LUTHER AND SULEYMAN

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Abstract

This paper emphasizes that the evolution of religious institutions in Europe was influenced by the expansionary threat posed by the Ottoman Empire between the mid-15th century and the early-17th century. Various historical accounts have suggested that the Ottomans' rise helped the Protestant Reform movement as well as its various offshoots, such as Zwinglianism, Anabaptism, and Calvinism, survive their infancy and mature. Utilizing a comprehensive dataset on violent conflicts for the period between 1451 and 1650, I find strong empirical support for the idea that Ottoman military engagements in continental Europe lowered the number and extent of violent conflicts among and within the European states. Ottomans' influence in Europe extended to the feud between the Protestant Reformers and the Catholic establishment: during the time between the birth of Lutheranism and the end of the Thirty-Years War, the likelihood and timing of military engagements between the Protestant Reformers and the Counter-Reformation forces depended negatively and statistically significantly on Ottomans' military activities in Europe.

"Modern history of Europe begins under stress of the Ottoman conquest."

Lord Acton, (1834-1902).

"Mamma, li Turchi!"

Anonymous, Italy.

1. Introduction

The survival and spread of Protestantism and its various offshoots, such as Zwinglianism, Calvinism and Anabaptism, in the 16th-century had a profound impact on European religious and socio-political organization thereafter.[1] Some key events in the history of the Protestant Reformation coincide with the pinnacle of the Ottoman Empire's strength, influence and military might late in the 15th century and the early part of the 16th century. As a result, numerous historians have claimed that the proliferation of the Lutheran movement was, at least in part, due to the Ottoman threat to Western Europe.[2] In this paper, I find empirical support for the hypothesis that the conflict between the Ottoman Empire and European secular and ecclesiastical powers aided and abetted Protestants' rise.

Utilizing a comprehensive data set on violent conflicts for a two-century interval between 1451 and 1650, I demonstrate that Ottoman military engagements in continental Europe lowered the number and extent of violent conflicts among and within the European states themselves. The Ottoman-threat-cum-European-cohabitation effects were long lasting and quantitatively very significant: in the 200-year span between 1451 and 1650, when there were roughly 1.5 new conflicts initiated among the Europeans per annum and about 5.1 conflicts per year in total (including those that had begun at earlier dates), Ottoman military expeditions in Europe lowered the number of newly initiated conflicts between the Europeans by about 35 percent, while it dampened longer-running confrontations on the order of about 20 percent. The intensity of military engagements between the Protestant Reformers and the Counter-Reformation forces (such as the Schmalkaldic Wars, 1546-47, the Thirty-Years War, 1618-48, and the French Wars of Religion, 1562-98) did depend negatively and statistically significantly on Ottomans' military activities in Europe too: during the interval of time between the

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[1]For a recent comprehensive review, see MacCulloch (2003). For more references, also consult Hill (1967), Hillerbrand (1968) and Rosenberg and Birdzell (1986).

[2]See Benz (1949), Fischer-Galati (1959), Setton (1962), Coles (1968), Inalcik (1970), Max Kortepeter (1972), Shaw (1976), Goffman (2002), and MacCulloch (2003).

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 a Protestant and Catholic violent engagement by about 25 to 40 percent.

Moreover, I show that the impact of Ottoman military conquests in Europe did not weaken and persisted with distance from the Ottoman frontier. Together with the fact that the simple correlation of the number of Ottoman wars in Europe and that of intra-European violent conflicts is negative but fairly low, this finding contradicts an alternative hypothesis that Ottomans forced their neighbors to engage them for survival but did not impact other Europeans.

From a broader perspective, this paper demonstrates that international conflicts, rivalries and cooperation can influence the evolution of domestic socio-political institutions. The fluidity with which civilizations, empires, societies have appeared on and disappeared from the historical stage as a result of foreign animosities is a testament to the fact that domestic power struggles were often rendered irrelevant in their longer term impact on domestic institutions. Riding on the back of Ottomans' implicit aid, the survival and official recognition of Protestantism and its various offshoots, such as Calvinism, Zwinglianism, and Anabaptism, had a profound impact on the European religion market. That religious pluralism generated competition between different Christian 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).

The remainder of this paper is organized as follows: In Section 2, I discuss the relevant literature. In Section 3, I provide the historical background and review historians' main claims regarding the Ottomans and Protestantism. In Section 4, I present my main empirical findings. In Section 5, I review some peripheral historical accounts that relate to my analysis. In Section 6, I discuss various aspects of my findings which need qualification and further elaboration. In Section 7, I conclude.

2. Relevant Literature

There are three strands in the economics literature to which the work below is related. First, following in the footsteps of North (1990), papers such as Acemoglu, Johnson, and Robinson (2001) and Rodrik, Subramanian, and Trebbi (2004) have argued that legal and contracting institutions have been more important than geography and human capital in influencing economic progress in the long run. Nonetheless, institutions are endogenous and recent efforts to explain how they evolve are divided into two branches. One, spear-

headed by contributions such as Glaeser et al. (2004), articulates that human capital trumps institutions in explaining long-run economic growth and that institutions evolve with changes in human capital attainment. The second effort, advocated by Acemoglu and Robinson (2005), is the idea that domestic power struggles define institutional characteristics. The work here emphasizes international conflicts, rivalries and cooperation as potential determinants of the evolution of domestic socio-political institutions.

The general idea I advocate below is laid out by Wright (2000). His view is that socio-economic and political institutions have evolved over time to reflect more complexity and interdependence between heterogeneous cultures and social groups. The reason is that conflict and survival has been a constant in the history of humankind and, when faced with formidable external threats, societies have adapted to learn to cooperate with or at least tolerate the existence of other groups to thwart and deflect such threats, even if they have had a long history of animosity and conflict. 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 (2006) 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 in appropriative conflict and even try to prop each other up in conflicts with third-party superior foes.

The final strand to which this paper is related emphasizes religion, social norms and culture as important factors in individual behavior and/or social organization. The main focus of some papers in this strand is religion and culture in general (e.g., Greif, forthcoming, North, 1990, Iannaccone, 1992, Temin, 1997, Glaeser and Sacerdote, 2002, Barro and McCleary, 2005, Guiso, Sapienza and Zingales, 2003, forthcoming, and Spolaore-Wacziarg, 2005). Other papers in this line emphasize how individual behavior and the evolution of socio-political institutions are driven by a specific religion, such as Judaism, Islam or within different denominations of Christianity (e.g., Botticini and Eckstein, 2005a, 2005b, Kuran, 2004b, 2005, and Arrunada, 2005).

3. Relevant Historical Facts

3.1. The Ottomans' Rise and Territorial Gains

Figure 1 shows a map of Europe, North Africa and the Near East in 1300 A. D. and Figure 2 shows the same geographic region at the turn of the 18th century. There are two striking aspects of the comparison between the two maps. One is the overwhelming territorial gains made by the Ottoman Empire, most of which took place between the mid-15th century and the end of the 16th century. The Ottoman state was formed around Bursa in west-central Anatolia in 1299. 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 and giving the Ottomans full control of the Bosporus and Dardanelles straits; 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 of 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).[3] 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.[4]

[Figures 1 and 2 about here.]

The capture of Istanbul by the Ottoman Turks in 1453 was a serious blow to continental Europe because of its strategic importance for Medieval trade and commerce. In Figure 3, I replicate a map from Anderson which illustrates the number of sea and overland routes that passed through the city. It is indicative of the instant and necessary shift of the commercial center of the continent toward the Atlantic seaboard countries after 1453.

[Figure 3 about here.]

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[3]For references on the history of the Ottoman Empire, see Faroqhi (2004), Kinross (1979), Inalcik (1973), Karpat (1974), Shaw (1976), and Goodwin (2000).

[4]Although I do not expound on this issue further, this consolidation is indicative of another channel through which the Ottomans potentially affected Europe. 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).

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Following the fall of Istanbul, perhaps the most alarming development for continental European powers was the establishment of an Ottoman garrison at Otranto, Italy. Shaw (1976) asserts that Mehmet the Conqueror had made it an explicit goal for his navy to spearhead an Ottoman occupation of Italy, "which seemed ripe for conquest due to the rivalries then endemic among Venice, Naples, and Milan as well as divisions caused by the political activities of the pope." When Otranto fell to the Ottomans in the summer of 1481, "Rome panicked, and the pope planned to flee northward along with most of the population of the city. At the same time, a new Crusade was called and support came from the Italian city-states, Hungary and France," (Shaw, 1976, pp. 69-70).

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.[5] There is a well-established strand in the political science literature that focuses on religion in explaining the historical patterns of violent conflict and cooperation; it shows that differences in religious beliefs have historically induced violent conflicts. For instance, in compiling a data set with over 300 violent conflicts around the world between 1820 and 1949, 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." In addition, Richardson finds that war alliances had subdued and prevented wars between former allies, although this influence declined with the passage of time since the alliance. As Wilkinson (1980) points out, 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." With reference to the confrontations of Ottomans and Europeans, Faroqhi (2004, pp. 41-42) notes "...these rivalries did not prevent Christians from both western and south-eastern Europe from seeing themselves as belonging to one and the same religion, and this sentiment was especially strong when they were confronted with a Muslim ruler."

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[5]Ottomans' European advances were neither the first realized by Muslims on the continent nor among those that penetrated deepest the Western and Central parts of the continent. The earliest Islamic conquests in the continent began taking place at the turn of the 8th century. By 711 Spain was under full-scale military invasion by the Berber Muslims (Moors) who had earlier raided the Iberian peninsula by crossing the Strait of Gibraltar from North Africa (Fletcher, 2003, p. 15 and Anderson, 1967, p. 14). In the late-8th century and throughout most of the 9th century, the Viking raids was a serious fact of life in all the coastal areas of the continent including the Mediterranean, Aegean and the Black Seas (Anderson, 1967, p. 20).

3.2. The Ottoman Threat and the Protestant Reformation

The Ottoman Empire peaked in strength, influence and military might 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. 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 and documented the Ottomans' impact on the Protestant Reformation era.

Some of these authors have particularly emphasized how Ottomans' European presence factored in the strategic bargaining between the leaders of the German Protestant movement on the one hand and the Holy Roman Emperor Charles V, the King of the Hapsburgs Ferdinand I, and the Catholic Pope on the other. 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. One of the main themes that emerges from the historical analyses of the period is that both sides were very cognizant of Ottomans' aspirations and swift gains in Europe. This manifested itself in two ways.

First, it made it fairly urgent for both the Pope-Charles-Ferdinand nexus and the Protestants to cooperate and deflect this threat. In discussing this, 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." Goffman (2002, p. 110) states "It is certain that the Ottoman threat as much as the dynastic claims and political ambitions in Italy distracted Charles V from his declared intent of crushing the Protestant revolt to his north." 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." MacCulloch (2003, p. 54), after emphasizing the same point, stresses that "The trail of catastrophe [left in the wake of the Ottomans in Eastern Europe] signaled [to the Christians in western and central Europe] the failure of the crusading enterprise on Europe's southern and eastern flanks, where crusades had achieved so many military advances and annexation of territory against Islam." Fischer-Galati (1959, p. 9) notes "Since [the Ottoman Sultans] Bayezit and Selim spent most of their reign either in Istanbul or fighting in the Middle East, the Emperor thought of exploiting this situation to strengthen Eastern Europe against

[the Turks]. These plans...could not be executed without the help of dependable allies, as the Turks were much more formidable than the mercenaries of the Venetians or the French... To obtain support from the West, Maximilian [Charles V's predecessor] turned once more to the Diets...He was not altogether unjustified in asking their assistance, as some Germans at least seemed interested in undertaking a crusade against the "enemy of the faith."[6]

Second, the Ottomans' lopsided victories against the Hapsburgs in the early-16th century turned into a bargaining chip for the budding Protestant movement. The Protestant 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 against Ottomans with strategic concessions from the Catholic Church and the Holy Roman Emperor. On this point, 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." According to Goffman (2002, p. 110), "The principal paradox for all of them, perhaps, was that even though the Ottomans posed a dire threat to Christendom, and especially to the [Hapsburg Empire], nevertheless, it was the Catholic world–and above all its Pope, represented by these same reformers as anti-Christ–that was most immediately threatened. The Ottoman Empire pounded away at the "soft underbelly" of Charles V's empire, and it was Charles and his Pope who had sworn to force Luther, John Calvin, and other Protestants to renounce their convictions. Many Protestants understood that only the Ottoman diversion stood between them and obliteration."

Along the same lines, Fischer-Galati (1959, p. 9) provides an extensive documentation of the bargaining between the House of the Hapsburgs and the Diet of Nurnberg, representing the early Protestant movement between the 1520s and 1550s. In elaborating on the meeting of the Diet at Worms in 1521, he notes "From as early as 1521, Ferdinand showed grave concern over the Turkish position in Eastern Europe. He realized that the renewed Ottoman aggression, if left unchecked, could bring disaster to Hungary and even perhaps Germany and the Hapsburgs' Austrian possessions...At least until 1526, Ferdinand believed that Hungary could be saved if aid could be secured; hence, from

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[6]For more detail, consult Charriere (1848), Ursu (1908) and Zinkesien (1854) which Fischer-Galati provide as his original sources in French and German.

1521 until the battle of the Mohacs [in 1526] he was a fervent advocate of assistance to Hungary."

Historical accounts also make it clear that Ferdinand could not muster enough help from his brother-in-law Charles V, who was spending his resources in the West to confront the French Emperor Francis and the Italian city-states. As a result, Ferdinand was forced to ask for the assistance of Germans, who were reluctant at first to contribute funds or manpower to the House of the Hapsburgs. Their stance began to change only when the Turkish gains in Europe accumulated and Ferdinand became more desperate. On this topic, Fischer-Galati (1959, pp. 19-35) notes:

> "By 1522 the Hungarian situation had worsened and the Turks had captured Belgrade... Before 1524 the religious and the Turkish questions were basically separate issues; however, it was clear to the German Diets that the religious question, though not directly associated with the Turkish one, took precedence over it...By the summer of 1526, when a new Diet met at Speyer the Hungarian situation had become critical. The Turks were about to launch a decisive campaign against [Hungary] and Ferdinand was gravely concerned...The Diet, however, was not swayed by his arguments...The estates declined to consider the question of assistance to Hungary before solving the German religious problem...[Ferdinand's] alternatives were limited: he could either accede to the wishes of the estates or dissolve the Diet. Turkish pressure on Hungary was too great for him to choose the latter alternative; therefore he reluctantly agreed to the former."[7]

The subsequent negotiations between the Protestants and Ferdinand reflected persistent attempts by the Protestants to link the provision of funds and men to Hungary with the resolution of their religious conflict with the Catholic Church. At the same time, Ferdinand's main concern was to get the Diet to commit troops and funds in defence of Hungary without yielding too many concessions in exchange. Their fruitless wrangling lasted until 1529 when the Ottomans put Vienna under siege. The Ottomans' move against the Hapsburgs' Austrian possessions was too big of a move to have kept the two sides entrenched in their own positions any longer. As a result, "Germans, irrespective of religious affiliation, prepared to defend the Empire against the Infidel. All these factors convinced the Protestants that they could not withhold their support, and

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[7]For more information, see Kluckhohn (1893) which Fischer-Galati lists as his original source in German.

they participated in the campaign that ended with the Turkish withdrawal from Vienna. Disregarding factional interests, the Protestants rallied to the defence of the Empire in 1529. But this was the last time that they joined in anti-Turkish hostilities without first securing concessions in religious matters. After the siege of Vienna, Protestantism and the question of assistance against the Turks became more and more closely interrelated," (Fischer-Galati, 1959, p. 35).

4. The Empirical Analysis
4.1. Conflict, Truce and Peace in Europe (circa 1451 A.D. -1650 A. D.)

I now empirically explore whether Ottomans' military engagements in continental Europe suppressed violent conflicts in Europe and, as a corollary, whether Ottoman military actions in other regions or its domestic civil discords raised them.

The primary source of my empirical work is the *Conflict Catalog* being constructed by Brecke (1999). It is a comprehensive data set on violent conflicts in all regions of the world between 1400 A. D. 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 in five continents.[8] While the Catalog is still under construction, it is virtually complete for Europe 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 and urbanization measures, I use the estimates by Chandler (1987) and MacEvedy and Jones (1978) and, for distance measures, I use the City Distance Tool by Geobytes.[9]

Using the European subset of the Conflict Catalog data, I generate annual data

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[8]Brecke borrows his definition for violent conflict from Cioffi-Revilla (1996): *"A war (a 'war event') is an occurrence of purposive and lethal violence among two or more social groups pursuing conflicting political goals that results in fatalities, with at least one belligerent group organized under the command of authoritative leadership."*

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

[9]http://www.geobytes.com/CityDistanceTool.htm.

with 200 observations for the period between 1451 A. D. and 1650 A. D., which according to most historical accounts corresponds to the interval during which the Ottoman threat to Europe was most intense. Then, I obtain the impact of Ottoman military activities on regional conflicts in continental Europe by estimating the following equation:[10]

$$EUCONFLICT_t = \lambda_0 + \lambda_1 OTTOMAN_t + \lambda_2 OTHEROTTOMAN_t + \lambda_3 X_t + \varepsilon_t, \tag{1}$$

where $EUCONFLICT_t$ is one of three alternative dependent variables described below; $OTTOMAN_t$ is the number of conflicts the Ottoman Empire initiated in continental Europe at time t; and $OTHEROTTOMAN_t$ 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, $EUCON-FLICT_t$, will be:

1. The number of violent conflicts initiated among 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, $AGEURO_t$;

3. The conflicts of a religious nature between the Catholic and Protestant establishments, $PROTESTANT_t$.

While the justification for 3 ought to be self-evident, those for 1 and 2 are provided by the quest to identify whether the Ottomans' military threat to European secular and religious entities induced the latter to not only refrain from initiating new feuds but also suppress longer running ones among them. According to the main hypothesis, λ_1 should be negative and λ_2 ought to be positive.

In all the empirical tests below, the control variables X_t include a time dummy, $TIME$; 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

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[10]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 number of Ottomans' conflicts in Europe, $OTTOMAN_t$, and the number of Ottoman conflicts elsewhere, $OTHEROTTOMAN_t$.

been a secular decline in warfare in Europe since the 15th century.[11] I include the interaction between the main explanatory variables, $OTTOMAN$ and $OTHEROTTOMAN$, and the time dummy, $TIME$, to capture the idea that the impact of Ottoman military activities drifted over time. I include the continental European population level as a proxy for per-capita income.[12]

Depending on the parsimony of the empirical specification I employ, other control variables in X_t include the average duration of continental European conflicts that began in any given period t, $LENGTH_t$; the average length of Ottoman military engagements in Europe that began in t, $OTTOLENGTH_t$; the duration of Ottoman military activities elsewhere that began in t, $OTHERLENGTH_t$; the population of Ottoman territories, $OTTOPOP_t$; a century dummy, $CENTURY$; the average distance from Istanbul of Ottomans' European military engagements at time t, $DISTANCE_t$; the average distance from Istanbul of the main population centers of European countries involved in violent intra-European conflicts at time t, $EURODISTANCE_t$; that of the main population centers of countries outside of Europe Ottomans engaged militarily at time t, $OTHERDISTANCE_t$; the *aggregate* number of violent conflicts in continental Europe at time t (including those which began at dates earlier than t), $AGEURO_t$; 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), $AGOTTO_t$; the *aggregate* number of Ottomans' conflicts with others and its own domestic civil discords, $AGOTHER_t$; and, finally, the interactions of the distance variables, such as $DISTANCE_t$ and $EURODISTANCE_t$, with the military engagement counts data, such as $EUROPE_t$ and $OTTOMAN_t$. Table 1 lists and defines all variables used in the empirical analysis.

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[11]See, for instance, Woods and Baltzly (1915), Richarsdon (1960), Wilkinson (1980), and Brecke (1999).

One could argue, as some historians have done, that the influence of the Ottoman Empire on Europe was at its pinnacle from the capture of Istanbul in 1453 to the Lepanto sea battle in 1571, in which the Holly Empire fleet decimated the entire Ottoman navy and scored the first major victory for Europeans against the Ottomans. To many historians, this sea battle marked not only a significant setback for the Ottoman naval prowess in the eastern Mediterranean Sea, which the Ottomans never dominated again, but also a psychological momentum shift. This is another reason why I include a time dummy in the empirical analyses below.

[12]The time period over which I carry out my empirical analysis covers the Malthusian era when there existed a strong link between the levels of per-capita income and population.

As an alternative, I use the urbanization rates constructed by Chandler (1987) and MacEvedy and Jones (1978) as proxy for the level of economic development in continental Europe. The results are very similar to those derived with the level of European population as proxy.

[Table 1 about here.]

The motivation for including some of these right-hand-side variables is mundane and self explanatory. I include the distance variables and their interactions with the conflict counts data especially, in order to see whether the impact of Ottomans' in Europe was confined to the borders and buffer zone territories or more widespread to impact more distant parts of continental Europe. I also control for the aggregate conflict data to identify whether newly-initiated conflicts by the Ottomans or their longer-running feuds were more important in influencing the patterns of intra-European conflicts.

Using the European subset of the Conflict Catalog data, I generate annual data with 200 observations for the period between 1451 A. D. and 1650 A. D., which according to most historical accounts corresponds to the interval during which the Ottoman threat to Europe was most intense.[13]

Table 2 presents summary statistics of the key variables in the empirical analysis. As can be seen in the top panel, there was on average one new Ottoman military action in continental Europe roughly every three years and about one new Ottoman engagement domestically or in other regions every five years between 1451 A. D. and 1650 A. D. This compares with roughly three violent conflicts every two years among continental European countries themselves. The highest number of intra-European conflicts recorded in any given year was 6 in 1519; that between the Ottoman Empire and Europe was 3 in 1551; and the highest number of domestic conflicts in the Ottoman Empire or military excursions in other regions was 3 in 1526. Looking at the *aggregate* numbers of conflicts, we see that the range of intra-European feuds was between as few as 1 (in 1454 and 1547) and as high as 11 (in 1478, 1620, 1625, and 1626); that of Ottomans' European engagements was between none (in numerous years) and five (in 1463); and the range of Ottomans' internal conflicts and elsewhere in *aggregate* was identical to the newly-initiated ones, between zero and three. Both European and Ottoman population levels are negatively correlated with violent conflicts in Europe (either between Ottomans and Europeans or among the European countries themselves), but they are positively associated with the number of Catholic-Protestant engagements. This reflects the fact that population levels manifest a positive time trend and the Protestant-Catholic confronta-

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[13]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 number of Ottomans' conflicts in Europe, $OTTOMAN_t$, and the number of Ottoman conflicts elsewhere, $OTHEROTTOMAN_t$.

tions were concentrated in the later part of the sample period. A salient observation is that the raw correlation between the number of Ottoman conquests in Europe and that of violent conflicts among the Europeans themselves is negative but fairly low at $-.102$.

[Table 2 about here.]

The main results I report below rely on two estimation alternatives: ordinary least squares with robust errors (OLS) and Poisson regressions with robust errors (negative binomial). The latter are designed for count data that are discreet and have a preponderance of zeros and small values.

Table 3 shows how Ottoman military activities every year between 1451 A. D. and 1650 A. D. influenced those that were newly initiated among and within the continental European countries. In columns (1) and (4), I present the estimates from the most parsimonious specification. In both estimates, Ottoman military excursions in continental Europe had a statistically significant and negative impact on the number of violent feuds among Europeans. The effect of Ottoman military engagements in subduing intra-European conflicts was quite substantial. According to the OLS estimate in column (1), one additional Ottoman military engagement in Europe lowered the number of intra-European conflicts by roughly .389. 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 reduced intra-European violent engagements over the same period by roughly 22 percent. The Poisson regression in column (4) suggests a more pronounced drop of roughly 45 percent.[14]

In columns (2) and (5) I add, as additional control variables, the average length of intra-European conflicts, $LENGTH$, that of Ottoman military actions in continental Europe, $OTTOLENGTH$, and the duration of Ottoman domestic disturbances and their excursions elsewhere, $OTHERLENGTH$. According to these estimates, the impact of $OTTOMAN$ on intra-European feuds is still significant and even stronger (with reductions on the order of 29 percent and 50 percent according to the OLS and Poisson estimates). In addition, there is now a discernible reduction in the impact of Ottomans on intra-European feuds over time because the interaction between $OTTOMAN$ and

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[14]The dependent variable in Poisson regressions is in logs and the explanatory variables enter linearly. The coefficient on $OTTOMAN_t$ is $-.278$, which implies that the log of the dependent variable, $\log EUROPE_t$, drops by the amount of the coefficient value with one more Ottoman conflict in Europe. Thus, evaluated at the mean of $\log 1.55$, this produces a European conflict level of .61, which is consistent with a 45 percent drop in intra-European conflicts.

$TIME$, is significant and positive at the 10 percent confidence levels in both columns. While the duration of Ottomans' military actions had no significant impact on the number of intra-European conflicts, the average length of European feuds was associated positively and significantly with the average number of European conflicts and those of Ottomans' engagements elsewhere had a negative and statistically significant impact on the average number of newly-initiated European conflicts.

In columns (3) and (6) I add all of the remaining control variables I listed above.[15] With all these control variables in place, $OTTOMAN$ is still negative and statistically significant in both specifications, although they are so at the 6 percent and 10 percent confidence levels. In contrast to the previous estimates, there is now a significant negative time trend in column (3). Since the interaction of $OTTOMAN$ with $DISTANCE$ is not significant in either column (3) or (6), this implies that the conflict-subduing role of the Ottomans was not confined to the buffer zones. Also, Ottomans' internal feuds and their military ventures elsewhere, $OTHEROTTOMAN$, is not significant in any specification and it has the wrong sign in column (3). Neither of the other control variables in these parsimonious regressions is significant.

[Table 3 about here.]

Perhaps a more intriguing issue is the degree to which Ottomans' European conquests suppressed all intra-European conflicts–including not only those that could have begun contemporaneously with the Ottomans European ventures, but also those intra-European feuds which had begun at earlier dates. To test this effect, I repeated the above steps using $AGEURO_t$ as the dependent variable. The results, which are reported in Table 4, 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 violent feuds. Since the average number of aggregate intra-European feuds is 5.1 in the sample, the coefficient estimates in Table 4 suggest a reduction between 20 percent (with the standard OLS estimates) and 37 percent (using the Poisson estimates). While most other results are in line with those reported in Table 3, note that there is unambiguously a reduction over time in the impact of Ottomans on intra-European feuds, because the interaction between $OTTOMAN$ and $TIME$, is significant and positive at the 5 percent or higher confidence levels in all columns. Unlike

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[15]Due to space restrictions, I do not show some of the control variables that did not enter significantly in either of the estimates in columns (3) and (6).

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the previous specification, in which Ottomans' internal feuds and their military ventures elsewhere, $OTHEROTTOMAN$, is not significant, columns (3) and (6) in Table 4 suggest that this variable too might have influenced intra-European conflicts negatively. But, as we shall see, this result is not robust and will even carry the predicted positive coefficient in a number of empirical formulations that follow.

[Table 4 about here.]

As a more direct test of the hypothesis that the Protestant Reformation was aided and abated by the Ottomans' European aspirations, I examined whether Ottoman military excursions had a direct impact on the likelihood of the Protestant Reformers and the Catholic Counter-Reformers engaging in violent feuds on the basis of their religious differences. In Table 5, I report the results derived using the annual number of conflicts between the Protestants and Catholics between 1521 and 1650.[16] As shown, the number of Ottomans military engagements in Europe, $OTTOMAN$, exerted a negative impact on the number of Catholic-Protestant feuds, $PROTESTANT$, in four of the six specifications. This impact tended to decline over time as suggested by the mostly positive and significant coefficient on the interaction term $TIME*OTTOMAN$. Hence, the Ottomans' European ventures 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 .570, in any given year, an Ottomans military conquest in the Balkans or Eastern Europe reduced that number anywhere between roughly more than 25 percent (given by the OLS estimates) and slightly below 40 percent (according to the Poisson estimates).

[Table 5 about here.]

In sum, the empirical results in Tables 3, 4, and 5 support the notion that intra-European conflicts subsided to a significant degree when the Ottoman Empire went on

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[16]For this exercise, I chose to focus on this narrower time span because Protestantism was born in 1517, when Luther posted his 95 Theses Luther 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 Catholic secular and religious establishments, was signed at the end of the Thirty-Years War in 1648. This noted, I elaborate in subsection 4.2 below on the robustness of the results to changes in the time span.

its military conquests in the continent. Over time, this effect might have dissipated to some extent, although the main results are not generally sensitive to the inclusion or exclusion of various control variables. There is no evidence that intra-European military feuds intensified when the Ottomans were distracted by military actions in other geographic regions or by their own civil discords. There is quite strong evidence to suggest that Ottomans' engagements in Europe reduced the Europeans' propensity to not only engage each other violently, but also set aside their existing, longer-running feuds and suppress the Catholic-Protestant confrontations. In contrast, the impact of Ottomans' internal feuds and its military ventures elsewhere on intra-European feuds seems to have been ambiguous. Nonetheless, it is noteworthy that the only significant and positive coefficient on this variable is attained when its impact on the Catholic-Protestant conflicts is examined.

4.2. Robustness

Reverse causality generally plagues 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 among 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 to those of Ottoman military actions in Europe, it is plausible that it generates attenuation bias. That noted, it is possible, for instance, that the Ottomans exploited the divisions among the Europeans in such a way that they targeted Europe only after intra-European feuds ran their course and the parties involved expended their resources and credit. In that case, one would expect the Ottomans' European expeditions to be contemporaneous with a more tranquil European environment. To address this reverse causality concern as best as possible given the data limitations, I ran the regressions reported in columns (4) through (6) of the previous three tables using the one- and two-period lagged values of the two key right hand side variables, $OTTOMAN$ and $OTHEROTTOMAN$ and with the other standard control variables included in those tables. The results for the $AGEURO$ and $PROTESTANT$ dependent variables using the one-period lagged Ottoman conflict variables as control variables are shown in Table 6. They are generally in line with those reported above, although the statistical significance of results is weaker. As can be seen, the lagged number of conflicts Ottomans were

engaged in continental Europe, $OTTOMAN_{t-1}$, comes in with a negative and statistically significant sign in all six estimates. The estimated coefficient on $OTTOMAN_{t-1}$ is slightly below the range of coefficients reported in Table 3, which is consistent with the idea that Ottomans' impact on intra-European conflicts faded with time. The estimates of the impact of Ottoman engagements elsewhere and at home, $OTHEROTTOMAN_{t-1}$, now come in with the expected positive sign and are significant at the 5 percent confidence level in two specifications. I do not report the results produced with the two-period lagged impact of Ottomans' European conflicts, $OTTOMAN_{t-2}$, but they are consistent with those reported in Table 6. I also do not shown results generated with the newly-initiated intra-European feuds, $EUROPE$, as the dependent variable, but the results from that exercise also are very similar to those reported for the *aggregate* number of intra-European violent confrontations, $AGEURO$.

[Table 6 about here.]

Next I checked what role if any outliers played in the results presented in Tables 3 and 4. In Table 7, I report the results from robust regressions that correct for outlier biases using Cook's D-test.[17] As can be seen, the robust regression results are roughly in line with those derived above–albeit somewhat weaker in the case of $EUROPE$–and they do not suggest that they are influenced severely by outlier biases.

[Table 7 about here.]

Further caution is needed in interpreting these results. Given that the data cover a century-and-a-half time span more than six hundred years ago and try to fully account for the timing and magnitude of all violent conflicts which yielded at least 35 deaths over that period, they are likely to be very noisy and sketchy over some shorter time intervals. This would obviously generate some attenuation bias.

In the empirical estimates presented in columns (3) and (6) of Tables 3 through 7, I included some controls for the distance of conflicts from the Ottoman capital Istanbul. The justification for this is that the actions of Ottomans should have had a larger (smaller) impact on intra-European feuds that were closer to (farther from) the Ottoman

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[17]These regressions eliminate outliers–observations for which Cook's $D > 1$–and iteratively select weights for the remaining observations to reduce the absolute value of the residuals.

frontier. In five out of six of those specifications, the average distance of Ottomans European ventures from Istanbul, $DISTANCE$, came in with mixed signs, although more often it was significant and negative. In contrast, when I included in the regressions its interaction with $OTTOMAN$, the interaction term typically had no significant impact on intra-European confrontations, except two cases in which it carried a positive sign suggesting that, the further the Ottomans penetrated into Europe, the greater was their impact on subduing intra-European feuds. This result is consistent with the idea that, regardless of how close or distant potential conflicts were to the Ottoman frontier, Ottomans' military activities had a negative and statistically significant impact on all intra-European feuds.

As an alternative dependent variable, I constructed the ratio of the number of intra-European conflicts in any given year, $EUROPE$, to the average distance of these conflicts to the Ottoman capital, $EURODISTANCE$, and regressed it on the explanatory variables utilized in Table 3.[18] The results are shown in the first three columns of Table 8. They verify 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. And even though the column (3) result is not significant, it yields the right sign and a p-value of 15 percent.

As another alternative test of the idea that Ottoman military involvements in Europe 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 (40 observations) and treated $EURODISTANCE$ as the dependent variable. The results are shown in the final three columns of Table 8. The coefficient on Ottomans' European conflicts is statistically significant and positive in all three specifications. Accordingly, when Europeans were engaged in violent feuds among 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 were militarily active in continental Europe. In particular, an additional Ottoman military engagement in Europe in any given year, $OTTOMAN$, raised the average distance of intra-European violent conflicts from Istanbul by about 140 to 320 miles. This is another channel through which Ottomans' military ventures in Eastern Europe and the Balkans helped suppress intra-European conflicts on the whole continent, and it is further indication that their impact was not solely concentrated on the buffer territories within geographical proximity of the

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[18]Specifically, I contructed this variable as the ratio of $EUROPE_t$ to $DISTANCE_t$ plus 0.1 to keep it defined at zero when there were no violent intra-European conflicts in any period t.

Ottoman frontier.

I also explored the degree to which the selection of my time span influenced the main results. As the often significant and positive coefficient on the interaction of $TIME$ with $OTTOMAN$ indicates, the conflict-deterrent role of the Ottomans during the period between 1451 and 1650 was weakening over time. Nonetheless, when I expanded the time span to cover a wider interval of time between 1401 A. D. to 1700 A. D., the results I got with $EUROPE$ and $AGEURO$ as the dependent variables were roughly in line with those reported in Tables 3 and 4 respectively. Similarly, when I expanded the time interval to cover 1450 to 1650 and treated $PROTESTANT$ as the dependent variable, the negative impact of $OTTOMAN$ on $PROTESTANT$ still remained statistically significant. But when the sample period was extended further to cover the years between 1451 A. D. to 1700 A. D., the impact of $OTTOMAN$ on $PROTESTANT$ became statistically insignificant. That Protestantism was not officially born until 1517; the Ottomans' European engagements were relatively more intense between 1450 and 1571; and direct, religiously-motivated confrontations between the Catholics and Protestants ended with the Peace of Westphalia at the end of the Thirty-Years War in 1648 can help to explain the results with $PROTESTANT$ as the dependent variable.[19]

Yet another issue is that the length of the conflicts varied. To the extent that some but not all battles or conflicts dragged on longer than a year, the empirical results could be biased. In the empirical specifications in columns (2), (3), (5) and (6) of Tables 3 through 7, I attempted to control for this by including the average duration of continental European conflicts that began in period t, $LENGTH_t$, the average length of Ottoman military engagements in Europe that began in t, $OTTOLENGTH_t$, and the duration of Ottoman military activities elsewhere that began in t, $OTHERLENGTH_t$. As an additional robustness check, I estimated equation (1) using data with the five-year averages of the dependent and independent variables. The results, which are not shown, yielded weaker results overall, but with signs consistent with the main hypothesis.

[Table 8 about here.]

5. The Protestant Reformation and European Ecclesiastical Institutions

The impact of Protestantism on European socio-political and economic evolution has been extensively debated. The origins of this debate can be traced back to Weber (1930)

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[19]While it is impossible to test empirically, it is possible that the timing of Martin Luther's upheaval against the Catholic Church in 1517 was also influenced by the Ottomans' intensifying threat to Europe.

who subscribed to the view that Protestantism–particularly its offshoot Calvinism–had "cultivated an intense devotion to one's work or 'calling' in order to assure oneself that one had in fact been selected for salvation."[20] According to Weber, Calvinism had generated this transformation by espousing the view that seeking material pursuits through work was an alternative form of service to God. Whether the "Protestant work ethic" in particular had indeed something to do with changing attitudes towards work and commercial activities in Europe and it played a role in the Industrial Revolution has been, and continues to be, hotly debated.[21] However, this debate has revolved mostly around whether subscribing to Protestantism itself imbues the individual with certain attributes more commensurate with capitalism. As such, most attempts to unearth the impact of Protestantism on capitalism or industrialization has focused on whether capitalist institutions emerged first in places where Protestantism prospered, such as the United Kingdom and Northern Germany, and their development lagged in other places where Catholicism prevailed, like Italy, parts of southern Germany and the low countries. The short answer to this turned out to be no; capitalist institutions were developed swiftly and effectively in some Catholic parts of continental Europe too, either preceding the Industrial Revolution or alongside with it as a by product.[22] In some of its more sophisticated forms, these investigations attempted to discern the influence of Protestants in the commercial activities of predominantly Catholic areas. For example, in discussing why the Industrial Revolution began in the United Kingdom despite the fact that it is regarded as the least 'Protestant' of all Protestant countries, Rosenberg and Birdzell propose that it might have had something to do with the disproportionate representation of the Calvinist Scotch in British business.[23]

While these claims are subject to intense debate, it less contentious to observe that the acceptance and spread of Protestantism in Europe in the 16th and 17th centuries ended the millennium-and-a-half long ecclesiastical monopoly of Catholicism in Western Europe. And some historians have argued that the religious competition Protestantism brought to Europe fostered less ecclesiastical involvement in commercial activity. This

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[20]Rosenberg and Birzdell (1986), p. 129.

[21]For instance, Mokyr (1990 and 2002b) dismisses this link by noting that the Counter-Reformation era was probably as bigoted a period as the pre-Reformation era. But Rosenberg and Birzdell (1986) are more sympathetic to this view and discuss in detail.

[22]There is an ongoing debate about the development of institutions and the timing of the Industrial Revolution. According to the "institutions" school espoused by North, Acemoglu et al. and Rodrik et al. institutional development precedes economic growth and development. Nonetheless, as some papers such as Keller and Shiue (2005) point out, institutional development may accompany economic development and not precede it.

[23]Rosenberg and Birzdell (1986), p. 131.

result is in the spirit of Hotelling's spatial competition model in which more competition yields centrist tendencies. Indeed, Barro and McCleary (2003, 2005) apply the Hotelling concept to the contemporary religion markets and find that less monopoly power and more secularization (defined strictly to cover states without official religions and less regulation of religious activities) is good for economic progress. Mokyr (2005b, pp. 22-23) discusses how such competition both in the ecclesiastical and secular realms could have influenced Europe: "The picture of Europe in the period 1500-1750 is one in which innovative, often radical, intellectuals are able to play one political authority against another: different polities against each other, and when necessary also central vs. local power, the private against the public sphere, and spiritual against secular authority. By moving from one place to another when the environment became too hostile, the members of the intellectual class could remain active in the transnational community of scholars... For the West as a whole, the salutory effects of this pluralism cannot be overestimated."

Some economists and historians have indeed singled out the role of Protestantism in generating more religious competition in Europe and affecting its economic transformation primarily through that channel. In discussing this issue, Rosenberg and Birdzell (1986, pp. 128-132) first elaborate on the role of Protestantism in developing a "European" moral code of conduct that is more commensurate with commerce. Nonetheless, they continue to note:

"Protestantism sanctioned a high degree of individual responsibility for moral conduct and reduced the authority of the clergy; and Protestant merchants were able to free themselves of clerical constraints which they found incompatible with their own experience. Under the circumstances, it would have been too much to expect the Catholic clergy to continue to stress doctrines which could only turn prosperous parishioners toward Protestantism. More and more, the religious world came to concede that what seemed right within the world of commerce was right for that world...Thus, religious authorities, whatever judgments they might pronounce over the conduct of business affairs, gradually abandoned the position that the day-to-day conduct of business ought to be regulated by, or be directly subject to, ecclesiastical authority. In the course of the sixteenth and seventeenth centuries, the business sphere was, in a word, secularized."

One of the main thrusts of Martin Luther was his emphasis on the laity's responsibility to study and personally examine the Scripture for themselves. As such,

Protestantism had two discernible, long-term effects on the European society and its organization. First, it clearly empowered the individual and emphasized his personal responsibility as superior over ecclesiastical regulations and regimentations. According to Hillerbrand (1968, p. xxiv), "The point of the Protestant proclamation was that religion was to be personal and creative. It called for personal involvement, not merely the affirmation of the dogma of the church or the external participation of its rites. It also called for the bold scrutiny of theological tradition and the willingness to reject it where it did not seem to be in harmony with the biblical message...The Reformation was hardly the cradle of the modern world–in a variety of ways its questions were medieval questions–Luther's plea at the Worms was hardly a plea for religious tolerance of the autonomy of conscience, and Calvin's economic thought was hardly the paradigm of Adam Smith. This must not obscure the fact, however, that these and many other "modern" notions made their first appearance during the sixteenth century, and the Reformation did its share in stimulating them: Protestantism stressed the centrality of the individual; sought to reduce the intervention of political power in ecclesiastical affairs; cast the glow of "vocation" over formerly menial undertakings; and raised the spirit of free, personal, and creative inquiry. All this could not help but change the face of society."

Second, the Lutheran calls for individuals to study and read the Bible themselves spurred a greater emphasis on literacy as well as various interpretations of the Scripture with the translation and the printing of the Bible in the vernacular instead of its original Latin. In this respect, one can argue that Protestantism did to Christianity what the educational reforms between 64 A. D. and 200 A. D. did to Judaism in promoting human capital accumulation via the reading and study of religious texts (see Botticini and Eckstein, 2005a and 2005b). In expounding on this idea, Hillerbrand (1968) notes that about one million copies of Luther's tracts had been published by 1523 and that the literature produced by the Reformation scholarship–led by the preeminent figures of the time such as Luther, Zwingli and Calvin as well as other minor reformers such as Bucer, Melanchthon and Carlstadt–would not have been published had there not been sufficient demand.

Others have emphasized that perhaps the most important legacy of the recognition of Protestantism and its various offshoots by the Catholic Church in the 16th century was greater social cohabitation in Europe. To be sure, such coexistence emerged only after brutal Reformation and Counter-Reformation wars which provided rounds of motives for killing in continental Europe during the 16th and 17th centuries and, according to the empirical evidence I presented above, heightened when the Ottoman threat ebbed. That

noted, once the Ottoman threat aided the survival of Protestantism and it became clear after its official recognition in 1555 that the Counter Reformation Wars would not be able to reclaim the lands lost to Protestantism in central and Northern Europe, religious cohabitation became a norm: MucColloch (2003, p. 652) states,

> "Here it is possible to argue that the most significant contribution of the two Reformation centuries to Christianity was the theory and practice of toleration, although it would be possible to argue that the contribution was inadvertent and reluctant. Christianity's previous record on toleration, either of Christian deviance or of other religions, might kindly be termed unimpressive. The eastern Churches (the Orthodox, the Copts, and other Churches of Monopyhsite or Nestorian belief) generally have a better record than the Latin West, but that has been forced on them by circumstance: Power was taken out of their hands by the Muslim invasions and they have had much less chance than the steadily more centralized Latin Church of being successfully intolerant...This dismal record began to change in the Reformation, though once more in the first instance through force of circumstances, as the rival bidders for a monopoly on the expression of Christianity found that they could not impose that monopoly."

6. Some Caveats and Refinements

Undoubtedly, there was some variance in the extent to which European secular powers and various European minorities from different Christian denominations coalesced with the Ottomans. Even as early as the late 15th century, 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).[24] As early as the 16th century, the French Emperor 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 joint military campaign against the Duke of Savoy in the mid-1500s).[25] In the 17th century, political alliances between Poland-Lithuenia, Sweden and

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[24]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 succeed the Ottoman throne.

[25]In 1535, Francis signed a treaty with Suleiman the Magnificent which in effect "permitted the French

the Ottomans became more prevalent and England began to trade cannon, gunpowder, lead and woolens with the Empire (Max Kortepeter, 1972, p. ix).

In addition, 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.[26] However, as Kuran (2004a) argues, the evolution of the political and social institutions in western Europe and the simultaneous stagnation of the Ottoman state jointly helped patch this division between the Christian Ottoman diaspora and the Europeans over time.

The empirical findings above suggest that these were exceptions to the rule. Furthermore, it is important to note that European collaboration with Ottomans seems to have carried a significant social stigma: Francis I had come under intense pressure for collaborating with the "infidels". 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 Islam.

A second issue of note is that external threats do not ensure the survival of a particular domestic group even if they encourage cooperation and coexistence among the threatened. Perhaps the most salient verification of this point was provided by Pirenne (1937, 1956) who claimed that the rise of Islam in the 7th and 8th centuries–not the Germanic invasion of the earlier centuries–led to the downfall of the Mediterranean world of Antiquity.[27]

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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).

[26]For reference, see Kafadar (1996), Shaw (1976) and Karpat (1974). Also see Faroqhi (2004, pp. 37 and 64) who discusses the Ottomans' direct involvement in aiding the Protestants by accepting the relocation of Huguenots from France to Moldavia, then an Ottoman territory, as well as Ottomans' indirect support of the Serbian Orthodox immigrants againts the Hapsburgs in some Balkan protectorates.

[27]Pirenne also provides an intriguing parallel between the rise of the Protestants in the 16th century with the aid of the Ottoman threat and that of Venice as a maritime power and mercantile center in the 9th century due to the rise of Islamic Empires in North Africa, Spain and the Mediterranean: "The peace of 812 left Venice in an exceptionally favourable situation. It was the condition of her future greatness. On the one hand, her union with the Empire enabled her to expand in the Orient, and this

Even if serious external threats suppress conflicts, promote cooperation and ensure survival, it is not clear that they eventually yield social contracts (explicit or implicit) commensurate with social pluralism. Rather, my primary emphasis here is that credible external threats could subside internal conflicts to a sufficient degree that, to the extent that domestic struggles continue later on, they are more likely than not to involve parties which had the time to ensure their survival. Indeed, as I discussed in Section 5, ecclesiastical coexistence emerged in Europe only after the Reformation and Counter-Reformation wars which yielded some of the bloodiest episodes of conflict in continental Europe during the 16th and 17th centuries. That noted, once the Ottoman threat aided the survival of Protestantism in its infancy and it became clear after its official recognition in 1555 that the Counter Reformation Wars would not be able to reclaim the lands lost to Protestantism in central and Northern Europe, religious plurality became more widely accepted (see, for example, Fischer-Galati, 1959 and MacCulloch, 2003).

Put differently, while external threats unambiguously raise the necessity for domestic coexistence and collusion thereby weakening the socio-political and economic power of the incumbents, their longer term impact on domestic socio-political organization will depend on the position of the incumbents from a Hotelling's spatial competition perspective. My main emphasis here is that, in the 15th and 16th century Europe, the Catholic ecclesiastical order left room for a desire for less involvement in material life and greater accountability, which the survival and spread of the Protestant Reforms helped to instigate and sustain.

A third relevant issue is that the recognition of Protestantism by the Hapsburgs with the Peace of Augsburg in 1555 represents neither the first nor the only case of deviation from European ecclesiastical monopoly. Hence, it is important to distinguish at the outset why denominational plurality in Europe in the 16th century due to the official recognition of Protestantism led to a gradual weakening of the religious monopoly of the Catholic Church and why, for example, the Great Schism of 1054 between the East Orthodox Church and the Western Catholics did not produce a similar outcome earlier.

To begin with, the Lutheran movement represented a Catholic reform movement within the geographic domain of the Catholic Church. It arose in reaction to the Church's practice of indulgence sales. In the 14th century it had become acceptable for the Church to accept financial payments in exchange for making available the "treasury merits" of Holy Christ and those of the saints, headed by Mary, to assist the Christian laity's

without threatening her autonomy, since the Empire had need of her support in the struggle against Islam," (Pirenne, 1956, p. 178).

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repentance. This practice intensified in the 15th century eventually drawing Martin Luther's ire in 1517 (see MacCulloch, 2003, pp. 118-119).[28] The 95 Theses Luther posted on the door of the Castle Church in Wittenberg not only denounced such sales, but also denied the Pope's right to grant pardons on God's behalf. Luther's theses argued that the authority to grant pardons was God's alone and indulgence sales were driven primarily by the Church's profit motive.

The Calvinist movement that followed solidified further the delineation of the pursuit of spiritual and material advancement because it promoted the idea that seeking material advancement through hard work was an alternative form of service to God (see Rosenberg and Birdzell, 1986, pp. 129-130). Similarly Anabaptism, which emerged as an offshoot of the Zwinglian Reformation in Zurich came to promote a congregational system of polity and an absolute separation of the church and the state (see Anderson, 1967, pp. 50-51).

In thinking about why the Eastern Orthodox Church and the Great Schism of 1054 did not produce the kind of religious competition attributed to the recognition of Protestantism in 1555, it is also important to recognize that the two churches had split geographically with the end of the Roman Empire in 476 A. D. when the last Roman Emperor was deposed and sent to the Eastern Byzantine part of the empire, which survived another millennium until 1453. Thus, even before the Great Schism, it is not clear that the Orthodox and Catholic Churches were competing in the same religion market. While there had been some demands for the reform of the Orthodox Church in the 8th and 9th centuries, the status quo was eventually restored in the Eastern Orthodox Church (MacCulloch, 2003, pp. xviii-xix).

Finally, it is possible that the Ottomans' European aspirations and conquests influenced Europe through another important channel: Besides the impact of the Ottomans on religious pluralism in Europe, their expansion and territorial gains in Eastern Europe and the Mediterranean during the 15th century seem to have provided an impetus for the Portuguese and Spanish maritime expeditions in the Atlantic. There is some historical evidence to suggest that the Ottomans' presence solidified the financial relationship between the Genoans and the Iberian kingdoms. This association, which materialized

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[28]There had been some earlier precedents of the Protestant movement in France and the Netherlands. For example, the French and Dutch Humanists (of the North) began showing concern for the reform of the Catholic Church starting in the late 15th century, and some Humanists later became associated with the Protestant Reformation. In the late 1550s, the French Humanists began to be called Huguenots (for more details, see Anderson, 1967). Nonetheless, the Lutherian revolt which began in 1517, when Luther posted the 95 Theses on the Castle Church door in Wittenberg, is more widely recognized as the beginning of Protestantism.

in large part due to the loss of the Genoans' dominance of east Mediterranean maritime trade, subsequently played a crucial role in the colonization of South and North America and the development of Atlantic trade.[29] Also, Portuguese maritime expeditions in the Atlantic were initially driven to some extent by the hope and rumors that there existed a distant Christian Kingdom in the west which had proven to be a stalwart ally against Islam (MacCulloch, 2003, p. 63). While I do not elaborate on this topic below, in a companion paper, Iyigun (in progress), I focus on such implications of the Ottomans' rise for European trade and economic and political orientation.

7. Conclusion

In this paper, I find empirical support for the historians' claim that the Ottoman Empire had something to do with how the European continent evolved ecclesiastically in the 15th and 16th centuries. In particular, utilizing a comprehensive data set on violent conflicts for a two-century interval between 1451 and 1650, I find empirical support for the idea that Ottoman military engagements in continental Europe lowered the number and extent of violent conflicts among and within the European states themselves, while Ottoman military actions in other regions or its domestic civil discords raised them. Most importantly, I show that Ottomans' influence on the Europeans applied more narrowly to the feud between the Protestant Reformers and the Catholic establishment.

The survival and official recognition of Protestantism–subsequently of its various offshoots, such as Calvinism, Zwinglianism, and Anabaptism, too–had a profound impact on the European religion market. The extent to which the birth, survival and rise of Protestantism influenced Europe's socio-political and economic evolution in the last five centuries is subject to intense debate. Nonetheless, it is less speculative to suggest that the acceptance and spread of Protestantism in Europe in the 16th and 17th centuries ended the millennium-and-a-half long ecclesiastical monopoly of Catholicism in Western Europe. Thus, taking a broader perspective, this paper provides some support for the notion that external conflicts, rivalries and cooperation can influence the evolution of domestic socio-political institutions.

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[29]This roughly parallels Pirenne's argument as to why the Roman Empire ceased to exist and the commerical center of the European continent shifted from the Mediterranean to the northwest. According to Pirenne, the rise of Islam in the 7th and 8th centuries–not the Germanic invasion of the earlier centuries–was the culprit for this.

8. References

Acemoglu, D., S. Johnson, and J. Robinson. (2001). "The Colonial Origins of Comparative Development," *American Economic Review*, 91, 1369-1401.

Acemoglu, D. and J. Robinson. (2005). *Economic Origins of Dictatorship and Democracy*, (Cambridge University Press, Cambridge), September.

Alesina, A. and E. Spolaore. (2006). "Conflict, Defense Spending, and the Number of Nations," *European Economic Review*, forthcoming.

Anderson, C. S. (1967). *Augsburg Historical Atlas of Christianity in the Middle Ages and Reformation*, (Minneapolis, MN: Augsburg Publishing House).

Arrunada, B. (2005). "Specialization and Rent-Seeking in Religion: The Case of Confession," Universitat Pompeu Fabra, unpublished manusrcipt.

Barro, R. and R. McCleary. (2003). "Religion and Economic Growth," *American Sociological Review*, October.

Barro, R. and R. McCleary. (2005). "Which Countries Have State Religions?," *Quarterly Journal of Economics*, forthcoming.

Benz, E. (1949). *Vittenberg und Bizanz*, (Marburg).

Botticini, M. and Z. Eckstein. (2005a). "Jewish Occupational Selection: Education, Restrictions, or Minorities?," *Journal of Economic History,* 65:4, December.

Botticini, M. and Z. Eckstein. (2005b). "From Farmers to Merchants, Voluntary Conversions and Diaspora: A Human Capital Interpretation of Jewish History," University of Minnesota, unpublished manusrcipt.

Brecke, P. (1999). "Violent Conflicts 1400 A.D. to the Present in Different Regions of the World," 1999 Meeting of the Peace Science Society, unpublished manusrcipt.

Brecke, P. (in progress). "The Conflict Dataset: 1400 A.D. - Present," Georgia Institute of Technology.

Chandler T (1987) *Four Thousand Years of Urban Growth: An Historical Census.* St. David's University Press, New York.

Charriere, E. (1848). *Negociations de la France dans le Levant*, ed., (Paris).

Cioffi-Revilla, C. (1996). "Origins and Evolution of War and Politics," *International Studies Quarterly*, 40 (1), March, 1-22.

Coles, P. (1968). *The Ottoman Impact on Europe*, (New York, NY: Harcourt, Brace & World, Inc. Publishers).

The Euro Atlas Shop, *The Euro Atlas*, http://www.euroatlas.com.

Faroqhi, S. (2004). *The Ottoman Empire and the World Around It*, (London: I. B. Tauris Publishers).

Fischer-Galati, S. A. (1959). *Ottoman Imperialism and German Protestanism, 1521-1555*, (Cambridge, MA: Harvard University Press).

Fletcher, R. (2003). *The Cross and the Crescent: Christianity and Islam from Mohammad to the Reformation*, (New York, NY: Viking , Penguin Group).

Frazee, C. A. (1983). *Catholic and Sultans: The Church and the Ottoman Empire, 1453-1923*, (Cambridge: Cambridge University Press).

Glaeser, E. L., and B. I. Sacerdote. (2002). "Education and Religion." Harvard University, unpublished manuscript.

Glaeser, E. L., R. La Porta, F. Lopez-de-Silanes, and A.Shleifer. (2004). "Do Institutions Cause Growth?" *Journal of Economic Growth* 9(3): 271-303.

Goffman, D. (2002). *The Ottoman Empire and Early Modern Europe*, (Cambridge: Cambridge University Press).

Goodwin, J. (2000). *Lords of the Horizon: A History of the Ottoman Empire*, (New York: Owl Books).

Greif, A. (forthcoming). *Institutions: Theory and History*, (Cambridge: Cambridge University Press).

Grossman, H. I. (1994). "Production, Appropriation, and Land Reform," *American Economic Review*, 84(3), June, 705-12.

Grossman, H. I. and M. Kim. (1995). "Swords or Plowshares? A Theory of the Security of Claims to Property," *Journal of Political Economy*, 103(6), December, 1275-1288.

Grossman, H. I. and M. Iyigun. (1995)."The Profitability of Colonial Investment," *Economics & Politics*, 7:3, November, 229-24.

Grossman, H. I. and M. Iyigun. (1997). "Population Increase and the End of Colonialism," *Economica*, 64(3), August, 483-493.

Guiso, L., P. Sapienza, and L. Zingales. (2003). "People's Opium? Religion and Economic Attitudes." *Journal of Monetary Economics,* 50 (1), 225—82.

Guiso, L., P. Sapienza, and L. Zingales. (forthcoming). "Does Culture Affect Economic Outcomes?" *Journal of Economic Perspectives.*

Haavelmo, T. (1968). *A Study in the Theory of Economic Evolution*, (Amsterdam: North-Holland).

Hafer, C. (2006)."On the Origins of Property Rights: Conflict and Production in the State of Nature," *Review of Economic Studies*, forthcoming.

Hill, C. (1967). *Reformation to Industrial Revolution: The Making of Modern English Scoiety, Vol. I, 1530-1780*, (New York: Random House).

Hillerbrand, H. (1968). *The Protestant Reformation*, (New York: Harper Collins).

Hirshleifer, J. (1991)."The Paradox of Power," *Economics & Politics*, 3:3, November, 177-200.

Hotelling, H. (1929)."Stability in Competition," *Economic Journal*, 39:1, March, 41-57.

Iannaccone, L. R. (1992). "Sacrifices and Stigma: Reducing the Free-Riding in Cults, Communes and Other Collectives." *Journal of Political Economy* 100 (2), April, 271—91.

Inalcik, H. (1973). *The Ottoman Empire: The Classical Age, 1300-1600*, (London).

Iyigun, M. (in progress). "Ottomans and the Rise of European Colonialism," University of Colorado, unpublished manuscript.

Kafadar, C. (1996). *Between Two Worlds: The Construction of the Ottoman State*, reprinted edition, (Berkeley, CA: University of California Press).

Karpat, K. (1974). *The Ottoman State and its Place in World History*, ed., (Leiden).

Kinross, L. (1979). *Ottoman Centuries*, (New York, NY: Harper Perennial).

Kluckhohn, A. (1893). *Deutsche Reichstagsakten unter Karl V*, ed., (Gotha).

Kuran, T. (2004a). "The Economic Ascent of the Middle East's Religious Minorities: The Role of Islamic Legal Pluralism," *Journal of Legal Studies*, 33, June, 2003, 475-515.

Kuran, T. (2004b). "Why the Middle East Is Economically Underdeveloped: Historical Mechanisms of Institutional Stagnation," *Journal of Economic Perspectives*, 18, Summer, 71-90.

Kuran, T. (2005). "The Logic of Financial Westernization in the Middle East," *Journal of Economic Behavior and Organization*, 56 (April 2005): 593-615.

MacCulloch, D. (2003). *The Reformation: A History*, (New York, NY: Viking).

Max Kortepeter, C. (1972). *Ottoman Imperialism During the Reformation: Europe and the Caucasus*, (New York: New York University Press).

McEvedy C, Jones R (1978) *Atlas of World Population History.* Facts on File, New York.

McNeill, W. (1984). *The Pursuit of Power : Technology, Armed Force, and Society since A.D. 1000,* (Chicago, IL: University of Chicago Press).

Mokyr, J. (1990). *The Lever of Riches*, (New York: Oxford University Press).

Mokyr, J. (2002a).*The Gifts of Athena: Historical Origins of the Knowledge Economy*, (Princeton: Princeton University Press).

Mokyr, J. (2002b). "The Enduring Riddle of the European Miracle: the Enlightenment and the Industrial Revolution," Northwestern University, unpublished manuscipt.

Mokyr, J. (2005a). "Mobility, Creativity, and Technological Development: David

Hume, Immanuel Kant and the Economic Development of Europe," Northwestern University, unpublished manuscipt.

Mokyr, J. (2005b). ""The Great Synergy: the European Enlightenment as a Factor in Modern Economic Growth," Northwestern University, unpublished manuscipt.

North, D. (1990). *Institutions, Institutional Change and Economic Performance (Political Economy of Institutions and Decisions)*, (Cambridge: Cambridge University Press).

Pirenne, H. (1937). *Mohammed and Charlemange*, reprinted edition, 2001, (Dover: Dover Publications).

Pirenne, H. (1956). *Economic and Social History of Medieval Europe*, (New York: Harvest HBJ).

Richardson, L. F. (1960). *Statistics of Deadly Quarrels*, (Pittsburgh, PA: The Boxwood Press).

Rodrik, D., A. Subramanian, and F. Trebbi. (2004). "Institutions Rule: The Primacy of Institutions over Geography and Integration in Economic Development," *Journal of Economic Growth*, 9.

Rosenberg, N. and L. E. Birdzell, Jr. (1986). *How the West Grew Rich: The Economic Transformation of the Industrial World*, (New York, NY: Basic Books).

Setton, K. M. (1962). "Lutheranism and the Turkish Peril," *Balkan Studies,* III (1), 136-65.

Shaw, S. (1976). *History of the Ottoman Empire and Modern Turkey*, Vol. 1, (Cambridge: Cambridge University Press).

Shiue, C. H. and W. Keller. (2004). "Markets in China and Europe on the Eve of the Industrial Revolution," NBER Working Paper No: 10778, September.

Skaperdas, S. (1992). "Cooperation, Conflict, and Power in the Absence of Property Rights," *American Economic Review,* September, 82, 720-39.

Skaperdas, S. (2005). "The Market for Protection and the Origin of the State," University of California at Irvine, unpublished manuscript, May.

Spolaore, E. and R. Wacziarg. (2006). "The Diffusion of Development," Stanford University, unpublished manuscript.

Temin, P. (1997). "Is it Kosher to Talk about Culture?" *Journal of Economic History*, 57 (2), June, 267—87.

Tilly, C. (1992). *Coercion, Capital and European States: AD 990 - 1992 (Studies in Social Discontinuity)*, (New York, NY: Blackwell Publishers).

Ursu, J. (1908). *La Politique Orientale de Francois I, 1515-1547*, (Paris).

Weber, M. (1930). *Protestant Ethic and the Spirit of Capitalism*, trans. T. Parsons (New York: Scribner and Sons).

Wilkinson, D. (1980). *Deadly Quarrels: Lewis F. Richardson and the Statistical Study of War*, (Berkeley, CA: University of California Press).

Woods, F. A. and A. Baltzly. (1915). *Is War Diminishing? A Study of the Prevalence of War in Europe from 1450 to the Present Day*, (Boston, MA: Houghton Mifflin Co.).

Wright, R. (2000). *Nonzero: The Logic of Human Destiny*, (Vintage Books: New York).

Zinkeisen, J. W. (1854). *Drei Denkschriften uber die Orientalische Frage von Papst Leo X, Konig Franz I von Frankreich und Kaiser Maximilian I aus dem Jahre 1517*, ed., (Gotha).
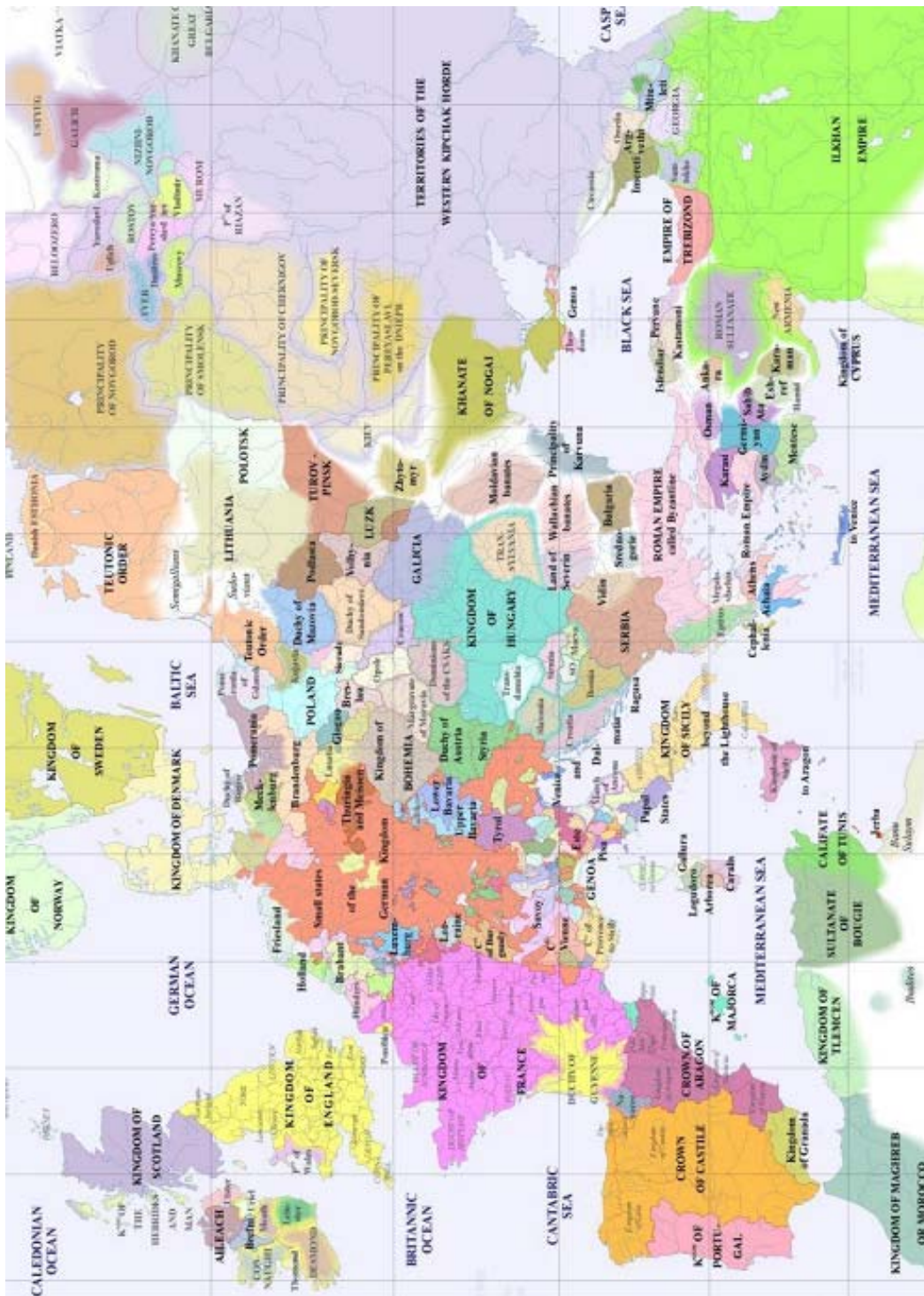
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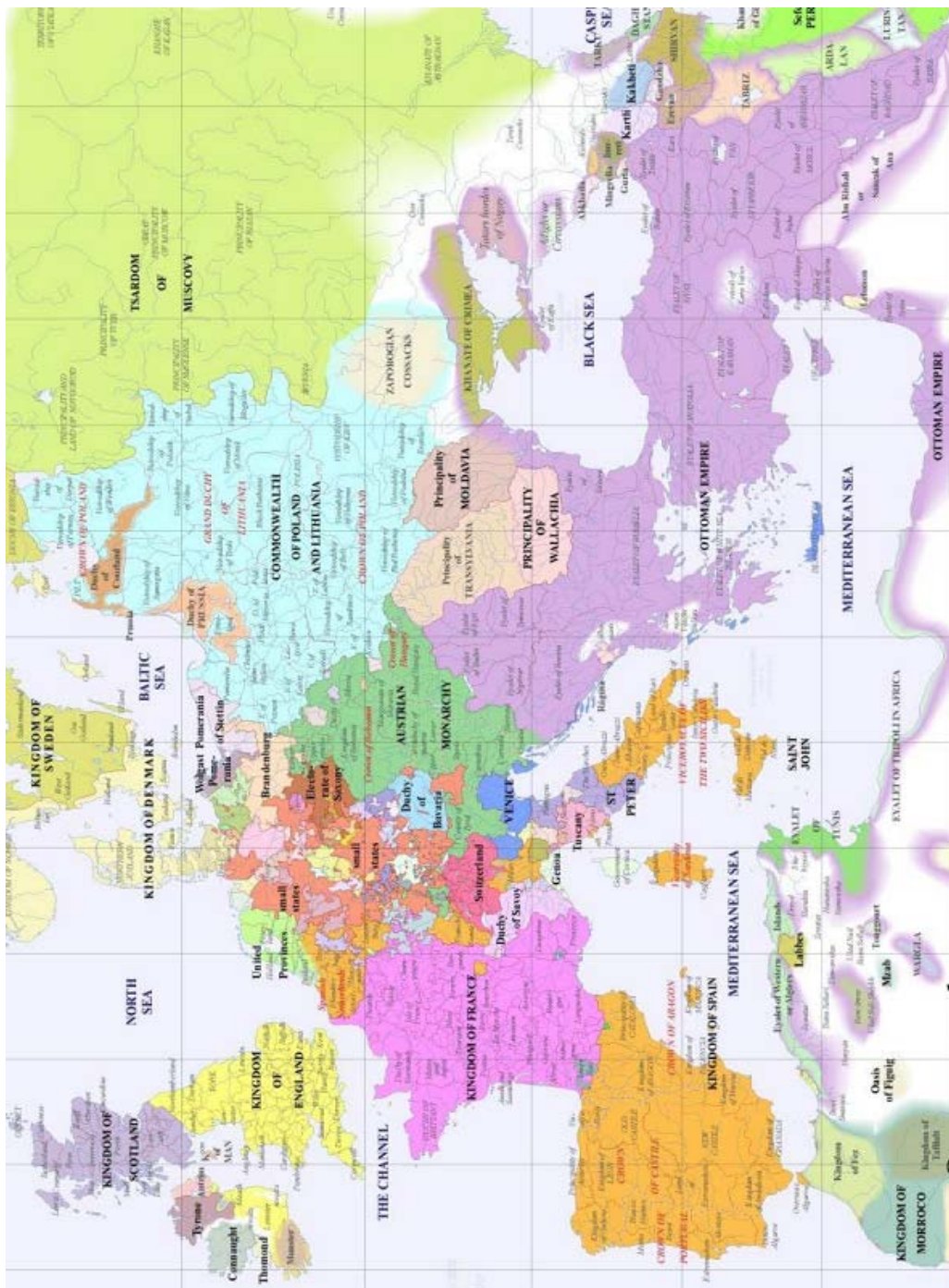
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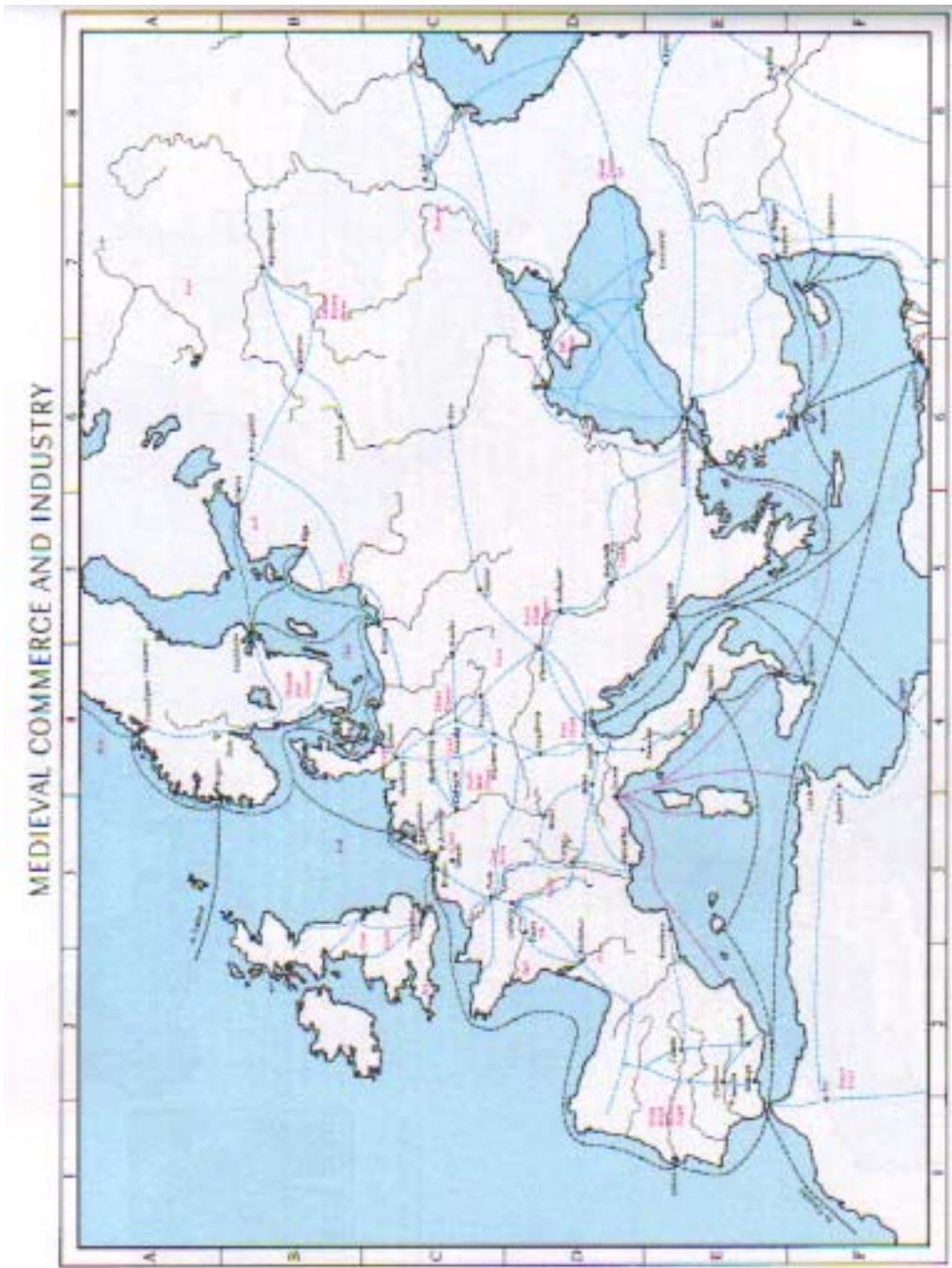
Figure 3:

Table 1: Variable Definitions

- $EUCONFLICT$:
$\begin{cases} EUROPE : \text{Number of new violent conflicts initiated among} \\ \text{and within continental European countries.} \\ AGEURO : \textit{Aggregate} \text{ number of violent conflicts among and} \\ \text{within continental European countries.} \\ PROTESTANT : \text{Number of religiously motivated, violent} \\ \text{conflicts between Protestants and Catholics.} \end{cases}$

- $OTTOMAN$: Number of violent new conflicts the Ottoman Empire initiated in continental Europe.

- $OTHEROTTOMAN$: Number of new Ottoman conflicts with others and its own domestic civil discords.

- $AGOTTO$: *Aggregate* number of conflicts the Ottoman Empire had in continental Europe.

- $AGOTHER$: *Aggregate* number of Ottomans' conflicts with others and its own domestic civil discords.

- $EUROPOP$: Continental European population level (in millions).

- $OTTOPOP$: Ottoman population level (in millions).

- $LENGTH$: Average duration of continental European conflicts (in years).

- $OTTOLENGTH$: Average duration of Ottoman military engagements in Europe (in years).

- $OTHERLENGTH$: Average duration of Ottomans' military activities elsewhere (in years).

- $DISTANCE$: Average distance from Istanbul of Ottomans' European military engagements (in miles).

- $EURODISTANCE$: Average distance from Istanbul of the main population centers of countries involved in violent intra-European conflicts (in miles).

- $OTHERDISTANCE$: Average distance from Istanbul of the main population centers of countries outside of Europe Ottomans engaged (in miles).

- $TIME$: Time dummy.

- $CENTURY$: Century dummy.

Table 2: Descriptive Statistics and the Correlation Matrix

1451 A. D. - 1650 A. D.			*The Correlation Matrix*								
n = 200	*Mean*	*St. Dev.*	*PRO*	*EU*	*OTT*	*OTHR*	*AGEU*	*AGOT*	*AGOTH*	*EUPOP*	*OTPOP*
PROTESTANT	.375	.553	1	...	...	...	...	...	...	...	...
EUROPE	1.55	1.21	−.077	1	...	...	...	...	...	...	...
OTTOMAN	.345	.631	−.052	−.102	1	...	...	...	...	...	...
OTHEROTT.	.220	.482	−.102	.073	.028	1	...	...	...	...	...
AGEURO	5.10	2.19	−.049	.454	−.083	−.078	1	...	...	...	...
AGOTTO	1.53	1.08	−.049	−.013	.513	.087	.092	1	...	...	...
AGOTHER	.620	.670	.059	.048	−.082	.617	.174	.067	1	...	...
EUROPOP	90.3	11.5	.600	−.082	−.134	−.032	−.041	−.296	.069	1	...
OTTOPOP	17.2	8.14	.638	−.102	−.105	−.057	.006	−.154	.096	.965	1

1521 A. D. - 1650 A. D.			*The Correlation Matrix*								
n = 130	*Mean*	*St. Dev.*	*PRO*	*EU*	*OTT*	*OTHR*	*AGEU*	*AGOT*	*AGOTH*	*EUPOP*	*OTPOP*
PROTESTANT	.577	.595	1	...	...	...	...	...	...	...	...
EUROPE	1.48	1.15	.075	1	...	...	...	...	...	...	...
OTTOMAN	.315	.623	−.076	.053	1	...	...	...	...	...	...
OTHEROTT.	.223	.502	−.019	.160	.096	1	...	...	...	...	...
AGEURO	5.19	2.20	.495	.495	−.079	.080	1	...	...	...	...
AGOTTO	1.39	.884	.082	−.097	.477	.046	−.103	1	...	...	...
AGOTHER	.669	.675	.035	.028	.029	.562	.127	−.106	1	...	...
EUROPOP	97.2	7.45	.534	.142	−.072	−.031	.440	.101	.061	1	...
OTTOPOP	22.0	5.83	.466	.078	−.076	−.060	.328	.148	.098	.959	1

Table 3: Annual Data, 1451 A. D. - 1650 A. D.

Dependent Variable: No. of New Continental European Wars per Year

	OLS			Poisson		
	(1)	(2)	(3)	(4)	(5)	(6)
$OTTOMAN_t$	−.389**	−.443*	−.278**	−.278**	−.307*	−.320**
	(.214)	(.205)	(.144)	(.156)	(.151)	(.179)
$OTHEROTTOMAN_t$	.283	.209	−.031	.171	.123	.014
	(.380)	(.410)	(.127)	(.199)	(.203)	(.139)
$TIME$	−.026	−.022	−.016*	−.018	−.017	−.019
	(.016)	(.015)	(.007)	(.012)	(.012)	(.005)
$TIME*OTTOMAN_t$	.002	.004**	−.0003	.001	.002**	−.0003
	(.002)	(.002)	(.001)	(.001)	(.001)	(.001)
$TIME*OTHEROT._t$	−.001	−.0002	.002**	−.001	−.0001	.002**
	(.003)	(.003)	(.001)	(.001)	(.002)	(.001)
$EUCONFLICT_{t-1}$	−.112	−.125	.023	−.074	−.097	.064
	(.126)	(.120)	(.044)	(.085)	(.086)	(.050)
$EUROPEPOP_t$	.125	.103	.038	.087	.081	.064*
	(.085)	(.078)	(.040)	(.060)	(.059)	(.032)
$LENGTH_t$	...	.147*	.0007	...	.071*	.011**
		(.040)	(.0004)		(.017)	(.006)
$OTTOLENGTH_t$	...	−.015	.011	...	−.013	.006
		(.024)	(.014)		(.020)	(.016)
$OTHERLENGTH_t$	...	−.005**	.0004	...	−.003**	−.0001
		(.002)	(.0008)		(.0017)	(.001)
$AGOTTO_t$	...	...	−.033	...	...	−.013
			(.066)			(.070)
$AGOTHER_t$	...	...	−.014	...	...	−.064
			(.096)			(.112)
$DISTANCE_t$	...	...	−.0002	...	...	−.0001
			(.0002)			(.0001)
$DISTANCE_t*OTT._t$	...	...	.0003*	...	...	.0003
			(.0001)			(.0003)
$CENTURY_t$	...	...	.129	...	...	−.019*
			(.096)			(.114)
$OTTOPOP_t$	...	...	.034*	...	...	.028
			(.020)			(.025)
No. of obs.	199	199	199	199	199	199
(pseudo) R^2	.039	.174	.926	.013	.048	.261

Note: *, ** respectively denote significance at the 5 percent and 10 percent levels.

Table 4: Annual Data, 1451 A. D. - 1650 A. D.

Dependent Variable: No. of All Continental European Wars per Year

	OLS			Poisson		
	(1)	(2)	(3)	(4)	(5)	(6)
$OTTOMAN_t$	−.791*	−.869*	−.057*	−.179*	−.182*	−.015
	(.295)	(.333)	(.379)	(.058)	(.062)	(.079)
$OTHEROTTOMAN_t$	−.316	−.356	−.924*	.015	.008	−.114**
	(.361)	(.360)	(.357)	(.065)	(.067)	(.062)
$TIME$	−.023	−.016	−.012	−.002	.0001	−.001
	(.030)	(.030)	(.028)	(.005)	(.005)	(.004)
$TIME * OTTOMAN_t$	.005**	.007*	.007*	.001*	.0015*	.001*
	(.0027)	(.003)	(.002)	(.0005)	(.0005)	(.0005)
$TIME * OTHEROT._t$	.003	.004	.008*	−.0001	−.0001	.001
	(.004)	(.003)	(.003)	(.001)	(.001)	(.001)
$EUCONFLICT_{t-1}$	.678*	.666*	.619*	.127*	.127*	.119*
	(.057)	(.056)	(.055)	(.011)	(.011)	(.010)
$EUROPEPOP_t$	.109	.069	.100	.087	−.003	.009
	(.149)	(.146)	(.142)	(.060)	(.026)	(.023)
$LENGTH_t$	...	.117*	−.032**	...	.022*	−.007
		(.038)	(.019)		(.006)	(.005)
$OTTOLENGTH_t$	...	−.014	−.003	...	−.005	−.001
		(.033)	(.026)		(.005)	(.005)
$OTHERLENGTH_t$	...	−.010*	−.009*	...	−.004*	−.004*
		(.003)	(.002)		(.001)	(.001)
$AGOTTO_t$	...	...	.101	...	...	−.006
			(.164)			(.032)
$AGOTHER_t$	...	...	.606	...	...	.131**
			(.384)			(.071)
$DISTANCE_t$	...	...	−.0007**	...	...	−.0002*
			(.0004)			(.0001)
$DISTANCE_t * OTT._t$	...	...	−.0004	...	...	.00001
			(.0004)			(.0001)
$CENTURY_t$	...	...	−.602	...	...	−.206*
			(.392)			(.084)
$OTTOPOP_t$	...	...	.013	...	...	−.002
			(.077)			(.016)
No. of obs.	199	199	199	199	199	199
(pseudo) R^2	.523	.547	.760	.107	.111	.158

Note: *, ** respectively denote significance at the 5 percent and 10 percent levels.

Table 5: The Protestant-Catholic Confrontations, 1521 A. D. - 1650 A. D.

Dependent Variable: No. of Protestant-Catholic Wars per Year

	OLS			Poisson		
	(1)	(2)	(3)	(4)	(5)	(6)
$OTTOMAN_t$	−.088	−.110**	−.354*	−.031	−.120	−1.02*
	(.063)	(.067)	(.139)	(.157)	(.163)	(.340)
$OTHEROTTOMAN_t$	−.049	−.030	−.099	.046	.076	.431**
	(.055)	(.053)	(.095)	(.148)	(.144)	(.264)
$TIME$	−.006	−.004	−.006	.014	.019	.009
	(.005)	(.005)	(.005)	(.010)	(.009)	(.009)
$TIME*OTTOMAN_t$	.001	.001**	.0015*	.001	.0014**	.003*
	(.001)	(.0006)	(.0007)	(.001)	(.0007)	(.001)
$TIME*OTHEROT._t$	.0003	.0000	.0013	−.002	−.002*	.002
	(.0006)	(.0006)	(.001)	(.002)	(.001)	(.002)
$PROTESTANT_{t-1}$	.820*	.818*	.782*	1.41*	1.52*	1.61*
	(.061)	(.062)	(.077)	(.206)	(.212)	(.264)
$EUROPEPOP_t$	.035	.021	.051	−.055	−.089**	−.065
	(.028)	(.027)	(.043)	(.058)	(.055)	(.086)
$LENGTH_t$	...	.014*	.013	...	.036*	.034*
		(.007)	(.008)		(.013)	(.014)
$OTTOLENGTH_t$	...	−.005	−.006	...	−.008	−.016
		(.011)	(.011)		(.011)	(.015)
$OTHERLENGTH_t$	...	−.001*	−.001	...	−.013	−.072**
		(.0005)	(.0006)		(.019)	(.040)
$AGOTTO_t$	...	...	.067	...	...	.183
			(.128)			(.349)
$AGOTHER_t$	...	...	.219	...	...	.776
			(.155)			(.714)
$DISTANCE_t$	...	...	.0001	...	...	.0008
			(.0001)			(.0006)
$DISTANCE_t*OTT._t$	...	...	.0001	...	...	−.0001
			(.0001)			(.0001)
$CENTURY_t$	...	...	−.073	...	...	−.574
			(.206)			(.520)
$OTTOPOP_t$	...	...	−.008	...	...	.116
			(.034)			(.074)
No. of obs.	129	129	129	129	129	129
(pseudo) R^2	.298	.283	.285	.236	.249	.281

Note: *, ** respectively denote significance at the 5 percent and 10 percent levels.

Table 6: Regressions with Annual Data, 1451 A. D. - 1600 A. D.
Dependent Variable: No. of New Continental European Wars per year, (1)-(3);
No. of Protestant-Catholic Wars per year, (4)-(6);

	Poisson Regressions					
	(1)	(2)	(3)	(4)	(5)	(6)
$OTTOMAN_{t-1}$	$-.173^*$	$-.177^*$	$-.127$	$-.713$	$-.907^{**}$	-1.02^*
	$(.063)$	$(.061)$	$(.091)$	$(.496)$	$(.537)$	$(.528)$
$OTHEROTTOMAN_{t-1}$	$.283^*$	$.247^*$	$.066$	$.318$	$.254$	$.881$
	$(.073)$	$(.075)$	$(.094)$	$(.591)$	$(.589)$	(1.09)
$TIME$	$-.002$	$-.001$	$-.002$	$.013$	$.017^{**}$	$.014$
	$(.005)$	$(.005)$	$(.004)$	$(.010)$	$(.009)$	$(.010)$
$TIME*OTTOMAN_{t-1}$	$.001^{**}$	$.001^*$	$.001^*$	$.004$	$.006^{**}$	$.009^*$
	$(.0005)$	$(.0005)$	$(.0004)$	$(.003)$	$(.003)$	$(.004)$
$TIME*OTHEROT._{t-1}$	$-.002^*$	$-.002^*$	$-.0004$	$-.004$	$-.003$	$-.003$
	$(.001)$	$(.001)$	$(.001)$	$(.004)$	$(.004)$	$(.007)$
$EUCONFLICT_{t-1}$	$.129^*$	$.127^*$	$.109^*$	1.42^*	1.54^*	1.61^*
	$(.010)$	$(.010)$	$(.012)$	$(.213)$	$(.217)$	$(.220)$
$EUROPEPOP_t$	$.013$	$.005$	$.051^{**}$	$-.055$	$-.086$	$-.093$
	$(.024)$	$(.026)$	$(.062)$	$(.059)$	$(.055)$	$(.087)$
$LENGTH_t$	...	$.020^*$	$.005$	...	$.036^*$	$.034^*$
		$(.007)$	$(.006)$		$(.011)$	$(.014)$
$OTTOLENGTH_t$	...	$-.007$	$.001$	...	$-.006$	$-.035^{**}$
		$(.004)$	$(.005)$		$(.009)$	$(.019)$
$OTHERLENGTH_t$	...	$-.004^*$	$-.003^*$	...	$-.048$	$-.061$
		$(.001)$	$(.001)$		$(.041)$	$(.043)$
$AGOTTO_{t-1}$	...	...	$.101^*$	...	...	$.080$
			$(.044)$			$(.492)$
$AGOTHER_{t-1}$	...	...	$.153^{**}$	...	...	$-.621$
			$(.081)$			$(.737)$
$DISTANCE_t$	...	...	$-.0001$	...	...	$.0004^*$
			$(.0001)$			$(.0002)$
$DISTANCE_t*OTT._{t-1}$	...	...	$-.0005$	...	...	$-.0001$
			$(.0006)$			$(.0004)$
$CENTURY_t$	...	...	$-.205^*$	...	...	$-.660$
			$(.093)$			$(.481)$
$OTTOPOP_t$	...	...	$-.025$	...	...	$.123^{**}$
			$(.017)$			$(.069)$
No. of obs.	198	198	198	128	128	128
pseudo R^2	.110	.114	.135	.239	.252	.279

Note: *, ** respectively denote significance at the 5 percent and 10 percent levels.

Table 7: Robust Regression Results with Annual Data, 1451 A. D. - 1600 A. D.

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

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

	OLS Regressions					
	(1)	(2)	(3)	(4)	(5)	(6)
$OTTOMAN_t$	−.291	−.360	−.339*	−.782*	−.839*	−.131
	(.251)	(.249)	(.126)	(.296)	(.308)	(.388)
$OTHEROTTOMAN_t$	.178	.266	−.153	−.371	−.344	−.776**
	(.341)	(.332)	(.149)	(.404)	(.413)	(.423)
$TIME$	−.019	−.017	−.010**	.015	.015	.015
	(.016)	(.015)	(.005)	(.019)	(.019)	(.015)
$TIME*OTTOMAN_t$	.001	.003	−.0001	.004	.005**	.006*
	(.002)	(.002)	(.001)	(.003)	(.0028)	(.003)
$TIME*OTHEROT._t$	.001	.0004	.001	.004	.0043	.006
	(.002)	(.003)	(.001)	(.004)	(.0037)	(.004)
$EUCONFLICT_{t-1}$	−.032	−.051	.042	.728*	.706*	.654*
	(.141)	(.131)	(.045)	(.049)	(.049)	(.044)
$EUROPEPOP_t$	.097	.080	.016	−.079	−.082	−.017
	(.081)	(.076)	(.029)	(.096)	(.095)	(.093)
$LENGTH_t$	...	.158*	.007	...	.091*	−.029
		(.027)	(.009)		(.034)	(.030)
$OTTOLENGTH_t$	...	−.012	.013	...	−.009	−.006
		(.033)	(.012)		(.042)	(.036)
$OTHERLENGTH_t$	...	−.056	.0008	...	−.046	−.008**
		(.062)	(.001)		(.077)	(.004)
$AGOTTO_t$	...	...	.003	...	...	.185
			(.056)			(.170)
$AGOTHER_t$	...	...	−.037	...	...	.402
			(.106)			(.327)
$DISTANCE_t$	...	...	−.0004*	...	...	−.001*
			(.0001)			(.0005)
$DISTANCE_t*OTT._t$	...	...	.0003**	...	...	−.0003
			(.00017)			(.0005)
$CENTURY_t$	...	...	.183	...	...	−.560**
			(.105)			(.340)
$OTTOPOP_t$	...	...	.021	...	...	−.013
			(.020)			(.065)
No. of obs.	199	199	199	199	199	199
R^2	...	...	...	...	...	...

Note: *, ** respectively denote significance at the 5 percent and 10 percent levels.

Table 8: More Results with Annual Data, 1451 A. D. - 1650 A. D.
Dependent Variable: Distance-Adjusted No. of Conflicts, (1)-(3);
Average Distance from Istanbul, (4)-(6);

	Poisson			OLS		
	(1)	(2)	(3)	(4)	(5)	(6)
$OTTOMAN_t$	$-.379^*$	$-.403^*$	$-.479$	140.2^*	131.1^{**}	317.8^*
	(.162)	(.167)	(.333)	(67.1)	(79.3)	(97.9)
$OTHEROTTOMAN_t$	.103	.059	$.436^*$	52.5	43.2	100.2
	(.212)	(.211)	(.214)	(80.1)	(88.0)	(123.2)
$TIME$	$-.024^*$	$-.023$	$-.016^{**}$	5.39	5.74	13.6^*
	(.011)	(.010)	(.009)	(5.24)	(5.15)	(5.58)
$TIME*OTTOMAN_t$	.002	$.003^{**}$	.0006	$-.909$	$-.294$	$-.220$
	(.002)	(.0014)	(.001)	(.606)	(.660)	(.700)
$TIME*OTHEROT._t$	.0003	.0007	.001	$-.867$	$-.644$	-1.49
	(.001)	(.0002)	(.001)	(.687)	(.765)	(1.07)
$EUROPE_t$	$-.032$	$-.048$	.040	-39.8	-27.8	-24.3
	(.094)	(.096)	(.093)	(45.6)	(46.7)	(53.2)
$EUROPEPOP_t$	$.113^*$	$.108^*$	.005	-23.7	-23.9	4.36
	(.054)	(.053)	(.064)	(27.3)	(27.6)	(29.1)
$LENGTH_t$	...	$.063^*$	$.059^*$	...	12.4^*	12.0^{**}
		(.018)	(.017)		(6.11)	(6.70)
$OTTOLENGTH_t$	...	$-.009$	$-.003$	...	-10.8	-19.4
		(.024)	(.020)		(14.3)	(13.6)
$OTHERLENGTH_t$	...	$-.002$	.0001	...	-1.65^*	$-.165$
		(.002)	(.002)		(.830)	(.805)
$AGOTTO_t$	...	...	$-.064$	...	...	7.94
			(.139)			(47.9)
$AGOTHER_t$	...	...	$-.204$	...	...	-53.2
			(.183)			(106.2)
$DISTANCE_t$	...	...	.00001	...	...	$.184^*$
			(.0001)			(.110)
$DISTANCE_t*OTT._t$	...	...	.0003	...	...	$-.301^*$
			(.0005)			(.095)
$CENTURY_t$	...	...	$.548^*$	...	...	-268.7^*
			(.248)			(119.1)
$OTTOPOP_t$	...	...	.062	...	...	$-.67.0^*$
			(.054)			(20.5)
No. of obs.	199	199	199	159	159	159
(pseudo) R^2	.002	.010	.020	.006	.009	.238

Note: *, ** respectively denote significance at the 5 percent and 10 percent levels.

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