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OTTOMAN CONQUESTS AND EUROPEAN ECCLESIASTICAL PLURALISM

Murat Iyigun
University of Colorado, Sabanci University and IZA

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-16th 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. In an attempt to conceptualize these effects, I develop a model of appropriative conflict in which the emergence of a foe with a superior military technology can lead to a secession of hostilities (or even temporary cooperation) between heterogeneous and rival social groups. The general patterns of conflict in continental Europe as well as those between the Protestant Reformers and the Counter-Reformers between the 15th and 17th centuries support the idea that Ottoman military conquests in Europe substantially reduced intra-European feuds.

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

Lord Acton, (1834-1902).

"Mamma, li Turchi!"

Anonymous, Italy.

1. Introduction

Secularism and religious pluralism have arguably become two of the most fundamental features of European socio-political organization since the 17th century. In this paper, I claim that they are both, to some degree, artifacts of the conflict between the Ottoman Empire and European secular and ecclesiastical powers.

My argument is that international conflicts, rivalries and cooperation can influence the evolution of 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. In what follows, I argue that attempts to understand the evolution of the socio-political institutions in Western Europe and, in particular, how religious pluralism emerged and sustained in Europe requires an emphasis on the conflict between Ottomans and Europeans. This conflict intensified with the Ottomans conquest of Istanbul in 1453 and reached its zenith with a number of their visible and significant continental European territorial gains in the early-16th century, such as the capture of Belgrade in 1522, the victory against Hungary in the Mohacs Battle in 1526, and the first siege of Vienna in 1529.

The general idea I advocate below is laid out by Wright (2000). His view is that societies—in particular socio-economic and political institutions—have evolved over time to reflect more complexity and interdependence between heterogeneous cultures and social groups. The reason for this 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.

I begin this paper by presenting a simple conceptual framework that merges Wright's idea with a standard model of appropriative conflict and cooperation. 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 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, as I do below, 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 their superior foe.

In essence, I subscribe to Wright's reasoning about why the European ecclesiastical landscape evolved to produce more religious pluralism during the 15th and 16th centuries when, not coincidentally, the Ottoman military prowess was at its pinnacle. The European history literature contains many accounts of the role of the Ottoman military supremacy holding in check the appetites of the Hapsburg Empire and the Papacy oppressing the infant Lutheran movement; I shall survey some of these works in greater detail in a separate section below.[1]

Utilizing a comprehensive dataset on violent conflicts for a three-and-a half century interval between 1400 and 1750, I find strong empirical support for the idea that Ottoman military engagements in continental Europe lowered the number and extent of violent conflicts among the European states themselves, while Ottoman military actions in other regions or its domestic civil discords raised them. The Ottoman-threat-cum-European-cohabitation effects were long lasting and quantitatively very significant: in the 150-year span between 1451 and 1600, when there were roughly 1.5 conflicts among the Europeans per annum (or 224 intra-European military engagements in total during that timespan), Ottoman military expeditions in Europe lowered the number of conflicts by about 45 percent while Ottoman military actions in other regions raised them by roughly 60 percent. Furthermore, I find some support for the idea that the Ottomans' influence on the Europeans applied even more narrowly to the feud between the Protestant Reformers and the Catholic establishment: between 1451 and 1700, the likelihood and timing 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

[1]The precedents of this idea date back to the 1950s, but a number of historians have continued to promote it throughout the 1970s and even in more recent publications. A non-exhaustive list of historians who subscribe to this line of argument includes Benz (1949), Fischer-Galati (1959), Setton (1962), Coles (1968), Inalcik (1970), Max Kortepeter (1972), Shaw (1976), Goffman (2002), and MacCulloch (2003).

French Wars of Religion, 1562-98) depended negatively and statistically significantly on Ottomans' military activities in Europe.

I also demonstrate 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.

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. 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). And while the extent to which religious plurality played a role in European Enlightenment is somewhat contestable,[2] there is solid historical support for both the fact that the millenium-long monopoly of Catholicism in western Europe came to an end with the establishment of Protestantism and European Enlightenment was an important precursor for the Industrial Revolution.[3]

There are various aspects of my findings which need clarification and some elaboration. The first one involves the implication that Ottoman military efficiency and its manifested European territorial gains unambiguously and without exception was perceived as a vital threat to continental Europe and subdued the main intra-European rivalries and conflict. As I discuss further in Section 6.1, there was some variance in the extent to which European secular powers and the 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).[4] 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

[2]For more background on this link, see Rosenberg and Birdzell (1986), Hill (1967), MacCulloch (2003, pp. 674-83).

[3]For details and reference, see Mokyr (2002).

[4]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.

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). In the 17th century, political alliances between Poland-Lithuenia, Sweden and the Ottomans became more prevalent and England began to trade cannon, gunpowder, lead and woolens with the Empire (Max Kortepeter, 1972, p. ix).

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.[5] 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.

Without discounting these exceptions, I provide references from the political science literature in Section 3 as well as specific historical references regarding the conflict between the Ottomans and the Europeans in Section 6 which document that Ottomans' rapid territorial gains in the 15th and early-16th centuries did play a role in influencing the patterns of conflict and cooperation among the European powers. Furthermore, it is important in this context to note that Francis I had come under intense pressure in Europe for collaborating with the "infidels"; Faroqhi (2004, p. 33) points out that the French-Ottoman collaboration was held in check and 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.

Second, 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.[6]

[5]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.

[6]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

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 elaborate further in Section 6.2, 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. And, as I shall show below, such conflicts heightened when the Ottoman threat ebbed and subdued when it peaked. 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, I differ from Wright in one important aspect: 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.

Third, it is important to acknowledge that the recognition of Protestantism by the Hapsburgs with the Peace of Augsburg in 1555 does not represent the only or even the first case of deviation from 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 influence of the Catholic Church on material life 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

greatness. On the one hand, her union with the Empire enabled her to expand in the Orient, and this without threatening her autonomy, since the Empire had need of her support in the struggle against Islam," (Pirenne, 1956, p. 178).

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 repentance. This practice intensified in the 15th century eventually drawing Martin Luther's ire (see MacCulloch, 2003, pp. 118-119).[7] Thus, by construction, Protestantism clearly and unambiguously represented a more secular alternative religious interpretation than the one offered by the Catholic Church at the time. 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).

Fourth and 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

[7]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.

relationship between the Genoans and the Iberian kingdoms. This association, which materialized 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.[8] 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.

The remainder of this paper is organized as follows: In Section 2, I discuss some relevant literature. In Section 3, I provide a brief historical background. In the Section 4, I present the conceptual framework that is the basis of the empirical work. In Section 5, I discuss my main empirical findings. In Section 6, I review some historical accounts that relate to my analysis. And in Section 7, I conclude.

2. Relevant Literature

There are three broad strands in the economics, history and political science literatures to which the work below is related. First, following in the footsteps of North (1990), papers such as Acemoglu, Johnson, and Robinson (2001, 2005) 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, spearheaded 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, Johnson and Robinson (2005) and Acemoglu and Robinson (2005), is the idea that domestic political, economic 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 second strand to which this paper is related emphasizes religion, social norms

[8]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.

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), while others in this literature emphasize how individual behavior and the evolution of socio-political institutions are driven by a specific religion, like Judaism, Islam or within different denominations of Christianity (e.g., Botticini and Eckstein, 2005a, 2005b, Kuran, 2004b, 2005, and Arrunada, 2005).

Third, the work here borrows essential ideas from a strand in the political science literature which has emphasized that the rise of the nation state and the consolidation of secular power between the 16th and mid-20th centuries was primarily driven by advances in military technology and the rise in external threats commensurate with these advances (e.g., McNeill, 1984 and Tilly, 1992).

3. The Background

Figure 1 shows a map of Europe, North Africa and the Near East at the turn of the 14th century and Figure 2 shows the same geographic region at the turn of the 17th 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 Bosphorus and Dardanelles straits (which connect the Black Sea to the Mediterranean); had gained important military victories against Hungary in central Europe (like the capture of Belgrade in 1521 and the Mohacs Battle in 1526); had established a garrison in Otranto of the Italian Peninsula (in 1481); and had put Vienna, the capital of the Austrian Monarchy, under what eventually turned out to be the first of two unsuccessful sieges (in 1529).[9] 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.[10]

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

[10]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

[Figures 1 and 2 about here.]

The capture of Istanbul by the Ottoman Turks in 1453 was a double 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. The map is indicative of the instant and necessary shift of the commercial center of the continent toward the Atlantic seaboard countries after 1453. As Acemoglu, Johnson and Robinson (2005) have recently argued, the creation of the Atlantic trade and its European seaboard played a crucial role in the transmission of the wealth generated by the Atlantic commerce to the rest of the European continent.

[Figure 3 about here.]

Following the fall of Istanbul, perhaps the most alarming development for continental European powers was the establishment of an Ottoman garrison at Otranto, Italy. Indeed, 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." And 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).

The bottomline is that the gains made by the Ottomans in Eastern Europe in the late-15th and early-16th centuries were a threat to the survival of the continental European states. To be sure, the Ottoman 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.[11] However, there can be little doubt that the Ottomans

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).

[11]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 Abbasids 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 threat of Viking raids

represented an organized and effective Islamic military power that was gradually and systematically encroaching on Europe.

Moreover, 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. There is a well-established strand in the political science literature that focuses on the role of religion in explaining the historical patterns of violent conflict and cooperation, which yields evidence that differences in religious beliefs have historically induced violent conflicts. For instance, in compiling a dataset 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 identifies that war alliances have had an influence in preventing 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."

4. A Simple Conceptual Framework

Consider three countries at time zero, when each country i, $i = 1, 2, 3$, has an initial endowment level of z. The intra-temporal output of the economy in period t, y_t^i, is produced using the endowment of country i at time t, Z_t^i, net of lump-sum taxes τ_t^i:

$$y_t^i \;=\; Z_t^i - \tau_t^i \;. \tag{1}$$

Each country is ruled by a sovereign with an infinite time horizon and who, in every period t, has the power to tax his country's endowment base z to raise revenue and uses it to contest the ownership of the endowments of another country via military

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).

action.[12] The decisions to allocate resources to military conflict and engage in warfare are independently made. For instance, in any given period t, a sovereign can bankroll his military but choose not to attack his neighbor, in which case the sovereign will retain its endowments until the next period provided that the neighboring states refrain from an attack.[13]

Countries are aligned along a linear segment in numerical order. Hence, country 2 buffers and neighbors both 1 and 3 while countries 1 and 3 neighbor country 2. Only two countries can be in conflict at any time t and only neighboring countries can engage in warfare. Consequently, countries 1 and 3 can engage each other only after country 2 is defeated and conquered.[14]

If a country declares war on another at $t \geqslant 0$, both country's endowments becomes contestable. Country i wins the war with probability p_t^{ij} (and country j wins it with probability $1 - p_t^{ij} \equiv p_t^{ji}$). The victorious country claims all of the contested endowments $2z$ as its own in the following period. The relative strength of the militaries decides the expected likelihood of winning a war. That is,

$$p_t^{ij} \;=\; \frac{\beta_i \tau_t^i}{\beta_i \tau_t^i \;+\; \beta_j \tau_t^j} \;, \tag{2}$$

where $i,\, j \;= 1, 2, 3$, $i \neq j$, and β_i, $\beta_i > 0$, represents the potency of country i's military strength. Increases in i's military strength through higher military spending τ_t^i raise the likelihood that country i wins the military conflict, and increases in j's military strength lowers the likelihood that country i can claim victory. For expositional simplicity, I assume $\beta_1 \equiv 1 < \beta_2 \leqslant \beta_3$.

The sovereign of country i maximizes his country's net discounted output over time:

[12] While I deliberately make no distinction about what the countries' endowments might be, there are at least two plausible interpretations. First, one can literally think of the endowments as the wealth of the landowners, in which case the lump-sum tax would represent a pecuniary and required payment made by the landowners to the sovereign who would use the funds to bankroll his military. Alternatively, the countries' endowments could be interpreted as efficiency units of available manpower. In that case, the tax imposed could be viewed as the soldiering time mandated by the sovereign.

[13] There is an important and untrivial simplification here. I do not distinguish between defensive and offensive military build ups. In a more sophisticated version of the model, one could allow the sovereigns to invest in defensive and offensive fortifications separately as in Grossman and Kim (1995). The main point I emphasize here would remain intact under such an extension.

[14] Thus, I rule out (the implausible case of) three-way wars. But I will establish below the stability of the one-on-one wars at any time t by verifying that not being engaged in conlflict is in the best interest of the country that is not engaged in war at time t.

$$\max_{\tau_t^i} \sum_{t=0}^{\infty} \delta^t p_t^{ij} \ (Z_t^i - \tau_i^t) \ , \tag{3}$$

where δ, $0 < \delta < 1$, represents the time discount factor, $Z_t^i \in \{z, 2z, 3z\}$ denotes the endowment base of country i at time t, and where

$$\tau_i^t \ \leq \ Z_t^i \ . \tag{4}$$

4.1 Potential Outcomes

Given the geographical alignments of the three countries and the limitations of military technology expressed above, there are five non-cooperative equilibria that could be sustainable: (a) countries 1 and 2 engage each other in the first period ($t = 0$) and the victor engages country 3 in the next period ($t = 1$); (b) countries 2 and 3 enter a conflict in the first period and country 1 engages the victor in the next period; (c) countries 1 and 2 engage each other in the first period ($t = 0$) and peace prevails between the winner of that conflict and country 3 thereafter ($t \geqslant 1$); (d) countries 2 and 3 engage one another in the first period and peace is sustained between the victor and country 1 thereafter; (e) peace prevails starting at time zero and indefinitely among all countries.[15]

For the purposes of my main argument here, the distinction between cases (a) and (c) or that between cases (b) and (d) is second order, but the conditions under which case (a) is more likely to be sustained than case (b) or the conditions under which (c) is preferable to case (d) is not. In words, we would like to establish the conditions under which relative changes in one country's military/appropriative technology, that is a β_i, would defer or indefinitely deter a conflict between two other countries. Whether an improvement in one country's military technology is more likely to deter or indefinitely defer such a conflict is less significant for our purposes.

Moreover, as is typically the case with infinite time horizon models, a sufficiently small time discount factor would make cases (a) or (b) dominate cases (c), (d) or (e).

[15]There could also be cooperative equilibria, which involve two countries forming an alliance against the third country. But collaboration between any two countries is made impossible by the lack of a commitment mechanism. The commitment problem arises because it would be in the interest of the stronger player of any alliance to renege on its promise not to attack its weaker collaborator if and when the foe against which the alliance was formed is defeated. This problem could be overcome only if the stronger agent can credibly commit to an indefinite truce after the enemy if defeated.

The reason for this is as follows: Peace between any two countries prevails in this model when both countries arm to confront each other but neither chooses to attack. It is not possible for either country not to invest in its military and peace to be sustained because, in that case, a rival country could divert an infinitesimally small amount of resources to its military and invade and conquer its neighbor without uncertainty or risk. Given this observation, a peaceful equilibrium does not necessarily Pareto dominate violent conflict; since countries undertake the same level of military expenditures in peace and war, only sufficiently far-sighted rulers can find it optimal to resist the short-term expected payoff of a violent but risky conflict.

On this basis and in the interest of brevity, I assume hereafter that the discount factor δ is small enough that only cases (a) or (b) are sustainable. Next, I review these two cases in turn.

(a) Working our way backward, we begin at $t = 1$ when country 3 takes on the winner of the conflict between 1 and 2. Let v, $v = 1, 2$, represent the victor of the first conflict at $t = 0$. At $t = 1$, countries 3 and v respectively solve the following problems:

$$\max_{\tau_1^3} \; z \; - \; \tau_1^3 \; + \; p_1^{3v} \sum_{t=2}^{\infty} \delta^t 3z \tag{5}$$

and

$$\max_{\tau_1^v} \; 2z \; - \; \tau_1^v \; + \; (1 - p_1^{3v}) \sum_{t=2}^{\infty} \delta^t 3z \tag{6}$$

subject to equations (1), (2) and (4).

According to (5) and (6), country 3 enters $t = 1$ with an endowment of z because it has not engaged in conflict at $t = 0$, whereas country v begins $t = 1$ with an endowment of $2z$ because it has captured the endowment of its rival at $t = 0$. For country 3, the expected likelihood of winning its conflict with v equals p_1^{3v}, and for v, that likelihood is equal to $1 - p_1^{3v}$. Whichever country wins the war at $t = 1$ will claim all of the endowments, $3z$, and ensure not to face a rival at any future date $t \geqslant 2$.

Equations (5) and (6) yield $\tau_1^v = \tau_1^3 \equiv \bar{\tau}_1$ where

$$\bar{\tau}_1 \; = \; \frac{3z\Delta\beta_3\beta_v}{(\beta_3 \; + \; \beta_v)^2} \; ; \qquad \Delta \; \equiv \; \frac{\delta^2}{1-\delta}. \tag{7}$$

Thus, the optimal amount of resources allocated to military buildup are identical for the two countries; it rises with the total endowment base, $3z$, and the combined military strengths, β_v and β_3.[16]

Based on (7), we can express the indirect utility levels of countries 3 and v at time 1 respectively as follows:

$$V_1^3 \;=\; \left[1 + 3\Delta\left(\frac{\beta_3}{\beta_3 \;+\; \beta_v}\right)^2\right] \; z \tag{8}$$

and

$$V_1^v \;=\; \left[2 + 3\Delta\left(\frac{\beta_v}{\beta_3 \;+\; \beta_v}\right)^2\right] \; z \; . \tag{9}$$

We can now examine the outcome at $t = 0$ when countries 1 and 2 take each other on. These countries solve the following problem:

$$\max_{\tau_0^i} \; z \;-\; \tau_0^i \;+\; p_0^{ij}(\delta V_1^v) \tag{10}$$

subject to equations (1), (2), (4), (9) and where i, $j = 1, 2$, $i \neq j$.

Solving the problem in (10) for both i and j yields $\tau_0^2 = \Omega\tau_0^1$ where

$$\Omega \;\equiv\; \left[2 + 3\Delta\left(\frac{\beta_2}{\beta_2 \;+\; \beta_3}\right)^2\right] \Bigg/ \left[2 + 3\Delta\left(\frac{1}{1 \;+\; \beta_3}\right)^2\right] \;>\; 1. \tag{11}$$

Thus, we get

$$\bar{\tau}_0^1 \;=\; \frac{\delta z \beta_2 \Omega}{(1 \;+\; \Omega\beta_2)^2}\left[2 + 3\Delta\left(\frac{1}{1 \;+\; \beta_3}\right)^2\right] \tag{12}$$

and

[16] In all that follows, I assume that the free parameter values are such that we get interior solutions.

$$\bar{\tau}_0^2 \;=\; \frac{\delta z \beta_2 \Omega}{(1 \;+\; \Omega\beta_2)^2}\left[2 + 3\Delta\left(\frac{\beta_2}{\beta_2 \;+\; \beta_3}\right)^2\right] \;. \tag{13}$$

On the basis of (12) and (13), we can express the indirect utility levels of countries 1 and 2 at time 0 respectively as

$$V_0^1 \;=\; \left\{1 + \delta\left(\frac{1}{1 \;+\; \Omega\beta_2}\right)^2\left[2 + 3\Delta\left(\frac{1}{1 \;+\; \beta_3}\right)^2\right]\right\}\; z \tag{14}$$

and

$$V_0^2 \;=\; \left\{1 + \delta\left(\frac{\beta_2\Omega}{1 \;+\; \Omega\beta_2}\right)^2\left[2 + 3\Delta\left(\frac{\beta_2}{\beta_2 \;+\; \beta_3}\right)^2\right]\right\}\; z \;. \tag{15}$$

For this equilibrium to be stable, country 3 ought to find it optimal to decide not to attack country 2 at $t = 0$. Given that countries 1 and 2 are engaged in conflict at $t = 0$, country 3 would find it optimal not to invest any resources in its military at $t = 0$. Hence, using equation (8), we derive the expected indirect utility of country 3 when it awaits on the sidelines at $t = 0$ as

$$V_0^3 \;=\; \left\{1 + \delta + 3\delta\Delta\left[\left(\frac{1}{1 \;+\; \Omega\beta_2}\right)\left(\frac{\beta_3}{1 \;+\; \beta_3}\right)^2 + \left(\frac{\Omega\beta_2}{1 \;+\; \Omega\beta_2}\right)\left(\frac{\beta_3}{\beta_2 \;+\; \beta_3}\right)^2\right]\right\} z \;. \tag{16}$$

Not surprisingly, the expected payoff of each country increases with their own military efficacy and decreases with those of their rivals. And as a comparison of (14) and (15) implies, the expected payoff of engaging a weaker opponent at time zero is greater than that of engaging a stronger opponent at that time.

(b) In this case, countries 2 and 3 engage in military conflict in the first period and the winner takes on country 1 in the second period. All of the case (a) results apply with the proper country subscript modifications. In particular, we have $\tau_1^v = \tau_1^1 \equiv \bar{\tau}_1$ where

$$\bar{\tau}_1 \;=\; \frac{3z\Delta\beta_v}{(1 \;+\; \beta_v)^2} \;, \quad v = 2, 3, \tag{17}$$

and the indirect utility levels of countries 1 and v at time 1 respectively are

$$V_1^1 \;=\; \left[1+3\Delta\left(\frac{1}{1\;+\;\beta_v}\right)^2\right]\;z\;, \tag{18}$$

and

$$V_1^v \;=\; \left[2+3\Delta\left(\frac{\beta_v}{1\;+\;\beta_v}\right)^2\right]\;z\;. \tag{19}$$

At time 0, when countries 2 and 3 face each other in conflict, we get $\tau_0^3 = \Omega\tau_0^2$ where

$$\Omega \;\equiv\; \left[2+3\Delta\left(\frac{\beta_3}{\beta_2\;+\;\beta_3}\right)^2\right]\Bigg/\left[2+3\Delta\left(\frac{\beta_2}{\beta_2\;+\;\beta_3}\right)^2\right] \;>\; 1. \tag{20}$$

Thus, we get

$$\bar{\tau}_0^2 \;=\; \frac{\delta z\beta_2\beta_3\Omega}{(\beta_2\;+\;\Omega\beta_3)^2}\left[2+3\Delta\left(\frac{\beta_2}{1+\beta_2}\right)^2\right] \tag{21}$$

and

$$\bar{\tau}_0^3 \;=\; \frac{\delta z\beta_2\beta_3\Omega}{(\beta_2\;+\;\Omega\beta_3)^2}\left[2+3\Delta\left(\frac{\beta_3}{1+\beta_3}\right)^2\right]\;. \tag{22}$$

With (21) and (22), we can express the indirect utility levels of countries 2 and 3 at time 0 respectively as

$$V_0^2 \;=\; \left\{1+\delta\left(\frac{\beta_2}{\beta_2\;+\;\Omega\beta_3}\right)^2\left[2+3\Delta\left(\frac{\beta_2}{1\;+\;\beta_2}\right)^2\right]\right\}\;z \tag{23}$$

and

$$V_0^3 \;=\; \left\{1+\delta\left(\frac{\beta_3\Omega}{\beta_2 \;+\; \Omega\beta_3}\right)^2\left[2+3\Delta\left(\frac{\beta_3}{1 \;+\; \beta_3}\right)^2\right]\right\}\; z\;. \tag{24}$$

For this equilibrium to be stable, country 1 ought to find it optimal to decide not to attack country 2 at $t = 0$. Since countries 2 and 3 are engaged in conflict at that time, country 1 would find it optimal not to invest in its military at $t = 0$. Hence, the analog of (16) in this case is

$$V_0^1 \;=\; \left\{1+\delta+3\delta\Delta\left[\left(\frac{\beta_2}{\beta_2 \;+\; \Omega\beta_3}\right)\left(\frac{1}{1 \;+\; \beta_2}\right)^2+\left(\frac{\Omega\beta_3}{\beta_2 \;+\; \Omega\beta_3}\right)\left(\frac{1}{1+\beta_3}\right)^2\right]\right\}\; z\;. \tag{25}$$

4.2 Sustainable Equilibria

We are now in position to assess which of the two equilibria could be sustained depending on parameter values.[17]

Recall that $\beta_1 \equiv 1$ and consider next the case in which countries 2 and 3 are evenly matched, i.e., $\beta_2 = \beta_3 > 1$. Under such parameter restrictions, (15) and (16) become

$$V_0^2 \;=\; \left\{1+\delta\left(\frac{\beta_2\Omega}{1 \;+\; \Omega\beta_2}\right)\left(2+\frac{3\Delta}{4}\right)\right\}\; z\;. \tag{26}$$

$$V_0^3 \;=\; \left\{1+\delta+3\delta\Delta\left[\left(\frac{1}{1 \;+\; \Omega\beta_2}\right)\left(\frac{\beta_2}{1 \;+\; \beta_2}\right)^2+\frac{1}{4}\left(\frac{\Omega\beta_2}{1 \;+\; \Omega\beta_2}\right)\right]\right\}\; z\;. \tag{27}$$

And equations (23) and (24) simplify to

$$V_0^2 \;=\; \left\{1+\frac{\delta}{2}+\frac{3\delta\Delta}{4}\left(\frac{\beta_2}{1 \;+\; \beta_2}\right)^2\right\}\; z \tag{28}$$

[17] Of course, we will need to verify that a solution does exist; as I alluded to in the discussions of cases (a) and (b), it is possible that neither scenario is sustainable if neither country that is not in conflict in the first period is willing to await the winner of a first-period conflict.

and

$$V_0^3 \;=\; \left[1+\frac{\delta}{2}+\frac{3\delta\Delta}{4}\left(\frac{\beta_2}{1\;+\;\beta_2}\right)^2\right]\;z\;. \tag{29}$$

It is straightforward to verify that, $\forall\ \beta_2=\beta_3>1$, equation (27) weakly exceeds (29). Thus, country 3 will prefer to defer a confrontation to period 1 (i.e., case (a) over case (b)). Moreover, $\exists\ \beta_2=\beta_3>1$ such that (26) is greater than (28) and country 2 prefers to engage country 1 immediately.[18] Hence, we conclude that, $\exists\ \beta_2=\beta_3>1$ for which case (a) will be the stable equilibrium.

Next consider parameter values $\beta_3>\beta_2=1$ such that country 3 dominates the other two countries in military technology. Rewriting (14), we get

$$V_0^1 \;=\; \left[1+\frac{\delta}{2}+\frac{3\delta\Delta}{4}\left(\frac{1}{1\;+\;\beta_3}\right)^2\right]\;z \tag{30}$$

And rewriting (16) yields

$$V_0^3 \;=\; \left[1+\delta+3\delta\Delta\left(\frac{\beta_3}{1\;+\;\beta_3}\right)^2\right]\;z\;. \tag{31}$$

Going through the same steps with equations (24) and (25), we generate

$$V_0^1 \;=\; \left\{1+\delta+3\delta\Delta\left[\frac{1}{4}\left(\frac{1}{1\;+\;\Omega\beta_3}\right)+\left(\frac{\Omega\beta_3}{\beta_2\;+\;\Omega\beta_3}\right)\left(\frac{1}{1+\beta_3}\right)^2\right]\right\}\;z\;. \tag{32}$$

$$V_0^3 \;=\; \left\{1+\delta\left(\frac{\beta_3\Omega}{1\;+\;\Omega\beta_3}\right)^2\left[2+3\Delta\left(\frac{\beta_3}{1\;+\;\beta_3}\right)^2\right]\right\}\;z\;. \tag{33}$$

[18] Equation (27) evaluated at $\beta_2\to 1$ equals $1+\delta+3\delta\Delta/4$ and (29) evaluated at $\beta_2\to 1$ equals $1+\delta/2+3\delta\Delta/16$. Equation (27) evaluated at $\beta_2\to\infty$ equals $1+\delta+3\delta\Delta/4$ and (29) evaluated at $\beta_2\to\infty$ equals $1+\delta/2+3\delta\Delta/4$. Equation (26) evaluated at $\beta_2\to\infty$ yields $1+2\delta+3\delta\Delta/4$ and (28) evaluated at the same point generates $1+\delta/2+3\delta\Delta/4$. Given that the indirect utility levels V_0^2 and V_0^3 are strictly monotonic in β_2, it follows that $\forall\ \beta_2=\beta_3\in[1,\infty]$, (26) exceeds (28) and that $\exists\ \beta_2=\beta_3\in(1,\infty)$ which yields interior solutions and (27) exceeds (29).

It is straightforward to verify that, $\forall\ \beta_3 \geqslant \beta_2 = 1$, equation (32) exceeds (30). Thus, country 1 will prefer not to engage country 2 in the first period (i.e., case (b) over case (a)). In contrast, country 3 will want to engage country 2 in the first period because, $\forall\ \beta_3 > 1$, (33) is greater than (31).[19] Thus, we conclude that, $\forall\ \beta_3 > \beta_2 = 1$, case (b) will be the stable equilibrium.

The main conclusion from this simple theoretical exercise is that, when one periphery country is relatively weak and the other two are matched fairly evenly, the weak, periphery country is engaged in military conflict first followed by a (potential) showdown between the evenly matched countries later. But if a periphery country is dominant compared to the other two, then it engages the buffer country first, followed by its (likely) confrontation with the weaker country next. In this second scenario, the latter country benefits because it is spared a first-stage conflict regardless of how weak it is militarily against the buffer country.

Another interesting implication of the framework above is that, as indicated by equations (16) and (25), it is always in the interest of countries that are spared a first-stage conflict to aid the weaker of the two opponents in the first-stage confrontation, without yielding a permanent advantage to the weaker side (i.e., without helping to raise the β_i of the weak country permanently). The reason for this is that, first-stage conflicts always involve a militarily superior foe and the survival odds and the expected payoff of countries that are not engaged in conflict in a first-period conflict rise if the militarily-superior country is eliminated in the first-stage conflict.

5. The Empirical Analysis

5.1. Conflict, Truce and Peace in Europe (circa 1400 A.D. -1750 A. D.)

The analysis above implies that the intensity and magnitude of conflict among the Europeans ought to have been related negatively to offensive military actions by Ottomans on the continent. As a corollary, they should have also been related positively to the degree to which the Ottomans were distracted by other endeavours, such as military action against other non-European foes, their own throne succession struggles or domestic civil discords.

[19] Equation (30) evaluated at $\beta_3 \rightarrow 1$ equals $1 + \delta/2 + 3\delta\Delta/16$ and (32) evaluated at $\beta_3 \rightarrow 1$ equals $1 + \delta + 3\delta\Delta/4$. Equation (30) evaluated at $\beta_3 \rightarrow \infty$ equals $1 + \delta/2$ and (32) evaluated at $\beta_3 \rightarrow \infty$ equals $1 + \delta$. Equation (31) evaluated at $\beta_3 \rightarrow \infty$ yields $1 + \delta + 3\delta\Delta$ and (33) evaluated at the same point generates $1 + 2\delta + 3\delta\Delta$. Given that the indirect utility levels V_0^1 and V_0^3 are strictly monotonic in β_3, it follows that $\forall\ \beta_3 \in [1, \infty]$, (32) exceeds (30) and that $\exists\ \beta_3 \in (1, \infty)$ which yields interior solutions and (33) exceeds (31).

In this subsection, I test this hypothesis using a conflict dataset covering the period 1400 A. D. to 1750 A. D. The primary source of my empirical work is the *Conflict Catalog* being constructed by Brecke (1999). It is a comprehensive dataset on violent conflicts in all regions of the world 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 criterion (32 or more deaths; $\log(32) = 1.5$) that occurred during the relevant time span in five continents (Europe, Asia, the Americas, Australia, and Africa).[20] 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 it took place. On the basis of this data, there also exists derivative information on the duration of the conflict and the number of fatalities (which is available for less than a third of the total number of observations). Supplementary data come from a variety of sources: to cite two, for population measures, I use the estimates by MacEvedy and Jones (1978) and for distance measures I use the City Distance Tool by Geobytes at http:// www.geobytes.com/ CityDistanceTool.htm.

I obtain the impact of Ottoman military activities on regional conflicts in continental Europe by estimating the following equation with two alternative sets of time-series data:

$$EUROPE_t = \lambda_0 \ + \ \lambda_1 OTTOMAN_t \ + \ \lambda_2 OTHEROTTOMAN_t + \ \lambda_3 X_t \ + \ \varepsilon_t, \tag{34}$$

where $EUROPE_t$ is the number of violent conflicts that took place over a specified interval of time in continental Europe–either among continental European countries or, as a result of civil conflicts, within them; $OTTOMAN_t$ is the number of conflicts the Ottoman Empire had in continental Europe at time t; and $OTHEROTTOMAN_t$ is the count at time t of the number of Ottoman conflicts with others and its own domestic civil discords. According to my hypothesis, λ_1 should be negative and λ_2 ought to be positive.

[20]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."*

In all specifications below, the control variables X_t include a time dummy, $TIME$, the lagged dependent variable, $EUROPE_{t-1}$, 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 political scientists have established that there has been a secular decline in warfare in Europe since the 15th century (see, for instance, Woods and Baltzly, 1915, who first documented this finding; Richardson, 1960, who referenced such a trend; Wilkinson, 1980, who could not corroborate it on the basis of the Richardson data; and Brecke, 1999, who did verify this trend utilizing the Conflict Catalog). Furthermore, 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.[21] 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. 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. Finally, I include the continental European population level as a proxy for per-capita income.[22]

Depending on the parsimony of the empirical specification I employ, other control variables in X_t include the following: 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, $OTTOMANPOP_t$; a century dummy, $CENTURY$; a dummy for pre- and post-Lepanto periods (i.e., before and after 1571); as well as lagged values of the main explanatory variables $OTTOMAN$ and $OTHEROTTOMAN$.

Using the European subset of the Conflict Catalog data, I generate two different datasets to estimate equation (34). My primary data are annual and cover the period between 1451 A. D. and 1600 A. D., which according to most historical accounts cor-

[21] See, for example, Coles (1968), Goffman (2002), Goodwin (2000), and Kinross (1979).

[22] 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.

responds to the interval during which the Ottoman threat to Europe was most intense. This dataset contains 150 annual observations.[23] My alternative data cover a longer time period between 1400 A. D. and 1750 A. D. and they consist of the number of regional conflicts and the values of other explanatory variables averaged over 5-year intervals. This second dataset contains 69 observations.

Table 1 presents summary statistics of the key variables in the empirical analysis. As can be seen in the top panel, there was on average one Ottoman military action in continental Europe roughly every three years and about one Ottoman engagement domestically or in other regions every five years between 1451 A. D. and 1600 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. 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). This may be reflective of the decreasing propensity for violent conflict over time. There exists a negative correlation between the number of intra-European conflicts and the average length of the Ottoman military excursions in the continent. In contrast, there is a positive correlation between the number of Ottoman military excursions in continental Europe and the average length of intra-European violent conflicts. The lower panel of the same table shows that the summary statistics for the five-year average data are roughly in line with those that are annual. 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 -.095 for the annual data, and it is in fact positive at .047 for the five-year average data. It is also noteworthy that, had the Ottoman Empire's only impact on Europe been to force their neighbors into violent conflict without suppressing conflict elsewhere on the continent, the simple correlation coefficient between the number of Ottoman conquests in Europe, $OTTOMAN$, and that of violent conflicts among the Europeans, $EUROPE$, would be negative. In that case, one would also expect the correlation between the average distance of intra-European conflicts from the Ottoman capital Istanbul, $DISTANCE$, with $OTTOMAN$ to be highly positive too. But as

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

shown in the top panel of Table 1, this is not the case.

[Table 1 about here.]

The main results I report below rely on two estimation alternatives: ordinary least squares with robust errors (OLS) and Poisson (negative binomial) regressions with robust errors. The latter are designed for count data that are discreet and have a preponderance of zeros and small values. [In Tables 2 and 3, columns (1) through (3) show estimates with ordinary least squares (OLS) with robust errors and columns (4) through (6) present those derived with negative binomial regressions with robust errors.]

Table 2, which is based on annual data, shows how Ottoman military activities between 1451 A. D. and 1600 A. D. influenced those among and within the continental European countries. In columns (1) and (4), I present the estimates from the most parsimonious specification where the number of conflicts among the continental European countries at time t, $EUROPE_t$, is regressed on a time trend, $TIME$; the European population level in year t, $EUROPOP$; the lagged value of the dependent variable, $EUROPE_{t-1}$; the number of Ottoman military incursion in Europe during the same year, $OTTOMAN_t$; the number of conflicts Ottomans were engaged in other regions and their domestic civil unrests, $OTHEROTTOMAN_t$; as well as the interaction of the latter two with the time dummy, $TIME * OTTOMAN_t$ and $TIME * OTHEROTTOMAN_t$. In both estimates, Ottoman military excursions in continental Europe had a statistically significant and negative impact on the number of violent feuds among Europeans. Moreover, as indicated by the statistically significant and positive coefficients on the interaction term in the robust errors regression in columns (1) and (4), $TIME * OTTOMAN$, the conflict-discouraging impact of the Ottoman military engagements in Europe was declining over time (although the impact of this effect was quantitatively small). 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 .55. 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 in the same period by roughly 40 percent. The Poisson regression in column (4) suggest a more radical drop of roughly 60 percent.[24] The only other significant variable in these spec-

[24]The dependent variable in Poisson regressions is in logs and the explanatory variables enter lin-

ifications is the lagged-value of continental European conflicts. Ceteris paribus, a high number of conflicts in any given year reduced violent confrontations the next year by about 15 percent. Given that the average length of intra-European conflicts was 2.6 years with a high variability of 3 years, this is reflective of the fact that most intra-European military confrontations ended within a year.

In columns (2) and (5) I add as additional control variables the average length of intra-European conflicts, $LENGTH_t$, that of Ottoman military actions in continental Europe, $OTTOLENGTH_t$, and the duration of Ottoman domestic disturbances and their excursions elsewhere, $OTHERLENGTH_t$. According to these estimates, the impact of $OTTOMAN$ on intra-European feuds is still negative and significant but slightly weaker (with reductions on the order of 30 percent and 50 percent according to the OLS and Poisson estimates). In addition, there is no discernible change in the impact of Ottomans on intra-European feuds over time because the interaction between $OTTOMAN$ and $TIME$, is no longer significant. The lagged-value of intra-European conflicts enters negatively and significantly. 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.

Finally, in columns (3) and (6) I add the following control variables: The one-period lagged value of Ottoman conflicts in Europe, $OTTOMAN_{t-1}$, the one-period lagged annual number of its domestic disturbances or its military excursions elsewhere, $OTHEROTTOMAN_{t-1}$, the interaction of those variables with $TIME$, a century dummy, $CENTURY$, the level of population in the Ottoman territories, $OTTOMANPOP_t$, and the average distance of intra-European violent conflicts from the Ottoman capital Istanbul, $DISTANCE_t$.[25] With all these control variables in place, $OTTOMAN_t$ is still negative but not statistically significant in either specification. However, as shown in the OLS estimates in column (3) and the Poisson estimates in column (6), the lagged value of Ottomans' European conflicts, $OTTOMAN_{t-1}$, comes in with the expected negative sign and it is statistically significant at the five percent level in both columns (3) and(6). The magnitude of this coefficient is slightly higher than that on $OTTOMAN_t$, suggesting

early. The coefficient on $OTTOMAN_t$ is $-.386$, 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(1.49), this produces a European conflict level of .61, which is consistent with a 60 percent drop in intra-European conflicts.

[25]Since $OTTOMANPOP$ and $CENTURY$ did not enter significantly in either of the three estimates in columns (3) and (6), I do not show them in Table 2.

that Ottomans' engagements in Europe suppressed the Europeans' propensity to engage each other violently with a one period lag and by about 50 to 60 percent.

[Table 2 about here.]

In sum, the empirical results in Table 2 support the notion that intra-European conflicts subsided to a significant degree when the Ottoman Empire went on 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, but there is some evidence to suggest that Ottomans' engagements in Europe suppressed the Europeans' propensity to engage each other violently even after a one period lag.

5.2. 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. Nonetheless, to address the reverse causality concern as best as possible given the data limitations, I ran the regressions reported in columns (1) through (6) 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 Table 2. The results, which are shown in Table 3, produce effects that are stronger and even more statistically significant. 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 generally in the range of coefficients reported in Table 2. The estimates of the impact of Ottoman engagements elsewhere and at home, $OTHEROTTOMAN_{t-1}$, now come in with the expected positive sign and they are significant at the 5 percent

confidence level in all specifications.[26] Furthermore, the two-period lagged impact of Ottomans' European conflicts, $OTTOMAN_{t-2}$, is also negative and statistically significant in the Poisson specification reported in column (6) and the two-period lagged impact of Ottoman engagements elsewhere and at home, $OTHEROTTOMAN_{t-2}$, is positive and significant in both columns (3) and (6). These results indicate that the Ottomans' impact on intra-European patterns of conflict had some persistence.

[Table 3 about here.]

Next I checked what role if any outliers played in the results presented in Tables 2 and 3. In Table 5, I report the results from robust regressions that correct for outlier biases using Cook's D-test.[27] As can be seen in Table 5, the robust regression results are roughly in line with those derived above and do not suggest that they are influenced severely by outlier biases.

[Table 4 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 over that period which yielded at least 35 deaths, they are likely to be very noisy and patchy over some shorter time intervals. This would obviously generate some attenuation bias.

In the empirical estimates presented in columns (3) and (6) of Tables 1 through 3, 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 frontier. In five out of six of those specifications, the distance variable I constructed, namely the average distance of intra-European violent conflicts from Istanbul, $DISTANCE_t$, came in significantly positive, but when I included in the regressions its interaction with $OTTOMAN_{t-1}$, the interaction term had no significant impact on intra-European confrontations. This result is consistent with the idea that, regardless

[26] Again, due to the fact that $OTTOMANPOP$ and $CENTURY$ did not enter significantly in either of the estimates in columns (3) or (6), I do not report them in Table 3.

[27] 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.

of how close or distant potential participants of 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, $EUROPE_t$, to the average distance of these conflicts to the Ottoman capital, $DISTANCE_t$, and regressed it on the explanatory variables utilized in Table 2.[28] The results are shown in the first two columns of Table 5. They verify that the distance adjusted number of intra-European conflicts depended negatively and significantly on the number of Ottoman military actions in Europe.

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 (36 observations) and treated $DISTANCE_t$ as the dependent variable. The results are shown in columns (3) and (4) of Table 5. Neither coefficient on Ottomans' European conflicts is statistically significant at the conventional significance levels, although both come in with the expected negative sign and attain p-values of 12 percent and 19 percent in columns (3) and (4). Again, these results suggest that Ottomans' military ventures in Eastern Europe and the Balkans helped suppress intra-European conflicts on the whole continent and that their impact was not solely concentrated on the buffer territories within geographical proximity of the Ottoman frontier.

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 2 through 4, 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 (34) using data with the five-year averages of the dependent and independent variables. The results are shown in columns (5) and (6) of Table 5. The impact of Ottoman military conquests elsewhere and its domestic civil unrests one period lagged, $OTHEROTTOMAN_{t-1}$, had a strong and positive impact on whether violent feuds in continental Europe were intense or not. This effect is robust to the correction for outliers, the heteroskedasticity in the error

[28] 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.

terms and the inclusion/exclusion of various control variables. Nonetheless, neither the variable $OTTOMAN_t$ nor $OTHEROTTOMAN_t$ is statistically significant using the five-year average data.

[Table 5 about here.]

Finally, 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. In the first three columns of Table 6, I report the results derived from a Poisson estimation using annual data and in final three columns I present the Poisson estimates using the five-year average data. The dependent variable in all regressions is the count of Protestant-Catholic Wars over the relevant time span (be it annual or five-year average windows) between 1450 and 1700. The explanatory variables are the standard variables I employed in Table 3. As shown in columns (1) through (3), the one-period lagged number of Ottomans military engagements in Europe, $OTTOMAN_{t-1}$, exerted a negative impact on the likelihood of Catholic-Protestant feuds in all three specifications with the annual data; Ottoman military conquests elsewhere and its domestic civil unrests one period lagged, $OTHEROTTOMAN_{t-1}$, had the predicted positive sign and was significant at the five percent level in two out of three specifications with the annual data; and the two-period lagged number of Ottomans military engagements in Europe, $OTTOMAN_{t-2}$, was also negative and statistically significant when it was included in column (3). Hence, the results using annual data confirm that the Ottomans' European ventures did have a dampening effect on the propensity for conflict between the Protestants and the Catholics. In fact, in any given year, an Ottomans military conquest in the Balkans or Eastern Europe reduced the likelihood of a violent clash between the Protestants and the Catholics in the following year by more than 90 percent. The estimates using the five-year average data are weaker as the one-period impact of the Ottomans' ventures in Europe and elsewhere are no longer significant but, as shown in column (6), the two-period lagged impact of Ottomans' European military conflicts on the Protestant-Catholic confrontations is still negative and significant at the five percent level.

[Table 6 about here.]

6. Relevant Historical Facts

6.1. The Ottoman Threat and the Protestant Reformation

As mentioned above, 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 some key events in the history of the Protestant Reformation. According to the model I sketched out above, the proliferation of the Lutheran movement was, at least in part, due to the Ottoman threat to Western Europe. A number of historians, in fact, have established such a link (see Benz, 1949, Fischer-Galati, 1959, Setton, 1962, Coles, 1968, Inalcik, 1970, Max Kortepeter, 1972, Shaw, 1976, Goffman, 2002, and MacCulloch, 2003).

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 point, 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, moves on to stress 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."[29]

Second, the Ottomans' lopsided victories against the Hapsburgs and in particular their eastern possession, the Hungarian Empire, in the 1520s turned into a bargaining chip for the young Protestant movement. The Protestant leaders capitalized on the Hungarian King Ferdinand I's persistent need by always trying to link any commitment to help 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."

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

[29]For more reference on the topic, consult Charriere (1848), Ursu (1908) and Zinkesien (1854), which Fischer-Galati provides as his original sources in French and German.

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."[30]

The subsequent negotiations between the Protestants and Ferdinand-Charles 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 to the Protestants 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 keep 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 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).

[30]For more reference on the topic, consult Kluckhohn (1893), which Fischer-Galati lists as his original source in German.

Max Kortepeter (1972, p. 196) makes it clear that the attempts to link the Protestants' recognition with the Ottoman threat continued well after the with the Peace of Augsburg in 1555 and into the 17th century: "...the Imperial Reichstag of the German Nation opened on February 3, 1604. The occasion was a bitter one because the majority of its members were Protestant. The Hapsburgs and the Papacy had carried the principal burden of fighting the Ottomans; moreover most of the anti-Protestant or anti-Hungarian decrees had originated with Emperor Rudolph and his entourage. Now it was Archduke Matthias who was caught in the middle. He had to make a plea for subsidies to a Reichstag made hostile by the senseless act of Rudolph and his military commanders. The Reichstag lost no time in drafting twenty-one articles to ensure the security of person and property and the free practice of religion in Hungary."

As noted in the introduction, not all Europeans were equally alarmed and ready to set aside their intra-European differences due to Ottomans' military and political rise. In particular, Francis, the French Emperor at the time, was more willing to cooperate with the Ottoman Turks than either the House of the Hapsburgs, the Pope or the Roman Emperor himself. In 1535, he signed a treaty with Suleiman the Magnificent which in effect "permitted the French to carry on trade throughout the Ottoman Empire, by payment of the same dues to the Sultan as were paid by the Turks themselves...[The treaty] granted complete religious liberty to the French in the Ottoman Empire, with the right to keep guard over the holy places, and amounted in effect to a French protectorate over all Catholics in the Levant. It put an end to the commercial predominance of Venice in the Mediterranean, and obliged all Christian ships–with the exception of those of the Venetians–to fly the French flag as a guarantee of protection."[31] Given the empirical discussion above and the historical record, there are two potential explanations for Francis I's readiness to cooperate with the Ottomans and break ranks with the Hapsburgs and the Pope. First, Francis and the Holy Roman Emperor, Charles V, had their own long running territorial and personal disputes. The Houses of the Hapsburgs and the French mutually claimed several areas in Europe and the animosity between Francis and Charles stemmed from Charles' imperial selection which was contested by Francis.[32] Second, the Ottomans' Eastern European aspirations were more of an urgent geographical threat to the Hapsburg possessions, such as Hungary and Austria, than they were to Francis and the French.[33] Nevertheless, Francis eventually had to come to terms with Charles due

[31]Kinross, (1977, p. 204).

[32]Anderson, (1967, p. 58).

[33]As empirical estimates in columns (4) through (6) of Table 4 imply, the negative effect of Ottomans' military activities in Europe on intra-European feuds decreased with geographical distance from the

to the pressure of the European Christian establishment on Francis against maintaining its partnership ties with Ottomans.[34]

6.2. The Protestant Reformation and European Ecclesiastical Institutions

The impact of Protestantism on European economic development has been extensively debated. The origins of this debate can be traced back to Weber (1930) 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."[35] 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 of the continent in the 18th century has been, and continues to be, hotly debated.[36] 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.[37] 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

Ottoman Empire.

[34] See the relevant discussion and references on page 4.

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

[36] For instance, Mokyr (1990 and 2002) 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.

[37] 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.

and Birdzell propose that it might have had something to do with the disproportionate representation of the Calvinist Scotch in British business.[38]

There is an important difference between these arguments and the one I have developed above: I emphasize 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 given the conservative and interventionist leanings of the Catholic Church until then, the religious competition Protestantism brought to Europe produced less ecclesiastical involvement in commercial activity. This result is in the spirit of Hotelling's spatial competition model in which more competition yields centrist tendencies.[39] 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.

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."

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

[39] This is not to suggest that religious competition ought to automatically produce a separation of the church and the state. See the discussion on page 5 for more detail.

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 a sufficient demand for it.

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."

7. Conclusion

I claim in this paper that the Ottoman Empire had something to do with how the European continent evolved politically and ecclesiastically in the 15th and 16th centuries. My main argument is that institutions evolve endogenously and that, at least historically, international patterns of conflict and cooperation have exerted as much influence on institutions as countries' domestic characteristics or their internal socio-political struggles.

In making this point, I rely on some ideas laid out by Wright who asserts that societies have evolved over time to reflect ever more complexity and interdependence between heterogeneous cultures and social groups. The main reason for this is that conflict and survival has been a constant in the history of humankind and, when faced with extraordinary external threats, societies have adapted to learn to cooperate with or

tolerate the existence of other groups–even if they have had a long history of animosity and conflict.

I present a conceptual framework that merges Wright's idea with a model of appropriative conflict and cooperation. According to the model, 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.

In the empirical component of the paper, I show that the intensity and magnitude of conflict among the Christian populations of Europe in the late-middle ages and the Reformation period was related negatively to the threat of offensive actions by the Ottoman Empire on the continent. They were also related positively to the degree to which the Ottomans were distracted by other endeavours, such as carrying out military offensives against other non-European foes or trying to subdue their own civil discords. Utilizing a comprehensive dataset on violent conflicts for a three-and-a half century time period between the 14th and the 17th centuries, I find some empirical support for the idea that Ottoman military engagements in continental Europe lowered the number and extent of violent conflicts among the European states themselves, while Ottoman military actions in other regions or domestic civil discords raised them.

I present evidence that the Ottomans directly impacted the feud between the Protestant Reformers and the Catholic establishment, with the likelihood and timing of military engagements between the Protestant Reformers and the Counter-Reformation forces depending negatively and statistically significantly on Ottomans' military activities in Europe. I also find that the impact of Ottoman military conquests in Europe did not weaken and persisted with distance from the Ottoman frontier.

On this basis, I argue that the survival and official recognition of Protestantism–subsequently of Zwinglianism, Anabaptism and Calvinism too–influenced "European institutions" because it generated religious pluralism and sustained a competition between Catholicism, Protestantism, and the offshoots of the latter in the gradual removal of the influence of religion from mercantile activity.

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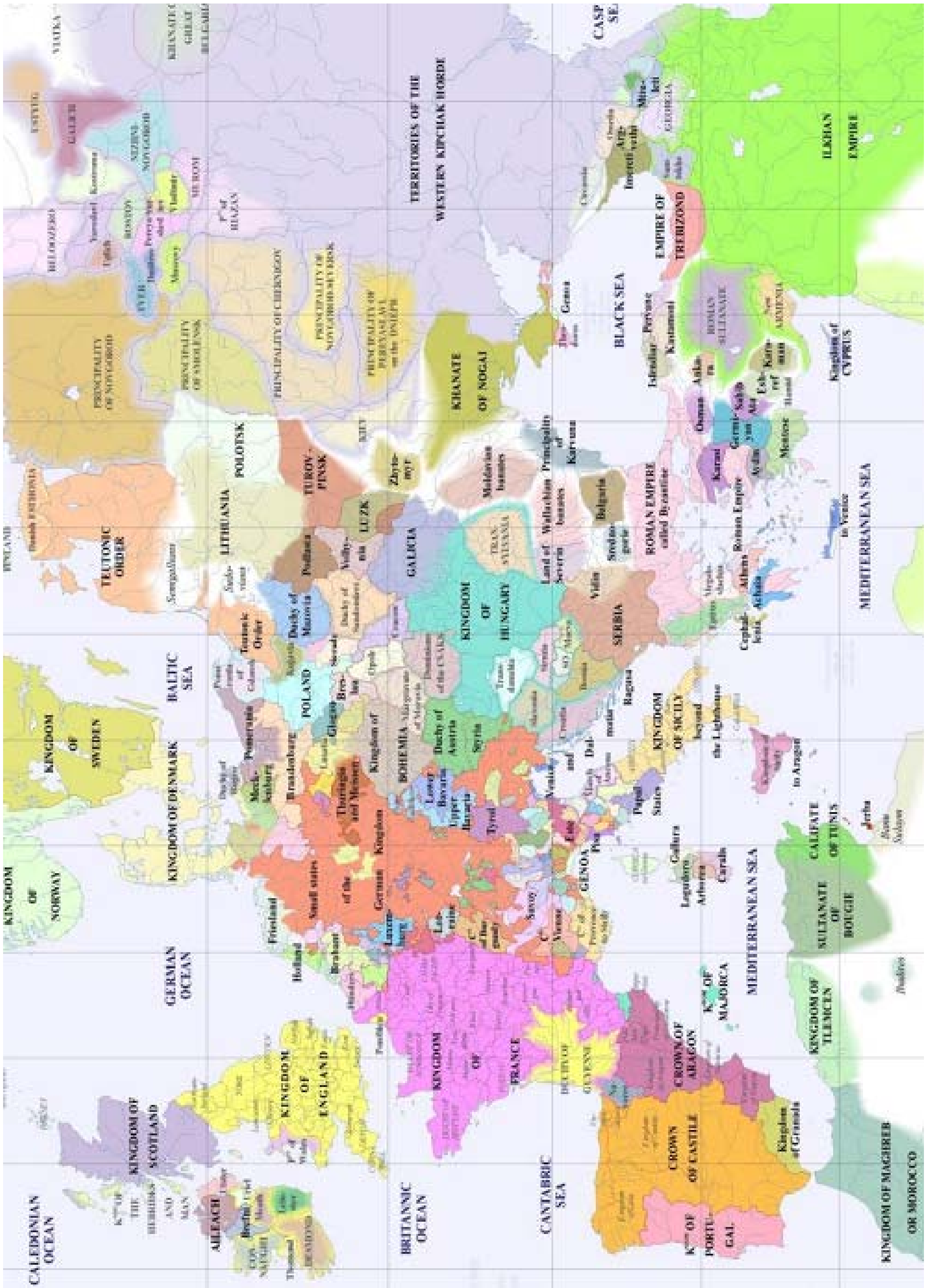
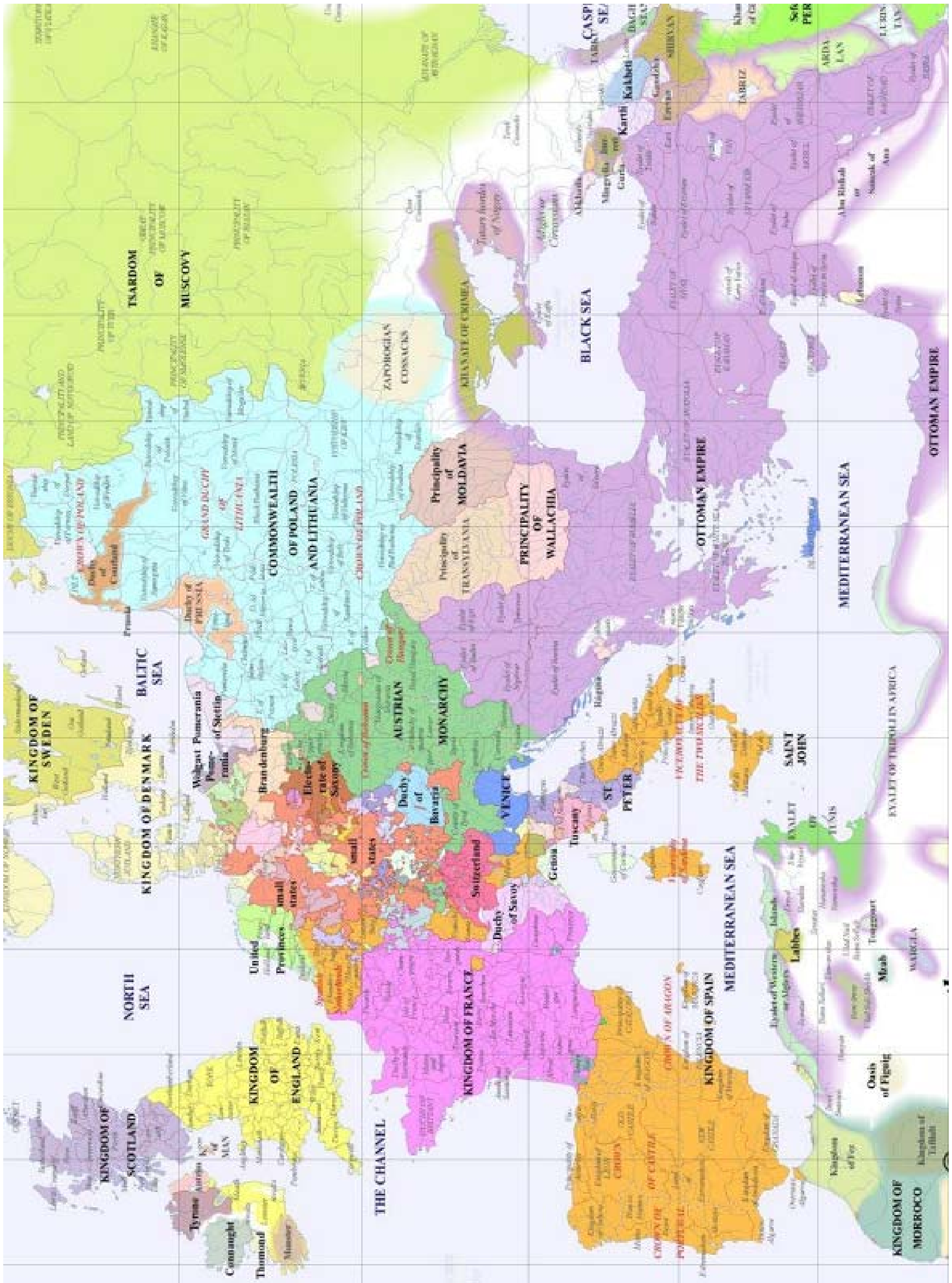

CALEDONIAN OCEAN
KINGDOM OF SCOTLAND
KINGDOM OF ENGLAND
BRITANNIC OCEAN
CANTABRIC SEA
GERMAN OCEAN
KINGDOM OF NORWAY
KINGDOM OF SWEDEN
KINGDOM OF DENMARK
BALTIC SEA
TEUTONIC ORDER
LITHUANIA
POLOTSK
PRINCIPALITY OF NOVGOROD
KINGDOM OF FRANCE
CROWN OF CASTILE
CROWN OF ARAGON
Kingdom of Granada
KINGDOM OF MAGHREB OR MOROCCO
KINGDOM OF TLEMCEN
SULTANATE OF BOUGIE
CALIFATE OF TUNIS
MEDITERRANEAN SEA
POLAND
BOHEMIA
GALICIA
KINGDOM OF HUNGARY
SERBIA
Bulgaria
KINGDOM OF SICILY
ROMAN EMPIRE called Byzantine
BLACK SEA
KHANATE OF NOGAI
TERRITORIES OF THE WESTERN KIPCHAK HORDE
EMPIRE OF TREBIZOND
ILKHAN EMPIRE
Kingdom of CYPRUS
MEDITERRANEAN SEA

Figure 1:



KINGDOM OF SCOTLAND
KINGDOM OF ENGLAND
NORTH SEA
THE CHANNEL
KINGDOM OF DENMARK
KINGDOM OF SWEDEN
BALTIC SEA
United Provinces
KINGDOM OF FRANCE
KINGDOM OF SPAIN
MEDITERRANEAN SEA
Switzerland
Duchy of Savoy
Genoa
Tuscany
VENICE
Duchy of Bavaria
Brandenburg
AUSTRIAN MONARCHY
COMMONWEALTH OF POLAND AND LITHUANIA
Duchy of PRUSSIA
TSARDOM OF MUSCOVY
ZAPOROGIAN COSSACKS
KHANATE OF CRIMEA
Principality of MOLDAVIA
PRINCIPALITY OF WALLACHIA
Principality of TRANSYLVANIA
BLACK SEA
OTTOMAN EMPIRE
MEDITERRANEAN SEA
SAINT JOHN
EYALET OF TUNIS
EYALET OF TRIPOLI IN AFRICA
KINGDOM OF MORROCO
OTTOMAN EMPIRE

Figure 2:

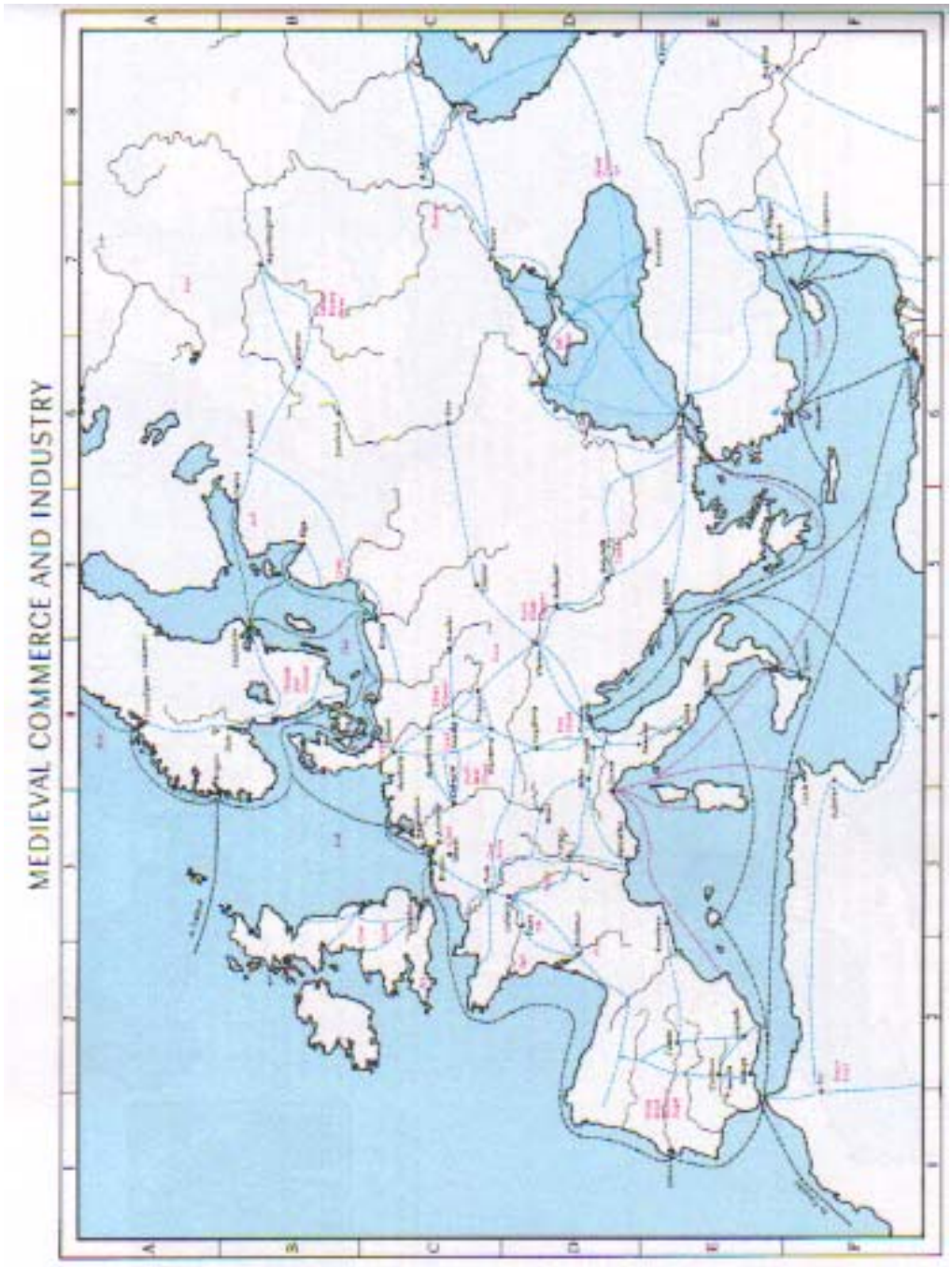


Figure 3:

Table 1: Descriptive Statistics and the Correlation Matrix

Annual Data			*The Correlation Matrix*						
$n = 150$	*Mean*	*St. Dev.*	*EURO*	*OTT.*	*OTHEROTT.*	*EUROPOP*	*OTTOPOP*	*LENGTH*	*OTTOL.*
EUROPE	1.49	1.24	1	...	...	...	...	...	...
OTTOMAN	.367	.639	−.095	1	...	...	...	...	...
OTHEROTT.	.213	.499	.068	.027	1	...	...	...	...
EUROPOP	85.3	8.58	−.100	−.135	−.021	1	...	...	...
OTTOMANP.	13.7	6.33	−.113	−.107	−.050	.964	1	...	...
LENGTH	2.55	3.04	.336	.032	.033	.053	.089	1	...
OTTOLEN.	1.25	2.59	−.130	.700	.059	−.025	.014	−.092	1
OTHERLEN.	.505	1.54	−.013	.026	.618	−.009	−.010	.121	.055
DISTANCE	911.1	565.5	.522	−.055	−.007	.079	.063	.451	−.131

5-year Average Data			*The Correlation Matrix*						
$n = 69$	*Mean*	*St. Dev.*	*EURO*	*OTT.*	*OTHEROTT.*	*EUROPOP*	*OTTOPOP*	*LENGTH*	*OTTOL.*
EUROPE	6.75	3.42	1	...	...	...	...	...	...
OTTOMAN	1.38	1.33	.047	1	...	...	...	...	...
OTHEROTT.	.855	1.00	.187	−.069	1	...	...	...	...
EUROPOP	95.3	20.8	−.489	−.389	.042	1	...	...	...
OTTOMANP.	18.5	9.05	−.252	−.271	.058	.830	1	...	...
LENGTH	3.46	2.13	.230	−.055	−.115	−.174	−.081	1	...
OTTOLEN.	3.41	4.10	.086	.228	.203	−.147	−.012	−.199	1
OTHERLEN.	1.64	2.30	.035	−.070	.362	.096	.124	.042	−.060

Table 2: Regressions with Annual Data, 1451 A. D. - 1600 A. D.

Dependent Variable: No. of Continental European Wars per Year

	OLS			Poisson		
	(1)	(2)	(3)	(4)	(5)	(6)
$OTTOMAN_t$	$-.550^{**}$	$-.427^{**}$	$-.260$	$-.386^{*}$	$-.309^{**}$	$-.293$
	(.298)	(.278)	(.272)	(.193)	(.192)	(.194)
$OTHEROTTOMAN_t$	.183	.128	.394	.087	.011	.220
	(.494)	(.600)	(.485)	(.262)	(.278)	(.194)
$TIME$	$-.065$	$-.086$	$-.032$	$-.046$	$-.065^{**}$	$-.035$
	(.063)	(.060)	(.067)	(.037)	(.036)	(.048)
$TIME * OTTOMAN_t$	$.005^{**}$	.004	.002	$.003^{**}$	.003	.002
	(.003)	(.003)	(.003)	(.002)	(.003)	(.002)
$TIME * OTHEROT._t$	$-.001$	.002	$-.0003$	.0001	.002	.0002
	(.005)	(.005)	(.004)	(.003)	(.003)	(.002)
$EUROPE_{t-1}$	$-.173^{**}$	$-.146^{**}$	$-.138$	$-.118^{**}$	$-.108^{**}$	$-.075$
	(.095)	(.089)	(.157)	(.067)	(.065)	(.106)
$EUROPEPOP_t$	.303	.402	.086	.213	$.306^{**}$	.113
	(.323)	(.307)	(.298)	(.188)	(.184)	(.211)
$LENGTH_t$	...	$.142^{*}$	.054	...	$.072^{*}$	$.033^{*}$
		(.046)	(.034)		(.021)	(.016)
$OTTOLENGTH_t$	...	$-.027$	$-.028$	...	$-.026$	$-.042$
		(.042)	(.033)		(.041)	(.037)
$OTHERLENGTH_t$	...	$-.078$	$-.051$	...	$-.047$	$-.034$
		(.068)	(.054)		(.042)	(.037)
$OTTOMAN_{t-1}$	...	...	$-.626^{*}$	...	...	$-.371^{*}$
			(.205)			(.125)
$OTHEROTTOMAN_{t-1}$	...	...	$.978^{*}$	...	...	$.477^{*}$
			(.407)			(.200)
$TIME * OTTOMAN_{t-1}$	...	...	$.006^{*}$	...	...	$.004^{*}$
			(.002)			(.002)
$TIME * OTHEROT._{t-1}$	...	...	$-.0003$	...	...	$-.002$
			(.002)			(.003)
$DISTANCE_t$	...	...	$.001^{*}$	...	...	$.001^{*}$
			(.0001)			(.0002)
No. of obs.	150	150	150	150	150	150
R^2	.073	.198	.431	...	...	...

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

Table 3: Regressions with Annual Data, 1451 A. D. - 1600 A. D.

Dependent Variable: No. of Continental European Wars per Year

	OLS			Poisson		
	(1)	(2)	(3)	(4)	(5)	(6)
$OTTOMAN_{t-1}$	$-.603^{*}$	$-.631^{*}$	$-.586^{*}$	$-.392^{*}$	$-.365^{*}$	$-.366^{*}$
	(.252)	(.231)	(.195)	(.168)	(.151)	(.133)
$OTHEROTTOMAN_{t-1}$	$.958^{*}$	$.829^{*}$	1.04^{*}	$.446^{*}$	$.337^{**}$	$.555^{*}$
	(.392)	(.387)	(.375)	(.177)	(.179)	(.175)
$TIME$	$-.057$	$-.071$	$-.072$	$-.038$	$-.058^{**}$	$-.072$
	(.059)	(.055)	(.060)	(.035)	(.035)	(.045)
$TIME * OTTOMAN_{t-1}$	$.005^{**}$	$.005^{**}$	$.006^{*}$	$.003^{**}$	.002	$.004^{**}$
	(.003)	(.003)	(.002)	(.002)	(.002)	(.002)
$TIME * OTHEROT._{t-1}$	$-.003$	$-.002$	$-.005$	$-.0007$	.001	$-.002$
	(.004)	(.004)	(.004)	(.002)	(.002)	(.002)
$EUROPE_{t-1}$	$-.213^{*}$	$-.199^{*}$	$-.195^{*}$	$-.146^{**}$	$-.145^{*}$	$-.160^{*}$
	(.086)	(.082)	(.083)	(.059)	(.055)	(.060)
$EUROPEPOP_t$	.259	.324	.323	.174	.274	$.342^{**}$
	(.305)	(.282)	(.269)	(.181)	(.181)	(.204)
$LENGTH_t$	...	$.131^{*}$	.051	...	$.068^{*}$	$.030^{**}$
		(.042)	(.033)		(.017)	(.016)
$OTTOLENGTH_t$	...	$-.056^{**}$	$-.042$	...	$-.051^{**}$	$-.057$
		(.030)	(.031)		(.028)	(.038)
$OTHERLENGTH_t$	...	.009	.010	...	.012	.006
		(.054)	(.050)		(.032)	(.037)
$OTTOMAN_{t-2}$	...	...	.294	...	...	$.258^{**}$
			(.218)			(.135)
$OTHEROTTOMAN_{t-2}$	...	...	1.10^{*}	...	...	$.633^{*}$
			(.427)			(.198)
$TIME * OTTOMAN_{t-2}$	...	...	$-.003$	...	...	$-.003$
			(.002)			(.002)
$TIME * OTHEROT._{t-2}$	...	...	$-.011^{*}$	...	...	$-.006^{*}$
			(.004)			(.002)
$DISTANCE_t$			$.001^{*}$			$.001^{*}$
			(.0001)			(.0001)
No. of obs.	150	150	148	150	150	150
R^2	.155	.277	.464	...	...	...

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

Table 4: Robust Regression Results with Annual Data, 1451 A. D. - 1600 A. D.

Dependent Variable: No. of Continental European Wars per Year

	Table 2 ($i = 0$)			Table 3 ($i = 1$)		
	(1)	(2)	(3)	(1)	(2)	(3)
$OTTOMAN_{t-i}$	$-.478^{**}$	$-.340$	$-.328$	$-.493^{**}$	$-.679^{*}$	$-.444^{*}$
	(.290)	(.305)	(.265)	(.300)	(.260)	(.211)
$OTHEROTTOMAN_{t-i}$	.097	$-.014$	$-.050$	$.904^{**}$	$.660^{**}$	$.547^{**}$
	(.457)	(.442)	(.363)	(.456)	(.393)	(.317)
$TIME$	$-.046$	$-.053$	$-.049$	$-.051$	$-.022$	$-.039$
	(.062)	(.057)	(.065)	(.061)	(.053)	(.046)
$TIME * OTTOMAN_{t-i}$	.005	.004	.004	.004	$.008^{*}$	$.006^{*}$
	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)
$TIME * OTHEROT._{t-i}$	.0002	.002	$-.001$	$-.003$	$-.003$	$-.005$
	(.005)	(.005)	(.004)	(.005)	(.005)	(.004)
$EUROPE_{t-1}$	$-.165^{*}$	$-.146^{**}$	$-.090$	$-.189^{*}$	$-.181^{**}$	$-.168^{*}$
	(.082)	(.077)	(.135)	(.083)	(.071)	(.060)
$EUROPEPOP_t$	.206	.244	.169	.235	.075	.208
	(.316)	(.292)	(.298)	(.313)	(.269)	(.240)
$LENGTH_t$	...	$.176^{*}$	.035	...	$.273^{*}$	.038
		(.032)	(.028)		(.029)	(.025)
$OTTOLENGTH_t$	...	$-.025$	$-.020$	...	$-.007$	$-.014$
		(.052)	(.049)		(.034)	(.040)
$OTHERLENGTH_t$	...	$-.051$	$-.009$	...	$-.056$	$-.005$
		(.079)	(.070)		(.057)	(.060)
$OTTOMAN_{t-i}$	...	...	$-.404^{**}$	...	...	$.525^{*}$
			(.235)			(.213)
$OTHEROTTOMAN_{t-1-i}$	...	...	$.617^{**}$	...	...	1.02^{*}
			(.351)			(.329)
$TIME * OTTOMAN_{t-1-i}$	...	...	$.006^{*}$	...	...	$-.004^{*}$
			(.002)			(.002)
$TIME * OTHEROT._{t-1-i}$	...	...	$-.0006$	...	...	$-.011^{*}$
			(.002)			(.004)
$DISTANCE_t$			$.001^{*}$			.001
			(.0001)			(.0001)
No. of obs.	150	150	150	150	150	148

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

Table 5: More Results with Annual Data, 1451 A. D. - 1600 A. D. and Five-year Average Data 1400 A. D. - 1700 A. D.

Dependent Variable: Distance-Adjusted No. of Conflicts, (1)-(2);
Average Distance from Istanbul, (3)-(4);
No. Continental European Wars per 5-Years, (5)-(6)

	OLS	Poisson	OLS	R. Reg.	OLS	Poisson
	(1)	(2)	(3)	(4)	(5)	(6)
$OTTOMAN_t$	$-.0006^{**}$	$-.448^{*}$	125.6	129.9	$-.150$	.011
	(.0003)	(.204)	(79.9)	(97.9)	(.477)	(.062)
$OTHEROTTOMAN_t$	.0003	.078	-39.5	-19.9	$-.139$	.024
	(.0004)	(.244)	(92.4)	(127.2)	(.592)	(.073)
$TIME$	$-.000002$	$-.023$	-19.3	-18.1	$-.099$	.013
	(.00006)	(.038)	(17.6)	(18.2)	(.144)	(.023)
$TIME * OTTOMAN_t$	.000004	.003	$-.360$	$-.330$	$-.004$	$-.001$
	(.000004)	(.002)	(.986)	(1.09)	(.014)	(.002)
$TIME * OTHEROT._t$	$-.000004$	.0004	.349	.118	.019	.002
	(.000005)	(.002)	(1.07)	(1.47)	(.016)	(.003)
$EUROPE_{t-1}$	$-.0002$	$-.128^{**}$	-24.2	-27.9	$.159^{**}$	$.021^{**}$
	(.0002)	(.073)	(44.3)	(47.4)	(.099)	(.011)
$EUROPEPOP_t$	$-.00003$	.098	12.7	13.7	$-.055$	$-.043^{**}$
	(.0003)	(.194)	(15.4)	(14.8)	(.116)	(.023)
$LENGTH_t$	...	...	...	...	.264	.038
					(.182)	(.026)
$OTTOLENGTH_t$	...	...	...	...	.016	.0005
					(.085)	(.011)
$OTHERLENGTH_t$	...	...	...	...	$-.024$	$-.004$
					(.128)	(.016)
$OTTOMAN_{t-1}$	...	...	...	...	$-.470$	$-.068$
					(.523)	(.070)
$OTHEROTTOMAN_{t-1}$	...	...	...	...	1.74^{*}	$.181^{*}$
					(.692)	(.066)
No. of obs.	150	150	116	116	69	69
R^2	.115	...	.059	...	.620	...

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

Table 6: The Ottoman Impact on the Protestant-Catholic Violent Confrontations

Dependent Variable: No. of Protestant-Catholic per Year, (1)-(3);
No. of Protestant-Catholic per 5-Years, (4)-(6)

	Annual Data			5-year Average Data		
	(1)	(2)	(3)	(4)	(5)	(6)
$OTTOMAN_{t-1}$	-2.17^{*}	-2.20^{*}	-3.16^{*}	$-.404$	$-.344$	.048
	(.853)	(.862)	(1.34)	(.424)	(.332)	(.368)
$OTHEROTTOMAN_{t-1}$	.926	$.942^{*}$	4.64^{*}	.283	.225	.653
	(.708)	(.665)	(1.18)	(.271)	(.319)	(.458)
$TIME$	$.960^{*}$	$.961^{*}$	4.96^{*}	$-.124$	$-.112$	$-.085$
	(.450)	(.443)	(.161)	(.101)	(.110)	(.152)
$TIME * OTTOMAN_{t-1}$	$.017^{*}$	$.016^{**}$	$.024^{*}$	.015	.013	$-.001$
	(.007)	(.007)	(.010)	(.014)	(.012)	(.011)
$TIME * OTHEROT._{t-1}$	$-.006$	$-.006$	$-.037^{*}$	$-.005$	$-.002$	$-.013$
	(.005)	(.005)	(.010)	(.006)	(.008)	(.012)
$PROTESTANT_{t-1}$	2.59^{*}	2.63^{*}	1.92^{*}	3.06^{*}	3.24^{*}	3.19^{*}
	(.961)	(.952)	(.767)	(.701)	(.705)	(.712)
$EUROPEPOP_{t}$	-4.76^{*}	-4.77^{*}	-28.1^{*}	.112	.105	$-.073$
	(2.23)	(2.20)	(.567)	(.089)	(.099)	(.144)
$LENGTH_{t}$	...	.006	.007	...	.040	$-.054$
		(.009)	(.010)		(.080)	(.102)
$OTTOLENGTH_{t}$	...	$-.047^{**}$	$-.131^{*}$	...	$-.023$	$-.066$
		(.027)	(.053)		(.024)	(.042)
$OTHERLENGTH_{t}$	...	$-.015^{*}$	$-.014$	...	.132	.074
		(.007)	(.020)		(.098)	(.085)
$OTTOMAN_{t-2}$	...	...	-2.41^{*}	...	...	-1.30^{*}
			(1.18)			(.412)
$OTHEROTTOMAN_{t-2}$	...	...	.171	...	...	$-.503$
			(3.53)			(.350)
$TIME * OTTOMAN_{t-2}$	...	...	$.018^{*}$	...	...	$.042^{*}$
			(.009)			(.012)
$TIME * OTHEROT._{t-2}$	...	...	$-.003$	...	...	.014
			(.027)			(.009)
$DISTANCE_{t}$			.0001	...	...	...
			(.0001)			
No. of obs.	149	149	148	69	69	68

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