3 Chapter 6 Appendix

3.1 Ottoman Wars and intra-European Violence

We obtain the impact of Ottoman military activities on regional conflicts in continental Europe by estimating the following equation:

$$
\begin{aligned}
European\ Conflicts_t \quad = \quad & \lambda_0 + \lambda_1\,Ottoman's\ European\ Conflicts_t + \lambda_2\ Year \\
& +\lambda_3\,Year^*Ottoman's\ European\ Conflicts_t \\
& +\lambda_4\,Ottoman's\ non\text{-}European\ Conflicts_t \\
& +\lambda_5\,Year^*Ottoman's\ non\text{-}European\ Conflicts_t \\
& +\lambda_6\,Other\ Controls_t + \varepsilon_t, \quad\quad\quad\text{(A.6.1)}
\end{aligned}
$$

where our key dependent variable will be one of three alternative dependent variables described below; *Ottoman's European Conflicts* is the number of conflicts in which the Ottoman Empire confronted European powers at time t; *Ottoman's non-European Conflicts* is the count at time t of the newly-initiated number of Ottoman conflicts outside Europe as well as its own domestic civil discords.

In various alternative empirical specifications, the dependent variable, *European Conflicts*, will be:

1. The number of violent conflicts initiated among or within continental European countries in the same year (as the variables on the right-hand side of equation (A.6.1)). This measure of intra-European confrontations does not distinguish whether these confrontations were between sovereigns, domestic uprisings against the sovereigns or related to civil wars. By definition, it also does not account for whether they involved a religious dimension either.

2. The aggregate number of intra-European conflicts, including those which began in the same period as well as those began earlier. This measure is broader than the first but can help us identify if the Ottomans' role in subduing intra-European violent confrontations were strong enough to even bring to halt existing feuds. Like the first measure of intra-European conflicts, however, this one too abstracts from the religious nature of the conflicts.

3. The conflicts of a religious nature between the Catholics and the Protestants began in the same year as the control variables. This definition is the narrowest and it includes the Schmalkaldic Wars in 1546 and 1547; the Thirty-Years War between 1618 and 1648; the French Wars of Religion between 1562 and 1598; the war between the Holy Roman Emperor and the Transylvanian Protestants between 1601 and 1604; the French Huguenot uprisings of 1621 and 1622; and the French Huguenot uprisings between 1625 and 1629. The advantage of this last measure is that it is narrowly defined as the religiously motivated wars involving the Protestants and the Catholics.

Regardless of the definition involved, the dependent variables are comprehensive: they include all Ottoman conflicts on record (including naval battles) with their rivals in Europe, the Middle East and North Africa. Classifying Ottoman confrontations by geographic region can be complicated because of the ambiguities of defining the border of the European continent vis-a-vis Asia (see, for example, Findlay and O'Rourke, 2007, p. 2). For practical purposes, I divide the Eurasian landmass roughly vertically with reference to Istanbul (the Ottoman capital), and consider Ottomans' involvements to the west of that division to be in Europe and to the east of it to be in Asia (hence, as elsewhere). Accordingly, Ottomans' various Crimean, Muscovy and Russian engagements are classified as Ottoman conflicts outside Europe, while those with and in Lithuania, Moldavia and Poland are categorized as Ottoman-European confrontations.

Let us start our investigation with our first dependent variable which is the count of violent confrontations in continental Europe initiated in any given year between 1451 and 1700. Table A.6.1 below is generated running six different Poisson regressions of the type shown in equation (A.6.1) and using our first definition of intra-European hostilities. The main results I report below rely on Poisson (negative binomial) regressions with robust errors, designed primarily for count data that are discreet and have a preponderance of zeros and small values.

The first three columns of Table A.61 show how Ottoman military activities every year between 1451 and 1700 influenced those that were newly initiated amongst and within the continental European countries. Column (1) presents the estimates from the most parsimonious specification. As shown, Ottoman

military excursions in continental Europe had a statistically significant and negative impact on the number of European violent feuds. Moreover, the interaction of *Year* with *Ottomans' European Conflicts* is positive and statistically significant, implying that the impact of the Ottomans on intra-European feuds was waning over time. Still, the net effect of Ottoman military engagements in subduing intra-European conflicts was quite substantial in the late-15th and early-16th centuries: one additional Ottoman military engagement in Europe in 1500, for example, lowered the log of the number of intra-European conflicts by roughly .562. Given that the average number of intra-European violent confrontations was about 1.5 per annum, this implies that Ottoman military activities in continental Europe around the year 1500 reduced intra-European violent engagements by roughly 25 percent. According to the coefficient estimates in column (1), the negative impact of Ottomans on intra-European conflicts disappeared around the year 1593. Interestingly, this is roughly two decades following the first decisive defeat of the Ottomans in European hands at Lepanto.

In the following two columns we add different right-hand-side variables in the regressions, although our key finding remains intact: That is, the interaction of *Year* with *Ottomans' European Conflicts* is positive and statistically significant, indicating a waning impact over time of the Ottomans on intra-European feuds. Given the coefficients on *Ottomans' European Conflicts* and *Year * Ottomans' European Conflicts* in column (2), the influence of Ottomans on intra-European conflict begun to turn positive around the year 1578, seven years after the Lepanto Sea Battle.

In the last three columns of Table A.6.1, we repeat the above steps using our second alternative definition of intra-European conflicts which is newly-initiated as well as on-going intra-European feuds. All three estimates indicate that the Ottomans' role in subduing intra-European violent conflicts went beyond just suppressing new ones; it also had an influence on the propensity for Europeans to end their existing feuds. Since the average number of aggregate intra-European conflicts is 4.7 in the sample, the coefficient estimates in the last three columns suggest a reduction of roughly 20 to 25 percent around the turn of the 16th century.

Table A.6.1: Annual Data, 1450 CE – 1700 CE

Dependent Variable: No. of New Continental European Wars per Year, (1) - (3)

No. of All Continental European Wars per Year, (4) - (6)

	Poisson Regressions					
	(1)	(2)	(3)	(4)	(5)	(6)
Ottomans' Euro Conflicts$_t$	−.562*	−.497*	−.465**	−.293*	−.280*	−.178**
	(.231)	(.221)	(.247)	(.095)	(.095)	(.108)
Ottomans' non-EU Conflicts$_t$	.155	.190	.352	−.030	−.017	.009
	(.307)	(.294)	(.300)	(.110)	(.107)	(.113)
Year	−.013	−.014	−.012	−.0005	−.0005	.0014
	(.0087)	(.009)	(.008)	(.004)	(.004)	(.0044)
Year*Ottomans' EU Con.$_t$	.0029*	.0028*	.0022	.0013*	.0014*	.0012
	(.0014)	(.0014)	(.0015)	(.0006)	(.0007)	(.0007)
Year*Ottomans' non-EU Con.$_t$	−.0003	.00005	.0002	.0004	.0005	.0005
	(.0018)	(.0018)	(.002)	(.0007)	(.0007)	(.0007)
Intra-EU Conflicts$_{t-1}$	−.051	−.051	−.058	.148*	.149*	.137*
	(.046)	(.046)	(.047)	(.011)	(.011)	(.011)
EU Population$_t$	.057	−.057	.012	−.004	−.0044	−.050**
	(.046)	(.045)	(.046)	(.021)	(.0021)	(.026)
Ottoman Population$_t$	...	...	.042*	...	...	.052*
			(.019)			(.009)
No. of obs.	250	250	250	250	250	250
(pseudo) R^2	.022	.024	.036	.151	.151	.166

Note: * and ** respectively denote significance at the 5 percent and 10 percent levels. Cols. (1) - (3) dependent variable: no. of conflicts that began in a given year with at least one continental European entity involved in each. Cols. (4) - (6) dependent variable: all new or on-going conflicts in a given year with at least one continental European group involved in each. Source for conflict data: Brecke (1999). Source for distance measures: http://www.geobytes.com/CityDistanceTool.htm. Source for population data: McEvedy and Jones (1978). Included in regressions (2), (3), (5) and (6) but not shown are the average durations of Ottomans conflicts in Europe and elsewhere. Included in columns (3) and (6) but also not shown are the average distance of Ottomans' conflicts from their capital, Istanbul as well as the total number of Ottomans' conflicts (ongoing as well as newly-initiated).

3.2 Ottomans & the Protestant Reformation

The third and final measure we can examine, in fact, is a pure count of the historically well-documented Protestant-Catholic confrontations. Table A.6.2 below shows results based on this narrowest definition of intra-European conflicts confined to those of a religiously-motivated nature.

What we see here is consistent with the hypothesis that the Protestant Reformation was aided and abated by the Ottomans' European aspirations: the num-

ber of Ottomans military engagements in Europe, for the most part, did exert a negative dampening impact on the number of Catholic-Protestant feuds. This impact tended to decline over time although, in any given year, an Ottomans military conquest in the Balkans or Eastern Europe reduced that number anywhere between roughly 25 percent and 40 percent.

Table A.6.2: European Wars of Religion Protestant-Catholic Confrontations

Dependent Variable: No. of Religious Wars per Year, 1451 to 1700, (1) - (3)

No. of Protestant-Catholic Wars per Year, 1521 to 1650, (4) - (6)

	Poisson Regressions					
	(1)	(2)	(3)	(4)	(5)	(6)
$OTTOMAN_t$	$-.805^{**}$	$-.782^{**}$	.994	-1.46^{*}	-1.25	-1.25
	(.469)	(.475)	(.764)	(.759)	(.796)	(.778)
$OTHEROTTOMAN_t$	$-.201$	$-.132$	$-.243$	$-.432$	$-.468$	$-.274$
	(.592)	(.574)	(.705)	(.811)	(.793)	(.781)
$TIME$	$-.013$	$-.0014$	$-.015$	.047	.047	.056
	(.016)	(.0016)	(.015)	(.034)	(.034)	(.084)
$TIME^2$	...	...	...	$-.0001$	$-.00012^{**}$	$-.0001$
				(.00007)	(.0007)	(.0002)
$TIME*OTTOMAN_t$	$.0046^{**}$	$.0042^{**}$	.0031	$.0075^{*}$	.0058	.0057
	(.0024)	(.0026)	(.0031)	(.0038)	(.0042)	(.0041)
$TIME*OTHEROT._t$	.0017	.0019	.0019	.0023	.0026	.0021
	(.0030)	(.0030)	(.0035)	(.0041)	(.0039)	(.0039)
$PROTESTANT_{t-1}$	$.961^{*}$	$.957^{*}$	$.847^{*}$	$.914^{*}$	$.892^{*}$	$.702^{*}$
	(.181)	(.180)	(.171)	(.154)	(.156)	(.179)
$EUROPEPOP_t$	.074	.079	$-.076$	$-.026$	$-.013$	.156
	(.088)	(.087)	(.087)	(.049)	(.050)	(.112)
$OTTOPOP_t$	...	...	$.178^{*}$	...	...	$-.131$
			(.026)			(.102)
No. of obs.	250	250	250	130	130	130
$(pseudo)$ R^2	.241	.242	.293	.118	.121	.134

Note: * and ** respectively denote significance at the 5 percent and 10 percent levels. Cols. (1) - (3) dependent variable: no. of religiously-motivated conflicts that began in a given year within continental Europe between 1451 - 1700. Cols. (4) - (6) dependent variable: no. of Prot.-Cath. violent confrontations that began in a given year within continental Europe between 1521 - 1650. Source for conflict data: Brecke (1999). Source for distances: http://www.geobytes.com/CityDistanceTool.htm. Source for population data: McEvedy and Jones (1978). Included in regressions (2), (3), (5) and (6) but not shown are the average durations of Ottomans conflicts in Europe and elsewhere. Included in columns (3) and (6) but also not shown are the average distance of Ottomans' conflicts from their capital, Istanbul as well as the total number of Ottomans' conflicts (ongoing as well as

newly-initiated).

For a more complete set of empirical analyses, please see Iyigun (2008).