 107 weavers in the entire district, of which 73 were in the town of Wildberg and 10 in the village of Ebhausen.

⁷¹⁸ Troeltsch (1897); Ogilvie (1997); Flik (1985), 170-1; Staudenmeyer (1972), 104-5.

⁷¹⁹ Flik (1985), 170,

⁷²⁰ Klab (1987), 135-7; Ogilvie (1997); Troeltsch (1897).

Figure 4:
Total Worsted-Weavers in Wildberg, Ebhausen, and the Whole District, 1590-1862



Sources: HStAS A573 Bü. 777-911 (1598-1647, 1666-1760); Troeltsch (1897), pp. 10, 17, 22, 40-1, 78, 103-5, 107-8, 176, 183, 209-10, 253-5, 282, 293-4, 298, 306, 310, 314, 334, 336-8, 383, 387, 392.

For the first few generations after the worsted industry arose, the weavers were free to sell their cloths wherever they liked and to participate in the export-trade as well. But from the 1620s on, the merchant-dyers of the neighbouring district town of Calw (19 km from Wildberg) formed a series of associations which sought to cartelize the dyeing and export of worsteds. These early merchant associations were short-lived and did not succeed in establishing an effective cartel. This left the weavers free to go on visiting trade fairs on their own behalf and to continue selling locally to a variegated and competitive group of merchants and small-scale traders. But in 1650, as already discussed in Section 4.3, a group of merchant-dyers in Calw succeeded in obtaining a state charter which obliged all worsted-weavers within the surrounding region (including Wildberg and Ebhausen) to sell exclusively to members of the newly formed Calw Worsted Trading Association (Calwer Zeughandlungskompagnie), at prices supposedly reached through collective negotiation but actually determined largely by the merchants.⁷²¹ The region within which all worsted-weavers

⁷²¹ Troeltsch (1897); Ogilvie (1997); Staudenmeyer (1972), esp. 104-06.

Map 11:
The Area of the Calwer Moderation, 1650 – 1797

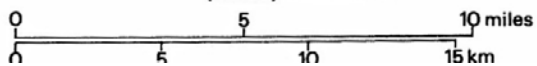


Wildberg The most important worsted-weaving communities in the Calwer Moderation
Altbulach Communities with at least some worsted-weavers selling cloths to the Calwer Zeughandlungskompagnie
Bebenhausen Communities without worsted-weavers (included for orientation)
Pforzheim, Horb Non-Württemberg communities (some with worsted-weavers selling cloths to the Calwer Zeughandlungskompagnie)

The numbers refer to the old *Ämter* (Württemberg administrative districts), as follows:

- | | | | |
|---------------|-----------------|----------------|---|
| 1. Calw | 5. Altensteig | 9. Hirsau | 13. Leonberg |
| 2. Zavelstein | 6. Herrenberg | 10. Liebenzell | 14. Bebenhausen |
| 3. Wildberg | 7. Böblingen | 11. Merklingen | 15. Tübingen |
| 4. Nagold | 8. Sindelfingen | 12. Heimsheim | 16. Communities and estates of the princely <i>Rentkammer</i> |

- District towns === Roads
 • Villages
 ● Non-Württemberg towns



Source: Troeltsch (1897), facing p. 80.

were obliged to sell to the Calw Association was called the *Calwer Moderation* and, as Map 11 illustrates, included Wildberg and Ebhausen alongside a large number of villages and small towns across a geographical area amounting to one-ninth of the total land area of Württemberg.

The Calw merchant association retained its state monopoly over most aspects of the worsted export trade for nearly one and a half centuries, from 1650 to 1797. During this period, participation in the industry, input markets, technology, output, and prices were regulated through the interplay between the monopolistic privileges of the guilded weavers and those of the merchant-dyers' association. This created a dense but impoverished population of weavers, and an even larger pool of exploited female spinners whose piece-rates were capped by the guild organizations of the weavers, dyers, and merchants.⁷²² In 1764, one author of a book of advice to the Württemberg state on how to encourage national manufacturing described the proto-industrial wool textile workers of the Wildberg-Ebhausen region as being 'hapless hybrids between peasants, craftsmen and day-labourers'.⁷²³ In 1778, a district-level princely bureaucrat in a letter to the government claimed that even street-beggars were better off than the weavers of the Calwer Moderation. The weavers of Wildberg in particular, where almost half the population depended on worsted-weaving, were among the poorest in the Duchy.⁷²⁴ The later seventeenth and entirety of the eighteenth century were marked by continual conflict between the guilds of the worsted-weavers and the Calw merchant association. The industry stagnated, as the privileges of both groups prevented the industry from responding flexibly to changes in technology and consumer demand.⁷²⁵

⁷²² Troeltsch (1897); Ogilvie (1997); Staudenmeyer (1972). On the position of the spinners, see esp. Ogilvie (1990); Ogilvie (2003), ch. 6.

⁷²³ Quoted in Flik (1985), 172: 'unglückselige Mitteldinge zwischen Bauern, Handwerkern und Tagelöhnern'.

⁷²⁴ Flik (1985), 171.

⁷²⁵ For the analysis behind this assessment, see Ogilvie (2004).

Meanwhile, external competition was gradually reducing the industry's capacity to survive. The death knell struck in the 1790s, when the French Revolutionary wars cut the Nagold Valley off from crucial export-markets. The trade collapsed and in 1797, the Calw merchant association voluntarily dissolved itself, no longer interested in continuing to invest in retaining or expanding monopoly rents over an industry that its own actions had rendered unable to survive an external shock.⁷²⁶

As Figure 4 shows, after the Thirty Years War the number of weavers in Wildberg never recovered its pre-war level except for very briefly in the late 1680s. Instead, weaver numbers stagnated at between 100 and 150 weavers throughout the eighteenth century, before entering into a precipitous decline in the 1790s. The number of weavers in Ebhausen increased to around 40 by the late 1680s, but was hard hit by the French invasions of the late 1680s, and collapsed in the early 1690s. During the first decades of the eighteenth century, the number of weavers in Ebhausen recovered gradually. Around 1730 it reached a plateau of c. 50 weavers, which it maintained for the rest of the century. After the dissolution of the Calw merchant association in 1797, the number of weavers in Ebhausen declined much more gently than was the case in Wildberg for at least two generations. But after 1850, as shown by the occupational designations in its parish registers, worsted-weaving in Ebhausen followed the earlier collapse in Wildberg and never recovered.

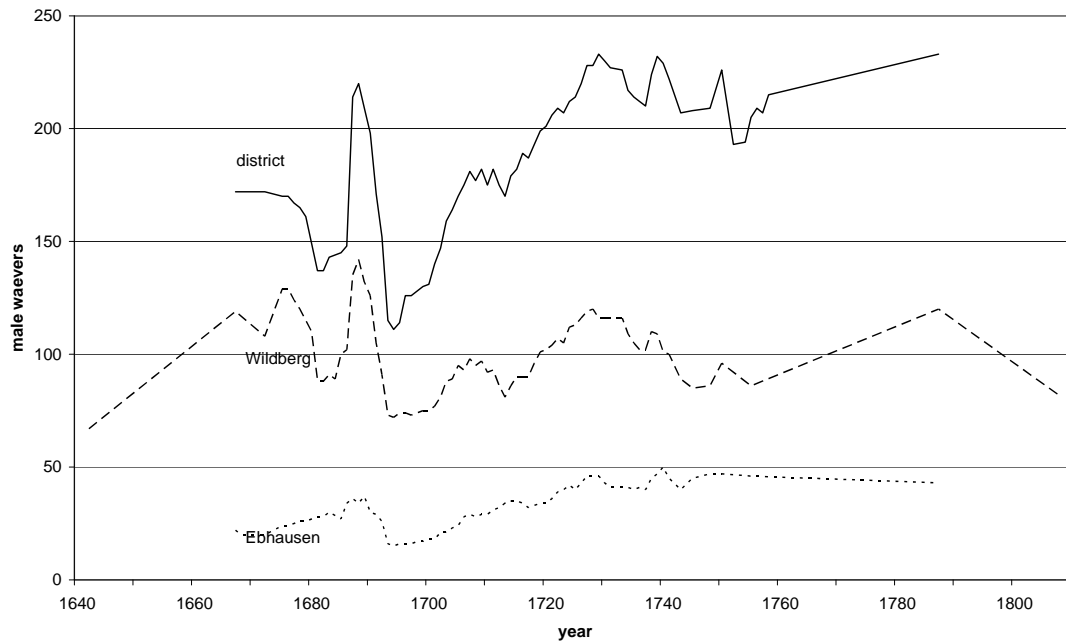
The majority of worsted-weavers were male, as Figure 5 shows. This was not because women's work was not important. The industry employed thousands of spinners and ancillary workers, the vast majority of which were female.⁷²⁷ Rather, it was because the worsted-weavers' guilds only permitted males to become apprentices, journeymen, and masters, and thus to operate weaving workshops.⁷²⁸ The guild did permit a master's widow to continue a

⁷²⁶ See the detailed account of the industry in Troeltsch (1897); and Ogilvie (1997).

⁷²⁷ See the discussion of women's work in this industry in Ogilvie (2003).

⁷²⁸ For a detailed analysis of the gender discrimination exercised by Württemberg craft and proto-industrial guilds, see Ogilvie (2003).

Figure 5:
Male Worsted-Weavers in Wildberg, Ebhausen, and the Whole District, 1640-1810



Sources: As for Figure 4.

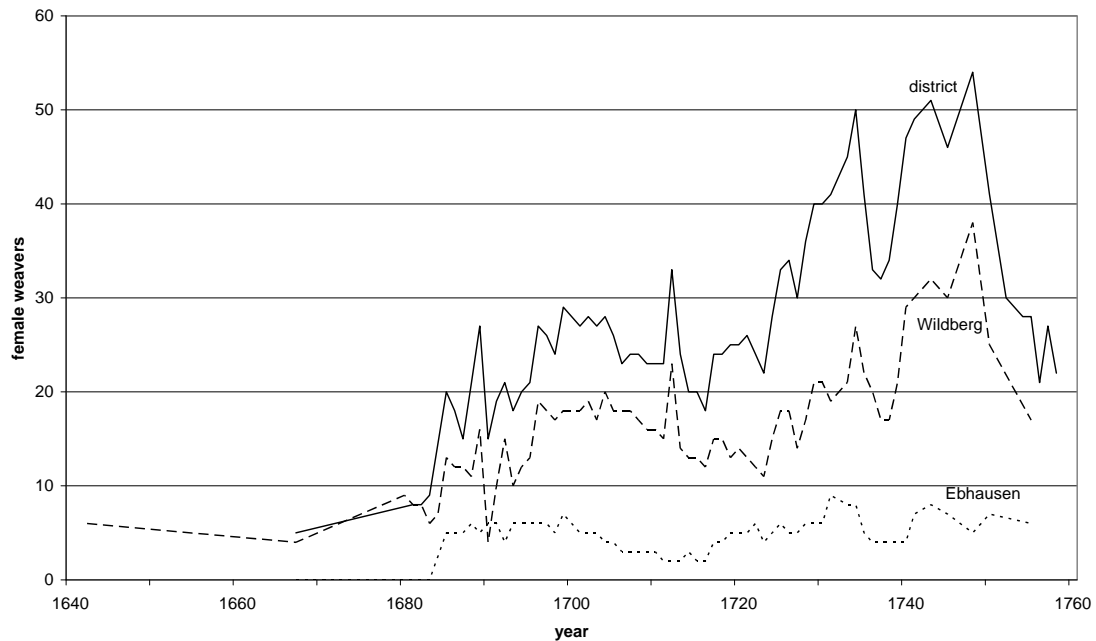
workshop after her husband died, although with a restricted output quota and no right to employ apprentices. Such widows could be quite numerous, as Figure 6 shows. They were more common in the town of Wildberg (where they operated about 14 per cent of worsted workshops in the eighteenth century) than in the village of Ebhausen (where they operated only about 10 per cent of workshops), but the difference in the proportions is not statistically significant.⁷²⁹ Proto-industry thus opened up opportunities for women’s work in both town and village, although full participation was reserved for widows of guild masters.

The serious decline in the number of worsted weavers experienced by Wildberg and Ebhausen in the first half of the nineteenth century was part of a wider decline in this industry across the wider region.⁷³⁰ This was not because local worsted-weavers were being put out of business by factories, since in wool textiles handloom-weaving remained competitive with

⁷²⁹ In a test of difference between proportions, it is not significant even at the 10% level.

⁷³⁰ Flik (1985), 172.

Figure 6:
Female Worsted-Weavers in Wildberg, Ebhausen, and the Whole District, 1640-1760



Sources: As for Figure 4.

factory-weaving in Württemberg into the later nineteenth century. As late as 1850, Württemberg still had very few mechanical woollen looms.⁷³¹ The causes must be sought, rather, in the handloom producers' failure to adjust to changes in market demand. The worsted proto-industry had always produced cloths of quite low quality, but in their heyday they had been cheap and fashionable. By the 1820s they were being described as 'antiquated', and as failing to adjust to the alternative attractions of cotton.⁷³² The crisis worsened after the German Customs Union of 1834, which opened up Württemberg markets to competition from other German textile regions, particularly in Saxony and Prussia.⁷³³ In 1840-7, a state inquiry found that the branches of industry in Württemberg with by far the highest bankruptcy rates were woollen-weaving (at 18.5 per cent) and worsted-weaving (at 10.5 per cent).⁷³⁴ The district of Nagold, in which Wildberg and Ebhausen were located, suffered from 373

⁷³¹ Flik (1985), 173.

⁷³² Flik (1985), 176.

⁷³³ Flik (1985), 177.

⁷³⁴ Flik (1985), 177.

bankruptcies in the seven years between 1840 and 1847, the second-highest bankruptcy rate among all the districts of Württemberg.⁷³⁵

So dire was the situation of the wool textile industry in the upper Nagold Valley by 1844 that the Württemberg state instituted a number of palliative measures. Unfortunately, most of them were quite ineffectual.⁷³⁶ In 1844, the weavers' guilds of the district of Nagold devised a scheme for a central storehouse that would purchase their cloth and then sell it onward. Though the central and district authorities were willing to fund the scheme with the requisite 20,000 Gulden, no individual entrepreneur could be found who would take the risk of trying to make it work as a business.⁷³⁷ Ultimately in 1850 part of the project was realized by using funds the state had offered to establish a lending fund (*Leihkasse*) for weavers.⁷³⁸ The Central Welfare Association (*Centrale Wohltätigkeitsverein*) tried to establish alternative cottage industries in the district of Nagold by encouraging the spinning of combed yarn, embroidering, and straw-plaiting; it also set up soup-kitchens and offered alternative training for young people. It focussed its efforts specifically on two communities, Wildberg and Unterschwandorf, an indication of how hard hit Wildberg was by the decline of handloom weaving.⁷³⁹ Despite these palliative measures, Wildberg was still in such a bad state in the 1850s that it had to be placed under special state assistance.⁷⁴⁰

A second set of public efforts was directed specifically at Ebhausen. In 1830, a newly established organization called the Society for the Furthering of Industry (*Gesellschaft zur Beförderung der Gewerbe*) organized an inspection of the whole former worsted-weaving region around Wildberg and Ebhausen by a commission of leading Württemberg textile industrialists. Based on their recommendations, it then sought to rescue the local worsted

⁷³⁵ Flik (1985), 177.

⁷³⁶ Flik (1985), 177.

⁷³⁷ Flik (1985), 177.

⁷³⁸ Flik (1985), 177.

⁷³⁹ Flik (1985), 177.

⁷⁴⁰ Flik (1985), 177.

industry by improving its ‘backward’ methods and teaching local weavers to be modern businessmen through lectures, courses, and free donations of modern looms. The activities of the Society concentrated on the weavers of Ebhausen, who had hitherto been producing simple flannels (incidentally in contravention of guild regulations)⁷⁴¹ and were now to be re-trained to produce the more saleable ‘mousselines’. But this project went to sleep after only one year because the factory in eastern Württemberg that had been supposed to buy the output got into financial difficulties and then in 1848 went out of business.⁷⁴² The situation in Ebhausen appears to have remained dire, judging by a government report of 1856 which described the flannel weaving in the village as follows:

on inadequate looms, out of poor yarn, a not very careful product is woven, which through the use of inappropriate fulling arrangements is finished in an even more inadequate way, and is still sold for the most part through retail sales and visits to periodic markets.⁷⁴³

All that these various government initiatives apparently achieved was possibly to reduce the severity of the crisis and slightly delay the death of the worsted industry in the upper Nagold Valley.⁷⁴⁴ As late as 1862, worsted-weaving was still practised in Wildberg, employing 5 independent masters, 16-18 assistants, and c. 80 female spinners.⁷⁴⁵ Wildberg’s weavers were described as mainly making woollen sailors’ gloves (which were exported to Holland, England and America), sieve-cloth (*Beuteltuch*), cartridge-cloths (*Patronenzeuge*), molletons (*Multon*), and flannels.⁷⁴⁶ The size of the industry was picayune, however, compared to the heights of the worsted proto-industry in the seventeenth and eighteenth centuries, when as many as 140 master weavers were operating in Wildberg alone, not counting all their

⁷⁴¹ Flik (1985), 184 n. 18.

⁷⁴² Flik (1985), 177.

⁷⁴³ Quoted in Flik (1985), 178.

⁷⁴⁴ Flik (1985), 178.

⁷⁴⁵ Königliches statistisch-topographisches Bureau (1862), 261.

⁷⁴⁶ Königliches statistisch-topographisches Bureau (1862), 261.

employees and spinners.⁷⁴⁷ The grim and lengthy death throes of the wool textile industry in Wildberg and Ebhausen were mainly managed through emigration, particularly in Ebhausen, where in 1847, the communal authorities planned to take on a loan of 8000 Gulden in order to offer financial incentives to the local poor to emigrate to North America.⁷⁴⁸

8.2. Linen Textiles

The second major proto-industry in Württemberg was linen-weaving. Linen cloth was woven for domestic consumption everywhere in the country, but from the seventeenth century it began to be produced on the Swabian Jura for export markets. This was illustrated in the occupational distribution of our three communities, where Wildberg and Ebhausen each had one or two linen-weavers producing cloths for local customers, whereas around 1750 Auingen developed a larger group of linen-weavers who must have been producing for export since there cannot have been sufficient local demand to support them. In 1825, linen-weaving was described as being the only industrial occupation practised for export in the entire district of Münsingen, and Auingen was its main centre.⁷⁴⁹ As we saw in Section 6, linen-weaving continued to be a major occupation in the locality until c. 1850.

The institutional development of the Württemberg linen proto-industry resembled that of the worsted proto-industry. Weaving was initially open to all, but in the early seventeenth century it was made the exclusive privilege of members of the linen-weavers' guilds.⁷⁵⁰ Then, in 1662, a guild-like association of merchants, the Urach Linen Trading Association (*Uracher Leinwandhandlungs-Compagnie*), was established in the town of Urach 16 km from Auingen. All linen-weavers on the Swabian Jura were legally obliged to deliver their entire output to the privileged merchant association in Urach or to its branches in larger weaving villages such

⁷⁴⁷ Ogilvie (1997), 136.

⁷⁴⁸ Flik (1985), 178, 184 n. 24.

⁷⁴⁹ Memminger (1825), 83.

⁷⁵⁰ Kazmaier (1978), 20-1.

as Laichingen (21 km from Auingen). The merchant association then had the exclusive legal right to export the cloths, which mainly went to Switzerland and Bavaria, but also further afield.

A scenario familiar from the Nagold Valley worsted proto-industry then unrolled, with bitter struggles between linen-weavers' guilds and merchant association. Throughout the eighteenth century, the Württemberg state continued to expand the legal privileges of the merchant association and the weavers' guilds continued to lobby against them and insist on their own legal privileges.⁷⁵¹ The rigid edifice of rival corporative privileges of guilds and merchant association contributed to industrial stagnation throughout much of the eighteenth century and the dissolution of the merchant association in 1793.⁷⁵²

After that date, the weavers were free to sell their cloths independently, either visiting markets and fairs on their own, selling to itinerant traders, or continuing to deliver to larger merchants, some of them the descendants of members of the Urach association. In 1812, the yarn trade was also declared free, which gave rise to a group of yarn-middlemen.⁷⁵³ By 1825, linen was being exported from the district of Münsingen through a variety of commercial outlets – by the Rheinwald & Co. Linen Trading Firm in Laichingen, a descendant of the privileged Urach association; on commission for Swiss firms by J. J. Ruoss, who operated a damask-weaving manufactory in Münsingen (discussed in the next section); by smaller commission-traders; by the weavers themselves; and by direct purchasing in the villages by external customers.⁷⁵⁴ Complaints were already arising in 1825 about declining demand, although other contemporaries adjudged the problem to be the lack of local bleaching works which meant that linen was mostly exported raw, to be bleached and finished elsewhere, mainly in

⁷⁵¹ Medick (1996); Kazmaier (1978), 20-30

⁷⁵² Medick (1996); Memminger (1825), 89; Kazmaier (1978), 20-30.

⁷⁵³ Memminger (1825), 90.

⁷⁵⁴ Memminger (1825), 89.

Switzerland.⁷⁵⁵ For the decline of the linen industry in the district, contemporaries also blamed ‘the guild organization which has deteriorated into a useless *Sportulieren*’ – a term referring to the corrupt levying of arbitrary fees by privileged office-holders – and the reluctance of weavers to shift from guilded linen-weaving to unguilded cotton-weaving.⁷⁵⁶

For Auingen, as we saw, linen production only came into prominence in the mid-eighteenth century. Münsingen, and with it Auingen, did not have any industry beyond locally oriented crafts before about 1600.⁷⁵⁷ Around 1600, Münsingen organized its own linen-weavers’ guilds, which suggests that linen-weaving may have somewhat increased in importance at that time, but neither the town nor the surrounding villages developed a dense linen proto-industry in the seventeenth century along the lines of the better-known centres such as Urach and Laichingen.⁷⁵⁸ It was not until the eighteenth century that Auingen began to develop an agglomeration of export-oriented linen-weavers. By 1721, in contrast to most of the other villages in the district of Münsingen, Auingen had an unusually high number of village craftsmen, with 5 linen-weavers, 3 carpenters, 2 cabinet-makers, 1 mason, 1 wagon-maker, 1 baker, 2 shoemakers, and 2 tailors.⁷⁵⁹

The number of linen-weavers grew considerably in the course of the eighteenth century, as we saw in analysing occupational designation in the Auingen parish registers. Between 1750 and 1800, about one-third of all men marrying in the village were recorded as linen-weavers. By 1802, Auingen had a total of 32 linen-weavers, qualifying it as a ‘weaving village’.⁷⁶⁰ In 1825, Auingen was described as being ‘among the most first-rate localities of the district’ and ‘one of the main linen-weaving localities’.⁷⁶¹ In that year, it had 30 master linen-weavers

⁷⁵⁵ Memminger (1825), 90.

⁷⁵⁶ Memminger (1825), 90-91 (quotation); for similar arguments and quotations from contemporaries, see Kazmaier (1978), 27-9.

⁷⁵⁷ Maurer (1965), 455; Memminger (1825), 83.

⁷⁵⁸ Maurer (1965), 455; Königliches statistisches Landesamt (1912), 545.

⁷⁵⁹ Landesarchivdirektion Baden-Württemberg (1997), II:70.

⁷⁶⁰ Landesarchivdirektion Baden-Württemberg (1997), II:70.

⁷⁶¹ Memminger (1825), 84, 120 (quote).

employing a total of 10 journeymen, more weavers than were active in the much larger town of Münsingen.⁷⁶² At that time, the linen-weavers of the district were divided into two groups – ‘piece-weavers’ (*Stückweber*) who wove pieces of pre-determined size (a whole piece at 66 ells, a half-piece at 33 ells) for sale; and ‘customer- and wage-weavers’ (*Kunden- und Lohnweber*), who wove for household use or for other masters in return for wages.⁷⁶³ Auingen had 20 piece-weavers (with 10 journeymen) and 10 wage-weavers, making up approximately 16 per cent of the male population. This was many fewer than worked in Laichingen, the main weaving community of the district, with 87 masters and 10 journeyman working as piece-weavers and 127 as wage-weavers, making up approximately 26 per cent of the male population.⁷⁶⁴ Nonetheless, the fact that about 16 per cent of Auingen’s male population were linen-weavers in 1825 indicates the importance of linen-weaving to its economy in the first half of the nineteenth century. However, even in Laichingen, most weavers only wove for part of the year, spending the rest of the year on agriculture, and it seems likely that this was also the pattern in Auingen.⁷⁶⁵ After 1850, as we have seen, linen weaving swiftly declined in Auingen, and by 1912 it was described as having ‘completely ceased’.⁷⁶⁶

Proto-industry, some have argued, generated a high-pressure demographic regime characterized by early marriage, high fertility, and high infant and child mortality.⁷⁶⁷ This demographic regime is generally postulated as resulting from the incentives created for individual proto-industrial producers by the ability to support a family without inheriting a farm or a workshop. But some scholars also postulate the emergence of distinctive proto-industrial cultural norms as a key determinant of this demographic regime. The development of the worsted proto-industry, which followed a different timing in Wildberg than in

⁷⁶² Memminger (1825), Tab. IV.

⁷⁶³ Memminger (1825), 84 and Tab. IV.

⁷⁶⁴ Memminger (1825), 84 and Tab. IV.

⁷⁶⁵ Memminger (1825), 84.

⁷⁶⁶ Königliches statistisches Landesamt (1912), 573.

⁷⁶⁷ See the arguments advanced in Mendels (1972); Medick (1976); Kriedte, Medick and Schlumbohm (1977); and, specifically on the linen proto-industry of the Swabian Jura as exemplified in the village of Laichingen (20 km from Auingen), Medick (1996).

Ebhausen, provide an excellent context in which to test these hypotheses about the individual-level and community-level demographic effects of proto-industry. The hypothesis of a distinctive proto-industrial demographic regime can be further investigated by bringing linen-weaving into the analysis, since it was practised as a local handicraft in Wildberg and Ebhausen, but as an export-oriented proto-industry in Auingen, at least for the century between 1750 and 1850. The different contexts in which linen-weaving was practised in these three communities will enable us to disentangle the demographic effects of its technological and labour demands from those of its ‘proto-industrial’ characteristics.

8.3. Centralized Industry: Manufactories and Factories

Factory industrialization roughly coincided in many parts of Europe with fertility decline, and this has led much traditional literature on the demographic transition to postulate a causal relationship between the two. Factories may affect fertility by changing the incentives of potential parents, although there is not always agreement about the direction of these changes. Thus factories may encourage people to marry earlier (instead of waiting to inherit a farm or workshop) or later (if high factory wages provide attractive alternatives to marriage for women). Factories may encourage people to have more children (if they provide more jobs for child workers, or if their effluents increase infant mortality) or fewer (if they provide more female jobs that are spatially segregated from the household and thus incompatible with childcare). But factory industrialization is also thought to affect fertility collectively, for instance by encouraging the dissemination of medical information (about contraception or infant feeding practices), exposing people to new consumption patterns which are incompatible with supporting large families, or creating social networks with new fertility norms. For all these reasons, it is important to know when factory work became available to the inhabitants of our three communities and began to constitute a potential influence on their demographic behaviour.

Compared not just to northwest Europe but also to other parts of Germany, Württemberg experienced factory industrialization relatively late. Most economic historians date industrial ‘take-off’ in Württemberg to the period after about 1855, although it varied across regions, with a few starting much earlier and some starting only after c. 1870.⁷⁶⁸ The percentage of Württemberg inhabitants working in industry, commerce and transportation increased from 9 per cent in 1822 to 13 per cent in 1852, 15 per cent in 1875, and 22 per cent by 1907. Württemberg thus certainly manifested rising ‘industrialization’ by 1875, even if 15 per cent was modest compared to the levels in more highly industrialized parts of Germany – 23 per cent in the Kingdom of Saxony, 19 per cent in the Rhine Provinces, and 18.5 per cent in Westphalia.⁷⁶⁹

But many of those working in ‘industry’ in Württemberg were actually active in craft workshops, not in factories in the modern sense of the word. The number of Württemberg people working in ‘factories’ rose from 9,430 in 1832 (about 3 per cent of household heads, about 5 per cent of industrial workers) to 33,333 in 1852 (c. 10 per cent of household heads and 15 per cent of industrial workers) to 39,775 in 1861 (c. 11 per cent of household heads).⁷⁷⁰ The number of such ‘factories’ expanded from 324 in 1832 to 1,498 in 1852.⁷⁷¹ However, the modesty of these early beginnings of industrialization should be recognized. For thing, many of these enterprises were very small: all operations with more than 5 employees counted as ‘factories’.⁷⁷² For another, the factories tended to be concentrated in particular regions, particularly the Neckar and Fils valleys of central Württemberg.⁷⁷³ It was these regions that industrialized around the mid-nineteenth century. Many other parts of Württemberg remained largely untouched by factory industry until considerably later.

⁷⁶⁸ On the dating of industrial ‘take-off’ in nineteenth-century Württemberg, see Langewiesche (1974), ch. 4; Ott (1971), 16-17; Hippel (1992), 623-4, 662-700. For a revisionist argument pointing out indications of industrial growth much earlier, in the 1830-50 period, see Kollmer (1994).

⁷⁶⁹ Hippel (1992), 662.

⁷⁷⁰ Number of factory workers and percentages of industrial workers from Kollmer (1994), 62, 69; calculations by present authors, based on population figures of 1,590,000 for 1834, 1,680,000 for 1855, and 1,778,396 for 1867, and assuming mean household size of 5 persons.

⁷⁷¹ Kollmer (1994), 62.

⁷⁷² Naujoks (1982), 173; Hippel (1992), 663.

⁷⁷³ Naujoks (1982), 173.

These included Black Forest region around Wildberg and Ebhausen and the Swabian Jura region around Münsingen and Auingen.⁷⁷⁴ As already discussed, Wildberg had been densely industrial since the later sixteenth century, Ebhausen since the early seventeenth, and Auingen since the mid-eighteenth. But this was cottage industry, carried out in people's houses, not in centralized factories or even manufactories. It also used hand techniques and traditional equipment that had not changed a great deal since medieval times. After the collapse of the worsted proto-industry in the 1790s and the linen proto-industry around 1850, all three communities largely reverted to agriculture and locally-oriented crafts. There were scattered attempts to set up larger, more centralized manufactories or factories, but few survived for long.

The Nagold Valley textile region around Wildberg and Ebhausen had already seen attempts to set up centralized textile manufactories in the later eighteenth century. But these failed because of opposition from the weavers' guilds and the Calw merchant association. Thus, for instance, in 1767 a woollen-weaver called Johannes Sautter set up a 'frieze manufactory' in Nagold (7 km from Ebhausen, 11 km from Wildberg). By the mid-1770s he had turned this into a successful exporting firm with 18 weavers regularly producing for it. His sales, which consisted of exports to other territories of southwest Germany and to Switzerland, already amounted to more than 33,000 Gulden annually by the beginning of 1776.⁷⁷⁵

In order to set up a manufactory in Württemberg, as in most German territories, it was necessary to obtain a state license (*Konzession*), which was only granted if one was supported both by the state bureaucrats and by the local authorities. Sautter obtained his manufactory license and retained it for nearly a decade by prudently securing support from the Nagold community council and the district governor. He even found favour with the duke of

⁷⁷⁴ Naujoks (1982), 166-7.

⁷⁷⁵ Troeltsch (1897), 130.

Württemberg because of his desire to improve the national sheep breed. But in 1777, Sautter was confronted by a bitter lobbying campaign by the woollen-weavers' guild of Nagold, the worsted-weavers' guilds of the whole Calwer Moderation (including those of the district of Wildberg), and the Calw Worsted Trading Association, all of which claimed that he was infringing on their monopoly privileges.⁷⁷⁶ The Calw Association claimed (falsely) that the 'Ratin' cloth that Sautter sought to manufacture was one of the types of cloth covered by the monopoly of the association. It also complained that the rise of a new, large-scale wool-textile industry would reduce the supply of spun yarn and raise its price, thereby crippling local worsted-weavers and merchants. The Calw Association evidently feared the rise of a new, large-scale, innovated textile enterprise in the region that would threaten its economic and political dominance.⁷⁷⁷ The Württemberg state yielded to the lobbying of the weavers' guilds and the Calw merchant association, revoked Sautter's *Konzession*, and forced him to close down the manufactory in 1777. He and his partners suffered huge financial losses, and one partner went bankrupt the following year.⁷⁷⁸

Similar opposition greeted the Calwer Worsted Trading Association itself when it tried to set up a centralized 'manufactory' to employ weavers and spinners directly, rather than purchasing from independent guilded weavers. Although members of the Calw merchant association who had themselves undergone a proper guild apprenticeship were legally entitled to engage in worsted-weaving, this was bitterly opposed by the regional weavers' guilds, so much so that throughout the eighteenth century it was a tacitly recognized principle that the members of the merchant association would not actually engage in weaving or employ others to weave for them for pay. In 1772, however, the Calw association broke this principle by obtaining a state *Konzession* permitting it to produce finer worsteds and yarn in a so-called 'manufactory'.⁷⁷⁹ The association employed a Swiss engineer to set up a horse-driven twisting

⁷⁷⁶ Flik (1985), 173-6.

⁷⁷⁷ Troeltsch (1897), 131.

⁷⁷⁸ Flik (1985), 176.

⁷⁷⁹ Troeltsch (1897), 58.

mill for spinning, and to introduce improvements in finishing, printing and pressing. From Strasbourg, the association purchased a pressing machine with a cylindrical metal roller. A factory foreman was recruited from Saxony (another more advanced industrial region of Germany) to oversee centralized rooms for preparing and combing the wool. By the middle of 1774, the Calw merchant association had gone so far as to set up a centralized room (in a former sugar refinery) in which it placed looms to produce the new ‘flowered’ worsteds.

Although the Calw Association had in 1772 obtained a state permit to set up this manufactory, the weavers’ guilds only became aware of the plans midway through 1774. At that point, they unleashed a lobbying campaign, protesting both that the manufactory would deprive them of spinners’ labour and that each ‘factory’ loom would be able to produce double the quantity of a normal loom in the workshop of an independent weaver. Similar resistance by handloom weavers occurred all over Europe as new technology and centralized production began to be experimented with in the course of the eighteenth and nineteenth centuries. But in Württemberg it was not just a matter of spontaneous demonstrations by largely unorganized handloom weavers. Rather, it was institutionalized in the form of the weavers’ guilds which had centuries of experience in lobbying for industrial regulations, tried and trusted mechanisms for collecting funds for political battles, and an edifice of legal privileges reserving many aspects of worsted production to guild members who held the appropriate licenses. This effectively organized opposition and the threat of more to come undoubtedly played a role in inducing the Calw Association to keep its ‘factory’ modest in size and scope – only 4 looms in 1774, rising to 9 looms by 1787. The socio-political difficulties of moving into factory production also contributed to the merchants’ decision to dissolve their association and abandon the worsted sector in 1797.⁷⁸⁰

Only after 1816 did some descendants of members of the Calw association make a second attempt to establish factory production. On this occasion, they did so in the woollen-

⁷⁸⁰ Troeltsch (1897), 167-71.

broadcloth branch where they would not be obliged to employ (or lobby against) the descendants of the embittered worsted-weavers' guilds of the eighteenth century. They also focused their efforts mainly on spinning, whose predominantly female practitioners did not have guild organizations. The new factories in Calw were initially unprofitable and only became financially successful after the mid-nineteenth century.⁷⁸¹ The distance of Calw from Wildberg (19 km) and Ebhausen (32 km) in any case meant that the Calw factories of the nineteenth century were irrelevant as employers for the inhabitants of Wildberg and Ebhausen.

Nonetheless, the serious decline of the worsted proto-industry in the first half of the nineteenth century led to a number of efforts to shift the Nagold Valley textile centres, particularly the hardest-hit communities such as Wildberg and Ebhausen, over to factory production. As early as 1809 there are references to a woollen-weaving 'factory' (*Fabrik*) obtaining a *Konzession* in Rohrdorf, just 2.5 km from Ebhausen. This appears to have been a precursor of the later well-known firm of Reichert & Seeger, which was founded in 1837 and was still operating in 1858 with 29 employees.⁷⁸² This firm also operated a spinning-works which provided its weaving-works with the requisite yarn.⁷⁸³ The spinning-works experienced fluctuating fortunes, but was still in existence in 1852, at which point it had 32 employees.⁷⁸⁴ The Reichert family set up another two small textile factories in Rohrdorf in the mid-nineteenth century, one of them (G. Reichert) founded in 1840 and still in existence in 1858 with 12 employees, while the other (Reichert & Calmbach) was founded in 1845 and still in existence in 1858 with 11 employees.⁷⁸⁵ These enterprises undoubtedly offered some employment for people in Ebhausen only 2.5 km away.

⁷⁸¹ See the brief account in Troeltsch (1897), 341-2.

⁷⁸² Flik (1985), 173.

⁷⁸³ Flik (1985), 178.

⁷⁸⁴ Flik (1985), 173.

⁷⁸⁵ Flik (1985), 180.

In Ebhausen itself, one of the village's own worsted-weavers, Johann David Schöttle, set up a small woollen-weaving plant with its own spinning-, fulling-, and dyeing-works in 1828 and 20 employees.⁷⁸⁶ This plant violated guild regulations, since Schöttle was a worsted-weaver and did not have the right to practise woollen-weaving. But somehow Schöttle managed to stay in business. In the 1820s and 1830s he was employing at least some of his worsted-weaving colleagues in a putting-out system.⁷⁸⁷ However, by the mid-1830s it is clear that the woollen-weaving aspect of the business was doing badly, as shown by the fact that in 1836 Schöttle was trying to sell the business.⁷⁸⁸ After this attempt failed, in 1837 Schöttle was able to get a state loan of 5,000 Gulden to modernize his fulling and finishing works in Ebhausen.⁷⁸⁹ At some point after that, he succeeded in getting rid of the firm, which was recorded in 1858 as a wool-spinning plant with 25 employees, operating under the name Frick & Reichert.⁷⁹⁰ In 1862, the Frick & Reichert mechanical wool-spinning plant had 10 spinning-rooms, employed 25-30 persons in Ebhausen, and produced woollen yarn for weaving masters in Ebhausen itself and the surrounding area.⁷⁹¹ There was also a flannel manufactory operating in Ebhausen in 1862, in which about 20 master weavers manufactured flannel cloth on their own account, employing about 200 persons, and selling their wares mainly within Württemberg, but also occasionally as far afield as Bavaria, Baden, and Switzerland.⁷⁹² These small manufactories in Rohrdorf and Ebhausen probably help to account for the survival of worsted-weaving in the village in the first half of the nineteenth century, although as we have seen it ceased to be a major component of the village's occupational structure shortly after 1850.

Ebhausen also saw some attempts at non-textile manufactories in the later nineteenth century.

In 1862, with a population of 1,356 inhabitants and some 270 households, Ebhausen had four

⁷⁸⁶ Flik (1985), 173, 180.

⁷⁸⁷ Flik (1985), 173.

⁷⁸⁸ Flik (1985), 173.

⁷⁸⁹ Flik (1985), 173.

⁷⁹⁰ Flik (1985), 180.

⁷⁹¹ Königliches statistisch-topographisches Bureau (1862), 152.

⁷⁹² Königliches statistisch-topographisches Bureau (1862), 152.

larger-scale industrial plants. The two discussed above were in the wool textile branch, but the others were in different sectors.⁷⁹³ One was the Frick & Reichart saw-mill ‘with the most modern equipment, alongside an oil-mill’, which employed 6 persons, and whose owners conducted an extensive trade in timber wood and short-cut wood.⁷⁹⁴ Second, there was a hackling business operated by G. J. Schöttle, who sold his output both domestically and internationally.⁷⁹⁵ Such enterprises meant that a non-trivial group of Ebhausen inhabitants were working in factory-type surroundings, even though all these operations were small-scale and nothing like the massive plants that began to come into being in the larger cities around Stuttgart after c. 1870.

Wildberg, by contrast, saw much less success in introducing manufactories to mop up the mass industrial unemployment caused by the collapse of worsted production. A little local employment was provided by two non-textile manufactories which developed from the later eighteenth century on, but these were very small enterprises that did not employ more than a handful of inhabitants.

The first was a quill-pen manufactory (*Federkielfabrik*) which was operated between the 1770s and the mid-nineteenth century by several generations of the Schweigert family. The first Schweigert had migrated to Wildberg from Stuttgart in the 1770s and his descendants could still be found there as late as 1905.⁷⁹⁶ However, by 1862 the Royal Statistical Bureau was writing that ‘the manufacturing of quill pens, which was previously conducted very extensively by the Schweigert family, has recently declined’.⁷⁹⁷

⁷⁹³ Königliches statistisch-topographisches Bureau (1862), 150.

⁷⁹⁴ Königliches statistisch-topographisches Bureau (1862), 153.

⁷⁹⁵ Königliches statistisch-topographisches Bureau (1862), 153.

⁷⁹⁶ The first Schweigert (or Schweickardt) described as a quill-pen ‘trader’ or ‘manufacturer’ married in Wildberg in 1775; see PAW Eheregister, 21.11.1775.

⁷⁹⁷ Königliches statistisch-topographisches Bureau (1862), 261.

Some Wildberg inhabitants also obtained employment in a paper-mill that had been established (initially against community resistance) in the 1750s in Gültlingen, a village about 5 km from the town. The first mill was established in 1756, burnt down in 1841, but was rebuilt and operated as a cardboard factory until 1920. In 1796 a second paper-mill was established upstream from the first and was operated as a cardboard factory well into the second half of the twentieth century. In 1796, the Gültlingen paper-miller successfully petitioned the Württemberg state for permission to expand his mill by setting up a hemp-press (*Hanfpreibe*) and a grinding-mill (*Schleifmühle*), and after some local protest was permitted to do so.⁷⁹⁸

Inhabitants of Wildberg were involved with these mills throughout their history. The plot of land on which the first Gültlingen paper-mill was erected was sold to its founder by two Wildberg citizens in 1756.⁷⁹⁹ The communal protests of Gültlingen and Holzbronn against the permit for a paper-mill were heard by the Wildberg district officials in the later 1750s.⁸⁰⁰ The paper-millers and their offspring frequently married daughters of Wildberg citizens during the eighteenth century.⁸⁰¹ Conflicts over the rag-collecting activities of employees of the paper-mill appeared before Wildberg law-courts in the eighteenth century, as in 1793, when a Wildberg citizen complained at the community assembly that an itinerant basket-maker was dwelling at the paper-mill in Gültlingen ‘and his wife, equipped with a slip of paper from [the paper-miller], but without any *Patent* [state permit], is roaming around this and neighbouring districts under the pretext of collecting rags’.⁸⁰² In 1810 the two Gültlingen paper-mills were employing five men as rag-collectors, all of them from Wildberg.⁸⁰³ In 1862, the Royal

⁷⁹⁸ Schmidt (1987), 52.

⁷⁹⁹ Schmidt (1987), 43.

⁸⁰⁰ Schmidt (1987), 44.

⁸⁰¹ Schmidt (1987), 44.

⁸⁰² HSAS A573 Bü. 100, fol. 28r-v, 1793: ‘und das Weib durchstreife mit einem Zettel von Rivinius versehen, jedoch ohn Patent, unter dem Vorwand des Lumpensammelns hiesiges und anliegende OberAemter’.

⁸⁰³ Schmidt (1987), 54. Linking the names of these 5 rag-collectors to the 1808 Wildberg census, we find that they were Veit Jakob Kugel (40-year-old brother of a Wildberg worsted weaver, still unmarried); Christian Sicha (an unmarried Bohemian immigrant of unknown age); Johann Georg Hezel (19-year-old unmarried son of a Wildberg night-watchman); Johann Georg Haarer (24-year-old

Statistical Bureau recorded a paper-mill ‘in Wildberg’, reflecting the fact that the Gültlingen paper-mill was viewed as part of the industrial activities of the town itself.⁸⁰⁴ It seems likely that the paper-mill continued to provide employment to a handful of Wildberg inhabitants into the twentieth century, although it also had the population of the village of Gültlingen to draw on. The presence of these small manufactories in the surrounding area thus provided some employment to Wildberg inhabitants, although these were often more marginal members of the community.

Other manifestations of industrialization in Wildberg were even smaller in scale and lasted for even shorter periods. In 1862, one of the main ‘industries’ practised in Wildberg was being conducted by an apothecary called Seeger who ‘engages in the wholesale manufacturing of spirits and juices out of forest berries, as well as chemical and pharmaceutical preparations mainly from plants which grow in the surroundings such as belladonna, hyoscyamus, conium, digitalis, etc.’.⁸⁰⁵ However, it is not clear that Seeger operated any kind of centralized plant or employed any significant number of non-family employees. In 1862, hand-knitting of jerkins, stockings and shoes was practised in the town of Wildberg and was named by the Royal Statistical Bureau as one of the main industries there – but again this was a cottage industry and cannot be seen as contributing to a ‘factory-industrial’ environment for local demographic behaviour.⁸⁰⁶ In 1894 a paper-shell-sleeve factory (*Papierhülsenfabrik*) was set up in the former fulling-mill in Wildberg below the Lower Mill; but it closed down soon afterwards, and thus cannot be viewed as a significant component of the economic environment of the town.⁸⁰⁷

unmarried son of a Wildberg butcher); and Jacob Bernhard Keller (61-year-old widowed Wildberg shoemaker).

⁸⁰⁴ Königliches statistisch-topographisches Bureau (1862), 71.

⁸⁰⁵ Königliches statistisch-topographisches Bureau (1862), 261.

⁸⁰⁶ Königliches statistisch-topographisches Bureau (1862), 261.

⁸⁰⁷ Klab (1987), 142.

The Münsingen-Auigen region was also late in developing factory industry. Indeed, some members of the nineteenth-century Württemberg elite regarded the Swabian Jura as especially hostile to modern industrialization. Hermann von Ehmann, for instance, declared that ‘nowhere was it more difficult to introduce innovations’ and that ‘the primordially conservative Swabian jibs at anything which does not come down from his father or grandfather’.⁸⁰⁸ More than a century later, the historian Eberhard Naujoks went so far as to say that ‘the Swabian Jura represented an obstacle to industrialization in the nineteenth and even in the twentieth century ... It would be over-confident to speak of any appreciable industrialization of the Swabian Jura as early as the nineteenth century.’⁸⁰⁹ The Swabian Jura certainly industrialized later than other parts of Württemberg, although not necessarily because of cultural attitudes. After all, it possessed a whole array of geographical characteristics which made industry costly and risky – lack of water power because of the porous karst landscape, remoteness (both horizontal and vertical) from population centres, poor transport links, and lack of natural endowments such as ore deposits.⁸¹⁰ Industry existed in the forelands of the Swabian Jura, but penetrated the Swabian Jura itself only around Urach and Reutlingen, in contrast to the region around Münsingen which remained primarily agricultural to a late date.⁸¹¹

Nonetheless, Auigen did see the appearance of a few small-scale manufactories from the later eighteenth century on. In 1788, Johann Jakob Ruoss established in Münsingen the first *Damastweberei* (damask-weaving-manufacture) in Württemberg, producing a very fine type of linen.⁸¹² In 1825, the Ruoss firm was described as conducting the only ‘factory’ (actually just a manufactory) in the district of Münsingen.⁸¹³ By that year the firm had expanded into what were described as ‘three picture- and damask-weaving works’ (‘3 Bild- und

⁸⁰⁸ Ehmann (1876), 28ff.

⁸⁰⁹ Naujoks (1982), 167.

⁸¹⁰ Naujoks (1982), 167-173.

⁸¹¹ Naujoks (1982), 167.

⁸¹² Landesarchivdirektion Baden-Württemberg (1997), II:31.

⁸¹³ Memminger (1825), 86.

Damastwebereyen'), operated by the elder Ruoss and his two sons. For a long time these had been the only damask-weaving plants in the country and were described as producing particularly high-quality wares that competed well with foreign wares.⁸¹⁴ Initially this manufactory had a guaranteed customer in the royal court in Stuttgart. But after the death of the son of the founder the plant was given up.⁸¹⁵ These damask manufactories were located only 2 km from the centre of Auingen and were thus a potential source of employment for inhabitants of the village. However, this early centralized industrial plant was only a passing episode, did not create employment beyond the Ruoss family and a few assistants, and did not lead to factory industrialization.

The only other industrial enterprises in or near Auingen before the 1870s were so small that they can hardly be regarded as symptoms of factory industrialization. In 1825, Münsingen was described as having 3 brickworks, 5 beer-breweries (producing only mediocre beer), a yarn-boilery, and a bleaching works established only 2-3 years earlier and operated only for domestic linens. The town also had an oil-mill and a tanning-mill which were 'driven by the surplus from the water-springs and therefore often stand still' – an illustration of how water scarcity inhibited industry on the Swabian Jura, even in those settlements with the best water supplies, such as Münsingen and Auingen.⁸¹⁶ A malting-mill was set up in Münsingen in 1844 but only supplied local breweries.⁸¹⁷ For a time in the 1860s, Auingen was engaged very intensively in corset-weaving, but this was almost certainly conducted as a cottage industry rather than in a centralized manufactory, and had in any case disappeared by 1912.⁸¹⁸

⁸¹⁴ Memminger (1825), 84.

⁸¹⁵ Landesarchivdirektion Baden-Württemberg (1997), II:31.

⁸¹⁶ Memminger (1825), 86, 107 (quote).

⁸¹⁷ Landesarchivdirektion Baden-Württemberg (1997), II:31.

⁸¹⁸ Königliches statistisches Landesamt (1912), 573.

Münsingen and Auingen did not develop any actual factory industry until the establishment in 1872 of a factory producing metal fittings (the Beschlägefabrik Schreiber).⁸¹⁹ In 1892, before the connection to the railway system, this was the only plant in Münsingen (or Auingen) with more than 10 employees.⁸²⁰ By 1912, it was producing door- and window-fittings and small iron-wares, for a market area including Württemberg, Bavaria, and Baden, and employing 20 workers, mostly on piece-work.⁸²¹

In 1897, the situation changed fundamentally with the establishment of a plant producing Portland cement (the Süddeutsches Portlandzementwerk AG) on the northwest periphery of the town, 3-4 km from the centre of Auingen and thus an attractive source of employment for the villagers.⁸²² One reason for the establishment of this factory was the completion of the westward rail link to Münsingen four years earlier.⁸²³ The plant initially employed 124 workers in 1897, rising above 200 shortly after 1900, and to 200-250 by 1914, again mostly on piece-work.⁸²⁴ The cement plant is known to have provided employment mainly for the northern communities of the district of Münsingen, including Auingen, although by 1914 10-20 per cent of its employees were Italian; these Catholic immigrants to Auingen can be observed in the Catholic parish registers for Magolsheim in this period.⁸²⁵ The coming of large-scale factory industry to the Auingen area after 1897 thus affected demography directly by encouraging immigration by non-Lutherans and non-Germans, as well as indirectly by creating new sources and patterns of employment.

⁸¹⁹ Landesarchivdirektion Baden-Württemberg (1997), II:31; Königliches statistisches Landesamt (1912), 552.

⁸²⁰ Deigendesch (1998), 88.

⁸²¹ Königliches statistisches Landesamt (1912), 552.

⁸²² Landesarchivdirektion Baden-Württemberg (1997), II:4, 7, 31; Deigendesch (1998), 88-9; Königliches statistisches Landesamt (1912), 552.

⁸²³ Dirschka (2009), 9.

⁸²⁴ Landesarchivdirektion Baden-Württemberg (1997), II:31; Deigendesch (1998), 88-9; Königliches statistisches Landesamt (1912), 552.

⁸²⁵ Landesarchivdirektion Baden-Württemberg (1997), II:22, 27; Königliches statistisches Landesamt (1912), 552.

In the years following the establishment of the military encampment north of Auingen in 1896, the village developed a ‘pre-encampment’ (*Vorlager*) in the neighbourhood bordering on the military zone. This new neighbourhood contained a number of small production facilities, but also one or two larger foodstuff enterprises – a lemonade factory and a bread factory – which provided employment not just for live-in assistants in small businesses but also for factory workers.⁸²⁶ In 1912, Auingen was described as having one mechanical workshop operating with steam, and several craft workshops (a joiner’s and a butcher’s) working with motors driven by gasoline; it also had 2 distilleries and a mineral-water manufactory.⁸²⁷ There was also a chalk-pit which had been operated by a private entrepreneur since 1898, with good sales nationally, employing 20-25 workers who were mainly inhabitants of Auingen.⁸²⁸ Another 10-15 male inhabitants of the village walked daily to the Münsingen lime-works, and a number of female villagers engaged in domestic industry producing work-clothing for a factory in Reutlingen.⁸²⁹

In an apparent paradox, therefore, the primarily agricultural village of Auingen, which only experienced proto-industry after 1750 and lost it again after 1850, made a more successful transition to factory industrialization than the primarily proto-industrial communities of Wildberg and Ebhausen which had been important manufacturing centres since before 1600. Indeed, Auingen is the only one of our three communities in which at least some of the inhabitants began to work in truly large-scale, mechanized ‘factories’ (albeit only after about 1897), as opposed to small-scale ‘manufactories’ of the type observed in Ebhausen from the 1820s onward. In a similar paradox, the later and always less fully proto-industrialized village of Ebhausen shifted toward factory industry – albeit on a small scale – to a greater extent than the early and heavily proto-industrialized town of Wildberg. Not only does this cast question on theories of ‘proto-industrialization’, which argue that the existence of dense, export-

⁸²⁶ Deigendesch (1998), 79, 88-9, 91-2; Landesarchivdirektion Baden-Württemberg (1997), II:10-11, 27, 32.

⁸²⁷ Königliches statistisches Landesamt (1912), 573.

⁸²⁸ Königliches statistisches Landesamt (1912), 573.

⁸²⁹ Königliches statistisches Landesamt (1912), 573.

oriented cottage industries prepared the way for subsequent factory industrialization. But it also poses new and interesting questions about the flexibility of different communities in responding to economic change and the long-term legacy of different types of pre-factory industry, in terms both of the transition to sustainable economic growth and of the transformation of demographic behaviour.

9. Conclusion

This paper has laid out in detail the characteristics of the three communities in southwest Germany whose demographic behaviour is being analyzed in the framework of a wider research project. The paper has proceeded on the assumption that demographic behaviour is influenced not just by human biology and attributes of individual men and women (such as wealth and occupation), but also by factors specific to the particular village or town in which people are living.

Community characteristics, we have seen, fall into two main categories. The first consists of exogenous natural endowments of the community or events that strike the community from the outside. This paper has identified a number of important exogenous features of these three communities, with a significant potential to affect their demographic behaviour. Section 3 showed that from the medieval period through to the early twentieth century, all three communities experienced exogenous historical events such as warfare and the redrawing of political boundaries, with a profound potential to shape their demographic behaviour. Section 5 surveyed another set of exogenous factors, the differing natural endowments of these communities in terms of location and altitude, geology, soil, climate, and water provision, all of which had direct as well as indirect effects on the environment within which demographic behaviour occurred.

A second type of characteristics arise through endogenous decisions taken by the community collectively or by its decision-makers. Examples are provided by the social institutions discussed in Section 4. Some of these institutional arrangements were wholly or partly exogenous to local communities and individuals. Thus, for instance, the permeability of the pre-1806 Württemberg state to intervention by Imperial institutions, its reliance on alliances with local interest-groups, and even the organizational structures of the Lutheran state church, were hardly within the control of any individual, village, or town. But other aspects of the institutional structure were much closer to being endogenous. This paper has shown how collective and individual decision-making influenced the day-to-day practical workings of local communities, guilds, merchant associations, Pietist conventicles, schools, and welfare systems. Each of these constituted an important aspect of the constraint structure within which individuals took their demographic decisions, but was also crucially affected by the actions of these very individuals.

This paper has also shown that even the effect of exogenous events and natural endowments can be influenced by endogenous individual and communal decision-making. Thus, for instance, Section 5 showed that the natural constraints imposed by geography on transportation, communication and water sources could be overcome by collective and individual actions in building roads, railways, water supply systems, postal systems, telegraph and telephone networks, and newspapers. Section 7 showed how the unfavourable natural endowments for agriculture in all three communities could result in poor economic outcomes for centuries because of the human decisions taken about them, but could ultimately be overcome – at least in some communities – through individual innovation and institutional change. Section 8 demonstrated, likewise, how favourable endowments which created the basis for successful manufacturing long before the coming of factories could be transformed, through individual and collective institutional action, into an obstacle to factory industrialization, sustained economic growth, and the demographic changes which might come in their wake.

The general lesson is that in analyzing determinants of demographic behaviour, we must take account of community-specific political events, religious affiliations, social institutions, geographical endowments, occupational structure, agricultural productivity, and industrial specialization. Only then can we distinguish the influence of variables which operate at a different level – that of the personal characteristics of households or individuals.

Bibliography

- Allen, R. C. (1998). "Agricultural Output and Productivity in Europe, 1300-1800." *U.B.C. Department of Economics Discussion Paper* 98-14.
- Amend, A., A. Baumann, S. Wendehorst and S. Westphal, eds. (2007). *Gerichtslandschaft Altes Reich. Höchste Gerichtsbarkeit und territoriale Rechtsprechung*. Cologne / Weimar / Vienna, Böhlau.
- Basu, K. (1997). *Analytical development economics: the less developed economy revisited*. Cambridge, MA.
- Bauer, E. W. and H. Schönnamsgruber, Eds. (1988). *Das große Buch der Schwäbischen Alb*. Stuttgart, Konrad Theiss.
- Baumann, A., P. Oestmann, S. Wendehorst and et al., eds. (2005). *Prozesspraxis im Alten Reich. Annäherungen - Fallstudien - Statistiken*. Cologne / Vienna / Weimar, Böhlau.
- Behringer, W., H. Lehmann and C. Pfister, eds. (2005). *Kulturelle Konsequenzen der "Kleinen Eiszeit"*. Göttingen, Vandenhoeck & Ruprecht.
- Benscheidt, A. R. (1985). *Kleinbürgerlicher Besitz: Nürtinger Handwerker-Inventare von 1660-1840*. Münster.
- Blanning, T. C. W. (1989). "The French Revolution and modernization in Germany." *Central European history* 22: 109-129.
- Blickle, P. (1977). *Die Revolution von 1525*. Munich.
- Boelcke, W. A. (1987). *Wirtschaftsgeschichte Baden-Württembergs von den Römern bis heute*. Stuttgart.
- Boelcke, W. A. (1989). *Sozialgeschichte Baden-Württembergs 1800-1989*. Stuttgart.
- Braun, R. (1978). "Early industrialization and demographic change in the Canton of Zürich." in *Historical studies of changing fertility*. Ed. C. Tilly. Princeton: 289-334.
- Clark, P., ed. (1985). *The European crisis of the 1590s*. London.
- Crafts, N. F. R. (1985). *British economic growth during the industrial revolution*. Oxford.

- De Vries, J. (1976). *The economy of Europe in an age of crisis, 1600-1750*. Cambridge, Cambridge University Press.
- De Vries, J. and A. Van der Woude (1997). *The first modern economy: success, failure, and perseverance of the Dutch economy, 1500-1815*. Cambridge, Cambridge University Press.
- Decker-Hauff, H. (1946). *Die Entstehung der altwürttembergischen Ehrbarkeit, 1250-1534*. (Ph.D. dissertation, University of Erlangen).
- Dehlinger, A. (1951). "Die Kirchenkonvente von 1642 bis 1891." in *Württembergs Staatswesen in seiner geschichtlichen Entwicklung bis heute*. Ed. A. Dehlinger. Stuttgart. 1: 281-282.
- Deigendesch, R. (1998). "Eine Region und der Platz: Münsingen mit den Anliegergemeinden Auingen, Böttingen, Magolsheim und Trailfingen zwischen 1890 und 1920." in *Vom Nutzwald zum Truppenübungsplatz: das Münsinger Hart*. Ed. R. Deigendesch and S. Lorenz. Leinfelden-Echterdingen: 75-97.
- Dirschka, S. (2009). "1200 Jahre Münsingen. Eine Zeitreise durch die Stadtgeschichte." Ansprache zum Neujahrsempfang der Stadt Münsingen am 06.01.2009 von Stadtarchivar Steffen Dirschka [<http://www.münsingen.de/servlet/PB/show/1282189/Stadtgeschichte%20Mnsingen%20-%20Vortrag%20von%20Stadtarchivar%20Steffen%20Dirschka.pdf>].
- Ehmann, H. v. (1876). *Das öffentliche Wasserversorgungswesen im Königreich Württemberg unter Hervorhebung der Versorgung der wasserarmen rauhen Alb mit fließenden Trink- und Nutzwassern*. Stuttgart.
- Ehmer, J. (1991). *Heiratsverhalten, Sozialstruktur und ökonomischer Wandel. England und Mitteleuropa in der Formationsperiode des Kapitalismus*. Göttingen, Vandenhoeck und Ruprecht.
- Erzberger, M. (1902). *Die Säkularisation in Württemberg von 1802 bis 1810: ihr Verlauf und ihre Nachwirkungen*. Stuttgart.

- Fellmeth, U. (1998). "Die Reform der Münsinger Landwirtschaft im 19. Jahrhundert und die Rolle des Hofguts Ludwigshöhe auf dem Münsinger Hart." *Vom Nutzwald zum Truppenübungsplatz: das Münsinger Hart*. Edited by R. Deigendesch and S. Lorenz. Leinfelden-Echterdingen: 27-42.
- Fertig, G. (2000). *Lokales Leben, atlantische Welt. Die Entscheidung zur Auswanderung vom Rhein nach Nordamerika im 18. Jahrhundert*. Osnabrück, Universitätsverlag Rasch.
- Fink, B. (2006). "Kirchenkonventsprotokolle." in *Serielle Quellen in südwestdeutschen Archiven*. Eds. C. Keitel and R. Keyler. Stuttgart.
- Fischer, U. L. and H.-J. Weißbach (1992). "Der Wandel geschlechtsspezifischer Erwerbsmuster in der Textil- und Bekleidungsindustrie." *LTA-Forschung: Reihe des Landesmuseums für Technik und Arbeit in Mannheim* 6: 2-22.
- Flik, R. (1990). *Die Textilindustrie in Calw und in Heidenheim 1705-1870. Eine regional vergleichende Untersuchung zur Geschichte der Frühindustrialisierung und Industriepolitik in Württemberg*. Stuttgart.
- Fraas, O. (1873). *Die Albwasser-Versorgung im Königreich Württemberg ausgeführt unter der Regierung Seiner Majestät des Königs Karl*. Stuttgart, Greinerschen Hofbuchdruckerei.
- Frauer, H.-D. (1987). "Die Wildberger Kirche." in *Wildberger Chronik. Effringen - Gültlingen - Schönbronn - Sulz am Eck - Wildberg, 1237-1987*. Ed. J. Klab. Wildberg: 153-162.
- Fulbrook, M. (1983). *Piety and politics: religion and the rise of absolutism in England, Württemberg and Prussia*. Cambridge, Cambridge University Press.
- Gestrich, A. (2002). "Pietismus und ländliche Frömmigkeit in Württemberg im 18. und frühen 19. Jahrhundert." in *Ländliche Frömmigkeit. Konfessionskulturen und Lebenswelten 1500-1850*. Ed. N. Haag, S. Holtz and W. Zimmermann. Sigmaringen: 343-357.
- Guinnane, T. W. (2003). "Population and the economy in Germany, 1800-1990." in *Germany: a new social and economic history, vol. III: Since 1800*. Ed. S. Ogilvie and R. Overly. London, Arnold: 35-70.

- Gysin, J. (1989). *'Fabriken und Manufakturen' in Württemberg während des ersten Drittels des 19. Jahrhunderts*. St. Katharinen.
- Hardwick, J. (1998). "Seeking separations: gender, marriages, and household economies in early modern France." *French historical studies* 21(1): 157-180.
- Haug-Moritz, G. (2002). *Der Schmalkaldische Bund 1530-1541/42. Eine Studie zu den genossenschaftlichen Strukturelementen der politischen Ordnung des Heiligen Römischen Reiches Deutscher Nation*. Leinfelden-Echterdingen.
- Hausleutner, P. W. G. (1790). *Schwäbisches Archiv*. Stuttgart.
- Henning, F.-W. (1969). *Dienste und Abgaben der Bauern in 18. Jahrhundert*. Stuttgart.
- Hermann, C. (2005). "...*Maria Hueberin zu Moitrambs, um sich bey allhiesiger Zunft einverleiben zu lassen...*". *Geschlechterrollen im Zwettl der Frühen Neuzeit*. Zwettl.
- Hippel, W. v. (1977). *Die Bauernbefreiung im Königreich Württemberg*. Boppard am Rhein.
- Hippel, W. v. (1978). "Bevölkerung und Wirtschaft im Zeitalter des Dreißigjährigen Krieges: das Beispiel Württemberg." *Zeitschrift für historische Forschung* 5: 413-448.
- Hippel, W. v. (1992). "Wirtschafts- und Sozialgeschichte 1800 bis 1918." in *Handbuch der baden-württembergischen Geschichte: vol. 3: Vom Ende des Alten Reiches bis zum Ende der Monarchien*. Eds. H. Schwarzmaier, H. Fenske, B. Kirchgässner, P. Sauer and M. Schaab. Stuttgart, Klett-Cotta: 477-784.
- Hoffmann, L. (1905). *Das württembergische Zunftwesen und die Politik der herzoglichen Regierung gegenüber den Zünften im 18. Jahrhundert*. (Ph.D. dissertation, University of Tübingen).
- Hoffmann-Martinot, V. (2004). "The process of citizen's political emancipation in European cities: the case of Stuttgart." Paper presented at the XIII Nordiske Kommunalforskerkonferansen, Oslo, 26-28 November 2004.
- Honecker, M. (1968). *Cura religionis Magistratus Christiani. Studien zum Kirchenrecht im 17. Jahrhunderts*. Munich.
- Kaschuba, W. and C. Lipp (1979). *1848 - Provinz und Revolution*. Tübingen.

- Kaschuba, W. and C. Lipp (1980). "Revolutionskultur 1848. Einige (volkskundliche) Anmerkungen zu den Erfahrungsräumen und Aktionsformen antifeudaler Volksbewegung in Württemberg." *Zeitschrift für württembergische Landesgeschichte* 39: 141-164.
- Kaschuba, W. and C. Lipp (1982). *Dörfliches Überleben. Zur Geschichte materieller und sozialer Reproduktion ländlicher Gesellschaft im 19. und frühen 20. Jahrhundert.* Tübingen, Tübinger Vereinigung für Volkskunde.
- Kazmaier, B. (1978). *Das Ermstal zwischen Urach und Metzingen: Untersuchungen zur Kulturlandschaftsentwicklung in der Neuzeit.* Tübingen, Selbstverlag des Geographischen Instituts der Universität Tübingen.
- Klaß, J., ed. (1987). *Wildberger Chronik. Effringen - Gültlingen - Schönbronn - Sulz am Eck - Wildberg, 1237-1987.* Wildberg.
- Klein, L. (1933). *Die geschichtliche Entwicklung des Gemeindebürgerrechts in Württemberg.* Tübingen.
- Knodel, J. E. (1967). "Law, marriage and illegitimacy in nineteenth-century Germany." *Population studies* 20: 279-294.
- Königliches statistisches Landesamt (1912). *Beschreibung des Oberamts Münsingen.* Stuttgart, Kohlhammer.
- Königliches statistisch-topographisches Bureau, Ed. (1862). *Beschreibung des Oberamts Nagold.* Stuttgart, Horst Bissinger Verlag.
- Kollmer, G. (1994). "Tendenzen wirtschaftlichen Wachstums in Württemberg in der ersten Hälfte des 19. Jahrhunderts. Kritische Anmerkungen zum Forschungsstand." in *Württemberg um 1840. Beiträge zum 150jährigen Bestehen des Württembergischen Geschichts- und Altertumsvereins.* Ed. H.-M. Maurer. Stuttgart, Kohlhammer: 57-70.
- Kriedte, P., H. Medick and J. Schlumbohm (1977). *Industrialisierung vor der Industrialisierung. Gewerbliche Warenproduktion auf dem Land in der Formationsperiode des Kapitalismus.* Göttingen.

- Landesarchivdirektion Baden-Württemberg (1997). *Der Landkreis Reutlingen*. 2 vols. Sigmaringen, Jan Thorbecke Verlag.
- Landesmuseum Württemberg (2006). *Das Königreich Württemberg 1806–1918: Monarchie und Moderne. Ausstellungskatalog Landesmuseum Württemberg*. Stuttgart.
- Langewiesche, D. (1974). *Liberalismus und Demokratie in Württemberg zwischen Revolution und Reichsgründung*. Düsseldorf, Droste.
- Laslett, P. (1988). "Family, kinship and collectivity as systems of support in preindustrial Europe: a consideration of the "nuclear-hardship" hypothesis." *Continuity and change* 3: 153-176.
- Lee, W. R. (1999). "Urban labor markets, in-migration, and demographic growth: Bremen, 1815-1914." *Journal of interdisciplinary history* 30(3): 437-473.
- Lehmann, H. (1972). "Pietismus und Wirtschaft in Calw am Anfang des 18. Jahrhunderts. Ein lokalhistorischer Beitrag zu einer universalhistorischen These von Max Weber." *Zeitschrift für Württembergische Landesgeschichte* 31: 249-277.
- List, F. (1842). "Die Ackerverfassung, die Zwergwirtschaft, und die Auswanderung." *Deutsche Vierteljahrs Schrift* 20: 106-191.
- Maisch, A. (1992). *Notdürftiger Unterhalt und gehörige Schranken: Lebensbedingungen und Lebensstile in württembergischen Dörfern der frühen Neuzeit*. Stuttgart, G. Fischer.
- Maisch, A. (1997). "'Wider die natürliche Pflicht und eingepflanzte Liebe': Illegitimität und Kindsmord in Württemberg im 17. und 18. Jahrhundert." *Zeitschrift für württembergische Landesgeschichte* 56: 65-104.
- Mann, B. (2006). *Kleine Geschichte des Königreichs Württemberg*. Leinfelden-Echterdingen.
- Mantl, E. (1997). *Heirat als Privileg. Obrigkeitliche Heiratsbeschränkungen in Tirol und Vorarlberg 1820 bis 1920*. Vienna / Munich, Verlag für Geschichte / Politik and R. Oldenbourg Verlag.
- Matz, K.-J. (1980). *Pauperismus und Bevölkerung. Die gesetzlichen Ehebeschränkungen in den süddeutschen Staaten während des 19. Jahrhunderts*. Stuttgart.

- Maurer, H.-M. (1965). "Münsingen." *Handbuch der historischen Stätten Deutschlands, vol. 6: Baden-Württemberg*. Edited by M. Miller. Stuttgart, Alfred Kröner Verlag: 454-455.
- Maurer, H.-M. (1965). "Münsinger Gutsbezirk." *Handbuch der historischen Stätten Deutschlands, vol. 6: Baden-Württemberg*. Edited by M. Miller. Stuttgart, Alfred Kröner Verlag: 455-456.
- Maurer, H.-M. (2004). "Der Arme Konrad – ein Aufstand in Württemberg." in *Der Gerechtigkeit einen Beistand thun ... Vorträge und Dokumente zum Bauernkrieg*. Ed. T. Schwabach. Remshalden: 17-33.
- McNeely, I. F. (2004). "Hegel's Württemberg commentary: intellectuals and the construction of civil society in Revolutionary-Napoleonic Germany." *Central European history* 37(3): 345-364.
- Medick, H. (1976). "The proto-industrial family economy: the structural function of household and family during the transition from peasant society to industrial capitalism." *Social history* 1: 291-315.
- Medick, H. (1996). *Weben und Überleben in Laichingen 1650-1900. Untersuchungen zur Sozial-, Kultur- und Wirtschaftsgeschichte aus der Perspektive einer lokalen Gesellschaft im frühneuzeitlichen Württemberg*. Göttingen.
- Meiners, C. (1794). "Bemerkungen auf einer Herbstreise nach Schwaben. Geschrieben im November 1793." in *Kleinere Länder- und Reisebeschreibungen*. Ed. C. Meiners. Berlin. 2: 235-380.
- Memminger, J. D. G. v. (1825). *Beschreibung des Oberamts Münsingen*. Stuttgart / Tübingen, Cotta.
- Mendels, F. F. (1972). "Proto-industrialization: the first phase of the industrialization process." *Journal of economic history* 32: 241-261.

- Mertens, D. (1995). "Weltliche Territorien: Württemberg." in *Handbuch der baden-württembergischen Geschichte: vol. 3: Die Territorien im Alten Reich*. Eds. H. Schwarzmaier, H. Fenske, B. Kirchgässner, P. Sauer and M. Schaab. Stuttgart, Klett-Cotta: 1-163.
- Mone, F. J. (1858). "Die Weberei und ihre Beigewerbe in Baden, Elsaß, Bayern und Rheinpreußen vom 14. bis 16. Jahrhundert." *Zeitschrift für die Geschichte des Oberrheins* 9: 129-189.
- Müller, W. (1995). *125 Jahre Albwasserversorgung*. Korntal, Hinderer Verlag.
- Natale, H. (1965). "Wildberg." *Handbuch der historischen Stätten Deutschlands, vol. 6: Baden-Württemberg*. Edited by M. Miller. Stuttgart, Alfred Kröner Verlag: 751-752.
- Naujoks, E. (1982). "Stadt und Industrialisierung im Bereich der Schwäbischen Alb. Ansätze und Charakteristika dieser Entwicklung im 19. Jahrhundert." *Zeitschrift für württembergische Landesgeschichte* 41: 165-193.
- Nipperdey, T. (1983). *Deutsche Geschichte 1800–1866: Bürgerwelt und starker Staat*. Munich, Beck.
- Oertel, B. (2006). *Ortssippenbuch Ebhausen 1559-1920, mit dem Ortsteil Wöllhausen und kirchlichen Filialen, insbesondere Pfrondorf 1570-1807*. Neubiberg / Frankfurt, Selbstverlag des Verfassers.
- Ogilvie, S. (1986). "Coming of age in a corporate society: capitalism, pietism and family authority in rural Württemberg, 1590-1740." *Continuity and change* 1: 279-331.
- Ogilvie, S. (1990). "Women and proto-industrialisation in a corporate society: Württemberg textile manufacture, 1590-1790." in *Women's work, family income and the structure of the family in historical perspective*. Ed. W. R. Lee and P. Hudson. Manchester: 76-103.
- Ogilvie, S. (1992). "Germany and the seventeenth-century crisis." *Historical journal* 35: 417-441.
- Ogilvie, S. (1995). "Population growth and state policy in Central Europe before industrialization." Centre for History and Economics working paper.

- Ogilvie, S. (1996). "The beginnings of industrialization." in *Germany: a new social and economic history, Vol. II: 1630-1800*. Ed. S. Ogilvie. London, Edward Arnold: 263-308.
- Ogilvie, S. (1997). *State corporatism and proto-industry: the Württemberg Black Forest, 1580-1797*. Cambridge, Cambridge University Press.
- Ogilvie, S. (1999a). "The European economy in the eighteenth century." *The short Oxford history of Europe, Vol. XII: The eighteenth century: Europe 1688-1815*. Edited by T. W. C. Blanning. Oxford, Oxford University Press: 91-130.
- Ogilvie, S. (1999b). "The German state: a non-Prussian view." in *Rethinking Leviathan: the eighteenth-century state in Britain and Germany*. Ed. E. Hellmuth and J. Brewer. Oxford, Oxford University Press: 167-202.
- Ogilvie, S. (2003). *A bitter living: women, markets, and social capital in early modern Germany*. Oxford, Oxford University Press.
- Ogilvie, S. (2004). "Guilds, efficiency and social capital: evidence from German proto-industry." *Economic history review* 57: 286-333.
- Ogilvie, S. (2007). "Can we rehabilitate the guilds? A sceptical re-appraisal." *Cambridge working papers in economics* 0745.
- Ogilvie, S. (2008). "Aux origines de l'industrialisation en Allemagne." *Revue d'Allemagne et des pays de langue allemande* 40(1): 5-36.
- Ogilvie, S. and M. Cerman, eds. (1996). *European proto-industrialization*. Cambridge, Cambridge University Press.
- Ogilvie, S. and J. S. S. Edwards (2000). "Women and the "second serfdom": evidence from early modern Bohemia." *Journal of economic history* 60(4): 961-994.
- Ott, W. R. (1971). *Grundlageninvestitionen in Württemberg. Maßnahmen zur Verbesserung der materiellen Infrastruktur in der Zeit vom Beginn des 19. Jahrhunderts bis zum Ende des Ersten Weltkrieges*. Heidelberg.

- Parkerson, D. H. and J. A. Parkerson (1988). “‘Fewer children of greater spiritual quality’: religion and the decline of fertility in nineteenth-century America.” *Social science history* 12(1): 49-70.
- Pierenkemper, T. and R. H. Tilly (2004). *The German Economy During the Nineteenth Century*. Oxford / New York, Berghahn.
- Popkin, B. (1996). “Der Kirchenkonvent in Württemberg.” *Blätter für Württembergische Kirchengeschichte* 96: 98-118.
- Raiser, G. (1978). *Die Zünfte in Württemberg. Entstehung und Definition, interne Organisation und deren Entwicklung, dargestellt anhand der Zunftartikel und der übrigen Normativbestimmungen seit dem Jahre 1489*. Tübingen.
- Rauch, M. v. (1916). “Ein Rhein-Neckar-Donau-Verkehrsplan im 18. Jahrhundert.” *Württembergische Vierteljahrshefte für Landesgeschichte* NF 25: 489-522.
- Rengel, Z., G. D. Batten, et al. (1999). “Agronomic approaches for improving the micronutrient density in edible portions of field crops.” *Field crops research* 60(1-2): 27-40.
- Reule, G. and R. Schwarz (1993). *Das Altensteigerle*. Calw.
- Reyscher, A. L. (1828ff). *Vollständige, historisch und kritisch bearbeitete Sammlung der württembergische Gesetze*. Stuttgart.
- Roth, W. (1994). *Die Evangelische Brüdergemeinde Korntal: ein Gemeindemodell des Pietismus in Württemberg; Idee - Geschichte - Wirklichkeit*. Neuhausen-Stuttgart, Hänssler.
- Rudolf, H. U., ed. (2003). *Die Mediatisierung, Auswirkung von Säkularisation und Mediatisierung*. Ostfildern, Thorbecke.
- Sabean, D. W. (1990). *Property, production and family in Neckarhausen, 1700-1870*. Cambridge, Cambridge University Press.
- Schaab, M. (1974a). “Zeit der Territorialstaaten.” in *Das Land Baden-Württemberg. Amtliche Beschreibung nach Kreisen und Gemeinden, Vol. I: Allgemeiner Teil*. Ed. Staatliche Archivverwaltung Baden-Württemberg. Stuttgart, Kohlhammer: 167-229.

- Schaab, M. (1974b). "Das 19. und 20. Jahrhundert." in *Das Land Baden-Württemberg. Amtliche Beschreibung nach Kreisen und Gemeinden, Vol. I: Allgemeiner Teil*. Ed. Staatliche Archivverwaltung Baden-Württemberg. Stuttgart, Kohlhammer: 230-263.
- Schaab, M. (2000). "Siedlung, Gesellschaft, Wirtschaft von der Stauferzeit bis zur Französischen Revolution." in *Handbuch der baden-württembergischen Geschichte: vol. 1: Allgemeine Geschichte, part 2: Vom Spätmittelalter bis zum Ende des Alten Reiches*. Eds. M. Schaab, H. Schwarzmaier and G. Taddey. Stuttgart, Klett-Cotta: 457-586.
- Schad, P. (2002). *Buchbesitz im Herzogtum Württemberg im 18. Jahrhundert. Am Beispiel der Amtsstadt Wildberg und des Dorfes Bissingen/Enz*. Stuttgart, Jan Thorbecke.
- Schenda, R. (1977). *Volk ohne Buch. Studien zur Sozialgeschichte der populären Lesestoffe 1770-1910*. Munich.
- Schmauder, A. (1998). *Württemberg im Aufstand – der Arme Konrad 1514. Ein Beitrag zum bäuerlichen und städtischen Widerstand im Alten Reich und zum Territorialisierungsprozeß im Herzogtum Württemberg an der Wende zur Frühen Neuzeit*. Leinfelden-Echterdingen, DRW-Verlag.
- Schmidt, F. (1987). "Zur Geschichte der Papiermühlen in Wildberg-Gültingen." *Schwäbische Heimat* 38: 43-60.
- Schmidt-Ebhausen, F. H. (1955). "1455-1955. Ein Gedenkjahr der Kirche zu Ebhausen." *Schwäbische Heimat* 6: 130-135.
- Schneider, K. (1995). "Kipper- und Wipperzeit." in *Von Aktie bis Zoll. Ein historisches Lexikon des Geldes*. Ed. M. North. Munich.
- Scott, T. (1996). "Economic landscapes." in *Germany: a new social and economic history. Vol. 1, 1450-1630*. Ed. B. Scribner. London / New York, Arnold: 1-31.
- Scott, T. and B. Scribner (1996). "Urban networks." in *Germany: a new social and economic history, Vol. I: 1450-1630*. Ed. B. Scribner. London, Edward Arnold: 113-144.

- Sigel, C. (1910ff). "Das Evangelische Württemberg: Mitteilungen aus dem Leben der evangelischen Geistlichen von der Reformation an bis auf die Gegenwart. Ein Nachschlagewerk in alphabetischer Ordnung." Gebersheim. part handwritten manuscript, part typescript, Landeskirchliche Bibliothek Stuttgart.
- Slicher van Bath, B. H. "Agriculture in the vital revolution." in *Cambridge economic history of Europe: vol. 5: The economic organization of early modern Europe*. Ed. E. E. Rich and C. H. Wilson. Cambridge, Cambridge University Press: 42-132.
- Speck, U. (1997). *Staatsordnung und Kommunalverfassung : die Formierung moderner Gemeindekonzeptionen in Württemberg zwischen Ancien régime und Frühkonstitutionalismus*. Frankfurt am Main etc., Lang.
- Stanbury, J. B. and B. S. Hetzel, Eds. (1980). *Endemic goiter and endemic cretinism: iodine nutrition in health and disease*. New York, John Wiley.
- Staudenmeyer, W. (1972). "Die soziale Lage der in der Calwer Zeughandlungs-Compagnie gebannten Zeugmacher." in *Städtische Mittelschichten*. Ed. E. Maschke and J. Sydow. Stuttgart: 104-119.
- Stier, B. and W. v. Hippel (1996). "War, economy, and society." in *Germany: a new social and economic history, vol. 2: 1630-1800*. Ed. S. Ogilvie. London, Arnold: 233-262.
- Taylor, P. K. (1994). *Indentured to liberty: peasant life and the Hessian military state, 1688-1815*. Ithaca, NY, Cornell University Press.
- Troeltsch, W. (1897). *Die Calwer Zeughandlungskompanie und ihre Arbeiter. Studien zur Gewerbe- und Sozialgeschichte Altwürttembergs*. Jena.
- Vann, J. A. (1984). *The making of a state: Württemberg, 1593-1793*. Ithaca, NY, Cornell University Press.
- Wagner, G. (1959). *Die Schwäbische Alb*. Essen, Burkhard-Verlag.
- Wauschkuhn, F.-F. (1977). *Staatliche Gewerbepolitik und frühindustrielles Unternehmertum in Württemberg von 1806-1848. Stadt in der Geschichte*. Sigmaringen.
- Wegge, S. A. (1999). "To part or not to part: emigration and inheritance institutions in nineteenth-century Hesse-Cassel." *Explorations in economic history* 36(1): 30-55.

- Wilson, P. H. (1995). *War, state and society in Württemberg, 1677-1793*. Cambridge.
- Winkel, H., ed. (1982). *Geschichte und Naturwissenschaft in Hohenheim: Beiträge zur Natur-, Agrar-, Wirtschafts- u. Sozialgeschichte Südwestdeutschlands. Festschrift für Günther Franz zum 80. Geburtstag*. Sigmaringen, Thorbecke.
- Winkel, H., ed. (1993). *Universität Hohenheim: Festschrift zum 175jährigen Jubiläum*. Stuttgart, Ulmer.
- Wintterlin, F. (1906). *Die Organisationen König Wilhelms I. bis zum Verwaltungsedikt v. 1. März 1822*. Stuttgart, Kohlhammer.
- World Bank (1982). *World development report 1982: agriculture and economic development*. Oxford, Oxford University Press.
- World Bank (2008). *World development report 2008: agriculture for development*. Oxford, Oxford University Press.
- Zmora, H. (1997). *State and nobility in early modern Germany: the knightly feud in Franconia, 1440-1567*. Cambridge, Cambridge University Press.

Appendix:

Timeline of Historical Events and Developments,

Württemberg and the Three Project Communities, 636 - 1918

Date	Württemberg (Wü)	Wildberg (Wb)	Ebhausen (Eb)	Münsingen-Auingen (Mü-Au)
636				Mü possibly founded by Merovingian King Dagobert as first county on the Swabian Jura
770				'Auingen Mark' is mentioned
772				Mü is mentioned by name
804				St Martin's church exists in Mü
809				Mü village is mentioned by name
1081	Konrad I of Wü is first mentioned			
1083	Konrad I becomes ruler of Wü			
1110	Konrad II accedes to throne			
1122	Konrad I dies			
12C	Wü becomes a County of Holy Roman Empire			fortress is built on hill near Au
1143	Konrad II dies; Ludwig I accedes to throne as first known 'Count' of Wü age 24			
1158	Count Ludwig I dies age 39; Count Ludwig II accedes to throne age 21			
1181	Count Ludwig II dies age 54			
1194	brothers Count Hartmann I (age 34) & Count Ludwig III (age 28) accede to throne, probably joint rulers			
c.1200		fortification is built in Wb by Pfalzgrafen von Tübingen	Eb is probably founded	
1230-50			oldest Eb church-bell is made	
c. 1235		daughter of Pfalzgraf von Tübingen brings Herrschaft Wb as dowry to Reichsgraf von Hohenberg,		
1237		Wb is mentioned as an inhabited settlement		
1240	Count Hartmann I dies age 80			
1241	Count Ludwig III dies age 75; Count Ulrich I ('the founder', 'with the thumbs') accedes to throne age 15			
1245			governor (<i>Vogt</i>) of Eb is mentioned	
c. 1250		Reutin convent is established on riverbank below Wb		

Date	Württemberg (Wü)	Wildberg (Wb)	Ebhausen (Eb)	Münsingen-Auingen (Mü-Au)
1251				Mü begins to be used as princely residence town
1252		Reutin convent is first mentioned by name		
1263				Mü & Au are transferred to Württemberg
1265	Count Ulrich I dies age 39; Count Ulrich II accedes to throne age 11			
1267			governor (<i>Vogt</i>) of Eb is mentioned	
1273			Eb church benefice held by Burkhard von Höwen Canon of Konstanz Cathedral	
1275			first documentary reference to Eb church & village	
1277		Reutin convent is endowed with Oberjettingen church revenues		
1279	Count Ulrich II dies age 25; Count Eberhard I accedes to throne age 14			
1280		Dominican nuns are first documented in Reutin convent		
1284		Reutin convent is rebuilt & extended, becomes official burial place of House of Hohenberg, takes on Dominican rule		
1286			Eb church <i>Viceplebanus</i> is H. H.	
1288		Count Hohenberg sells village of Oberjettingen to Reutin convent		
1293			Eb church <i>Kilcherre</i> is 'C.'	
1297		Reutin convent is endowed with Monhart farm near Eb	governor (<i>Vogt</i>) of Eb is mentioned; Reutin convent is endowed with Monhart farm near Eb	
1298		Reutin convent gets pasture rights over Wb communal pastures		
c.1300				fortress near Au is abandoned
1303		Herrschaft Wb includes most villages of later district	Eb is included as part of Herrschaft Wb	
1317		Reutin convent gets free ownership over convent mill		

Date	Württemberg (Wü)	Wildberg (Wb)	Ebhausen (Eb)	Münsingen-Auingen (Mü-Au)
1320		Latin school is first mentioned in Wb		
1322		Franciscan <i>Pfleghof</i> (office and storehouse) for mendicant monks near Wb churchyard		
1325	Count Eberhard I dies age 60; Count Ulrich III accedes to throne age c. 39			
pre-1339				Mü becomes town; is fortified; has c. 600 inhabitants; administers Au
1344	Count Ulrich III dies age c. 58; brothers Count Ulrich IV (age c. 29) and Eberhard II ('the whiner') age c. 29) accede jointly			
1347-8	Black Death			
1355		Herrschaft Wb is divided between 2 Hohenberg brothers, Wb co-ruled	Eb is allocated to one of the Hohenberg brothers (Burkhard VII)	
1360s				Au St Pancratius Chapel (village church) is first mentioned
1361	Count Eberhard forces Count Ulrich IV to sign family contract confirming impartibility of Wü			
1362	Count Ulrich IV ceases to participate in rule; Count Eberhard II ('the whiner') carries on ruling alone			
1363		Reutin convent is transferred partly to Palatinate & partly to Wü		
1364		heirs of Burkhard VII von Hohenberg sell their half of Wb to Pfalzgraf Ruprecht I of Palatinate	heirs of Burkhard VII von Hohenberg sell Eb to Pfalzgraf Ruprecht I of Palatinate	
1366	non-ruling Count Ulrich IV dies age c. 51			
1377		right of appointment of Wb parish is transferred to Reutin convent; Wb schoolmaster's widow is mentioned		
1378				Mü is invaded, plundered & burnt down by Ulm army

Date	Württemberg (Wü)	Wildberg (Wb)	Ebhausen (Eb)	Münsingen-Auingen (Mü-Au)
1392	Count Eberhard II ('the whiner') dies age c. 77; Count Eberhard III ('the mild') accedes to throne age c. 30	Wb parish church is legally separated from previous Sulz 'mother church' and is declared autonomous (although Reutin still has appointment right)		
1397	Mömpelgard (Montbéliard) comes under Württemberg administration			
early 15C				Mü & Au are mortgaged by Wü to Helfenstein
1411		oldest known Wb church bell is made (destroyed in WW2)		
1416			Eb village church chaplain (<i>Kaplan</i>) is Pfaff Heinrich Maier	
1417	Count Eberhard III dies age c. 55; Count Eberhard IV ('the younger') accedes to throne age 29			
1419	Count Eberhard IV ('the younger') dies age 31; Count Ludwig I (age 7) accedes to throne jointly with Count Ulrich V ('the much loved', age 6) under regency			
1426	Count Ludwig I reaches majority age 14, rules alone during brother's minority			
1432				Mü & Au are redeemed by Wü from Helfenstein
1433	Count Ulrich V ('the much loved') reaches majority, age 20, rules jointly with elder brother Ludwig I			
1439		earliest surviving Wb church bell is made (1411 bell was destroyed in WW2)		
1440		Electors of Palatinate sell Herrschaft Wb (including Wb and Reutin convent) to Wü	Electors of Palatinate sell Eb to Wü	
1442	Treaty of Nürtingen divides Wü between 2 family lines; Wü-Stuttgart line taken over by Count Ulrich V ('the much loved'); Wü-	Wb becomes a possession of Wü-Stuttgart family line	Eb becomes a possession of Wü-Stuttgart family line	Mü & Au become possessions of Wü-Urach line, whose residence town is Urach

Date	Württemberg (Wü)	Wildberg (Wb)	Ebhausen (Eb)	Münsingen-Auingen (Mü-Au)
	Urach line taken over by Ludwig I			
1444	Mömpelgard (Montbéliard) becomes part of Württemberg			
1448	invention of printing			
1449-50				Ulm army invades and burns Mü
1450	Count Ludwig I dies of plague age 37 in Urach; count Ludwig II takes over Wü-Urach line age 11	Wb church is first mentioned as 'St Martin's'	Eb cleric is Beck or Brodbeck	
1453	Count Ludwig II of Wü-Urach reaches majority age 14			
1454				fortress near Au is mentioned as ruin surrounded by forest; artificial water-storage-pond (<i>Hülbe</i>) is first mentioned in Au
c. 1455			Eb suffers serious fire, church is rebuilt	
1457	Count Ludwig II of Wü-Urach is epileptic & dies age 18; Count Eberhard V ('the bearded') takes over the Wü-Urach line age 12			
1464		Wb burns down totally		
1467		new Wb church is finished	Eb pastor is N. Wetzel	
1469		oldest Wb communion chalice is made		
1478		Count sends nuns from Worms to reinstate discipline & morality in Reutin convent		
1480s		district clerk (<i>Amtsschreiber</i>) is conducting Latin school in Wb		St Martin's church in Mü is extensively rebuilt in Gothic style
1480	Count Ulrich V ('the much loved') dies age 67; Count Eberhard VI (later Duke Eberhard II) accedes to Wü-Stuttgart line age 33			Count establishes hospital-poorhouse in Urach for entire district including Mü & Au
1482	Treaty of Münsingen reunifies Wü after 40 years, under Eberhard V; plague rages in Wü	Balthasar Käuffelin (of the Käuffelin Foundation) is born in Wb		counts and parliament of Wü meet in Mü, sign Treaty reunifying Wü
1486		Wb woollen-weavers get own guild ordinance, exporting to Stuttgart & organizing villages	Eb is possibly already involved in woollen-weaving	

Date	Württemberg (Wü)	Wildberg (Wb)	Ebhausen (Eb)	Münsingen-Auingen (Mü-Au)
1489			Eb pastor is Johann Nestlin	
1492			Eb pastor is Johann Nestlin	
1495	Count Eberhard V becomes Duke Eberhard I ('the bearded') age 50; Wü becomes Duchy			
1496	Duke Eberhard I ('the bearded') dies age 51; Duke Eberhard II accedes to throne age 49			Fraternity of All Faithful Souls is mentioned in Mü
1498	Duke Eberhard II flees to exile in Ulm; Duke Ulrich I ('zealous Heinrich') accedes to throne age 11, but with parliamentary regency during minority; Wü ejects its Jews			rebuilding of St Martin's church in Mü in Gothic style is completed (c. 1500)
1501		Wb hospital-poorhouse is founded		
1502	Stuttgart suffers plague			Duke of Wü flees to Mü to escape plague, writes his will there, & receives Emperor Maximilian I; Mü is ranked 4th among Wü towns
1503	Duke Ulrich I ('zealous Heinrich') reaches majority age 14, takes over ruling Wü			
1504	ex-Duke Eberhard II dies in exile in Palatinate			
1514	'Armer Konrad' revolt; Tübinger Vertrag (Wü's 'constitution') prohibits ruler from waging war or raising taxes without parliament's consent	Wb does not participate in Armer Konrad revolt	Eb possibly participates in Armer Konrad revolt; holder of Eb church benefice is Johann Wetzel (possibly of Berneck)	Mü & villages protest forest rights during Armer Konrad revolt
1519	nobility declare themselves independent & cease to attend Wü parliament; Duke Ulrich takes Reutlingen; Swabian League invades Wü and deposes Duke Ulrich I ('zealous Heinrich') age 32	Wb is briefly held by Swabian League, returns to Wü, but refuses to send men to help Duke		
1520	Swabian League sells Wü to Emperor Karl V of Austria for 220,000 Gulden	Wb again pays oath of allegiance to Swabian League; Balthasar Käuffelin (born in Wb) is Rector of University of Tübingen		
1525	German Peasants' War begins;	Wb capitulates to Black Forest		Mü & Au peasants revolt late

Date	Württemberg (Wü)	Wildberg (Wb)	Ebhausen (Eb)	Münsingen-Auingen (Mü-Au)
	deposed Duke Ulrich I ('zealous Heinrich') allies with peasants to try to get Wü back but fails	Peasant Horde, Reutin convent is plundered, Wb is occupied for 1 day		March; Tailors' Fraternity is mentioned in Mü
1528			Eb priest is Jakobus Philippi	
1530			Eb gets new priest Michel Beer	
1534	deposed Duke Ulrich I ('zealous Heinrich') is restored to throne of Wü age 47; Wü's 'First Church Reformation' is introduced	Reutin convent refuses to accept Wü Reformation		Mü's deposed Catholic priest Konrad Schlenk (who had Lutheran tendencies) is reinstated in benefice
1535		Wb benefice is held by Catholic Christoph Zörner of Strasbourg	Eb church is inspected for Reformation; Eb gets temporary new Lutheran pastor (<i>Pfarrverweser</i>) Hans Schuble; then permanent new Lutheran pastor Jodocus Himelcron	Mü gets first Lutheran pastor Georg Bausser
1536	Church Ordinance lays down foundation for national Lutheran church	Catholic priest Christoph Zörner & Wb <i>Keller</i> (district bureaucrat) are deposed by Duke; Alpirsbach monk Ambrosius Blarer introduces Reformation in Wb; Wb gets Lutheran pastor Andreas Keller		
1537				convent and St Martin's church in Mü are plundered by Lutheran iconoclasts
c. 1540				Au gets first Lutheran curate Johannes Behem
1542				Au's curate is Johannes Behem
1543		Wb receives addition of curate (<i>Diakon</i>)		Au probably gets new curate David Besserer
1544-5		public theatricals 'on Papacy' are led by Wb schoolmaster		
1546	Schmalkaldic War begins (1545-7); Martin Luther dies	Wb provides 51 men to Duke of Wü against Emperor; Imperial troops occupy Wb for 16 weeks	Imperial troops occupy district of Wb (possibly including Eb) for 16 weeks	
1547	Emperor defeats Schmalkaldic League; Synodal Ordinance is issued	Deaconry of Wb is set up covering districts of Wb, Calw & Nagold; Wb schoolmaster first mentioned	Eb becomes part of Deaconry of Wb	Mü & Au become part of Deaconry of Urach

Date	Württemberg (Wü)	Wildberg (Wb)	Ebhausen (Eb)	Münsingen-Auingen (Mü-Au)
1548	Imperial troops occupy Wü; Emperor forces Duke Ulrich I ('zealous Heinrich') to accept Augsburg Interim, partially restoring Catholicism in Wü		Eb pastor Himmelcron disappears (perhaps dies); parish has no pastor for 2 years	Au's curate David Besserer probably leaves and there is an 'Interim' in curacy
1550	Duke Ulrich I ('zealous Heinrich') dies age 63; Duke Christoph accedes to throne age 35		Eb gets new pastor Jakob Jäger after 2-year gap with no pastor	Au probably gets new curate Sebastian Behem
1551		Wb pastor Andreas Keller probably receives rank of 'Superintendent'		
1552	Augsburger Interim is revoked; Wü's 'Second Church Reformation' begins; Treaty of Passau secularizes church lands; first <i>Landesordnung</i> is issued		Eb gets new pastor Georgius Fieß	Au's curate is Sebastian Behem (possibly since 1550)
1553	Wü church begins to be managed jointly by Consistory (spiritual) and Church Council (administration); 'Little Ice Age' starts			Au gets new curate Johann Philipp
1554	<i>Ausschussverfassung</i> reorganizes parliamentary estates into 14 Lutheran prelates and c. 50 representatives of towns and districts (<i>Städte und Ämter</i>)			All Souls Benefice (<i>Allerseelenpfünde</i>) established in Mü
1555	Peace of Augsburg ('cuius regio, eius religio'); first national law-code (<i>Landrecht</i>) issued			
1556		nuns in Reutin convent resist introduction of Reformation		Au gets new curate Nikolaus Velter
1558	Wü introduces baptism & marriage registers	Wb marriage register starts 3 Oct; Reutin convent lands become ducal demesne farm but some nuns remain resident		Au gets new curate Alexander Glase; Mü baptism register starts (Au has separate baptism register starting 1581); Mü has leper-house (<i>Siechenhaus</i>) located near Au

Date	Württemberg (Wü)	Wildberg (Wb)	Ebhausen (Eb)	Münsingen-Auingen (Mü-Au)
1559	Great Church Ordinance (<i>Große Kirchenordnung</i>) is issued; primary schooling become compulsory	Reutin convent signs agreement that nuns can remain until c. 1580; Balthasar Käuffelin dies, sets up Käuffelin Foundation in Wb for education of descendants; Wb school has 35 pupils	Eb burial register starts 1 Mar; baptism & marriage registers start 3 Apr	Mü gets first full-time schoolmaster (previously curate taught school)
c. 1560		worsted proto-industry arises in Wb region		
1560				Au gets new curate Michael Renner
1562		Wb gets new pastor Sebastian Bloss		
1563				Au gets new curate Sebastian Leipzig
1565	parliamentary decision (<i>Landtagsabschied</i>) declares Lutheranism to be state religion			Au gets new curate Kaspar Heinrichmann
1566		Duke energetically seeks to eject last nuns from Reutin convent		Au gets new curate Jakob Lorhardt
1567	Wü issues second national law-code (<i>Landrecht</i>) and second <i>Landesordnung</i>			
1568	Duke Christoph dies age 53; Duke Ludwig I ('the pious') accedes to throne, age 14			
1569			Eb gets new pastor Vitus Ludwig	Au gets new curate Georg Müller; Ducal commission resolves conflict between Mü & Au over cattle-driving on Münsinger Hart
1570		Wb gets new pastor Johannes Nikolaus Weidner; 4 nuns remain in Reutin convent	Pfrondorf inhabitants start being registered in Eb parish registers	
1571			Eb gets new pastor Jacobus Kaiser	
1572				Au gets new curate Johannes Schwarz
1573	cold year causes poor harvest, economic crisis		Eb gets new pastor Ludovicus Kraatzer	Au gets new curate Paul Schickard
1574	cold year causes poor harvest, economic crisis			Mü gets new pastor Abraham Sattler; Mü marriage register starts

Date	Württemberg (Wü)	Wildberg (Wb)	Ebhausen (Eb)	Münsingen-Auingen (Mü-Au)
1576		Wb gets new pastor Jeremias Pistorius (1 year only)		Au gets new curate Johannes Steig (briefly); then another new curate Johannes Betz
1577		Deaconry of Wb loses district of Calw; Wb gets new pastor Daniel Ziegler; Wb schoolmaster gets good references from community		
1579				Au gets new curate Johannes Dicklin
c. 1580		nuns in Reutin convent give up resistance to Reformation & move out, convent is finally dissolved		
1580				Au gets new curate Johannes Lieb
1581		Wb school has 8 Latin & 23 German pupils		Au baptism register starts 19 Feb
1585				new schoolhouse is built in Mü
1586	Johann Valentin Andreae (later originator of Wü church courts) is born	Wb graveyard beside church ceases to be regularly used, new graveyard is set up for non-notables		Au gets new curate Christian Pfister; Au marriage register starts 4 Dec
1591				Au gets new curate Tobias Hess; Au burial register starts 11 Nov; Mü gets new pastor Georg Stösser
1592			Eb gets new pastor Stephanus Müller; and second new pastor Sebastianus Göthfried	
1593	Duke Ludwig I dies childless age 38; Duke Friedrich I accedes to throne age 36			Au villagers negotiate freedom from mill compulsion by paying fee
1595				Au gets new curate Philipp Jakob Hunn; sub-district of Mü gets 1/3 of Catholic village of Magolsheim
1597		Wb worsted-weavers' guild splits from woollen-weavers' guild & starts separate accounts		Au gets new curate Johannes Höfel; Mü gets new pastor Georg Rebstock (1 year only)
1598			Eb gets new pastor Ludovicus Bartholomäi	Mü gets new pastor Albrecht Hess

Date	Württemberg (Wü)	Wildberg (Wb)	Ebhausen (Eb)	Münsingen-Auingen (Mü-Au)
1600	rapid inflation is observable in German economies			Au church is rebuilt; Au gets new curate Johannes Fellner; Mü gets own linen-weavers' guild; Urach gets legal privileges over linen industry
1601			Eb village school first mentioned	
1602		Wb Inventuren & Teilungen start		
1603			Pfrondorf joins Wü & becomes sub-parish of Eb	
1604			Eb gets new pastor Bartholomäus Widmann	
1606				Au gets new curate Johannes Horn
1607				Au gets new curate Johann Sebastian Blankenhorn; Mü gets new pastor Tobias Olbert
1608	Duke Friedrich I dies age 51; Duke Johann Friedrich accedes to throne age 15			
1609		Wb church is extended		
1611				Au gets new curate Ludwig Salomon (briefly); then Ludwig Sigel or Sigmann (longer-term)
1612			Eb gets new pastor Conradus Volkmar	
1615		Wb burial register starts 21 Jul; Wb gets new pastor Heinrich Dauber		
1616				Mü gets new pastor Heinrich Effertzen
1617	Mömpelgard is subjected to secundogeniture (lasts until 1723)			
1618	Thirty Years War begins (1618-48)	Wb castle burns down (accidentally); Wb gets new pastor Justinus Kerner		Au has a school
1619				Au gets new curate Johannes Kalchbrenner
1619-23	Kipper- und Wipperzeit (hyperinflation)			
1620	Johann Valentin Andreae comes to Calw as pastor	Wb has 30-40 woollen-weavers (10% of household heads)		

Date	Württemberg (Wü)	Wildberg (Wb)	Ebhausen (Eb)	Münsingen-Auingen (Mü-Au)
1623	Wü devalues currency			Au gets new curate Jakob Lederer
1626		Wb census lists 1442 'citizens and their children'		Au gets new curate Johann Ludwig Stumpp
1627				Mü gets new pastor Christian Pfister
1628	Duke Johann Friedrich dies age 46; Duke Eberhard III accedes to throne age 14, initially under regency		Eb suffers 'Hungarian Sickness' & harvest failure	
1629	Edict of Restitution restores c. 1/3 of Wü territory to Catholic church	Reutin convent outside Wb is included in Edict of Restitution		
1630		Wb has over 150 worsted-weavers (c. 40% of household heads)	Eb petitions for grain handouts	
1631			Eb gets new pastor Conradus Volkmar (son of predecessor)	Au gets new curate Johann Jakob Stumpp (previous one's brother); Mü is plundered by Count Egon von Fürstenberg & 20,000 troops; first surviving Mü burial register starts
1632	Battle of Lützen; Wü regency allies with Sweden; Edict of Restitution revoked in Wü; Privy Council & Estates eject regent			
1633	Emperor declares majority of Duke Eberhard III (age 19) who begins personal rule; joins Heilbronner Bund (Protestant side in war)	Wb gets new pastor Daniel Osiander (just for 2 years)		
1634	Catholic victory over Protestants (incl. Wü) at Battle of Nördlingen; Wü invaded by Imperial forces; Duke Eberhard III flees to Strasbourg	Calw burns down; Croatian mercenaries occupy Wb for several weeks (Sep); months of plundering & plague; Wb still has c. 30 woollen-weavers	soldiers are preying on villages of district of Wb (probably including Eb)	Au has 87 households (pop c. 435)
1635	Duke Eberhard III in exile in Strasbourg	637 people buried in Wb; Wb pastor Osiander dies	Eb petitions for tax relief, almost all villagers with land are dead	plague in Mü
1636	Duke Eberhard III in exile in Strasbourg	Wb gets new pastor Johann Konrad Zeller	Eb has recently been burnt, plundered several times, has no livestock, most inhabitants have moved away; Eb gets new pastor Johann Bernhard Eberhard	

Date	Württemberg (Wü)	Wildberg (Wb)	Ebhausen (Eb)	Münsingen-Auingen (Mü-Au)
1637	Duke Eberhard III marries in exile in Strasbourg	Wb is occupied by 133 Imperial troops, has to pay occupation costs, puts together self-defence force		
1638	Duke Eberhard III negotiates with Emperor to return from exile; Johann Valentin Andreae becomes court preacher in Stuttgart			Mü is plundered for 3 weeks by 500 soldiers, only 40 citizens left
1639	Johann Valentin Andreae publishes book summarizing religious & educational laws of Wü		Eb is invaded & plundered by Imperial forces, villagers lose all grain & possessions	
1641				Au has 18 communicants (pop 28); Au loses its curate & curacy vacant until 1651
1642	Wü establishes church courts (<i>Kirchenkonvente</i>) in towns	Wb has only 73 worsted-weavers	Eb is described as half-burnt-down; has 10 worsted-weavers	
1643			Eb is described as half-burnt-down; has 2 farmers + 11 weavers	Mü plundered by Bavarians
1644	Wü establishes church courts (<i>Kirchenkonvente</i>) in villages	Wb church court records start		
1645		French & Weimar (anti-Imperial) forces occupy town; first baptism register destroyed by Swedes	costs of anti-Imperial forces allocated to villages (probably including Eb)	Au's inhabitants flee to Mü and stay there till 1647
1646		Wb has only 8 woollen-weavers left; first surviving Wb baptism register starts 1 Jan		Mü plundered by Swedes; Au totally deserted
1647				Au's inhabitants return after 2-year desertion of village
1648	Thirty Years War Ends; Peace of Westphalia is signed & restores territorial integrity of Wü			Mü has 30-40 surviving citizens; Swiss immigrants re-settle Mü and surrounding villages
1649	Johann Valentin Andreae introduces compulsory schooling for boys & girls			
1650		Calwer Zeughandlungskompagnie is founded, with legal monopoly over Wb worsted-weavers' wares	Calwer Zeughandlungskompagnie is founded, with legal monopoly over Eb worsted-weavers' wares	
1651			Eb petitions for tax relief since it is burnt-out, damaged by hail, barely able to rebuild houses	Au gets new curate (after 10-year gap) Martin Neuffer

Date	Württemberg (Wü)	Wildberg (Wb)	Ebhausen (Eb)	Münsingen-Auingen (Mü-Au)
1652			Eb has 47 buildings still in ashes	
1653				Au has only 81 inhabitants
1654	Johann Valentin Andreae (originator of Wü community church courts) dies	Wb gets new pastor Philipp Gräter		Mü becomes autonomous district including Au; Mü-Au remain part of Deaconry of Urach
1655				Au has only 49 buildings
1656				Au gets new curate Johann Jakob Hess
1659		Wb gets new pastor Johannes Hellwag		
1660				Mü gets new pastor Johann Jakob Hess (previously Au curate)
1661				Au gets new curate Johann Philipp Hegel; Au children are being schooled by private citizens
1662	Uracher Leinwandhandlungs-Compagnie is established			Uracher Leinwandhandlungs-Compagnie is established with monopoly over Mü & Au weavers
1664				Au gets new curate Jeremias Haug; Mü gets new pastor Anton d'Attrin
1667				Au gets new curate Johann David Canz
1670		Wb gets new pastor Erhard Machtolph		
1671				Mü suffers accidental fire, half the town burns down; Mü gets new pastor Ludwig Gebhard
1672				Au gets new curate Johann Leonhard Hagemajer
1674	Duke Eberhard III dies age 59; Duke Wilhelm Ludwig accedes to throne age 27		Eb church court records start; Eb gets new pastor Johann Wilhelm Faißler	
1675				Mü gets new pastor Johann Georg Hegel
1676		Wb gets new pastor Georg Friedrich Weinmar; Wb school has 126 pupils & Wb described as 17th-best Latin schools in country		

Date	Württemberg (Wü)	Wildberg (Wb)	Ebhausen (Eb)	Münsingen-Auingen (Mü-Au)
1677	Duke Wilhelm Ludwig dies age 39; Duke Eberhard Ludwig accedes to throne age 1; struggle within ducal family for control of regency, resolved by intervention of Emperor Leopold			Au Inventuren & Teilungen start
1679				Au gets new curate Johann Melchior Landauer
1680			Eb Inventuren & Teilungen start	
1681	Sunday-school (<i>Christenlehre</i>) introduced – Wü Pietism begins			
1682				Au gets new curate Matthäus Frey
1684			Eb pastor Johann Wilhelm Faißler dies or leaves; possibly 3-year gap without pastor	Mü gets new pastor Johann Ludwig Schaubecker
1686				Mü & Au are shifted to Deaconry of Blaubeuren
1687	Johann Valentin Andreae's book summarizing Wü religious & educational laws is reissued		Eb gets new pastor Johann Michael Ekhenfelder	
1688	War of Palatine Succession begins (1688-97); Wü invaded by France	French plunder Calw & approach Wb but draw off at last moment; Wb castle is rebuilt		
1689		Wb worsted-weavers' guild sends delegation to demonstrate in Stuttgart; Wb gets new pastor Johann Georg Laitenberger	Eb church is expanded with new upper gallery	Mü gets new pastor Johann Georg Sigler
1690			Rohrdorf becomes sub-parish of Eb	
1691		Wb church tower roof is renewed		
1692	Regent Friedrich Carl is taken prisoner by French at Battle of Ötisheim	French soldiers burn Calw; refugees shelter in Wb; Wb school has 116 pupils		Mü gets new pastor Johann Leonhard Hagmajer
1693	French invade Wü; Duke Eberhard Ludwig is formally declared to have reached majority age 16	Wb gets new pastor Johann Jakob Zeller; French soldiers shoot a baker in Wb		Au gets new curate Gottfried Kuhorst
1694		Calw refugees are still dying in Wb	Eb gets new pastor Franciscus Vischer	
1696		Wb gets new pastor Johann Konrad Linsenmann		

Date	Württemberg (Wü)	Wildberg (Wb)	Ebhausen (Eb)	Münsingen-Auingen (Mü-Au)
1696-1700			Eb church is extensively renovated	
1697	War of Palatine Succession ends			
1698	separation in Wü church between Consistory (spiritual) & Church Council (administration)			Au gets new curate Georg Friedrich Heusler; Mü gets new pastor Wilhelm Ludwig Ruoff
1699	Duke Eberhard Ludwig dissolves parliament (for 34 years)			
1700	Duke Eberhard Ludwig visits Versailles			
1701	War of Spanish Succession begins (1701-14)			
1702	new community ordinance seeks to enhance village representation in parliamentary estates			battle is fought by Bavarian troops in front of Mü town walls
1703	Wü is invaded by France			Mü & villages are plundered and burnt by French-Bavarian army; Au gets new curate Johann Theodor Clemens
1704	Duke Eberhard Ludwig participates at Battle of Höchstädt; lays foundation stone of Ludwigsburg Palace		Eb gets new pastor Johann Ludovicus Wetzel	Au completely burnt down except for 4 houses; Mü gets new pastor Georg Friedrich Hausch
1705		Wb gets new pastor Johann Philipp Zeller		
1706				Au gets new curate Philipp Jakob Kreuser
1707	Wü is invaded by France; Duke Eberhard Ludwig is named field-marshal of Swabian troops in War of Spanish Succession and enters morganatic marriage with mistress		Eb gets new pastor Johann Georg Schäfer; Eb man is holding Pietist conventicles, Eb woman is attending conventicles in Altensteig	
1708	Emperor, Privy Council and Estates compel Duke Eberhard Ludwig to abandon morganatic marriage; he follows mistress into exile in Switzerland; 'Hunger Year'			
1709			Eb gets new pastor Gottfried Wagner	Au gets new curate Johann Jakob Müller

Date	Württemberg (Wü)	Wildberg (Wb)	Ebhausen (Eb)	Münsingen-Auingen (Mü-Au)
1710	Duke Eberhard Ludwig enters into marriage of convenience, returns to Wü with mistress; 'Hunger Year'	Wb pastor Zeller complains about Pietist conventicles in town; Zeller moves to Calw; Wb gets new pastor Johann Georg Uber		
1713	Pietist members of Calw merchant company are in conflict with pastor Zeller, ducal commission of inquiry	Wb begins register of sumptuary fines		
1714	War of Spanish Succession ends			
1715			building work on Eb church	Au gets new curate Johann Georg Steck; Mü gets new pastor Johann Jakob Müller
1717	Duke sets up <i>Konferenzministerium</i> to circumvent Privy Council	Wb soul-register lists 1,328 inhabitants		
1718	Ducal residence moves from Stuttgart to Ludwigsburg			
1719	first Wü House of Discipline and Work (<i>Zucht- und Arbeitshaus</i>) is founded in Stuttgart			
1720			Eb gets new pastor Christoph Haas	
1721				Au schoolhouse is mentioned
1722	confirmation is introduced under Pietist influence			
1723	Mömpelgard secundogeniture line dies out; it returns to main Wü line			
1724	Duke establishes (small) standing army despite parliamentary opposition			
1725			building work on Eb church	
1726	Blaubeurener Leinwandhandlungs-Compagnie is established			
1728-9			Pfrondorf builds own church	
1729	Renewed Ordinance for the German-Language Schools			Au gets new curate Pantaleon Ignatius Ruisinger
1730				all Au fields from pre-30YW are back under cultivation
1731	heir-apparent Prince Friedrich Ludwig dies, threatening that Catholic prince will succeed			

Date	Württemberg (Wü)	Wildberg (Wb)	Ebhausen (Eb)	Münsingen-Auingen (Mü-Au)
1732		Wb gets new pastor Georg Konrad Baur		
1733	Duke Eberhard Ludwig dies age 57; Catholic Duke Karl I Alexander accedes to throne age 49; employs Jewish financial adviser Josef Süß Oppenheimer to get funds for standing army; Privy Council uses Imperial institutions to confirm Lutheran church (<i>Religionsreversalien</i>); War of Polish succession begins (1733-8)			
1735	Protestant Delegation in Imperial Diet confirms Lutheran church in Wü			
1736	Heidenheimer Leinwandhandlungs-Compagnie is established; second Wü House of Discipline and Work (<i>Zucht- und Arbeitshaus</i>) is founded in Ludwigsburg	comprehensive 'soul-table' of Wb livelihoods is drawn up	Eb inhabitants attend Pietist conventicles in Nagold; comprehensive 'soul-table' of Eb livelihoods is drawn up	
1737	Duke Karl I Alexander dies unexpectedly age 53; Catholic Duke Karl Eugen ('Carl') accedes to throne in his minority age 9; Josef Süß Oppenheimer is subjected to show trial			
1738	War of Polish Succession ends; Josef Süß Oppenheimer is publicly executed		building work on Eb church	
1740	War of Austrian Succession begins (1740-48)		Eb gets new pastor Zacharias Dolmetsch	Au gets new curate Johann Georg Weisser
1742	Wü religious settlement is confirmed by Prussia, England & Denmark ('guarantor states'); Emperor recognizes all Wü laws back to Tübinger Vertrag 1514			
1743		Wb gets new pastor Christian Friedrich Vischer		district of Mü gets entirety of Catholic village of Magolsheim

Date	Württemberg (Wü)	Wildberg (Wb)	Ebhausen (Eb)	Münsingen-Auingen (Mü-Au)
1744	Duke Karl Eugen achieves majority age 16, tries to limit powers of parliamentary estates & bureaucracy, they resist	detailed communicant register starts in Wb	Eb gets new pastor Sixtus Jacobus Kapff	Au gets new curate Johann Konrad Engelhard; Mü gets new pastor Johann Georg Weisser
1747		Wb gets new pastor Georg Christoph Griesinger		
1748	War of Austrian Succession ends			
1749			Eb gets new pastor Jacobus Ulrichus Nestlen	
1751		Wb gets new pastor Christoph Heinrich Zeller		
1752	Duke Karl Eugen signs subsidy treaty with France to expand standing army			
1754				Au gets new curate David Nathanaël Frisch
1756	Seven Years War begins (1756-63); Wü sides with Austria & France against Prussia	first Gültlingen paper-mill is set up		
1758	Communal Ordinance (<i>Kommunordnung</i>) is issued		Eb gets new pastor Johann Zacharius Staenglin	
1760				Au recovers pre-30YW population; Mü gets new pastor Johann Martin Beuerlen
1763	Seven Years War ends; Wü estates formally complain against Duke before Imperial Aulic Council			
1764				Au gets new curate Ludwig Friedrich Krieger
1766			Eb gets new pastor Johann Ulricus Moegling	
1767		Sautter sets up frieze manufactory in Nagold	Sautter sets up frieze manufactory in Nagold	
1768		Wb gets new pastor Gottlieb Friedrich Faber		
1769		Wb school is reorganized and expanded		

Date	Württemberg (Wü)	Wildberg (Wb)	Ebhausen (Eb)	Münsingen-Auingen (Mü-Au)
1770	Imperial Aulic Council decides in favour of Wü Estates against Duke, negotiates Inheritance Contract (<i>Erbvergleich</i>) which confirms Wü constitutional privileges; 'Hunger Years' (1770-1)			
1772		Wb church is extended; Calwer Zeughandlungskompagnie gets state permit for manufactory		Grafeneck Castle rebuilt as Baroque palace, brings ducal guests to Mü
1773				Au gets new curate Philipp Friedrich Rau
1774		guilds lobby against Calw manufactory, so it stays small	guilds lobby against Calw manufactory, so it stays small	
1775		first Schweigert migrates from Stuttgart to Wb, later founds quill-pen manufactory		
1776		Wb gets new pastor Georg Jakob Duttenhofer		
1777		guild lobbying by Wb weavers (among others) results in revocation of state license for Sautter's frieze manufactory in Nagold	Eb gets new pastor Johann Friedrich Canstetter; guild lobbying by Eb weavers (among others) results in revocation of state license for Sautter's frieze manufactory in Nagold	
1778				Au builds new village hall incorporating new school
1780		ducal officials forbid clover & other new crops without ducal permit		
1781		Wb gets new pastor David Jonathan Cless		Au gets new curate Andreas Timotheus Stängel
1785		Wb gets new schoolhouse with 4 rooms		Au gets new curate Johann Christoph Keppler; Mü gets new pastor Andreas Timotheus Stängel (former Au curate)
1787		Wb church is repaired after storm		
1788				Ruoss sets up first damask-weaving manufactory in Wü, located in Mü
1789	French Revolution starts; Friedrich List is born	new schoolhouse is built in Wb		

Date	Württemberg (Wü)	Wildberg (Wb)	Ebhausen (Eb)	Münsingen-Auingen (Mü-Au)
1790		Wb gets new pastor Christian Ludwig Pfeilsticker		
1791	French forces eject Wü governor from Mömpelgard			Au gets new curate Johann Georg Dahm; Mü gets new pastor Johann Christoph Keppler (former Au curate)
1792	First Coalition War begins (1792-7), Wü sides with Austria against Revolutionary France			
1793	Duke Karl II Eugen dies age 65; Duke Ludwig Eugen accedes to throne age 62; Göttingen Professor Carl Meiners travels through Wü			Uracher Leinwandhandlungs-Compagnie voluntarily dissolves
1795	Wü loses Mömpelgard definitively to France; Duke Ludwig Eugen dies age 64; Duke Friedrich II Eugen accedes to throne age 63	French emigré troops are marauding in neighbouring districts	French emigré troops are marauding in neighbouring districts	
1796	French Revolutionary army under Moreau invades Wü; Wü signs Separate Peace of Paris (<i>Pariser Sonderfrieden</i>) with France giving up left-Rhine possessions and paying reparations	Wü general retreats from French through Nagold Valley, Wb has to pay costs; Wb opposes Effringen's attempt to divide up commons; Gültlingen paper-mill expands into hemp & grinding; Wb gets new pastor Karl Friedrich Ziller	Eb gets new pastor Johann Friedrich Hailer	
1797	Duke Friedrich II dies age 65; Duke Friedrich II ('fat Friedrich') accedes to throne age 43; First Coalition War against Revolutionary France ends; Wü Reform Parliament begins (1797-9)	Calwer Zeughandlungskompagnie is dissolved and Wb worsted-weavers can sell freely for the first time since 1650	Calwer Zeughandlungskompagnie is dissolved and Eb worsted-weavers can sell freely for the first time since 1650	
1799	new Duke forcibly closes Reform Parliament (<i>Reformlandtag</i>); Second Coalition War begins (1799-1802), Wü sides with Austria	French & Austrian soldiers are marching in Wb-Eb region; Wb school gets 4 classes (all co-educational)	French & Austrian soldiers are marching in Wb-Eb region	Au gets new curate Johann Friedrich Sprenger
1800		French & Austrian soldiers are marching in Wb-Eb region	French & Austrian soldiers are marching in Wb-Eb region	troops are quartered in Au; Mü is occupied by French forces

Date	Württemberg (Wü)	Wildberg (Wb)	Ebhausen (Eb)	Münsingen-Auingen (Mü-Au)
1802	Second Coalition War ends; Duke Friedrich II yields to pro-French parliament and signs peace treaty with Revolutionary France; August Ludwig Reyscher is born		Pfrondorf sets up own graveyard	Au has 32 linen-weavers
1803	Duke Friedrich II is raised to rank of Elector age 49; <i>Reichsdeputationshauptschluss</i> redistributes territories of Empire; Duke forms new acquisitions into 'Neuwürttemberg' in personal union with 'Altwürttemberg'			
1804		Wb gets new pastor Christlieb Martin Plieninger		
1805	Third Coalition War (1805); Treaty of Pressburg is signed between France & Austria; Wü receives many Austrian territories; journeymen's guild lodges are abolished			Battle of Elchingen between Austria & France, troops march through Mü & Au
1806	Fourth Coalition War (1806-07); Wü is founding member of Confederation of Rhine; Empire is dissolved; Wü gets more Austrian & independent territories; Elector Friedrich I becomes King Friedrich I ('fat Friedrich') age 52 and unifies 'Neu-Württemberg' with 'Alt-Württemberg'	district of Wb provides 25 men to army required by Wü-France alliance	district of Wb provides 25 men to army required by Wü-France alliance	
1807	Wü assists France in campaign against Prussia	district of Wb is dissolved, Wb becomes part of enlarged district of Nagold; Reutin demesne farm master is replaced with cameral administrator	district of Wb is dissolved, Eb becomes part of enlarged district of Nagold	
1808	Heidenheimer Leinwandhandlungs-Compagnie is dissolved; Wü family registers start; Wü abolishes internal tolls	Wb family register starts	Pfrondorf inhabitants stop being registered in Eb parish registers; Eb family register starts	Au family register starts; Mü is assigned power over 3 new sub-districts

Date	Württemberg (Wü)	Wildberg (Wb)	Ebhausen (Eb)	Münsingen-Auingen (Mü-Au)
1809	Fifth Coalition War (1809); Wü assists France in campaign against Austria; Tyrolean Uprising; Peace of Schönbrunn is signed; Ernst Philipp Paulus born	full census of Wb	woollen manufactory gets state license to operate in Rohrdorf (2.5 km from Eb)	Au gets new curate Gottlieb Friedrich Christmann; soldiers are recruited from district of Mü during Tyrolean Uprising
1809-14				33 men recruited from Mü to fight abroad
1810		Deaconry of Wb is transferred to Generalcy of Tübingen	Eb is transferred as part of Deaconry of Wb to Generalcy of Tübingen	Mü receives a number of new (Catholic) villages from Anterior Austria; new post-road is built between Mü & Ehingen (eastwards); Mü gets postal station
1811				Au church organ is built
1812	Sixth Coalition War (1812-15); new law brings rights of <i>Beisitzer</i> ('by-settlers') closer to those of <i>Bürger</i> (community citizens)		Eb gets new pastor Carl Maximilian Weikersreuter	regional linen yarn trade is declared free
1812-13	Wü takes part in Napoleon's Russia campaign, providing 15,000 troops	Wb provides 2 soldiers for Napoleon's Russia campaign		2 soldiers from Mü die in Russia
1813	Wü changes sides, signs Treaty of Fulda, joins Allies against France	Wb gets new pastor Christian Andreas Friedrich Harpprecht		village in district of Mü organize patrols against French deserters; Mü gets new pastor Johann Ludwig Ziegler
1814		Wb loses post of curate (<i>Diakon</i>)		
1814-15	Wü assists Allied campaign against France in Sixth Coalition War; Congress of Vienna recognizes Wü's territorial acquisitions & its status as Kingdom			
1815	King summons parliament; 4-year constitutional struggle between king and parliament begins; Wü is last state to join German Federation (<i>Deutscher Bund</i>); community redemption right on land is abolished			
1816	King Friedrich I dies age 64; King Wilhelm I accedes to throne age 35	Calw merchants set up woollen spinning manufactories	Calw merchants set up woollen spinning manufactories	Au gets new temporary curate whose name is not known

Date	Württemberg (Wü)	Wildberg (Wb)	Ebhausen (Eb)	Münsingen-Auingen (Mü-Au)
1816-17	'Hunger Years' – harvest failure, famine, mass emigration			
1817	16 Great Organization Edicts (<i>Große Organisationsedikten</i>) are issued (1817-18); serfdom and some manorial privileges are abolished; Chair of Agriculture is set up at University of Tübingen			Au gets new temporary curate Karl Planck (for 1 year)
1818	Hohenheim Agricultural College is founded; some additional manorial privileges are abolished; Cannstatt Agricultural Fair is founded to display & further agriculture			Au gets new temporary curate Gottlob Ludwig Hochstetter (for 1 year); then gets new longer-term curate Karl Planck; Mü gets own Deaconry, Au is member
1819	King William I summons parliament; they agree Wü constitution with bicameral legislature; king permits Pietists to establish community in Korntal instead of emigrating		Eb gets new pastor Wilhelm Christoph Friedrich Sigel	ascent road to Swabian Jura is built at Seeburg, easing access from Mü-Au to Urach
1821	some additional manorial privileges are abolished; Catholic national bishopric for Wü is established in Rottenburg	seat of Deaconry is transferred from Wb to Nagold; Wb gets new pastor Christoph Wilhelm Heinrich Cotta		Au gets new curate Johann Ludwig Andrassy; Association for Improvement of Horse-Breeding is set up in Mü
1822	Administrative Edict (<i>Verwaltungsedikt</i>) entrenches communal powers in Wü			
1823	Calvinists are integrated into the national Lutheran church			Mü gets new pastor Gottlob Eberhard Hafner
1824		most of Reutin convent buildings burn down, are partly rebuilt		
1825			Pfrondorf ceases to be sub-parish of Eb	Au gets new curate Josias Schüle; Mü & villages hold Pietist conventicles; Au has 30 master linen-weavers; Ruoss damask works in Mü is sole manufactory in district

Date	Württemberg (Wü)	Wildberg (Wb)	Ebhausen (Eb)	Münsingen-Auingen (Mü-Au)
1826	Wü signs Customs Agreement with Switzerland (lower tolls); Korntal Pietist community is permitted to establish daughter community of 'Wilhelmsdorf'			Mü tears down most of its town walls
1827	Karl Ehmann (inventor of Swabian Jura Water Supply) is born			
1828	new Wü citizenship law increases marriage controls; new Industrial Law abolishes 13 guilds but confirms 44 others; Wü enters Bavarian-Wü Customs Union; legislation improves position of Jews; August Ludwig Reyscher starts publishing 19-volume collection of the laws of Wü		Johann David Schöttle sets up woollen plant in Eb with 20 workers	Mü gets new pastor Johann Gottlieb David Ehrhart
1829				Au gets new curate Ludwig Friedrich Faber
1830s	Wü state rejects applications for railway-building permits			first water-bores on Swabian Jura, mostly unsuccessful
1830	Wü enters Prussian-Hessian Customs Union; July Revolution in Paris		Society for Furthering of Industry set up, inspects regional weaving, focuses on improving Eb, but efforts have little effect	
1831	press censorship is loosened, many local newspapers are set up; University of Tübingen gets back its academic autonomy; liberal political parties proliferate; liberals enjoy great success in election; King delays summoning parliament			Ellrichshausen sets up Ludwigshöhe experimental farm near Mü & Au
1832			Eb gets new pastor Ludwig Friedrich Ellwanger	
1833	parliament is summoned; liberal opposition attack government; king dissolves parliament; revised citizenship law confirms marriage controls	Wb gets new pastor Karl Georg Haldenwang		

Date	Württemberg (Wü)	Wildberg (Wb)	Ebhausen (Eb)	Münsingen-Auingen (Mü-Au)
1834	Wü joins German Customs Union; many liberals are imprisoned			Au gets new temporary curate Christoph Friedrich Wezel, then new longer-term one Gustav Friedrich Griesinger; Mü gets new pastor Josias Schüle
1835				Regional Agricultural Association is set up in Mü
1836	revised new industrial law confirms most guild privileges; some additional manorial privileges are abolished		Schöttle tries to sell Eb textile manufactory	
1837		Haldenwang sets up school in Wb for mentally deficient children (first in Germany)	Eb population surpasses Wb; Reichert & Seeger manufactory is founded in Rohrdorf; Schöttle gets state loan to modernize his manufactory in Eb	<i>Albbote</i> newspaper begins publication in Mü
1838	liberal leaders cease to campaign for election	Haldenwang school is expanded; private poor relief fund is set up		
1839				Au gets new temporary curate August Kraiss[?], then new permanent curate Christoph Eberhard Elwert
1840			3-storey schoolhouse with 4 classrooms is built in Eb; G. Reichert sets up factory in Rohrdorf	
1841	Catholic opposition to government is strongly expressed in parliament, beginning of political Catholicism as third force in Wü politics	Regional Agricultural Association is set up in Nagold; first Gültlingen paper-mill burns down but is rebuilt as cardboard factory	Eb gets new pastor August Friedrich Wilhelm Dessecker; Regional Agricultural Association is set up in Nagold	
1842	drought in Wü			
1843				Mü gets new pastor Ernst Ludwig Mutschler (temporary), then Sixt Karl Kapff (for 4 years); latter begins holding Pietist gatherings
1844		Nagold district worsted-weavers' guilds propose scheme for central storehouse, comes to naught	Nagold district worsted-weavers' guilds propose scheme for central storehouse, comes to naught	Mü innkeeper is running regular omnibuses to E, S, & W; malting-mill is set up in Mü (supplies local breweries)

Date	Württemberg (Wü)	Wildberg (Wb)	Ebhausen (Eb)	Münsingen-Auingen (Mü-Au)
1845	first limited stretch of railway is opened in Wü	pastor Haldenwang leaves Wb for health reasons; Wb gets new pastor Paul Gottlob Friedrich Süskind (1 yr only)	Reichert & Calmbach founds manufactory in Rohrdorf	
1846	drought in Wü; Friedrich List commits suicide	Wb gets new pastor Konrad Jakob Käferle		Hartstrasse is built, first direct road link from Mü to outline parts of its district (Laichingen)
1846-7	economic crisis, grain scarcity			
1847	social unrest in Wü	Haldenwang school is closed and children are sent to Swabian Jura	Eb commune offers financial incentives to local poor to emigrate to USA	Pietist pastor Kapff leaves Mü; new Mü pastor is Christoph Eberhard Elwert; Au gets new temporary curate whose name is unknown
1848	liberal 'Revolutions'; king appoints liberal ministry (<i>Märzministerium</i>); first socialistic workers' associations form; August Ludwig Reyscher takes seat in parliament; mass emigration; important manorial privileges are abolished			Au gets new curate Johannes Friedrich Seth Stendel; Au establishes citizens' defence units against French 1848 'Revolutionaries'; Mü receives muskets for defence
1849	some additional manorial privileges are abolished; liberal ministry presses king to recognize basic civil rights agreed in Frankfurt by liberal 'Revolutionaries'; Frankfurt 'Rump Parliament' moves to Stuttgart & is ejected by army		Eb population peaks	flood in Mü (January)
1850	reactionary 'July Ministry' is appointed	lending-fund for regional weavers is set up in Nagold	lending-fund for regional weavers is set up in Nagold	
1851	August Ludwig Reyscher finishes publishing 19-volume collection of the laws of Wü		new highway is built between Nagold & Altensteig, passing through Eb	
1852	revised citizenship law confirms marriage controls; liberal reforms are revoked; drought; harvest failure; emigration wave		Reichert & Seeger manufactory has 32 workers in Rohrdorf	
1852-4	economic crisis; c. 78,000 people emigrate from Wü	new highway is built along Nagold Valley through Wb		
1854			Rohrdorf ceases to be sub-parish of Eb	

Date	Württemberg (Wü)	Wildberg (Wb)	Ebhausen (Eb)	Münsingen-Auingen (Mü-Au)
1855	parliament rejects law granting nobility compensation for loss of manorial privileges in 1848-9		Eb gets new pastor August Gottfried Roller	Au gets new temporary curate Hermann Christian Schmidgall, followed by another temporary curate Wilhelm Kohl, then new permanent curate Karl August Haug
1856		Wb town council sets up weaving-school for poor children		
1857	King agrees concordat with Curia favouring Catholics	Wb gets new pastor Ludwig Zeller (briefly); then Karl Philipp Fischer		
1858			Frick & Reichert manufactory in Eb has 25 workers; Reichert & Seeger manufactory has 29 workers in Rohrdorf; G. Reichert has 12 workers in Rohrdorf; Reichert & Calmbach has 11 workers in Rohrdorf	
1860s				Au is intensively engaged in corset-weaving
1861	Wü emancipates Jews; second chamber of parliament rejects King's 1857 concordat with Curia		Eb church is totally renovated	
1862	Wü abolishes guilds; parliament accepts draft law favouring Catholics	Wb ceases to be notarial office for surrounding villages; telegraph reaches Nagold (11 km away); Schweigert quill-pen manufactory has recently declined; apothecary is manufacturing spirits & juices	Eb has unusually high levels of goitre, cretinism, and overall mortality; telegraph reaches Nagold (7 km away); Frick & Reichert manufactory has 25-30 workers in Eb; flannel manufactory has 20 weavers in Eb	Mü allocates funds of abolished guilds to school, fire brigade, & national charities
1863				Mü gets rural postmen; telegraph station in Mü is 'projected'
1864	Wü weakens legal restrictions on marriage; King Wilhelm I dies age 83; King Karl I accedes to throne age 41; declares freedom of press and freedom of association	Ernst Philipp Paulus sets up old-age home for poor people (<i>Haus der Barmherzigkeit</i>) in Wb		Au gets new temporary curate whose name is unknown, then new permanent curate Gottlieb Christian Heinrich Beckh

Date	Württemberg (Wü)	Wildberg (Wb)	Ebhausen (Eb)	Münsingen-Auingen (Mü-Au)
1865	drought in Wü; some additional manorial privileges are abolished; nobility are freed of welfare responsibilities in return for relinquishing compensation claims			Mü gets new pastor Wilhelm Paul Christoph Schüz
1866	Wü allies with Austria in war against Prussia, is defeated, has to pay 8 m Gulden reparations			Ehmann submits plans for Swabian Jura Water Supply
1867		Wb gets new pastor (unknown name, 1 yr only)	Eb gets new pastor Julius Alexander Zeller	
1868	voting rights to elect parliamentary representatives are widened; constitutional reform is begun but not completed	Wb gets new pastor Karl Adolf Schlegel		
1870	Franco-Prussian War breaks out; Wü fights on Prussian side; 'German Party' wins majority in Wü parliament & votes to join new German Empire			
1871	Wü joins united Imperial Germany; King Karl of Wü becomes subordinate ruler in the new German Empire; marriage restrictions are abolished	<i>Maierei</i> building in Reutin convent grounds burns down		Mü gets new pastor Rudolf Georg Ludwig Rooschüz; Swabian Jura Water Supply opens (though not in Mü or Au)
1872		Wb gets railway & telegraph	railway bypasses Eb (nearest station Nagold 7 km away)	5 units of Swabian Jura Water Supply are finished; Au divides up village commons; metal-fittings factory set up in Mü
1873				Au gets new temporary curate whose name is unknown; then a new permanent curate Albert Julius Landenberger; Swabian Jura Water Supply is much admired at Vienna World Fair; railway reaches Urach
1874		Wb gets rail link southwards via Nagold		
1878	Ernst Philipp Paulus dies			
1879		Wb begins to rationalize field ownership		

Date	Württemberg (Wü)	Wildberg (Wb)	Ebhausen (Eb)	Münsingen-Auingen (Mü-Au)
1880	August Ludwig Reyscher dies			Au gets new temporary curate Karl Julius Reichert, then new permanent curate Eberhard Christoph Nestle; Mü gets new pastor Christian Niethammer
1881			Eb gets new pastor Wilhelm Carl Hermann Moser	largest group of Swabian Jura Water Supply is opened
1883				Au gets new temporary curate Paul Wurster
1884				Au gets new curate Wilhelm Theophil Kolb
1887	Wü church courts (<i>Kirchenkonvente</i>) are abolished & replaced by <i>Kirchengemeinderäte</i>			Mü church tower is rebuilt
1888	King Karl suffers homosexual scandal	Wb gets new pastor Paul Roth (1 yr only)	Eb gets new pastor Gottlob Friedrich Jüller	
1889	Karl Ehmann (inventor of Swabian Jura Water Supply) dies	Wb gets new pastor Wilhelm Kentner (briefly); then longer-lasting new pastor Ferdinand Wilhelm Heinrich Eugen Weber		
1890				Mü gets new pastor Ernst Ludwig Fischer (briefly), then Johann August Friedrich Baur
1891	King Karl dies age 68; King Wilhelm II accedes to throne age 43		'das Altensteigerle' narrow-gauge railway connects Nagold & Altensteig, passing through Eb	Au curates obtain title of 'Second Town Pastor' in Mü; railway starts being built in Mü (westward)
1893				westward rail link reaches Mü (last district town in Wü); Catholic prayer-hall is set up in Mü; Au gets new temporary curate Eduard Gerok, then new permanent curate Heinrich Holzinger
1894		paper-shell-sleeve factory is set up in Wb but soon closes		

Date	Württemberg (Wü)	Wildberg (Wb)	Ebhausen (Eb)	Münsingen-Auingen (Mü-Au)
1895	agricultural crisis; left-wing parties enjoy success in elections		Eb gets new pastor Immanuel Gotthold Eberbach	military encampment is set up beside Au on Münsinger Hart; closes the Hartstrasse, cuts off Mü & Au from outlying parts of district; telegraph posts are set up in Mü & Au near encampment
1896				telephones are set up in Mü & Au for military reasons
1896-7				Mü & Au join Swabian Jura Water Supply
1897				South German Portland Cement Factory is set up in Mü with 124 workers; Mü gets new temporary pastor Benjamin Widmann (for 1 year)
1898				Mü & Au get general telephone link; chalk-pit opens employing mainly Au workers; Au gets new temporary curate Benjamin Widmann, then new permanent curate Paul Christoph Gottlob Finckh; Mü gets new pastor Georg Dieterle
1900	left-wing parties enjoy even more success in elections	Wb gets new pastor (briefly) Wilhelm Eberwein; then longer-lasting new pastor Karl Dieterich		South German Portland Cement Factory in Mü is employing 200 workers
1901				eastward rail link reaches Mü
1903	tax system is reformed to reflect social changes			Au gets new temporary curate Oskar Knapp
1904		Wb gets piped water and telephone lines		Au gets new temporary curate Gottlob Weymüller, then another temporary curate Theodor Kalchreuter
1905				Au begins to rationalize field ownership (but does not complete it until 1930s); Au gets new curate Albert Leube

Date	Württemberg (Wü)	Wildberg (Wb)	Ebhausen (Eb)	Münsingen-Auingen (Mü-Au)
1906	unfinished constitutional reform of 1868 is completed; parliament becomes more 'democratic'; new Community Ordinance strengthens communal self-government			Au abolishes communal sheep-pasturing
1907				Mü gets new temporary pastor Karl Sick, then Matthes Otto, then new permanent pastor Eugen Häcker
1909		Wb church tower is repaired		
1910			Eb gets new pastor Johann Friedrich Wall	Mü has c. 180 Catholics
1911				Au gets new schoolhouse
1912	social democrats win election			Mü metal-fittings factory is employing 20 workers; Au gets new temporary curate Albrecht Sigel, then another temporary curate Martin Nast
1913		Wb gets new pastor Paul Gaiser (1 year only)		Au gets new curate Martin Strebel; Mü gets new temporary pastor Richard Fritz (for 1 year)
1914	First World War begins; Wü provides half a million soldiers; more than 73,000 die or disappear in fighting	Pietist congregation exists in Wb; Wb gets new pastor Christian Heller (1 year only)		Mü gets new pastor Albert Dierolf; South German Portland Cement Factory in Mü is employing 200-250 workers
1915		Wb gets new pastor Immanuel Völter		
1916				Au pop equals Wb & Eb pop
1918	First World War ends; mass demonstration in Stuttgart; King of Wü is overthrown			Mü gets new temporary pastor Ernst Kienle, then new permanent one Eugen Seitz in 1919