

## LUTHER AND SULEYMAN

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### Abstract

*Various historical accounts have suggested that the Ottomans' rise helped the Protestant Reform movement as well as its offshoots, such as Zwinglianism, Anabaptism, and Calvinism, survive their infancy and mature. Utilizing a comprehensive dataset on violent confrontations for the interval between 1401 and 1700, I show that the incidence of military engagements between the Protestant Reformers and the Counter-Reformation forces between the 1520s and 1650s depended negatively on Ottomans' military activities in Europe. Furthermore, I document that the impact of the Ottomans on Europe went beyond suppressing ecclesiastical conflicts only: at the turn of the 16th century, Ottoman conquests lowered the number of all newly-initiated conflicts among the Europeans roughly by 25 percent, while they dampened all longer-running feuds by more than 15 percent. The Ottomans' military activities influenced the length of intra-European feuds too, with each Ottoman-European military engagement shortening the duration of intra-European conflicts by more than 50 percent. Thus, while the Protestant Reformation might have benefitted from — and perhaps even capitalized on — the Ottoman advances in Europe, the latter seem to have played some role in reducing conflicts within Europe more generally.*

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*“Modern history of Europe begins under stress of the Ottoman conquest.”*

Lord Acton, (1834-1902).

*“Mamma, li Turchi!”*

Anonymous, Italy.

## 1. Introduction

There were various challenges to the ecclesiastical monopoly of the Roman Catholic Church in the 14th and 15th centuries, but neither of those movements got off the ground.<sup>1</sup> In contrast, the birth, survival and growth of Protestantism in the 16th century and subsequently of its various offshoots, such as Zwinglianism, Calvinism and Anabaptism too, came to represent a watershed in European history. That religious pluralism generates competition between different denominations is a direct corollary of the spatial competition model of Hotelling (1929) applied to the religion market and espoused more recently by Barro and McCleary (2005). But how did Lutheranism and its offshoots proliferate whereas previous reform attempts failed? According to one theory, it was the Ottoman Empire’s prowess and its European conquests that aided and abetted the Reformation. A number of historians, such as Benz (1949), Fischer-Galati (1959), Setton (1962), Coles (1968), Inalcik (1970), Max Kortepeter (1972), Shaw (1976), Goffman (2002), and MacCulloch (2003) have articulated as such.<sup>2</sup>

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<sup>1</sup>Among the best known failed reform attempts are the movements instigated by John Wycliffe and Jan Hus. Wycliffe died in 1384 after he was fired from Oxford but the movement he inspired, known as *Lollardy*, was suppressed and had to go under ground. Jan Hus, was burned alive in Constance in 1415. The Albigensian and Waldensian heresies in Southern France were suppressed by the *Albigensian-Cathar Crusade*, which was spearheaded by Pope Innocent III in 1209 and lasted twenty years (see Armstrong, 1988, pp. 389-99). For a recent comprehensive review, see MacCulloch (2003). For more references, also consult Hill (1967), Hillerbrand (1968) and Rosenberg and Birdzell (1986).

<sup>2</sup>To cite some of them briefly, Shaw (1976, p. 76) notes “...what [the Ottoman Sultan] Suleiman had done was to shock Austria and most of Europe by the depth of his penetration, causing Charles to make concessions to the Protestants in Germany to gain their support, a major factor in the subsequent survival and expansion of the Lutheran movement throughout western Europe.”

According to Coles (1968, p. 118), “With Suleiman’s armies at the gates of Vienna and his navies terrorizing the central and western Mediterranean, the traditional frontier had collapsed. The Turks no longer represented a serious nuisance but a deadly danger.”

Inalcik (1970, p. 38) comments “...at first Luther and his adherents followed a passive course, maintaining that the Ottoman threat was a punishment from God, but when the Turkish peril began to endanger Germany, the Lutherans did not hesitate to support Ferdinand with military and financial aid; in return they always obtained concessions for Lutheranism. Ottoman intervention was thus an important factor not only in the rise of national monarchies, such as in France, but also in the rise of Protestantism in Europe.”

For a comprehensive chronology of events relating the Ottomans’ European activities to the Protestant Reformation, as well as various relevant historical anecdotes, see Fischer-Galati (1959).

Utilizing a comprehensive data set on violent conflicts for the interval between 1401 C. E. and 1700 C. E., I show that the incidence of military engagements between the Protestant Reformers and the Counter-Reformation forces did depend negatively and statistically significantly on Ottomans' military activities in Europe. Between the birth of Protestantism in 1517 and the end of the Thirty-Years War in mid-17th century, Ottomans' military expeditions in continental Europe depressed the number of Protestant and Catholic violent engagements on the order of about 40 percent.

In fact, the impact of the Ottomans on Europe went beyond suppressing ecclesiastical conflicts only: between 1451 and 1700, when there were roughly 1.5 new conflicts initiated among the Europeans per annum and about 4.7 conflicts per year in total (including those that had begun at earlier dates), Ottoman military expeditions in Europe around 1500 C. E. lowered the number of *all* newly-initiated conflicts within Europe by at least 25 percent, while it dampened *all* longer-running confrontations by about 15 percent.

The Ottomans' military conquests influenced the length of intra-European feuds too, with each Ottoman-European military engagement shortening the duration of intra-European conflicts by more than 50 percent. The impact of the Ottomans' ventures in Europe did not weaken and it persisted with distance from the Ottoman frontier. Although, the influence of Ottomans on intra-European conflicts was waning over time and it dissipated completely around the late-16th century or the early-17th century.

There are various strands in the economics literature to which this paper is related. First, since it shows that the European periphery influenced its sociopolitical and ecclesiastical history in a novel fashion, this paper complements Abu-Lughod (1989), Berg (2005), de Vries (1994) and Pommeranz (2000) who have emphasized various other channels through which European history was influenced by its periphery.

Second, the empirical framework here is implicitly based on a political economy model of conflict and production. The notion that appropriation and violent conflict over the ownership for resources should be modeled as an alternative to economic production was originally articulated by Haavelmo (1954) and further developed by follow-up papers such as Hirshleifer (1991), Grossman (1994), Grossman and Kim (1995), Grossman and Iyigun (1995, 1997), Skaperdas (1992, 2005), Alesina and Spolaore (2007) and Hafer (2006). In standard models of appropriative conflict between two players, the efficacy of appropriation plays a key role in the allocation of resources between productive uses and conflict. When such models are modified to incorporate more than two agents, changes in the technology of appropriation can influence the patterns and timing of conflict. In particular, the emergence of a player with a superior appropriative technology can be sufficient for other agents to want to refrain from engaging each other and even try to

prop others up in conflicts with third-party superior foes.<sup>3</sup>

In this context, one can think of religious differences as a cultural trait that intensifies rivalry in a model of conflict and production. And that is what makes the work below a contribution to the economics of religion. The main focus of some papers in this strand is religion and culture in general (e.g., Greif, 2006, North, 1990, Iannaccone, 1992, Temin, 1997, Glaeser and Sacerdote, 2002, Fernandez et al. 2004, Fernandez, 2007, Barro and McCleary, 2005, Guiso, Sapienza and Zingales, 2006, and Spolaore-Wacziarg, 2006). Other papers in this line emphasize how individual behavior and the evolution of various institutions are driven by adherence to a specific religion, such as Judaism, Islam or different denominations within Christianity (e.g., Berman, 2000, Botticini and Eckstein, 2005, 2007, Kuran, 2004a, 2005, and Arrunada, 2005).

The idea that differences of religion influenced patterns of conflict and truce within Europe historically is also what connects this paper to some literature on the determinants of war and peace. For instance, Richardson (1960) reveals that differences of religion, especially those of Christianity and Islam, have been causes of wars and that, to a weaker extent, “Christianity incited war between its adherents.” Further, he finds that war alliances had subdued and prevented wars between former allies, although this influence declined with the passage of time since the alliance. Wilkinson (1980) points out that Richardson’s analysis applies more broadly in the sense that “the propensity of any two groups to fight increases as the differences between them (in language, religion, race, and cultural style) increase.” A strand within this literature focuses on the role of economic ties in influencing patterns of conflict. As Lee and Pyun (2008) review comprehensively, the ‘liberal peace’ view, which dates back to the likes of Montesquieu, Kant and Angell, emphasizes that “mutual economic interdependence can be a conduit of peace.” Counter-arguments to this view have involved various negative consequences, such as exploited concessions and threats to national autonomy emanating from asymmetric interdependence (Emmanuel, 1972 and Wallerstein, 1974). The empirical evidence is mixed, with earlier studies such as Polachek (1980) and Polachek et al. (1999) finding that bilateral trade ties reduce conflict whereas Barbieri (1996) and Barbieri-Schnedier (1999) showing that they raise it. Most recently, however, Lee and Pyun (2008) have provided evidence in favor of the conflict-dampening role of bilateral trade links, particularly among geographically-contiguous states.

The Ottomans evidently had something to do with the survival of Protestantism and European religious pluralism. But whether or not European ecclesiastical pluralism and coexistence also influenced its economic history subsequently has been a perennial scholarly dispute. There are two fairly complementary strands in the economics literature that focus on this topic. First, the origins of this debate can be traced back to the We-

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<sup>3</sup>For an exposition of the theoretical model, see Iyigun (2008a).

berian hypothesis, according to which the “Protestant ethic” changed attitudes towards work and commercial activities in Europe.<sup>4</sup> This view has been challenged for a while, as Mokyr (1990) and Rosenberg-Birdzell (1986) have shown that capitalist institutions were developed swiftly and effectively in some Catholic parts of continental Europe too. More recently, Becker and Woessmann (2007) have argued that the Protestant Reformation might have encouraged literacy and led to human capital accumulation. Regardless of the nuance, though, what mattered most for European development according to this strand was either some attribute(s) of Protestantism or the ecclesiastical proliferation and competition that it manifested. Second, there is a nascent but influential view that European private economic institutions were very dynamic in the centuries preceding the Reformation and that its economic organization contrasted sharply with that elsewhere. According to this view, spearheaded by the combined works of Kuran (2004a) and Greif (2006), for example, Europe had put in place certain preconditions of the modern economy but, even as late as the turn of the 16th century, it still lacked an environment of relative peace and internal stability.

The remainder of this paper is organized as follows: In Section 2, I provide a historical background. In Section 3, I present the empirical findings. In Section 4, I discuss various relevant issues associated with the main results. In Section 5, I conclude.

## 2. Historical Background

### 2.1. The Ottomans’ Rise and Territorial Gains

After the demise of the Selçuk Turkish Empire at the end of the 13th century, Anatolia became a breeding ground for many small feudal states. The Ottoman tribe (*beylik*) was one of these states, being founded by Osman I around the Anatolian city of Eskişehir in 1299. Osman moved the capital of his fledgling settlement soon after its foundation to Bursa, 82 miles northwest of Eskişehir, and rapidly consolidated his power dominating the other Anatolian *derebeylik*s. With the exception of an interregnum period between 1402 and 1413, when the Empire collapsed after Tamerlane decimated the Ottoman army, the Empire grew fairly steadily and rapidly during the 14th and 15th centuries. According to standard historiography, the Ottomans’ era of political and military dominance covers the period between its conquest of Constantinople (Istanbul) in 1453 and the signing of the *Treaty of Karlowitz in 1699*.<sup>5</sup>

A quick comparison of the political maps of Europe, North Africa and the Near

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<sup>4</sup>Despite some differences of emphasis in the direction of causality, Tawney (1926) also articulated related views. Hence, this idea is occasionally labeled as the Weber-Tawney thesis (see, for example, MacCulloch, 2003, p. 585).

<sup>5</sup>With this treaty, Ottomans ceded most of Hungary, Transylvania and Slavonia to Austria, Podolia to Poland and most of Dalmatia to Venice. According to Shaw (1976, p. 224), the agreement marked the Ottomans’ transition from the “offensive to the defensive.”

East in 1300 and at the turn of the 17th century reveals two striking aspects. One is the overwhelming territorial gains made by the Ottoman Empire, most of which took place in eastern Europe and the Balkans between the mid-15th century and the end of the 16th century.<sup>6</sup> One can also infer from the comparison of the two maps that a significant degree of political consolidation accompanied the Ottoman expansion in continental Europe.<sup>7</sup>

What makes the Ottomans important from the perspective of European history is that the Empire steadily looked westward for expansion during its period of military prowess. In fact, most if not all of the early sultans (including Mehmed I, the Conqueror) considered themselves as heirs to the eastern Roman Empire and dreamt of uniting the wider Roman Empire.<sup>8</sup> As I shall empirically document below, that is the reason why the Ottomans initiated more conflicts in the West, and why on the eastern fronts, more conflicts were started by its rivals. And this is precisely why the Ottomans mattered to Europe's internal developments — all the more so until the conquest of Syria and Egypt in 1516 and 1517, respectively, and throughout the reign of Suleyman I, the Magnificent, between 1521 and 1566. Of course, what distinguished to an important extent the political and military rivalry between the Ottoman Empire and the secular European powers, such as the House of the Hapsburgs, the Italian city-states and France, was religious affiliation.

Since some of the empirical work below focuses on the role of the Ottomans in containing the Protestant-Catholic conflicts in particular, I next summarize a brief chronology of the Reformation.

## 2.2. The Ottoman Threat and the Protestant Reformation

The Ottomans' military threat and influence in Europe peaked late in the 15th century and the early part of the 16th century. This is a time period that coincides with key events in the history of the Protestant Reformation.

The Ottomans' swift territorial advances in Europe manifested themselves in two ways. First, it made it fairly urgent for both the Pope-Charles-Ferdinand nexus and the

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<sup>6</sup>By the end of the 16th century, the Ottomans controlled all of the Balkans; had conquered the city of Istanbul (in 1453) thereby ending the East Roman (Byzantine) Empire; had gained important military victories against Hungary in central Europe (such as the capture of Belgrade in 1521 and the Mohacs Battle victory in 1526); had established a garrison in Otranto on the Italian Peninsula (in 1481); and had put the capital of the Austrian Monarchy, Vienna, under what eventually turned out to be the first of two unsuccessful sieges (in 1529). For detailed references on the history of the Ottoman Empire, see Faroqhi (2004), Kinross (1979), Inalcik (1973), Karpal (1974), Shaw (1976), and Goodwin (2000).

<sup>7</sup>According to a relevant hypothesis, military threats necessitate the formation of larger states in order to sustain military establishments commensurate with such threats (i.e., that there are increasing returns to scale in military investments). See, for example, Tilly (1992) and McNeill (1984).

<sup>8</sup>See Shaw (1976, p. 61).

Protestants to cooperate and deflect this threat.<sup>9</sup> Second, the Ottomans' lopsided victories against the Hapsburgs in the early-16th century turned into a bargaining chip for the budding Protestant movement. Their leaders capitalized on the Hungarian King Ferdinand I's need for help by persistently trying to link any commitment to the Hapsburgs and the Catholics with strategic concessions from the Catholic Church and the Holy Roman Emperor.<sup>10</sup> The give and take between the two camps revolved extensively around Ferdinand's need for manpower to fight the Ottoman Turks in exchange for temporary peace and even the Church's official recognition of Protestantism.

Eventually, Ferdinand negotiated the Treaty of Passau with the Lutheran elector Maurice of Saxony. And in 1555 he signed the Peace of Augsburg which culminated in roughly a half-century peace for Germany's warring religious factions. Thus, the Peace of Augsburg represents the date when the Holy Roman Empire officially recognized the Lutheran Protestant movement's right to exist.

The Peace of Augsburg did not involve the Catholic Church and turned out to be a temporary reprieve. Indeed, much of the Counter-Reformation period got under way in earnest after the Lepanto Sea Battle in 1571 when the Holy Empire fleet decimated the entire Ottoman navy. Lepanto marked not only a significant setback for the Ottoman naval prowess in the eastern Mediterranean Sea, which the Ottomans never dominated again, but also the first major victory of the European powers against the Ottoman Turks. Hence it is that the period of truly murderous sectarian conflict between the Protestant Reformers and the Catholic Counter Reformers during the Thirty Years War (1618-1648) coincided with a period of Ottoman military weakness and tranquility in eastern Europe. Anderson (1967, p. 60) makes it clear that, by the time the House of Hapsburgs and the Catholic establishment were pitted against the Protestant Reformers to their north in 1618, the German Protestants were no longer the budding reform movement they were in the early-16th century but a much more formidable opponent. And it was not until the Peace of Westphalia signed at the end of the Thirty Years War in 1648 that religious pluralism became the accepted norm by the House of Hapsburgs as well as the Catholic Church.

### **3. The Empirical Analysis**

#### **3.1. Conflict, Truce and Peace in Europe (circa 1450 C. E. – 1700 C. E.)**

The primary source of the empirical work is the *Conflict Catalog* being constructed by Brecke (1999). It is a comprehensive dataset on violent conflicts in all regions of the world

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<sup>9</sup>For further details, see Shaw (1976, p. 76), Goffman (2002, p. 110), Coles (1968, p. 118), MacCulloch (2003, p. 54), and Fischer-Galati (1959, p. 9). Also consult Charriere (1848), Ursu (1908) and Zinkesien (1854) which Fischer-Galati provide as his original sources in French and German.

<sup>10</sup>See Inalcik (1970, p. 38), Goffman (2002, p. 110) and Fischer-Galati (1959, p. 9) for relevant discussions.

between 1400 C. E. and the present. It contains a listing of all recorded *violent* conflicts with a Richardson’s magnitude 1.5 or higher that occurred during the relevant time span on five continents.<sup>11</sup> While the Catalog is still under construction, it is virtually complete for Europe, North Africa and the Near East. It is this portion of the catalog that I rely on below.

For each conflict recorded in the catalog, the primary information covers (i) the number and identities of the parties involved in the conflict; (ii) the common name for the confrontation (if it exists); and (iii) where and when the conflict took place. On the basis of this data, there also exists derivative information on the duration of the conflict and the number of fatalities, which is available for less than a third of the total number of observations. Supplementary data come from a variety of sources: to cite two, for population measures, I use the estimates by McEvedy and Jones (1978) and, for distance measures, I use the City Distance Tool by Geobytes.<sup>12</sup>

Using these data, I generate 251 annual observations for the period between 1450 C. E. and 1700 C. E. For my baseline estimates, I focus on this time interval due to the fact that the Ottoman Empire’s era of dominance is formally defined as the period between 1453 C. E. and 1699 C. E.<sup>13</sup> Later on, I turn to broader and narrower intervals of time between 1401 C. E. and 1700 C. E. to either test the impact of the Ottomans on the Protestant-Catholic confrontations or carry out various robustness checks that I discuss in subsection 3.2.

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

$$EUCONFLICT_t = \lambda_0 + \lambda_1 OTTOMAN_t + \lambda_2 OTHEROTTOMAN_t + \lambda_3 X_t + \varepsilon_t, \quad (1)$$

where  $EUCONFLICT_t$  is one of three alternative dependent variables described below;  $OTTOMAN_t$  is the number of conflicts in which the Ottoman Empire confronted European powers at time  $t$ ;  $OTHEROTTOMAN_t$  is the count at time  $t$  of the newly-initiated number of Ottoman conflicts with others and its own domestic civil discords.

In various alternative empirical specifications, the dependent variable,  $EUCON-$

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<sup>11</sup>Brecke borrows his definition for violent conflict from Cioffi-Revilla (1996): “An occurrence of purposive and lethal violence among 2+ social groups pursuing conflicting political goals that results in fatalities, with at least one belligerent group organized under the command of authoritative leadership. The state does not have to be an actor. Data can include massacres of unarmed civilians or territorial conflicts between warlords.”

Richardson’s index corresponds to 32 or more deaths ( $\log 32 = 1.5$ ) and the five continents covered are all those that are inhabitable (i.e., Europe, Asia, the Americas, Australia, and Africa).

<sup>12</sup><http://www.geobytes.com/CityDistanceTool.htm>.

<sup>13</sup>See, for example, Shaw (1976, pp. 55, 224).

$FLICT_t$ , will be: (1) The number of violent conflicts initiated amongst or within continental European countries at time  $t$ ,  $EUROPE_t$ ; (2) The aggregate number of intra-European conflicts, including those which began at time  $t$  as well as those began earlier,  $AGEURO_t$ ; or (3) The conflicts of a religious nature between the Catholic and Protestant establishments,  $PROTESTANT_t$ .<sup>14</sup>

While the central justification for using 1 and 3 as dependent variables is provided by the quest for establishing whether Ottomans affected European conflict incidence, in general, and the Protestant-Catholic confrontations, in particular, that for 2 is provided by two factors: One, we would like to identify whether the Ottomans' military actions suppressed not only the immediate and pending confrontations, but also the longer running ones. Two, warfare in the medieval and pre-industrial eras was a highly seasonal activity, with longer-running hostilities typically coming to a halt during the winter months, only to be picked up again with the arrival of warmer weather in the spring. In this sense, all unresolved military confrontations were renewed every year. Regardless of the choice of dependent variable or empirical specification, however,  $\lambda_1$  should be negative and  $\lambda_2$  ought to be positive according to the main hypothesis.

The right-hand side conflict variables,  $OTTOMAN$  and  $OTHEROTTOMAN$ , are comprehensive: they include all Ottoman conflicts on record (including naval battles) with their rivals in Europe, the Middle East and North Africa. However, when it comes to some of Ottomans' conflicts in northeastern Europe, there is a fine and relatively tenuous distinction between what constitutes an engagement with a continental European entity and that with a non-European power. This is due to the complications of defining the border of the European continent vis-a-vis Asia.<sup>15</sup> For my practical purposes, I divided the Eurasian landmass roughly vertically with reference to Istanbul (the Ottoman capital), and considered 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).<sup>16</sup> Finally, all of the dependent intra-European variables are confined to continental European conflicts only. In this, they exclude developments in Britain and the Scandinavian Peninsula.<sup>17</sup>

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<sup>14</sup>To confirm the validity of this empirical specification using annual conflict data, I employed the Dickey-Fuller test for cointegration. At a significance level of one percent, I rejected the existence of a unit root in the number of European conflicts,  $EUROPE_t$ , and  $AGEURO_t$ , the Catholic-Protestant wars,  $PROTESTANT_t$ , the number of Ottomans' conflicts in Europe,  $OTTOMAN_t$ , and the number of Ottoman conflicts elsewhere,  $OTHEROTTOMAN_t$ .

<sup>15</sup>See, for example, Findlay and O'Rourke (2007, p. 2).

<sup>16</sup>Accordingly, Ottomans' various Crimean, Muscovy and Russian engagements are classified as  $OTHEROTTOMAN$ , while those with and in Lithuania, Moldavia and Poland are categorized as  $OTTOMAN$ . These classification choices do not have an effect on the conclusions presented below.

<sup>17</sup>However, conflicts which involved at least one continental European player are included. In any case, the main results are also robust to the inclusion of the conflicts in western and northern European periphery.

In all the empirical tests below, the control variables  $X_t$  include a time trend,  $TIME$ ; the lagged dependent variable,  $EUCONFLICT_{t-1}$ ; an estimate of the continental European population,  $EUROPOP_t$ ; as well as the interactions of  $TIME$  with both  $OTTOMAN_t$  and  $OTHEROTTOMAN_t$ . A time trend is included because there has been a secular decline in warfare in Europe since the 15th century.<sup>18</sup> And I include the interaction between the main explanatory variables and the time trend to capture the idea that the impact of Ottoman military activities drifted over time.

Depending on the parsimony of the empirical specification I employ, other control variables in  $X_t$  include the following: (i) the average length of Ottoman military engagements in Europe that began in  $t$ ,  $OTTOLENGTH_t$ ; (ii) that of Ottoman military activities elsewhere that began in  $t$ ,  $OTHERLENGTH_t$ ; (iii) the population of Ottoman territories at time  $t$ ,  $OTTOPOP_t$ ; (iv) a century dummy,  $CENTURY$ ; (v) the average distance from Istanbul of the capitals of European countries engaged militarily with the Ottomans at time  $t$ ,  $DISTANCE_t$ ; (vi) the average distance of the capitals of countries outside of Europe engaged in conflict with the Ottomans at time  $t$ ,  $OTHERDISTANCE_t$ ; (vii) the *aggregate* number of conflicts the Ottoman Empire had in continental Europe at time  $t$  (both those which began at time  $t$  and those began earlier),  $AGOTTO_t$ ; and finally, (viii) the *aggregate* number of Ottomans' conflicts with others and its own domestic civil discords,  $AGOTHER_t$ .<sup>19</sup>

The motivation for including some of these right-hand-side variables is mundane and straightforward. For instance, I include the conflict distance variables in order to see how far Ottomans penetrated into Europe and elsewhere had an impact on the extent of intra-European violent engagements. I control for the aggregate conflict data to identify whether newly-initiated conflicts by the Ottomans or their longer-running feuds were more important. I include the population levels to gauge — to the extent population proxies for aggregate economic activity — for size and strength of the two economies on conflict respectively. Table 1 presents the summary statistics.

[Table 1 about here.]

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.<sup>20</sup>

The first three columns of Table 2 show how Ottoman military activities every year between 1451 and 1700 influenced those that were newly initiated amongst and within

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<sup>18</sup>See, for instance, Woods and Baltzly (1915), Richardson (1960), Wilkinson (1980), Brecke (1999) and Lagerlöf (2007).

<sup>19</sup>All length variables are in years and all distance measures are in miles.

<sup>20</sup>Using *OLS* regressions with heteroskedasticity error corrections generates similar results.

the continental European countries. In column (1), I present 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 *TIME* with *OTTOMAN* 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.<sup>21</sup> 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 column (2) I add the length of Ottoman military actions in continental Europe, *OTTOLENGTH*, and the duration of Ottoman domestic disturbances and their excursions elsewhere, *OTHERLENGTH*, as additional control variables. According to these estimates, the impact of *OTTOMAN* on intra-European feuds is still significant with a conflict-reduction impact of around 20 percent in 1500. As in column (1), we also see that the interaction of *TIME* with *OTTOMAN* is positive and statistically significant, indicating a waning impact over time of the Ottomans on intra-European feuds. Given the coefficients on *OTTOMAN* and *TIME \* OTTOMAN* 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 column (3) I add all of the remaining control variables listed above. *OTTOMAN* is still negative and statistically significant at the 10 percent level. Interestingly, the Ottoman population level, *OTTOPOP*, exerts a positive and significant effect on intra-European feuds, while the interaction of *TIME* with *OTTOMAN* is no longer significant. The fact that *OTTOPOP* now enters positively and significantly might be reflective of the fact that the Ottomans' role in European conflicts was waning over time. Also, let us note in passing that Ottomans' internal feuds and their military ventures elsewhere, *OTHEROTTOMAN*, is not significant in any specification, but it has

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<sup>21</sup>The dependent variable in Poisson regressions is in logs, the explanatory variables enter linearly and the time trend, *TIME*, begins in the year 1401. In column (1), the coefficient on *OTTOMAN<sub>t</sub>* is  $-.562$  and that on *TIME \* OTTOMAN* is  $.0029$ . This implies that the dependent variable,  $\log \text{EUROPE}_t$ , drops by  $.272$  with one more Ottoman conflict in Europe in 1500 (i.e.,  $.0029 * 100 - .562 = -.272$ ). Thus, evaluated at the mean of  $\log 1.46$ , this produces a European conflict level of  $1.112$ , which is consistent with a 25 percent drop in intra-European conflicts.

the correct positive sign in all three regressions.

In the last three columns of Table 2, I repeat the above steps using  $AGEURO_t$  as the dependent variable. 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 columns (4), (5) and (6) suggest a reduction of roughly 20 to 25 percent around the turn of the 16th century.<sup>22</sup>

[Table 2 about here.]

So did Ottomans' military activities have an impact more narrowly on the incidence of intra-European violent conflicts that were driven by religious motives? In columns (1) through (3) of Table 3, I report how Ottomans' military involvements affected intra-European *religious warfare* and strife between 1451 and 1700. These results are slightly weaker than those in Table 2, but otherwise very much in line with what we have already seen. One exception is that the magnitude of the Ottomans' impact on intra-European religious feuds is stronger: even taking the lowest significant coefficient estimate in column (2) and evaluating the impact at the average value of intra-European religious conflicts (which stood at .360 per year), we find that an additional Ottoman military excursion in Europe around 1500 dampened intra-European religious strife by something on the order of 30 percent.<sup>23</sup>

In the last three columns of Table 3, I narrow this quest even more by reporting the results derived using the annual number of conflicts only between the Protestants and Catholics between 1521 and 1650.<sup>24</sup> The three specifications in columns (4) through

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<sup>22</sup>Note that there is still an unambiguous reduction over time in the impact of Ottomans on intra-European feuds, because the interaction of  $OTTOMAN$  with  $TIME$ , is significant and positive at the 5 percent or higher confidence levels in columns (4) and (5). According to the coefficient estimates in those two columns, it took a bit longer for the Ottomans impact on  $AGEURO$  to completely dissipate, with the net impact of Ottomans' European military activities turning positive around 1625 and 1600, respectively. And, as in column (3), the interaction of Ottomans' European feuds with time is no longer significant in column (6), but the Ottoman population level,  $OTTOPOP$ , exerts a positive and significant effect on intra-European feuds. Ottomans' internal feuds and their military ventures elsewhere,  $OTHEROTTOMAN$ , is still not significant. In fact, in two specifications it has the wrong sign.

<sup>23</sup>In column (2), the coefficient on  $OTTOMAN_t$  is  $-.782$  and that on  $TIME * OTTOMAN$  is  $.0042$ , which implies that the dependent variable,  $\log EUROPE_t$ , drops by  $.362$  with one more Ottoman conflict in Europe in 1500 (i.e.,  $.0042 * 100 - .782 = -.362$ ). Thus, evaluated at the mean of  $\log .360$ , this produces a European conflict level of  $.250$ , which is consistent with a 30 percent drop in intra-European conflicts.

<sup>24</sup>For this exercise, I chose to focus on this narrower time span because Protestantism was born in 1517, when Luther posted his 95 Theses on the door of the Castle Church in Wittenberg. And the Peace of Westphalia, which is widely recognized as the official recognition of religious plurality by the

(6) are identical to the ones in the first three columns with one exception: By definition, Protestant-Catholic conflicts arose only after the birth of Protestantism in 1517. Hence, the number of Protestant-Catholic conflicts started at zero that year, then became positive in some years until 1648 when it fell to zero again thereafter with the signing of the Peace of Westphalia. Since this time line is more consistent with an inverted U-shape over time, the estimates in columns (4) through (6) rely on a quadratic time trend.<sup>25</sup> As shown, the number of Ottomans military engagements in Europe, *OTTOMAN*, yielded a negative impact on the number of Catholic-Protestant feuds, *PROTESTANT*, in all three estimates. In column (4) the coefficient is significant at the 5 percent level and it comes in with p-values of 11.6 percent and 10.7 percent in column (5) and (6), respectively. This impact tended to decline over time as suggested by the positive coefficient on the interaction term *TIME \* OTTOMAN*, which is significant in column (4) only. In short, the impact of the Ottomans' on European strife applied even more narrowly, as it dampened the propensity for conflict between the Protestants and the Catholics. The magnitude of this effect is remarkably large: Given that the average number of running feuds between the Catholics and Protestants was about .615, an Ottoman military engagement with a European foe reduced that number roughly about 40 to 50 percent around the turn of the 16th century.

[Table 3 about here.]

### 3.2. Alternative Specifications & Robustness<sup>26</sup>

Reverse causality can plague these kinds of estimates. Given the results above, however, one would have to come up with a plausible reason why the Ottomans would have found it more optimal to engage the Europeans when the latter were not consumed by feuds amongst themselves. Put differently, the more credible reverse causality argument in this case is that Ottomans would have preferred to time their European conquests to coincide with more intra-European conflicts and disagreements, not less. As a result, if there is any reverse causality running from the number and timing of violent European feuds

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Catholic secular and religious establishments, was signed at the end of the Thirty-Years War in 1648. I elaborate in subsection 3.2 below on the robustness of the results to changes in time span.

In any case, the Protestant-Catholic confrontations that took place between 1521 and 1650 are: Peasants' War (1524), Swiss religious revolts (1529, 1531), Munster revolt (1534-35), Massacres of Vaudois Protestants (1540, 1545), Magdeburg War (1550), Metz War (1552), Geneva anti-Calvinist uprising (1555), the Schmalkaldic Wars (1546-47), the Thirty-Years War (1618-48), the French Wars of Religion (1562-98), the Hapsburgs and Transylvanian Protestant Wars (1601-04), and the First, Second and Third Bearnese revolts in France (of 1621-22, 1625-26 and 1627-29).

<sup>25</sup>Using a linear time trend does not alter the qualitative nature of the results, although statistical significance is achieved in the last specification only.

<sup>26</sup>All results discussed but not shown are available from the author upon request as well as online at <http://stripe.colorado.edu/~iyigun/Research.htm>.

to those of Ottoman military actions, it is plausible and more likely that this generates attenuation bias. That noted, it is possible, for instance, that the Ottomans exploited the divisions among the Europeans by targeting them only after intra-European feuds ran their course and the parties involved expended their resources and credit. In that event, one would expect the Ottomans' European expeditions to be contemporaneous with a more tranquil European environment. To address this reverse causality concern and as a general robustness check, I ran the regressions reported earlier using the one-period lagged values of the key right hand side variables and the other standard control variables in place.<sup>27</sup> The results were not only in line with the estimates reported above but, in many cases, also stronger statistically.

Given the unique history of the Ottomans, we can also employ three instrumental variables (*IV*) in order to address the potential endogeneity of the empire's military campaigns. First, while the empire steadily looked westward for expansion driven by its *Gaza ideology*, at least during the empire's early era running through the end of the 16th century, the succession of Ottoman sultans had quite often different policies towards waging wars.<sup>28</sup> These were not due to sudden shifts in the empire's priorities, but were attributable to the Sultan's personalities and preferences. Second, each sultan ascended the throne at a different age and this was highly random too (e.g., Mehmed II was only twelve when his father Murad II abdicated the throne, only to return within two years at the behest of his son and stay sultan for another seven years; Selim II was 42 when his father, Suleyman I died). Hence, it is plausible that the sultan's age at ascendancy potentially influenced the propensity of the empire to engage in conflict, but it was orthogonal to the intensity of intra-European confrontations. And third, we have some fairly accurate information on the ethnicity of sultans' mothers on the basis of which we can classify the rulers according to whether they had an ethnic Turkish lineage or a European one. While the influence of the Imperial Harem on the empire's policies varied, it is quite well established that at times it wielded considerable power. Various historians have suggested that the members of the Harem with different ethnic backgrounds often lobbied the Sultan to influence the geography of Ottoman conquests.<sup>29</sup> And the highest member of the Harem hierarchy was generally the *Valide Sultan*, the queen mother.

Using this set of instrumental-variables and running 2SLS estimates, I found that the first-stage results were not strong but acceptable.<sup>30</sup> In addition, the Sargan test

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<sup>27</sup>Bear in mind that, to the extent that medieval warfare was a seasonal activity, a one-period lag can effectively imply anywhere between 12 months to 4 – 6 months, covering the onset of winter to the warming of the weather in the spring.

<sup>28</sup>As analyzed by Paul Wittek and noted by Kafadar (1996, p. 11) “what fueled the energies of the early Ottoman conquerors was essentially their commitment to *Gaza*, an ‘ideology of Holy War’ in the name of Islam. Ottoman power was built on that commitment...”

<sup>29</sup>See Peirce (1993) and Shaw (1976, pp. 24, 98).

<sup>30</sup>According to the first-stage results, the age at which sultans ascended the throne positively and

p-values indicated that the instruments satisfied the over-identifying restrictions. Since these first-stage results were not particularly strong, I also estimated conditional likelihood ratio (*CLR*) confidence intervals. In any event, the 2nd-stage results were consistent with the baseline findings reported in Table 2. If anything, the *IV* estimates suggested that those provided by the *OLS* estimates may be a lower bound for the effect of the Ottomans on intra-European conflicts.

The Ottomans' impact on intra-European violent conflicts is robust to a contraction in the analysis period. For example, I recalculated all of the estimates, focusing on a narrower 200-year time span between 1451 and 1650 using both contemporaneous and lagged explanatory variables. The results were very much in line with those reported earlier, with the Ottomans' European military feuds exerting a statistically significant and negative impact in all six specifications listed in Table 2 and in five of the six specifications using lagged explanatory variables. I also examined the sensitivity of the results over a longer time span covering the period between 1401 and 1700. Using this longer time span, the lagged explanatory variables worked best, with all six estimates yielding negative and statistically significant coefficients on  $OTTOMAN_{t-1}$ . Using the contemporaneous explanatory variable,  $OTTOMAN_t$ , results were a bit weaker, with three coefficients coming in negative and statistically significant. Despite the fact that in the three other specifications results were insignificant, they all attained negative values. And the insignificant coefficients still produced p-values of 14 percent, 16 percent and 11 percent in the analogs of columns (3), (4) and (6) of Table 2, respectively.<sup>31</sup>

In general, it is possible that we are primarily picking up the influence of Ottomans on those intra-European conflicts immediately across their Eastern European frontiers, and that they did not suppress intra-European continental conflicts that were deeper in continental western Europe. I tested for this possibility in two ways. First, I constructed the ratio of the number of intra-European conflicts, *EUROPE*, to the average distance from Istanbul of the capitals of European foes in conflict with each other,

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significantly affected the empire's European military activities. Of the sultan dummies included, those for the reigns of Selim I, Ahmed I, Suleyman I and Ibrahim I showed statistically significant effects, with those of Selim I and Suleyman I clearly reflecting the strong eastward orientation of their campaigns. Perhaps most interestingly, while I did not find that having a Turkish maternal genealogical link had a significant influence on Ottoman's military campaigns in Europe, it did yield positive coefficients with relatively low p-values. However, I also found that a European maternal ethnic link had a positive and significant impact on Ottomans' campaigns elsewhere. This is some preliminary support for the theories on the link between Harem politics and Ottoman conquests. Moreover, it has important ramifications for the effects of ethnicity and religion on conflict and war. For more details, see Iyigun (2008a, b).

<sup>31</sup>Things were more sensitive when the Ottomans' role in religiously-driven strife was involved, although the chronology of events allows less flexibility in the choice of time span with respect to the Protestant and Catholic confrontations. For instance, when I extended the sample period for the Protestant-Catholic conflict estimates to cover the years between 1521 to 1700, the impact of *OTTOMAN* on *PROTESTANT* became statistically insignificant.

*EURODISTANCE*.<sup>32</sup> I used this as an alternative dependent variable and regressed it on the explanatory variables utilized in Table 2. The results using this dependent variable verified that, even with an adjustment for distance from the Ottoman frontier, the number of Ottoman military actions in Europe had a statistically significant and negative impact on the number of intra-European conflicts. The estimates were all in line with those shown in Table 2. Moreover, the coefficient magnitudes were about 15 to 20 percent higher. As another alternative test of the idea that Ottoman military involvements in Europe might have had a stronger discouraging effect on intra-European violent feuds that were closer geographically, I first eliminated all the years in which there were no intra-European violent feuds (61 observations in the 250-year sample) and treated *EURODISTANCE* as the dependent variable. The coefficient on Ottomans' European conflicts was statistically significant and positive only in the lengthiest specification, but the coefficients in all three estimates entered with the expected positive sign and they attain p-values of 13 and 12 percent, respectively. Accordingly, when Europeans were engaged in violent feuds amongst themselves, it was more likely that their confrontations took place in parts of Europe that were farther away from the Ottoman frontier when the Ottomans engaged Europeans militarily.

Since we have information on the length of intra-European conflicts, one could also explore whether Ottomans' military activities had an impact on the duration of intra-European confrontations too. In the first three columns of Table 4, I report the results of such an exercise where the dependent variable is the average length of intra-European violent feuds, *LENGTH*. Indeed, the results verify that Ottomans' military involvements with European powers, *OTTOMAN*, had a substantial effect on shortening the duration of intra-European engagements. Over the time span of 1451 to 1700, an average intra-European conflict lasted about 2.4 years. Given the estimates in columns (1) through (3), the impact of Ottomans on this measure was about 60 percent. Equally impressive and relevant is the fact that Ottomans' military involvements elsewhere, *OTHEROTTOMAN*, generated a positive and statistically significant impact on the duration of intra-European feuds in two of three specifications. This impact was roughly on the order of about 50 percent according to the estimates in columns (1) and (3).

In none of the estimates above did I control for the intensity or severity of conflicts (in terms of military personnel and fatalities, for example). And, of course, all the underlying conflict data came from Brecke's Catalog. To see if the intensity of intra-European conflicts was also influenced by the Ottomans' military ventures and explore the validity of the results using an alternative data source, I turned to Levy (1983). The

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<sup>32</sup>Specifically, I constructed this variable as the ratio of  $EUROPE_t$  to  $EURODISTANCE_t$  plus .01 to keep it defined at zero when there were no violent intra-European conflicts at time  $t$ .

upshot of using Levy’s data is that it has details on the intensity and severity of each conflict recorded. The downside is that it represents only a very restricted *subset* of the Conflict Catalog, with only 33 intra-European continental conflicts recorded in the period between 1495 and 1700 and about 20 Ottoman engagements with Europeans over the same period. Consequently, it is impossible to construct a time series analog of the Brecke data because the missing observations overwhelm the empirical estimates (in producing a significant source of attenuation bias). As a partial remedy to this complication, one could confine attention only to the years in which intra-European and/or Ottoman military engagements took place and run regressions similar to those reviewed earlier.<sup>33</sup> This is what I have done and reported in the final three columns of Table 4. As shown, the intensity of intra-European warfare and conflict depended negatively and statistically significantly on the Ottomans’ military engagements with the Europeans. The average intensity of intra-European conflicts, which is defined by Levy as “battle deaths per million European population” stood at 723. The three estimates yield a reduction of about 110 due to the Ottomans, which represents roughly a 15 percent drop. Although I have chosen not to report them here, I obtained similarly strong and negative effects of *OTTOMAN* when I used *LENGTH* of conflicts calculated by Levy as the dependent variable. With his data on the frequency of intra-European conflicts, I also constructed an alternative *EUROPE* as my dependent variable and I got results that were in line with those above but slightly weaker; in all three specifications similar to those shown in columns (4) through (6) of Table 4, the coefficient on *OTTOMAN* was negative, with one of three specifications generating significance at the 10 percent confidence level and another yielding a p-value of 13 percent.

[Table 4 about here.]

#### 4. Discussion

To begin with, the analysis above documents that the Ottomans’ role in holding in check intra-European military conflicts and violent confrontations had wider scope than just the religious struggles on the continent, especially those between the Catholic and Protestant establishments. Thus, while the Protestant Reformation might have benefitted from — and perhaps even capitalized on — the Ottoman advances in Europe, the latter seem to have played some role in reducing conflicts within Europe generally.

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<sup>33</sup>With this selection criterion, I ended up with 47 annual observations between the years of 1495 and 1700. In 5 of those (i.e., in the years of 1499, 1521, 1556, 1618 and 1672), there were at least one intra-European conflict *and* one Ottoman-European feud. In the remaining 42 observations, there was *either* at least one intra-European confrontation *or* one Ottoman-European violent engagement.

Also since Levy recorded Ottomans’ military activities in Europe only, I supplemented his conflict data with Brecke’s observations on *OTHEROTTOMAN* and *AGOTHER*.

Second, as far as the Protestant-Catholic confrontations go, implicit in the analysis above is the assumption that schisms within Christianity were exogenous. But one could plausibly argue that, during a period of mortal threats to the survival of Christianity, there could also have been an effect on the schisms created within it. There are a couple of relevant things to note here. One, from a game-theoretic, political economy perspective, it is not clear that the emergence of grave threats ought to encourage or discourage the *emergence* of new internal dissent. In this sense, theory and analytics do not offer concrete guidance, which leaves this issue as an ultimately empirical matter. Obviously, this is applicable in so far as *existing* rifts are concerned too.<sup>34</sup> Nonetheless, on the question of whether external threats encourage cooperation amongst *existing* factions, the analysis here is helpful. Due to lack of data, it is impossible to extend this exercise so that schisms within Christianity is taken as endogenous and explore whether the timing of Christianity's various schisms could be explained by the Ottoman threat. This leads us to the second point: while the history of schisms within Christianity is sporadic, it also predates the Ottoman-European confrontations by at least a millennium.<sup>35</sup> In this, we have some justification for why the creation of Christianity's schisms should be exogenous to the Ottomans.

Third, we can also gauge how large the net welfare effects of the Ottomans' military conquests were on Europe. On the one hand, the Ottoman threat reduced the duration and intensity of conflicts among the Europeans thereby lowering their death toll. On the other hand, it led to higher European fatalities as a direct result of the Ottoman-European confrontations. Carrying out simple calculations based on conflict death tolls and the estimates above, I found that the Ottomans' European conflicts accounted for anywhere between a 2 to 17 percent drop in total European deaths. And with similar calculations for a narrower period between 1451 and 1650, I found a drop in total European fatalities of roughly 20 percent.

Finally, there were various instances when European secular powers and European minorities from different Christian denominations coalesced with the Ottomans. Even as early as the late 15th century, for instance, the Catholic Popes Innocent VIII and his successor Alexander VI cooperated with the Ottoman Sultan Bayezit in exchange for assurances of nonaggression and a subsidy (see Frazee, 1983, pp. 19-22).<sup>36</sup> In the

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<sup>34</sup>See Iyigun (2008a) for a theoretical exposition.

<sup>35</sup>The Assyrian Church split from the Roman Catholic Church in 431 C. E. The Coptic Church followed twenty years later in 451 C. E. Then came the Great Schism between the Roman Catholic and the Eastern Orthodox Churches in 1054 C. E. That was followed by the Cathar/Albigensian uprisings in 1177 C. E., the Waldensian movement in 1177 C. E., the Lollardy splinter in 1350 C. E. and the Hussites in 1415-19 C. E., to name a few (see Moore, 1994, and Rhodes, 2005).

<sup>36</sup>In exchange for financial and security concessions from the Ottoman Empire, Pope Innocent VIII agreed to permanently jail Bayezit's younger brother Cem, who had sought the aid of the Knights of Saint John to challenge his brother for the Ottoman throne.

early-16th century, the French King Francis I was more ready and willing than the Hapsburgs and the Catholic Papacy to cooperate with the Ottomans and lean on this alliance in his geopolitical rivalry with the Hapsburgs and the Italian city-states (i.e., the brief French-Ottoman military alliance against the Duke of Savoy in the mid-1500s).<sup>37</sup> Then, in the 17th century, political alliances between Poland-Lithuania, Sweden and the Ottomans became more prevalent and England began to trade cannon, gunpowder, lead and woolens with the Empire (Max Kortepeter, 1972, p. ix). Along these lines, various scholars have documented that the Ottomans' deliberate policies of low taxes and religious toleration generally helped to "divide and conquer" Eastern Orthodox Christian communities in the Ottoman domains from the Catholic West, at least until the 18th century.<sup>38</sup>

Let me conclude with two related remarks: On the one hand, the data suggest that these were exceptions to the rule. There appear to be only four instances of outright and direct Ottoman-European military cooperation, none of which occurred before 1551.<sup>39</sup> To put things in perspective, that accounts for less than 10 percent of the Ottomans' European military campaigns between 1550 and 1700 and only 4 percent of their military confrontations with the Europeans between 1401 and 1700. Furthermore, European collaboration with Ottomans seems to have carried a significant social stigma: Faroqhi (2004, p. 33) points out that the French-Ottoman collaboration was held in check, as Francis I and Charles V eventually came to an agreement due to the negative reaction of European courts, noblemen and publicists against the alliance of Francis with the Ottomans. And according to Shaw (1976, p. 98), Charles and Francis ended their conflict under the pressure of the pope who strongly desired Europe to unite against

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<sup>37</sup>In 1535, Francis signed a treaty with Suleyman the Magnificent which in effect "permitted the French to carry on trade throughout the Ottoman Empire, by payment of the same dues to the Sultan as were paid by the Turks themselves...[The treaty] granted complete religious liberty to the French in the Ottoman Empire, with the right to keep guard over the holy places, and amounted in effect to a French protectorate over all Catholics in the Levant. It put an end to the commercial predominance of Venice in the Mediterranean, and obliged all Christian ships—with the exception of those of the Venetians—to fly the French flag as a guarantee of protection," Kinross, (1977, p. 204).

<sup>38</sup>For reference, see Kafadar (1996), Shaw (1976) and Karpát (1974). Also see Faroqhi (2004, pp. 37 and 64) who discusses the Ottomans' direct involvement in aiding the relocation of Huguenots from France to Moldavia, then an Ottoman territory. He also notes the Ottomans' indirect support of the Serbian Orthodox immigrants against the Hapsburgs in some Balkan protectorates. As Kuran (2004b) argues, the evolution of the political and social institutions in western Europe and the simultaneous stagnation of the Ottoman private economy (which was a manifestation of the lackluster institutions supporting commerce and finance) jointly helped patch this division between the Christian Ottoman diaspora and the Europeans.

<sup>39</sup>In order, they are (i) Ottomans & Transylvanian Protestants against Emperor & Hungary (1551–62); (ii) Ottomans & Barbary States against the Hapsburgs and the Papal States (1572–74); (iii) Venice against the Ottomans with French participation (1667–69); and (iv) Ottomans with Hungarian & Transylvanian Protestants against Austria, Germany and Poland (1683–99).

Islam. On the other hand, when there were indirect military alliances, such as the 1543 collaboration of Francis and Suleyman against the Hapsburgs, they are accounted in Brecke's dataset by an Ottoman-European confrontation in conjunction with an intra-European conflict. This is a clear source of attenuation bias.

## 5. Conclusion

The birth, resilience and eventual recognition of Protestantism and its various offshoots, such as Zwinglianism, Calvinism and Anabaptism, in the 16th-century had a profound impact on European religious and sociopolitical organization thereafter. While there were various attempts of religious reformation prior to the Protestant movement in Europe during the 14th and 15th centuries, neither of those movements survived. And since some key events in the history of the Protestant Reformation coincided with the pinnacle of the Ottoman Empire's military successes and conquests in Europe, numerous historians have claimed that the proliferation of the Lutheran movement was, at least in part, due to the Ottoman threat.

Utilizing a comprehensive data set on violent conflicts within Europe and between the Europeans and the Ottoman Empire for the period between 1401 and 1700, I have revealed some support in favor of this view. At the same time, I have found even stronger evidence that Ottoman military engagements lowered not just the religiously-motivated conflicts within Europe, but also the number and extent of all violent conflicts among and within the European states in general. Hence, while my findings support the notion that the Ottomans dampened the propensity of conflict between the Protestant Reform movement and the Catholic Counter-Reformers, that might have been an artifact of an environment in which Europeans engaged in fewer violent confrontations amongst themselves more generally due to the Ottoman threat.

These findings relate to various strands in the literature. To start with, the central contribution of the findings above is that the European military and political competition with its periphery influenced Europe's sociopolitical evolution. As such, this paper relates to work that emphasizes the interdependency of European history with that of its periphery. Two, because this paper highlights the empirical and historical relevance of religious differences and affinities for the sustenance and resolutions of violent conflict, it represents an empirical contribution to the economics of conflict and production. Three, due to the emphasis on the origins of European ecclesiastical pluralism, the findings above connect with the economics of religion. Four, given the role of religion in conflict and peace, they are related to the literature on the determinants of war. Finally, since it finds empirical evidence that the European periphery influenced its sociopolitical and ecclesiastical history in a novel fashion, this paper ties in with the literature on the role of Protestantism and European ecclesiastical coexistence in the continent's sociopolitical and economic evolution.

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**Table 1:** Descriptive Statistics and the Correlation Matrix

1450 C. E. – 1700 C. E.			<i>The Correlation Matrix</i>								
<i>n</i> = 251	<i>Mean</i>	<i>St. Dev.</i>	<i>EU</i>	<i>OTT</i>	<i>OTHR</i>	<i>AGEU</i>	<i>AGOT</i>	<i>AGOTH</i>	<i>PRO</i>	<i>EUPOP</i>	<i>OTPOP</i>
<i>EUROPE</i>	1.46	1.22	1	...	...	...	...	...	...	...	...
<i>OTTOMAN</i>	.316	.601	-.047	1	...	...	...	...	...	...	...
<i>OTHEROTT.</i>	.192	.452	.092	.072	1	...	...	...	...	...	...
<i>AGEURO</i>	4.71	2.45	.527	-.030	.062	1	...	...	...	...	...
<i>AGOTTO</i>	1.47	1.09	-.001	.508	.045	.079	1	...	...	...	...
<i>AGOTHER</i>	.556	.658	.047	-.040	.586	.179	-.034	1	...	...	...
<i>PROTESTANT</i>	.360	.600	.175	-.016	.040	.494	-.001	.142	1	...	...
<i>EUROPOP</i>	94.7	13.6	-.143	-.172	-.050	-.191	-.355	-.023	.228	1	...
<i>OTTOPOP</i>	18.9	8.03	-.088	-.142	-.045	-.033	-.247	.032	.371	.931	1

1521 C. E. – 1650 C. E.			<i>The Correlation Matrix</i>								
<i>n</i> = 130	<i>Mean</i>	<i>St. Dev.</i>	<i>EU</i>	<i>OTT</i>	<i>OTHR</i>	<i>AGEU</i>	<i>AGOT</i>	<i>AGOTH</i>	<i>PRO</i>	<i>EUPOP</i>	<i>OTPOP</i>
<i>EUROPE</i>	1.54	1.18	1	...	...	...	...	...	...	...	...
<i>OTTOMAN</i>	.315	.623	-.054	1	...	...	...	...	...	...	...
<i>OTHEROTT.</i>	.223	.502	.176	.096	1	...	...	...	...	...	...
<i>AGEURO</i>	5.39	2.25	.505	-.069	.113	1	...	...	...	...	...
<i>AGOTTO</i>	1.39	.893	-.125	.477	-.003	-.118	1	...	...	...	...
<i>AGOTHER</i>	.669	.675	.050	.029	.562	.144	-.135	1	...	...	...
<i>PROTESTANT</i>	.615	.589	.033	-.047	.004	.533	.136	.087	1	...	...
<i>EUROPOP</i>	97.2	7.45	.122	-.072	-.031	.414	.114	.061	.555	1	...
<i>OTTOPOP</i>	22.0	5.83	.059	-.076	-.060	.305	.161	.098	.522	.959	1

**Table 2:** Annual Data, 1450 C. E. – 1700 C. E.

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)
<i>OTTOMAN<sub>t</sub></i>	-.562*	-.497*	-.465**	-.293*	-.280*	-.178**
	(.231)	(.221)	(.247)	(.095)	(.095)	(.108)
<i>OTHEROTTOMAN<sub>t</sub></i>	.155	.190	.352	-.030	-.017	.009
	(.307)	(.294)	(.300)	(.110)	(.107)	(.113)
<i>TIME</i>	-.013	-.014	-.012	-.0005	-.0005	.0014
	(.0087)	(.009)	(.008)	(.004)	(.004)	(.0044)
<i>TIME * OTTOMAN<sub>t</sub></i>	.0029*	.0028*	.0022	.0013*	.0014*	.0012
	(.0014)	(.0014)	(.0015)	(.0006)	(.0007)	(.0007)
<i>TIME * OTHEROT.<sub>t</sub></i>	-.0003	.00005	.0002	.0004	.0005	.0005
	(.0018)	(.0018)	(.002)	(.0007)	(.0007)	(.0007)
<i>EUCONFLICT<sub>t-1</sub></i>	-.051	-.051	-.058	.148*	.149*	.137*
	(.046)	(.046)	(.047)	(.011)	(.011)	(.011)
<i>EUROPEPOP<sub>t</sub></i>	.057	-.057	.012	-.004	-.0044	-.050**
	(.046)	(.045)	(.046)	(.021)	(.0021)	(.026)
<i>OTTOLENGTH<sub>t</sub></i>	...	-.018	-.017	...	-.006	-.0043
		(.017)	(.018)		(.007)	(.0063)
<i>OTHERLENGTH<sub>t</sub></i>	...	-.044	-.028	...	-.011	-.0162
		(.038)	(.039)		(.010)	(.0130)
<i>AGOTTO<sub>t</sub></i>	...	...	-.013	...	...	-.032
			(.059)			(.024)
<i>AGOTHER<sub>t</sub></i>	...	...	-.122	...	...	-.006
			(.106)			(.044)
<i>DISTANCE<sub>t</sub></i>	...	...	.00009	...	...	-.0001
			(.0003)			(.0001)
<i>OTHERDISTANCE<sub>t</sub></i>	...	...	-.0002	...	...	-.00002
			(.00018)			(.00007)
<i>CENTURY<sub>t</sub></i>	...	...	.248	...	...	.067
			(.191)			(.086)
<i>OTTOPOP<sub>t</sub></i>	...	...	.042*	...	...	.052*
			(.019)			(.009)
<i>No. of obs.</i>	250	250	250	250	250	250
<i>(pseudo) R<sup>2</sup></i>	.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).

**Table 3:** 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)
<i>OTTOMAN<sub>t</sub></i>	-.805** (.469)	-.782** (.475)	.994 (.764)	-1.46* (.759)	-1.25 (.796)	-1.25 (.778)
<i>OTHEROTTOMAN<sub>t</sub></i>	-.201 (.592)	-.132 (.574)	-.243 (.705)	-.432 (.811)	-.468 (.793)	-.274 (.781)
<i>TIME</i>	-.013 (.016)	-.0014 (.0016)	-.015 (.015)	.047 (.034)	.047 (.034)	.056 (.084)
<i>TIME<sup>2</sup></i>	...	...	...	-.0001 (.00007)	-.00012** (.0007)	-.0001 (.0002)
<i>TIME * OTTOMAN<sub>t</sub></i>	.0046** (.0024)	.0042** (.0026)	.0031 (.0031)	.0075* (.0038)	.0058 (.0042)	.0057 (.0041)
<i>TIME * OTHEROT.<sub>t</sub></i>	.0017 (.0030)	.0019 (.0030)	.0019 (.0035)	.0023 (.0041)	.0026 (.0039)	.0021 (.0039)
<i>PROTESTANT<sub>t-1</sub></i>	.961* (.181)	.957* (.180)	.847* (.171)	.914* (.154)	.892* (.156)	.702* (.179)
<i>EUROPEPOP<sub>t</sub></i>	.074 (.088)	.079 (.087)	-.076 (.087)	-.026 (.049)	-.013 (.050)	.156 (.112)
<i>OTTOLENGTH<sub>t</sub></i>	...	.010 (.019)	.007 (.015)	...	.026** (.015)	.022 (.015)
<i>OTHERLENGTH<sub>t</sub></i>	...	-.049 (.050)	-.088* (.033)	...	-.014 (.029)	-.006 (.035)
<i>AGOTHER<sub>t</sub></i>	...	...	.070 (.097)	...	...	-.193** (.115)
<i>OTHERDISTANCE<sub>t</sub></i>	...	...	.0003* (.00012)	...	...	.0001 (.0001)
<i>CENTURY<sub>t</sub></i>	...	...	-.138 (.250)	...	...	-1.01 (.764)
<i>OTTOPOP<sub>t</sub></i>	...	...	.178* (.026)	...	...	-.131 (.102)
No. of obs.	250	250	250	130	130	130
(pseudo) <i>R</i> <sup>2</sup>	.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). AGOTTO<sub>t</sub> and DISTANCE<sub>t</sub> included in cols. (3) and (6), not statistically significant, hence, not shown.

**Table 4:** Some Alternative Specifications

Dependent Variable: Avg. Length of Intra-European Conflicts, 1451 - 1700, (1)-(3);  
 Intra-European Conflict Intensity, Levy (1983) Data, (4)-(6);

	Robust Regressions					
	(1)	(2)	(3)	(4)	(5)	(6)
<i>OTTOMAN<sub>t</sub></i>	-1.55* (.449)	-1.43* (.462)	-1.34* (.462)	-131.9* (46.5)	-127.5* (49.4)	-84.2** (42.9)
<i>OTHEROTTOMAN<sub>t</sub></i>	1.04** (.646)	1.02 (.658)	1.52* (.693)	54.9 (36.3)	57.2 (39.4)	88.8* (37.9)
<i>TIME</i>	-.023 (.015)	-.023 (.015)	-.022 (.015)	3.55** (1.81)	3.87** (2.02)	3.49** (1.75)
<i>TIME * OTTOMAN<sub>t</sub></i>	.010* (.003)	.010* (.003)	.011* (.003)	.121 (.423)	-.019 (.473)	-.158 (.418)
<i>TIME * OTHEROT.<sub>t</sub></i>	-.004 (.004)	-.004 (.004)	-.004 (.004)	-.455 (.531)	-.504 (.586)	-.640 (.476)
<i>DEPVAR<sub>t-1</sub></i>	.061 (.038)	.058 (.038)	.044 (.038)	-.048 (.161)	-.067 (.175)	-.053 (.148)
<i>EUROPEPOP<sub>t</sub></i>	.087 (.077)	.087 (.077)	.050 (.088)	-21.2* (10.1)	-23.9** (12.5)	-22.5* (10.8)
<i>OTTOLENGTH<sub>t</sub></i>	...	-.048 (.044)	-.035 (.045)	...	...	...
<i>OTHERLENGTH<sub>t</sub></i>	...	-.004 (.089)	.133 (.097)	...	...	...
<i>AGOTTO<sub>t</sub></i>	...	...	.067 (.138)	...	...	-47.8* (23.9)
<i>DISTANCE<sub>t</sub></i>	...	...	-.0006 (.0005)	...	...	...
<i>OTHERDISTANCE<sub>t</sub></i>	...	...	-.0012* (.0004)	...	...	...
<i>OTTOPOP<sub>t</sub></i>	...	...	.082* (.041)	...	1.67 (5.24)	4.15 (4.29)
<i>OTTOINTENSITY<sub>t</sub></i>	...	...	...	...	.010 (.024)	.012 (.020)
<i>No. of obs.</i>	250	250	250	47	47	47

Note: \* and \*\* respectively denote significance at the 5 percent and 10 percent levels. Cols. (1) - (3) dep. variable: the average duration (in years) of the conflicts that began in a given year (with at least one continental European entity involved in each). Cols. (4) - (6) dep. variable: average battle deaths per million population in conflicts that began in a given year (with at least one continental European entity involved in each). Source for conflict data in Col. (1) - (3): Brecke (1999). Source for battle intensity data: Levy (1983). Source for distance measures: <http://www.geobytes.com/CityDistanceTool.htm>. Source for population data: McEvedy and Jones (1978). AGOTHER<sub>t</sub> and CENTURY<sub>t</sub> included in cols. (3) and (6), not statistically significant, hence, not shown.